

| <b>Mendeloom panel</b> |                             |  |
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| <b>versie</b>          | 13-Mar-2018<br>(3380 genen) | Centrum voor Medische Genetica Gent  |
| <b>Gene</b>            | <b>OMIM gene ID</b>         | <b>Associated phenotype, OMIM phenotype ID, phenotype mapping key and inheritance pattern</b>  |
| A2M                    | 103950                      | Alpha-2-macroglobulin deficiency, 614036 (1), Autosomal dominant; {Alzheimer disease, susceptibility to}, 104300 (3), Autosomal dominant   |
| A4GALT                 | 607922                      | [Blood group, P1Pk system, P(2) phenotype], 111400 (3); [Blood group, P1Pk system, p phenotype], 111400 (3); NOR polyagglutination syndrome, 111400 (3)  |
| AAAS                   | 605378                      | Achalasia-addisonianism-alacrimia syndrome, 231550 (3), Autosomal recessive  |
| AANAT                  | 600950                      | No OMIM phenotype  |
| AARS                   | 601065                      | Charcot-Marie-Tooth disease, axonal, type 2N, 613287 (3), Autosomal dominant; Epileptic encephalopathy, early infantile, 29, 616339 (3), Autosomal recessive   |
| AARS2                  | 612035                      | Combined oxidative phosphorylation deficiency 8, 614096 (3), Autosomal recessive; Leukoencephalopathy, progressive, with ovarian failure, 615889 (3), Autosomal recessive  |
| AASS                   | 605113                      | Hyperlysinemia, 238700 (3), Autosomal recessive; Saccharopinuria, 268700 (1), Autosomal recessive  |
| ABAT                   | 137150                      | GABA-transaminase deficiency, 613163 (3), Autosomal recessive  |
| ABCA1                  | 600046                      | {Coronary artery disease in familial hypercholesterolemia, protection against}, 143890 (3), Autosomal dominant; HDL deficiency, type 2, 604091 (3); Tangier disease, 205400 (3), Autosomal recessive   |
| ABCA12                 | 607800                      | Ichthyosis, congenital, autosomal recessive 4A, 601277 (3), Autosomal recessive; Ichthyosis, congenital, autosomal recessive 4B (harlequin), 242500 (3), Autosomal recessive   |
| ABCA3                  | 601615                      | Surfactant metabolism dysfunction, pulmonary, 3, 610921 (3), Autosomal recessive   |
| ABCA4                  | 601691                      | Cone-rod dystrophy 3, 604116 (3); Fundus flavimaculatus, 248200 (3), Autosomal recessive; {Macular degeneration, age-related, 2}, 153800 (3), Autosomal dominant; Retinal dystrophy, early-onset severe, 248200 (3), Autosomal recessive; Retinitis pigmentosa 19, 601718 (3), Autosomal recessive; Stargardt disease 1, 248200 (3), Autosomal recessive |
| ABCB1                  | 171050                      | {Colchicine resistance}, 120080 (3); {Inflammatory bowel disease 13}, 612244 (3)   |
| ABCB11                 | 603201                      | Cholestasis, benign recurrent intrahepatic, 2, 605479 (3), Autosomal recessive; Cholestasis, progressive familial intrahepatic 2, 601847 (3), Autosomal recessive  |

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| <i>ABCB6</i>  | 605452 | [Blood group, Langereis system], 111600 (3); Dyschromatosis universalis hereditaria 3, 615402 (3), Autosomal dominant; Microphthalmia, isolated, with coloboma 7, 614497 (3), Autosomal dominant; Pseudohyperkalemia, familial, 2, due to red cell leak, 609153 (3), Autosomal dominant |
| <i>ABCB7</i>  | 300135 | Anemia, sideroblastic, with ataxia, 301310 (3), X-linked recessive [Axillary odor, variation in], 117800 (3), Autosomal dominant;   |
| <i>ABCC11</i> | 607040 | [Colostrum secretion, variation in], 117800 (3), Autosomal dominant; [Earwax, wet/dry], 117800 (3), Autosomal dominant  |
| <i>ABCC2</i>  | 601107 | Dubin-Johnson syndrome, 237500 (3), Autosomal recessive Arterial calcification, generalized, of infancy, 2, 614473 (3), Autosomal recessive; Pseudoxanthoma elasticum, 264800 (3), Autosomal recessive; Pseudoxanthoma elasticum, forme fruste, 177850 (3), Autosomal dominant          |
| <i>ABCC6</i>  | 603234 | Atrial fibrillation, familial, 12, 614050 (3), Autosomal dominant; Cardiomyopathy, dilated, 10, 608569 (3); Hypertrichotic osteochondrodysplasia, 239850 (3), Autosomal dominant  |
| <i>ABCD1</i>  | 300371 | Adrenoleukodystrophy, 300100 (3), X-linked recessive; Adrenomyeloneuropathy, adult, 300100 (3), X-linked recessive  |
| <i>ABCD3</i>  | 170995 | ?Bile acid synthesis defect, congenital, 5, 616278 (3), Autosomal recessive   |
| <i>ABCD4</i>  | 603214 | Methylmalonic aciduria and homocystinuria, cblJ type, 614857 (3), Autosomal recessive   |
| <i>ABCG2</i>  | 603756 | [Junior blood group system], 614490 (3); [Uric acid concentration, serum, QTL1], 138900 (3), ?Autosomal dominant  |
| <i>ABCG5</i>  | 605459 | Sitosterolemia, 210250 (3), Autosomal recessive   |
| <i>ABCG8</i>  | 605460 | {Gallbladder disease 4}, 611465 (3); Sitosterolemia, 210250 (3), Autosomal recessive  |
| <i>ABHD12</i> | 613599 | Polyneuropathy, hearing loss, ataxia, retinitis pigmentosa, and cataract, 612674 (3), Autosomal recessive   |
| <i>ABHD5</i>  | 604780 | Chanarin-Dorfman syndrome, 275630 (3), Autosomal recessive  |
| <i>ABO</i>    | 110300 | [Blood group, ABO system], 616093 (3)   |
| <i>ACAD8</i>  | 604773 | Isobutyryl-CoA dehydrogenase deficiency, 611283 (3)   |
| <i>ACAD9</i>  | 611103 | Mitochondrial complex I deficiency due to ACAD9 deficiency, 611126 (3), Autosomal recessive   |
| <i>ACADM</i>  | 607008 | Acyl-CoA dehydrogenase, medium chain, deficiency of, 201450 (3), Autosomal recessive  |
| <i>ACADS</i>  | 606885 | Acyl-CoA dehydrogenase, short-chain, deficiency of, 201470 (3), Autosomal recessive   |
| <i>ACADSB</i> | 600301 | 2-methylbutyrylglycinuria, 610006 (3), Autosomal recessive  |
| <i>ACADVL</i> | 609575 | VLCAD deficiency, 201475 (3), Autosomal recessive   |
| <i>ACAT1</i>  | 607809 | Alpha-methylacetoacetic aciduria, 203750 (3), Autosomal recessive   |
| <i>ACAT2</i>  | 100678 | ?ACAT2 deficiency, 614055 (1), Isolated cases   |

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| <i>ACD</i>   | 609377 | ?Dyskeratosis congenita, autosomal dominant 6, 616553 (3),<br>Autosomal recessive, Autosomal dominant; ?Dyskeratosis congenita,<br>autosomal recessive 7, 616553 (3), Autosomal recessive, Autosomal<br>dominant   |
| <i>ACE</i>   | 106180 | [Angiotensin I-converting enzyme, benign serum increase] (3);<br>{Microvascular complications of diabetes 3}, 612624 (3); {Myocardial<br>infarction, susceptibility to} (3); Renal tubular dysgenesis, 267430 (3),<br>Autosomal recessive; {SARS, progression of} (3); {Stroke, hemorrhagic},<br>614519 (3)  |
| <i>ACKR1</i> | 613665 | [Blood group, Duffy system], 110700 (3), Autosomal recessive,<br>Autosomal dominant; {Malaria, vivax, protection against}, 611162 (3);<br>[White blood cell count QTL], 611862 (3), Autosomal recessive  |
| <i>ACO2</i>  | 100850 | Infantile cerebellar-retinal degeneration, 614559 (3), Autosomal<br>recessive; ?Optic atrophy 9, 616289 (3), Autosomal recessive   |
| <i>ACOX1</i> | 609751 | Peroxisomal acyl-CoA oxidase deficiency, 264470 (3), Autosomal<br>recessive  |
| <i>ACOX2</i> | 601641 | Bile acid synthesis defect, congenital, 6, 617308 (3), Autosomal<br>recessive  |
| <i>ACP2</i>  | 171650 | ?Lysosomal acid phosphatase deficiency, 200950 (1), Autosomal<br>recessive   |
| <i>ACP4</i>  | 606362 | Amelogenesis imperfecta, type II, 617297 (3), Autosomal recessive  |
| <i>ACP5</i>  | 171640 | Spondyloenchondrodyplasia with immune dysregulation, 607944 (3),<br>Autosomal recessive  |
| <i>ACSF3</i> | 614245 | Combined malonic and methylmalonic aciduria, 614265 (3)  |
| <i>ACSL4</i> | 300157 | Mental retardation, X-linked 63, 300387 (3), X-linked dominant   |
| <i>ACTA1</i> | 102610 | Myopathy, actin, congenital, with cores, 161800 (3), Autosomal<br>recessive, Autosomal dominant; Myopathy, actin, congenital, with<br>excess of thin myofilaments, 161800 (3), Autosomal recessive,<br>Autosomal dominant; Myopathy, congenital, with fiber-type<br>disproportion 1, 255310 (3), Autosomal recessive, Autosomal<br>dominant; ?Myopathy, scapulohumeroperoneal, 616852 (3),<br>Autosomal dominant; Nemaline myopathy 3, autosomal dominant or<br>recessive, 161800 (3), Autosomal recessive, Autosomal dominant |
| <i>ACTA2</i> | 102620 | Aortic aneurysm, familial thoracic 6, 611788 (3), Autosomal dominant;<br>Moyamoya disease 5, 614042 (3); Multisystemic smooth muscle<br>dysfunction syndrome, 613834 (3), Autosomal dominant   |
| <i>ACTB</i>  | 102630 | Baraitser-Winter syndrome 1, 243310 (3), Autosomal dominant;<br>?Dystonia, juvenile-onset, 607371 (3), Autosomal dominant  |
| <i>ACTC1</i> | 102540 | Atrial septal defect 5, 612794 (3), Autosomal dominant;<br>Cardiomyopathy, dilated, 1R, 613424 (3), Autosomal dominant;<br>Cardiomyopathy, hypertrophic, 11, 612098 (3), Autosomal dominant;<br>Left ventricular noncompaction 4, 613424 (3), Autosomal dominant   |
| <i>ACTG1</i> | 102560 | Baraitser-Winter syndrome 2, 614583 (3), Autosomal dominant;<br>Deafness, autosomal dominant 20/26, 604717 (3), Autosomal<br>dominant  |

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| <i>ACTN1</i>    | 102575 | Bleeding disorder, platelet-type, 15, 615193 (3), Autosomal dominant  |
| <i>ACTN2</i>    | 102573 | Cardiomyopathy, dilated, 1AA, with or without LVNC, 612158 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 23, with or without LVNC, 612158 (3), Autosomal dominant                              |
| <i>ACTN4</i>    | 604638 | Glomerulosclerosis, focal segmental, 1, 603278 (3), Autosomal dominant  |
| <i>ACVR2B</i>   | 602730 | Heterotaxy, visceral, 4, autosomal, 613751 (3)  |
| <i>ACY1</i>     | 104620 | Aminoacylase 1 deficiency, 609924 (3), Autosomal recessive  |
| <i>ADA</i>      | 608958 | Adenosine deaminase deficiency, partial, 102700 (3), Autosomal recessive, Somatic mosaicism; Severe combined immunodeficiency due to ADA deficiency, 102700 (3), Autosomal recessive, Somatic mosaicism |
| <i>ADAM10</i>   | 602192 | {Alzheimer disease 18, susceptibility to}, 615590 (3); Reticulate acropigmentation of Kitamura, 615537 (3), Autosomal dominant  |
| <i>ADAM17</i>   | 603639 | ?Inflammatory skin and bowel disease, neonatal, 1, 614328 (3), Autosomal recessive  |
| <i>ADAM9</i>    | 602713 | Cone-rod dystrophy 9, 612775 (3)  |
| <i>ADAMTS10</i> | 608990 | Weill-Marchesani syndrome 1, recessive, 277600 (3), Autosomal recessive   |
| <i>ADAMTS13</i> | 604134 | Thrombotic thrombocytopenic purpura, familial, 274150 (3), Autosomal recessive  |
| <i>ADAMTS17</i> | 607511 | Weill-Marchesani 4 syndrome, recessive, 613195 (3), Autosomal recessive   |
| <i>ADAMTS18</i> | 607512 | Microcornea, myopic chorioretinal atrophy, and telecanthus, 615458 (3), Autosomal recessive   |
| <i>ADAMTS2</i>  | 604539 | Ehlers-Danlos syndrome, dermatosparaxis type, 225410 (3), Autosomal recessive   |
| <i>ADAMTSL2</i> | 612277 | Geleophysic dysplasia 1, 231050 (3), Autosomal recessive  |
| <i>ADAMTSL4</i> | 610113 | Ectopia lentis et pupillae, 225200 (3), Autosomal recessive; Ectopia lentis, isolated, autosomal recessive, 225100 (3), Autosomal recessive   |
| <i>ADAT3</i>    | 615302 | Mental retardation, autosomal recessive 36, 615286 (3), Autosomal recessive   |
| <i>ADCY1</i>    | 103072 | ?Deafness, autosomal recessive 44, 610154 (3), Autosomal recessive  |
| <i>ADCY10</i>   | 605205 | {Hypercalciuria, absorptive, susceptibility to}, 143870 (3), Autosomal dominant   |
| <i>ADCY6</i>    | 600294 | ?Lethal congenital contracture syndrome 8, 616287 (3), Autosomal recessive  |
| <i>ADD1</i>     | 102680 | {Hypertension, essential, salt-sensitive}, 145500 (3), Multifactorial   |
| <i>ADD3</i>     | 601568 | Cerebral palsy, spastic quadriplegic, 3, 617008 (3), Autosomal recessive  |
| <i>ADGRE2</i>   | 606100 | Vibratory urticaria, 125630 (3), Autosomal dominant   |
| <i>ADGRG2</i>   | 300572 | Vas deferens, congenital bilateral aplasia of, X-linked, 300985 (3), X-linked   |
| <i>ADGRG6</i>   | 612243 | Lethal congenital contracture syndrome 9, 616503 (3), Autosomal recessive   |

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| <i>ADGRV1</i> | 602851 | ?Febrile seizures, familial, 4, 604352 (3), Autosomal dominant; Usher syndrome, type 2C, 605472 (3), Autosomal recessive; Usher syndrome, type 2C, GPR98/PDZD7 digenic, 605472 (3), Autosomal recessive                           |
| <i>ADH1B</i>  | 103720 | {Aerodigestive tract cancer, squamous cell, alcohol-related, protection against}, 103780 (3), Multifactorial; {Alcohol dependence, protection against}, 103780 (3), Multifactorial  |
| <i>ADH1C</i>  | 103730 | {Alcohol dependence, protection against}, 103780 (3), Multifactorial; {Parkinson disease, susceptibility to}, 168600 (3), Isolated cases, Multifactorial  |
| <i>ADIPOQ</i> | 605441 | Adiponectin deficiency, 612556 (3)  |
| <i>ADK</i>    | 102750 | Hypermethioninemia due to adenosine kinase deficiency, 614300 (3), Autosomal recessive  |
| <i>ADRA2B</i> | 104260 | Epilepsy, myoclonic, familial adult, 2, 607876 (3), Autosomal dominant  |
| <i>ADRB1</i>  | 109630 | {Congestive heart failure and beta-blocker response, modifier of} (3); [Resting heart rate], 607276 (3)   |
| <i>ADRB2</i>  | 109690 | {Asthma, nocturnal, susceptibility to}, 600807 (3), Autosomal dominant; Beta-2-adrenoreceptor agonist, reduced response to (3); {Obesity, susceptibility to}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial |
| <i>ADRB3</i>  | 109691 | {Obesity, susceptibility to}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>ADSL</i>   | 608222 | Adenylosuccinate deficiency, 103050 (3), Autosomal recessive  |
| <i>ADSSL1</i> | 612498 | Myopathy, distal, 5, 617030 (3), Autosomal recessive  |
| <i>AFF2</i>   | 300806 | Mental retardation, X-linked, FRADE type, 309548 (3), X-linked recessive  |
| <i>AFF4</i>   | 604417 | CHOPS syndrome, 616368 (3), Autosomal dominant  |
| <i>AFG3L2</i> | 604581 | Spastic ataxia 5, autosomal recessive, 614487 (3), Autosomal recessive; Spinocerebellar atrophy 28, 610246 (3), Autosomal dominant  |
| <i>AFP</i>    | 104150 | Alpha-fetoprotein deficiency, 615969 (3), Autosomal recessive; [Hereditary persistence of alpha-fetoprotein], 615970 (3), Autosomal dominant  |
| <i>AGA</i>    | 613228 | Aspartylglucosaminuria, 208400 (3), Autosomal recessive   |
| <i>AGBL1</i>  | 615496 | Corneal dystrophy, Fuchs endothelial, 8, 615523 (3), Autosomal dominant   |
| <i>AGBL5</i>  | 615900 | Retinitis pigmentosa 75, 617023 (3), Autosomal recessive  |
| <i>AGK</i>    | 610345 | Cataract 38, autosomal recessive, 614691 (3), Autosomal recessive; Sengers syndrome, 212350 (3), Autosomal recessive  |
| <i>AGL</i>    | 610860 | Glycogen storage disease IIIa, 232400 (3), Autosomal recessive; Glycogen storage disease IIIb, 232400 (3), Autosomal recessive  |
| <i>AGPAT2</i> | 603100 | Lipodystrophy, congenital generalized, type 1, 608594 (3), Autosomal recessive  |
| <i>AGPS</i>   | 603051 | Rhizomelic chondrodyplasia punctata, type 3, 600121 (3), Autosomal recessive  |
| <i>AGRP</i>   | 602311 | {Leanness, inherited} (3); {Obesity, late-onset}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |

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| <i>AGT</i>    | 106150 | {Hypertension, essential, susceptibility to}, 145500 (3), Multifactorial; {Preeclampsia, susceptibility to} (3); Renal tubular dysgenesis, 267430 (3), Autosomal recessive  |
| <i>AGTR1</i>  | 106165 | {Hypertension, essential}, 145500 (3), Multifactorial; Renal tubular dysgenesis, 267430 (3), Autosomal recessive  |
| <i>AGXT</i>   | 604285 | Hyperoxaluria, primary, type 1, 259900 (3), Autosomal recessive   |
| <i>AHDC1</i>  | 615790 | Xia-Gibbs syndrome, 615829 (3), Autosomal dominant  |
| <i>AHI1</i>   | 608894 | Joubert syndrome 3, 608629 (3), Autosomal recessive   |
| <i>AICDA</i>  | 605257 | Immunodeficiency with hyper-IgM, type 2, 605258 (3), Autosomal recessive  |
| <i>AIFM1</i>  | 300169 | Combined oxidative phosphorylation deficiency 6, 300816 (3), X-linked recessive; Cowchock syndrome, 310490 (3), X-linked recessive; Deafness, X-linked 5, 300614 (3), X-linked recessive  |
| <i>AIMP1</i>  | 603605 | Leukodystrophy, hypomyelinating, 3, 260600 (3), Autosomal recessive   |
| <i>AIP</i>    | 605555 | Pituitary adenoma 1, multiple types, 102200 (3), Autosomal dominant, Somatic mutation; Pituitary adenoma predisposition, 102000 (3), Autosomal dominant   |
| <i>AIPL1</i>  | 604392 | Cone-rod dystrophy, 604393 (3), Autosomal recessive; Leber congenital amaurosis 4, 604393 (3), Autosomal recessive; Retinitis pigmentosa, juvenile, 604393 (3), Autosomal recessive   |
| <i>AIRE</i>   | 607358 | Autoimmune polyendocrinopathy syndrome , type I, with or without reversible metaphyseal dysplasia, 240300 (3), Autosomal recessive, Autosomal dominant  |
| <i>AK1</i>    | 103000 | Hemolytic anemia due to adenylate kinase deficiency, 612631 (3), Autosomal recessive  |
| <i>AK2</i>    | 103020 | Reticular dysgenesis, 267500 (3), Autosomal recessive   |
| <i>AKAP10</i> | 604694 | {Cardiac conduction defect, susceptibility to}, 115080 (3), Autosomal dominant  |
| <i>AKAP9</i>  | 604001 | ?Long QT syndrome-11, 611820 (3), Autosomal dominant  |
| <i>AKR1C2</i> | 600450 | 46XY sex reversal 8, 614279 (3), Autosomal recessive  |
| <i>AKR1C4</i> | 600451 | {46XY sex reversal 8, modifier of}, 614279 (3), Autosomal recessive   |
| <i>AKR1D1</i> | 604741 | Bile acid synthesis defect, congenital, 2, 235555 (3), Autosomal recessive  |
| <i>AKT1</i>   | 164730 | Breast cancer, somatic, 114480 (3); Colorectal cancer, somatic, 114500 (3); Cowden syndrome 6, 615109 (3); Ovarian cancer, somatic, 167000 (3); Proteus syndrome, somatic, 176920 (3); {Schizophrenia, susceptibility to}, 181500 (2), Autosomal dominant |
| <i>AKT2</i>   | 164731 | Diabetes mellitus, type II, 125853 (3), Autosomal dominant; Hypoinsulinemic hypoglycemia with hemihypertrophy, 240900 (3), Autosomal dominant   |
| <i>AKT3</i>   | 611223 | Megalencephaly-polymicrogyria-polydactyly-hydrocephalus syndrome 2, 615937 (3), Autosomal dominant  |
| <i>ALAD</i>   | 125270 | {Lead poisoning, susceptibility to}, 612740 (3), Autosomal recessive; Porphyria, acute hepatic, 612740 (3), Autosomal recessive   |

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| <i>ALB</i>      | 103600 | Analbuminemia, 616000 (3); [Dysalbuminemic hyperthyroxinemia], 615999 (3)   |
| <i>ALDH18A1</i> | 138250 | Cutis laxa, autosomal dominant 3, 616603 (3), Autosomal dominant; Cutis laxa, autosomal recessive, type IIIA, 219150 (3), Autosomal recessive, Isolated cases; Spastic paraplegia 9A, autosomal dominant, 601162 (3), Autosomal dominant; Spastic paraplegia 9B, autosomal recessive, 616586 (3), Autosomal recessive |
| <i>ALDH1A3</i>  | 600463 | Microphthalmia, isolated 8, 615113 (3), Autosomal recessive   |
| <i>ALDH2</i>    | 100650 | Alcohol sensitivity, acute, 610251 (3), Autosomal dominant; {Esophageal cancer, alcohol-related, susceptibility to} (3); {Hangover, susceptibility to}, 610251 (3), Autosomal dominant; {Sublingual nitroglycerin, susceptibility to poor response to} (3)  |
| <i>ALDH3A2</i>  | 609523 | Sjogren-Larsson syndrome, 270200 (3), Autosomal recessive   |
| <i>ALDH4A1</i>  | 606811 | Hyperprolinemia, type II, 239510 (3), Autosomal recessive   |
| <i>ALDH5A1</i>  | 610045 | Succinic semialdehyde dehydrogenase deficiency, 271980 (3), Autosomal recessive   |
| <i>ALDH6A1</i>  | 603178 | Methylmalonate semialdehyde dehydrogenase deficiency, 614105 (3), Autosomal recessive   |
| <i>ALDH7A1</i>  | 107323 | Epilepsy, pyridoxine-dependent, 266100 (3), Autosomal recessive   |
| <i>ALDOB</i>    | 612724 | Fructose intolerance, hereditary, 229600 (3), Autosomal recessive   |
| <i>ALG1</i>     | 605907 | Congenital disorder of glycosylation, type I $\kappa$ , 608540 (3), Autosomal recessive   |
| <i>ALG10</i>    | 603313 | {Long QT syndrome, acquired, reduced susceptibility to}, 613688 (3), Autosomal dominant   |
| <i>ALG11</i>    | 613666 | Congenital disorder of glycosylation, type I $\rho$ , 613661 (3), Autosomal recessive   |
| <i>ALG12</i>    | 607144 | Congenital disorder of glycosylation, type I $\gamma$ , 607143 (3), Autosomal recessive   |
| <i>ALG14</i>    | 612866 | ?Myasthenic syndrome, congenital, 15, without tubular aggregates, 616227 (3)  |
| <i>ALG2</i>     | 607905 | ?Congenital disorder of glycosylation, type I $\iota$ , 607906 (3), Autosomal recessive; Myasthenic syndrome, congenital, 14, with tubular aggregates, 616228 (3), Autosomal recessive  |
| <i>ALG6</i>     | 604566 | Congenital disorder of glycosylation, type I $\zeta$ , 603147 (3), Autosomal recessive  |
| <i>ALG8</i>     | 608103 | Congenital disorder of glycosylation, type I $\eta$ , 608104 (3), Autosomal recessive; Polycystic liver disease 3 with or without kidney cysts, 617874 (3), Autosomal dominant  |
| <i>ALG9</i>     | 606941 | Congenital disorder of glycosylation, type I $\delta$ , 608776 (3), Autosomal recessive; Gillessen-Kaesbach-Nishimura syndrome, 263210 (3), Autosomal recessive   |
| <i>ALK</i>      | 105590 | {Neuroblastoma, susceptibility to, 3}, 613014 (3)   |
| <i>ALLC</i>     | 612396 | No OMIM phenotype   |
| <i>ALMS1</i>    | 606844 | Alstrom syndrome, 203800 (3), Autosomal recessive   |

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| <i>ALOX12B</i> | 603741 | Ichthyosis, congenital, autosomal recessive 2, 242100 (3), Autosomal recessive  |
| <i>ALOX5</i>   | 152390 | {Asthma, diminished response to antileukotriene treatment in}, 600807 (3), Autosomal dominant; {Atherosclerosis, susceptibility to} (3)   |
| <i>ALOX5AP</i> | 603700 | {Stroke, susceptibility to}, 601367 (3), Multifactorial   |
| <i>ALOXE3</i>  | 607206 | Ichthyosis, congenital, autosomal recessive 3, 606545 (3), Autosomal recessive  |
| <i>ALPL</i>    | 171760 | Hypophosphatasia, adult, 146300 (3), Autosomal recessive, Autosomal dominant; Hypophosphatasia, childhood, 241510 (3), Autosomal recessive; Hypophosphatasia, infantile, 241500 (3), Autosomal recessive; Odontohypophosphatasia, 146300 (3), Autosomal recessive, Autosomal dominant |
| <i>ALS2</i>    | 606352 | Amyotrophic lateral sclerosis 2, juvenile, 205100 (3), Autosomal recessive; Primary lateral sclerosis, juvenile, 606353 (3), Autosomal recessive; Spastic paralysis, infantile onset ascending, 607225 (3), Autosomal recessive   |
| <i>ALX1</i>    | 601527 | ?Frontonasal dysplasia 3, 613456 (3)  |
| <i>ALX3</i>    | 606014 | Frontonasal dysplasia 1, 136760 (3), Autosomal recessive  |
| <i>ALX4</i>    | 605420 | {Craniosynostosis 5, susceptibility to}, 615529 (3), Autosomal dominant; Frontonasal dysplasia 2, 613451 (3), Autosomal recessive; Parietal foramina 2, 609597 (3), Autosomal dominant  |
| <i>AMACR</i>   | 604489 | Alpha-methylacyl-CoA racemase deficiency, 614307 (3), Autosomal recessive; Bile acid synthesis defect, congenital, 4, 214950 (3), Autosomal recessive   |
| <i>AMBN</i>    | 601259 | Amelogenesis imperfecta, type IF, 616270 (3), Autosomal recessive   |
| <i>AMELX</i>   | 300391 | Amelogenesis imperfecta, type 1E, 301200 (3), X-linked dominant   |
| <i>AMER1</i>   | 300647 | Osteopathia striata with cranial sclerosis, 300373 (3), X-linked dominant   |
| <i>AMH</i>     | 600957 | Persistent Mullerian duct syndrome, type I, 261550 (3), Autosomal recessive   |
| <i>AMHR2</i>   | 600956 | Persistent Mullerian duct syndrome, type II, 261550 (3), Autosomal recessive  |
| <i>AMMECR1</i> | 300195 | Midface hypoplasia, hearing impairment, elliptocytosis, and nephrocalcinosis, 300990 (3), X-linked recessive  |
| <i>AMN</i>     | 605799 | Megaloblastic anemia-1, Norwegian type, 261100 (3), Autosomal recessive   |
| <i>AMPD1</i>   | 102770 | Myopathy due to myoadenylate deaminase deficiency, 615511 (3), Autosomal recessive  |
| <i>AMPD2</i>   | 102771 | Pontocerebellar hypoplasia, type 9, 615809 (3), Autosomal recessive; ?Spastic paraplegia 63, 615686 (3), Autosomal recessive  |
| <i>AMPD3</i>   | 102772 | [AMP deaminase deficiency, erythrocytic], 612874 (3), Autosomal recessive   |
| <i>AMT</i>     | 238310 | Glycine encephalopathy, 605899 (3), Autosomal recessive   |
| <i>ANG</i>     | 105850 | Amyotrophic lateral sclerosis 9, 611895 (3)   |
| <i>ANGPTL3</i> | 604774 | Hypobetalipoproteinemia, familial, 2, 605019 (3), Autosomal recessive   |

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| <i>ANGPTL4</i> | 605910 | Plasma triglyceride level QTL, low, 615881 (3), Autosomal dominant   |
| <i>ANK2</i>    | 106410 | Cardiac arrhythmia, ankyrin-B-related, 600919 (3), Autosomal dominant; Long QT syndrome 4, 600919 (3), Autosomal dominant  |
| <i>ANK3</i>    | 600465 | ?Mental retardation, autosomal recessive, 37, 615493 (3), Autosomal recessive  |
| <i>ANKH</i>    | 605145 | Chondrocalcinosis 2, 118600 (3), Autosomal dominant; Craniometaphyseal dysplasia, 123000 (3), Autosomal dominant   |
| <i>ANKLE2</i>  | 616062 | ?Microcephaly 16, primary, autosomal recessive, 616681 (3), Autosomal recessive  |
| <i>ANKRD26</i> | 610855 | Thrombocytopenia 2, 188000 (3), Autosomal dominant   |
| <i>ANKS6</i>   | 615370 | Nephronophthisis 16, 615382 (3), Autosomal recessive   |
| <i>ANLN</i>    | 616027 | Focal segmental glomerulosclerosis 8, 616032 (3), Autosomal dominant   |
| <i>ANO10</i>   | 613726 | Spinocerebellar ataxia, autosomal recessive 10, 613728 (3), Autosomal recessive  |
| <i>ANO3</i>    | 610110 | Dystonia 24, 615034 (3), Autosomal dominant  |
| <i>ANO5</i>    | 608662 | Gnathodiaphyseal dysplasia, 166260 (3), Autosomal dominant; Miyoshi muscular dystrophy 3, 613319 (3), Autosomal recessive; Muscular dystrophy, limb-girdle, type 2L, 611307 (3), Autosomal recessive |
| <i>ANOS1</i>   | 300836 | Hypogonadotropic hypogonadism 1 with or without anosmia (Kallmann syndrome 1), 308700 (3), X-linked recessive  |
| <i>ANTXR1</i>  | 606410 | GAPO syndrome, 230740 (3), Autosomal recessive; {?Hemangioma, capillary infantile, susceptibility to}, 602089 (3), Autosomal dominant  |
| <i>ANTXR2</i>  | 608041 | Hyaline fibromatosis syndrome, 228600 (3), Autosomal recessive   |
| <i>ANXA5</i>   | 131230 | {Pregnancy loss, recurrent, susceptibility to, 3}, 614391 (3), Autosomal dominant  |
| <i>AP1S1</i>   | 603531 | MEDNIK syndrome, 609313 (3), Autosomal recessive   |
| <i>AP1S3</i>   | 615781 | {Psoriasis 15, pustular, susceptibility to}, 616106 (3), Autosomal dominant  |
| <i>AP2S1</i>   | 602242 | Hypocalciuric hypercalcemia, type III, 600740 (3), Autosomal dominant  |
| <i>AP3B1</i>   | 603401 | Hermansky-Pudlak syndrome 2, 608233 (3), Autosomal recessive   |
| <i>AP3B2</i>   | 602166 | Epileptic encephalopathy, early infantile, 48, 617276 (3), Autosomal recessive   |
| <i>AP3D1</i>   | 607246 | ?Hermansky-Pudlak syndrome 10, 617050 (3), Autosomal recessive   |
| <i>AP4B1</i>   | 607245 | Spastic paraplegia 47, autosomal recessive, 614066 (3), Autosomal recessive  |
| <i>AP4E1</i>   | 607244 | Spastic paraplegia 51, autosomal recessive, 613744 (3), Autosomal recessive; Stuttering, familial persistent, 1, 184450 (3), Autosomal dominant  |
| <i>AP4M1</i>   | 602296 | Spastic paraplegia 50, autosomal recessive, 612936 (3), Autosomal recessive  |
| <i>AP4S1</i>   | 607243 | Spastic paraplegia 52, autosomal recessive, 614067 (3), Autosomal recessive  |
| <i>AP5Z1</i>   | 613653 | Spastic paraplegia 48, autosomal recessive, 613647 (3), Autosomal recessive  |

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| <i>APBB2</i>  | 602710 | No OMIM phenotype   |
| <i>APCDD1</i> | 607479 | Hypotrichosis 1, 605389 (3), Autosomal dominant   |
| <i>APOA1</i>  | 107680 | Amyloidosis, 3 or more types, 105200 (3), Autosomal dominant; ApoA-I and apoC-III deficiency, combined (3); Corneal clouding, autosomal recessive (3); Hypoalphalipoproteinemia, 604091 (3)   |
| <i>APOA2</i>  | 107670 | Apolipoprotein A-II deficiency (3); {Hypercholesterolemia, familial, modifier of}, 143890 (3), Autosomal dominant   |
| <i>APOA5</i>  | 606368 | Hyperchylomicronemia, late-onset, 144650 (3), Autosomal dominant; {Hypertriglyceridemia, susceptibility to}, 145750 (3), Autosomal dominant   |
| <i>APOB</i>   | 107730 | Hypercholesterolemia, due to ligand-defective apo B, 144010 (3), Autosomal dominant; Hypobetalipoproteinemia, 615558 (3), Autosomal recessive   |
| <i>APOC2</i>  | 608083 | Hyperlipoproteinemia, type Ib, 207750 (3), Autosomal recessive  |
| <i>APOC3</i>  | 107720 | Apolipoprotein C-III deficiency, 614028 (3)   |
| <i>APOE</i>   | 107741 | Alzheimer disease-2, 104310 (3), Autosomal dominant; {Coronary artery disease, severe, susceptibility to}, 617347 (3); Hyperlipoproteinemia, type III, 617347 (3); Lipoprotein glomerulopathy, 611771 (3); {?Macular degeneration, age-related}, 603075 (3), Autosomal dominant; Sea-blue histiocyte disease, 269600 (3), Autosomal recessive |
| <i>APOL1</i>  | 603743 | {End-stage renal disease, nondiabetic, susceptibility to}, 612551 (3); {Glomerulosclerosis, focal segmental, 4, susceptibility to}, 612551 (3)  |
| <i>APOL4</i>  | 607254 | {Schizophrenia}, 181500 (1), Autosomal dominant   |
| <i>APOPT1</i> | 616003 | Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial   |
| <i>APP</i>    | 104760 | Alzheimer disease 1, familial, 104300 (3), Autosomal dominant; Cerebral amyloid angiopathy, Dutch, Italian, Iowa, Flemish, Arctic variants, 605714 (3), Autosomal dominant  |
| <i>APPL1</i>  | 604299 | {Maturity-onset diabetes of the young, type 14}, 616511 (3), Autosomal dominant   |
| <i>APRT</i>   | 102600 | Adenine phosphoribosyltransferase deficiency, 614723 (3), Autosomal recessive   |
| <i>APTX</i>   | 606350 | Ataxia, early-onset, with oculomotor apraxia and hypoalbuminemia, 208920 (3), Autosomal recessive   |
| <i>AQP1</i>   | 107776 | [Aquaporin-1 deficiency], 110450 (3); [Blood group, Colton], 110450 (3)   |
| <i>AQP2</i>   | 107777 | Diabetes insipidus, nephrogenic, 125800 (3), Autosomal recessive, Autosomal dominant  |
| <i>AQP3</i>   | 600170 | [Blood group GIL], 607457 (3)   |
| <i>AQP7</i>   | 602974 | [Glycerol quantitative trait locus], 614411 (3), Autosomal recessive  |

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| <i>AR</i>       | 313700 | Androgen insensitivity, 300068 (3), X-linked recessive; Androgen insensitivity, partial, with or without breast cancer, 312300 (3), X-linked recessive; Hypospadias 1, X-linked, 300633 (3), X-linked recessive; {Prostate cancer, susceptibility to}, 176807 (3), Autosomal dominant; Spinal and bulbar muscular atrophy of Kennedy, 313200 (3), X-linked recessive |
| <i>ARCN1</i>    | 600820 | Short stature, rhizomelic, with microcephaly, micrognathia, and developmental delay, 617164 (3), Autosomal dominant  |
| <i>ARFGEF2</i>  | 605371 | Periventricular heterotopia with microcephaly, 608097 (3), Autosomal recessive   |
| <i>ARG1</i>     | 608313 | Argininemia, 207800 (3), Autosomal recessive   |
| <i>ARHGAP26</i> | 605370 | Leukemia, juvenile myelomonocytic, somatic, 607785 (3)   |
| <i>ARHGAP31</i> | 610911 | Adams-Oliver syndrome 1, 100300 (3), Autosomal dominant  |
| <i>ARHGDI1</i>  | 601925 | Nephrotic syndrome, type 8, 615244 (3), Autosomal recessive  |
| <i>ARHGEF6</i>  | 300267 | ?Mental retardation, X-linked 46, 300436 (3), X-linked recessive   |
| <i>ARHGEF9</i>  | 300429 | Epileptic encephalopathy, early infantile, 8, 300607 (3), X-linked recessive   |
| <i>ARID1A</i>   | 603024 | Coffin-Siris syndrome 2, 614607 (3), Autosomal dominant  |
| <i>ARID1B</i>   | 614556 | Coffin-Siris syndrome 1, 135900 (3), Autosomal dominant  |
| <i>ARL13B</i>   | 608922 | Joubert syndrome 8, 612291 (3), Autosomal recessive  |
| <i>ARL2BP</i>   | 615407 | Retinitis pigmentosa with or without situs inversus, 615434 (3), Autosomal recessive   |
| <i>ARL6IP1</i>  | 607669 | ?Spastic paraparesis 61, autosomal recessive, 615685 (3), Autosomal recessive  |
| <i>ARMC4</i>    | 615408 | Ciliary dyskinesia, primary, 23, 615451 (3), Autosomal recessive   |
| <i>ARMC5</i>    | 615549 | ACTH-independent macronodular adrenal hyperplasia 2, 615954 (3), Autosomal dominant, Somatic mutation  |
| <i>ARMS2</i>    | 611313 | {Macular degeneration, age-related, 8}, 613778 (3)   |
| <i>ARNT2</i>    | 606036 | ?Webb-Dattani syndrome, 615926 (3), Autosomal recessive  |
| <i>ARSA</i>     | 607574 | Metachromatic leukodystrophy, 250100 (3), Autosomal recessive  |
| <i>ARSB</i>     | 611542 | Mucopolysaccharidosis type VI (Maroteaux-Lamy), 253200 (3), Autosomal recessive  |
| <i>ART4</i>     | 110600 | [Blood group, Dombrock], 616060 (3)  |
| <i>ARV1</i>     | 611647 | Epileptic encephalopathy, early infantile, 38, 617020 (3), Autosomal recessive   |
| <i>ARX</i>      | 300382 | Epileptic encephalopathy, early infantile, 1, 308350 (3), X-linked recessive; Hydranencephaly with abnormal genitalia, 300215 (3), X-linked; Lissencephaly, X-linked 2, 300215 (3), X-linked; Mental retardation, X-linked 29 and others, 300419 (3), X-linked recessive; Partington syndrome, 309510 (3), X-linked recessive; Proud syndrome, 300004 (3), X-linked  |
| <i>ASAHI</i>    | 613468 | Farber lipogranulomatosis, 228000 (3), Autosomal recessive; Spinal muscular atrophy with progressive myoclonic epilepsy, 159950 (3), Autosomal recessive   |
| <i>ASB10</i>    | 615054 | Glaucoma 1, open angle, F, 603383 (3)  |

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| ASCC1               | 614215 | Barrett esophagus/esophageal adenocarcinoma, 614266 (3); ?Spinal muscular atrophy with congenital bone fractures 2, 616867 (3), Autosomal recessive   |
| ASCL1               | 100790 | Central hypoventilation syndrome, congenital, 209880 (3), Autosomal dominant; Haddad syndrome, 209880 (3), Autosomal dominant   |
| ASIP                | 600201 | [Skin/hair/eye pigmentation 9, brown/nonbrown eyes], 611742 (3); [Skin/hair/eye pigmentation 9, dark/light hair], 611742 (3)  |
| ASL                 | 608310 | Argininosuccinic aciduria, 207900 (3), Autosomal recessive  |
| ASNS                | 108370 | Asparagine synthetase deficiency, 615574 (3), Autosomal recessive   |
| ASPA                | 608034 | Canavan disease, 271900 (3), Autosomal recessive  |
| ASPH                | 600582 | Traboulsi syndrome, 601552 (3), Autosomal recessive   |
| ASPM                | 605481 | Microcephaly 5, primary, autosomal recessive, 608716 (3), Autosomal recessive   |
| ASPN                | 608135 | {Lumbar disc degeneration}, 603932 (3); {Osteoarthritis susceptibility 3}, 607850 (3), Autosomal dominant   |
| ASXL2               | 612991 | Shashi-Pena syndrome, 617190 (3), Autosomal dominant  |
| ASXL3               | 615115 | Bainbridge-Ropers syndrome, 615485 (3), Autosomal dominant  |
| ATAD3A              | 612316 | Harel-Yoon syndrome, 617183 (3), Autosomal recessive, Autosomal dominant  |
| ATCAY               | 608179 | Ataxia, cerebellar, Cayman type, 601238 (3), Autosomal recessive  |
| ATF6                | 605537 | Achromatopsia 7, 616517 (3), Autosomal recessive  |
| ATG16L1             | 610767 | {Inflammatory bowel disease (Crohn disease) 10}, 611081 (3)   |
| ATIC                | 601731 | AICA-ribosiduria due to ATIC deficiency, 608688 (3), Autosomal recessive  |
| ATL3                | 609369 | Neuropathy, hereditary sensory, type IF, 615632 (3), Autosomal dominant   |
| ATN1                | 607462 | Dentatorubro-pallidoluysian atrophy, 125370 (3), Autosomal dominant   |
| ATP13A2             | 610513 | Kufor-Rakeb syndrome, 606693 (3), Autosomal recessive; Spastic paraplegia 78, autosomal recessive, 617225 (3), Autosomal recessive  |
| ATP1A2              | 182340 | Alternating hemiplegia of childhood 1, 104290 (3), Autosomal dominant; Migraine, familial basilar, 602481 (3), Autosomal dominant; Migraine, familial hemiplegic, 2, 602481 (3), Autosomal dominant |
| ATP1A3              | 182350 | Alternating hemiplegia of childhood 2, 614820 (3), Autosomal dominant; CAPOS syndrome, 601338 (3), Autosomal dominant; Dystonia-12, 128235 (3), Autosomal dominant                                  |
| ATP1B1              | 182330 | [Blood pressure regulation QTL], 145500 (2), Multifactorial   |
| ATP2A1              | 108730 | Brody myopathy, 601003 (3), Autosomal recessive   |
| ATP2A2              | 108740 | Acrokeratosis verruciformis, 101900 (3), Autosomal dominant; Darier disease, 124200 (3), Autosomal dominant   |
| ATP5F1A<br>(ATP5A1) | 164360 | ?Combined oxidative phosphorylation deficiency 22, 616045 (3), Autosomal recessive; ?Mitochondrial complex (ATP synthase) deficiency, nuclear type 4, 615228 (3), Autosomal recessive               |
| ATP5F1E<br>(ATP5E)  | 606153 | ?Mitochondrial complex V (ATP synthase) deficiency, nuclear type 3, 614053 (3)  |

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| <i>ATP6AP1</i>  | 300197 | Immunodeficiency 47, 300972 (3), X-linked recessive  |
| <i>ATP6AP2</i>  | 300556 | Mental retardation, X-linked, syndromic, Hedera type, 300423 (3), X-linked recessive; ?Parkinsonism with spasticity, X-linked, 300911 (3), X-linked recessive  |
| <i>ATP6VOA2</i> | 611716 | Cutis laxa, autosomal recessive, type IIA, 219200 (3), Autosomal recessive; Wrinkly skin syndrome, 278250 (3), Autosomal recessive   |
| <i>ATP6VOA4</i> | 605239 | Renal tubular acidosis, distal, autosomal recessive, 602722 (3)  |
| <i>ATP6V1A</i>  | 607027 | Cutis laxa, autosomal recessive, type IID, 617403 (3), Autosomal recessive; Epileptic encephalopathy, infantile or early childhood, 3, 618012 (3), Autosomal dominant  |
| <i>ATP6V1B1</i> | 192132 | Renal tubular acidosis with deafness, 267300 (3), Autosomal recessive  |
| <i>ATP6V1B2</i> | 606939 | Deafness, congenital, with onychodystrophy, autosomal dominant, 124480 (3), Autosomal dominant; Zimmermann-Laband syndrome 2, 616455 (3), Autosomal dominant   |
| <i>ATP6V1E1</i> | 108746 | Cutis laxa, autosomal recessive, type IIC, 617402 (3), Autosomal recessive   |
| <i>ATP7A</i>    | 300011 | Menkes disease, 309400 (3), X-linked recessive; Occipital horn syndrome, 304150 (3), X-linked recessive; Spinal muscular atrophy, distal, X-linked 3, 300489 (3), X-linked recessive   |
| <i>ATP7B</i>    | 606882 | Wilson disease, 277900 (3), Autosomal recessive  |
| <i>ATP8A2</i>   | 605870 | ?Cerebellar ataxia, mental retardation, and dysequilibrium syndrome 4, 615268 (3), Autosomal recessive   |
| <i>ATP8B1</i>   | 602397 | Cholestasis, benign recurrent intrahepatic, 243300 (3), Autosomal recessive; Cholestasis, intrahepatic, of pregnancy, 1, 147480 (3), Autosomal dominant; Cholestasis, progressive familial intrahepatic 1, 211600 (3), Autosomal recessive       |
| <i>ATPAF2</i>   | 608918 | ?Mitochondrial complex V (ATP synthase) deficiency, nuclear type 1, 604273 (3), Autosomal recessive  |
| <i>ATR</i>      | 601215 | ?Cutaneous telangiectasia and cancer syndrome, familial, 614564 (3), Autosomal dominant; Seckel syndrome 1, 210600 (3), Autosomal recessive  |
| <i>ATRX</i>     | 300032 | Alpha-thalassemia myelodysplasia syndrome, somatic, 300448 (3); Alpha-thalassemia/mental retardation syndrome, 301040 (3), X-linked dominant; Mental retardation-hypotonic facies syndrome, X-linked, 309580 (3), X-linked recessive             |
| <i>ATXN1</i>    | 601556 | Spinocerebellar ataxia 1, 164400 (3), Autosomal dominant   |
| <i>ATXN10</i>   | 611150 | Spinocerebellar ataxia 10, 603516 (3), Autosomal dominant  |
| <i>ATXN2</i>    | 601517 | {Amyotrophic lateral sclerosis, susceptibility to, 13}, 183090 (3), Autosomal dominant; {Parkinson disease, late-onset, susceptibility to}, 168600 (3), Isolated cases, Multifactorial; Spinocerebellar ataxia 2, 183090 (3), Autosomal dominant |
| <i>ATXN3</i>    | 607047 | Machado-Joseph disease, 109150 (3), Autosomal dominant   |
| <i>ATXN7</i>    | 607640 | Spinocerebellar ataxia 7, 164500 (3), Autosomal dominant   |
| <i>AUH</i>      | 600529 | 3-methylglutaconic aciduria, type I, 250950 (3), Autosomal recessive   |
| <i>AURKC</i>    | 603495 | Spermatogenic failure 5, 243060 (3), Autosomal recessive   |

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| <i>AUTS2</i>    | 607270 | Mental retardation, autosomal dominant 26, 615834 (3), Autosomal dominant   |
| <i>AVP</i>      | 192340 | Diabetes insipidus, neurohypophyseal, 125700 (3), Autosomal dominant  |
| <i>AVPR2</i>    | 300538 | Diabetes insipidus, nephrogenic, 304800 (3), X-linked recessive; Nephrogenic syndrome of inappropriate antidiuresis, 300539 (3), X-linked recessive   |
| <i>AXIN1</i>    | 603816 | ?Caudal duplication anomaly, 607864 (3); Hepatocellular carcinoma, somatic, 114550 (3)  |
| <i>AXIN2</i>    | 604025 | Colorectal cancer, somatic, 114500 (3); Oligodontia-colorectal cancer syndrome, 608615 (3), Autosomal dominant  |
| <i>AXL</i>      | 109135 | No OMIM phenotype   |
| <i>B3GALNT2</i> | 610194 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies, type A, 11, 615181 (3), Autosomal recessive   |
| <i>B3GALT6</i>  | 615291 | Ehlers-Danlos syndrome, spondylodysplastic type, 2, 615349 (3), Autosomal recessive; Spondyloepimetaphyseal dysplasia with joint laxity, type 1, with or without fractures, 271640 (3), Autosomal recessive |
| <i>B3GAT3</i>   | 606374 | Multiple joint dislocations, short stature, craniofacial dysmorphism, with or without congenital heart defects, 245600 (3), Autosomal recessive   |
| <i>B3GLCT</i>   | 610308 | Peters-plus syndrome, 261540 (3), Autosomal recessive   |
| <i>B4GALT1</i>  | 137060 | Congenital disorder of glycosylation, type II <sup>d</sup> , 607091 (3), Autosomal recessive  |
| <i>B4GALT7</i>  | 604327 | Ehlers-Danlos syndrome, spondylodysplastic type, 1, 130070 (3), Autosomal recessive   |
| <i>B4GAT1</i>   | 605517 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 13, 615287 (3), Autosomal recessive  |
| <i>B9D1</i>     | 614144 | Joubert syndrome 27, 617120 (3), Autosomal recessive; ?Meckel syndrome 9, 614209 (3), Autosomal recessive   |
| <i>B9D2</i>     | 611951 | Joubert syndrome 34, 614175 (3), Autosomal recessive; ?Meckel syndrome 10, 614175 (3), Autosomal recessive  |
| <i>BAAT</i>     | 602938 | Hypercholanemia, familial, 607748 (3)   |
| <i>BAG3</i>     | 603883 | Cardiomyopathy, dilated, 1HH, 613881 (3), Autosomal dominant; Myopathy, myofibrillar, 6, 612954 (3), Autosomal dominant   |
| <i>BANF1</i>    | 603811 | Nestor-Guillermo progeria syndrome, 614008 (3), Autosomal recessive   |
| <i>BANK1</i>    | 610292 | No OMIM phenotype   |
| <i>BAP1</i>     | 603089 | Tumor predisposition syndrome, 614327 (3), Autosomal dominant   |
| <i>BARD1</i>    | 601593 | {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant  |
| <i>BBIP1</i>    | 613605 | ?Bardet-Biedl syndrome 18, 615995 (3), Autosomal recessive  |
| <i>BBS1</i>     | 209901 | Bardet-Biedl syndrome 1, 209900 (3), Autosomal recessive, Digenic recessive   |
| <i>BBS10</i>    | 610148 | Bardet-Biedl syndrome 10, 615987 (3), Autosomal recessive   |
| <i>BBS12</i>    | 610683 | Bardet-Biedl syndrome 12, 615989 (3), Autosomal recessive   |

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| <i>BBS2</i>   | 606151 | Bardet-Biedl syndrome 2, 615981 (3), Autosomal recessive; Retinitis pigmentosa 74, 616562 (3), Autosomal recessive   |
| <i>BBS4</i>   | 600374 | Bardet-Biedl syndrome 4, 615982 (3), Autosomal recessive   |
| <i>BBS5</i>   | 603650 | Bardet-Biedl syndrome 5, 615983 (3), Autosomal recessive   |
| <i>BBS7</i>   | 607590 | Bardet-Biedl syndrome 7, 615984 (3), Autosomal recessive   |
| <i>BBS9</i>   | 607968 | Bardet-Biedl syndrome 9, 615986 (3), Autosomal recessive   |
| <i>BCAM</i>   | 612773 | [Blood group, Auberger system], 111200 (3); [Blood group, Lutheran null], 247420 (3), Autosomal recessive; [Blood group, Lutheran system], 111200 (3)  |
| <i>BCAN</i>   | 600347 | No OMIM phenotype  |
| <i>BCAP31</i> | 300398 | Deafness, dystonia, and cerebral hypomyelination, 300475 (3), X-linked recessive   |
| <i>BCKDHA</i> | 608348 | Maple syrup urine disease, type Ia, 248600 (3), Autosomal recessive  |
| <i>BCKDHB</i> | 248611 | Maple syrup urine disease, type Ib, 248600 (3), Autosomal recessive  |
| <i>BCKDK</i>  | 614901 | Branched-chain ketoacid dehydrogenase kinase deficiency, 614923 (3)<br>?Immunodeficiency 37, 616098 (3), Autosomal recessive; Lymphoma, MALT, somatic, 137245 (3); {Lymphoma, follicular, somatic}, 605027 (3); {Male germ cell tumor, somatic}, 273300 (3); {Mesothelioma, somatic}, 156240 (3); {Sezary syndrome, somatic} (3) |
| <i>BCL10</i>  | 603517 | ?Immunodeficiency 49, 617237 (3), Autosomal dominant   |
| <i>BCL11B</i> | 606558 | ?Hypercarotenemia and vitamin A deficiency, autosomal dominant, 115300 (3), Autosomal dominant   |
| <i>BCO1</i>   | 605748 | Microphthalmia, syndromic 2, 300166 (3), X-linked dominant   |
| <i>BCOR</i>   | 300485 | Leukemia, acute lymphocytic, somatic, 613065 (3); Leukemia, chronic myeloid, somatic, 608232 (3)   |
| <i>BCS1L</i>  | 603647 | Bjornstad syndrome, 262000 (3), Autosomal recessive; GRACILE syndrome, 603358 (3); Leigh syndrome, 256000 (3), Autosomal recessive, Mitochondrial; Mitochondrial complex III deficiency, nuclear type 1, 124000 (3), Autosomal recessive   |
| <i>BDNF</i>   | 113505 | No OMIM phenotype  |
| <i>BEAN1</i>  | 612051 | Spinocerebellar ataxia 31, 117210 (3), Autosomal dominant<br>Bestrophinopathy, autosomal recessive, 611809 (3); Macular dystrophy, vitelliform, 2, 153700 (3), Autosomal dominant;   |
| <i>BEST1</i>  | 607854 | Microcornea, rod-cone dystrophy, cataract, and posterior staphyloma, 193220 (3), Autosomal dominant; Retinitis pigmentosa, concentric, 613194 (3); Retinitis pigmentosa-50, 613194 (3); Vitreoretinochoroidopathy, 193220 (3), Autosomal dominant  |
| <i>BFSP1</i>  | 603307 | Cataract 33, multiple types, 611391 (3), Autosomal recessive, Autosomal dominant   |
| <i>BFSP2</i>  | 603212 | Cataract 12, multiple types, 611597 (3), Autosomal dominant  |
| <i>BGN</i>    | 301870 | Meester-Loeys syndrome, 300989 (3), X-linked;<br>Spondyloepimetaphyseal dysplasia, X-linked, 300106 (3), X-linked recessive  |

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| <i>BHLHA9</i>  | 615416 | ?Camptosynpolydactyly, complex, 607539 (3), Autosomal recessive; Syndactyly, mesoaxial synostotic, with phalangeal reduction, 609432 (3), Autosomal recessive  |
| <i>BHLHE41</i> | 606200 | [Short sleeper], 612975 (3), Autosomal dominant  |
| <i>BICC1</i>   | 614295 | {Renal dysplasia, cystic, susceptibility to}, 601331 (3), Autosomal dominant   |
| <i>BICD2</i>   | 609797 | Spinal muscular atrophy, lower extremity-predominant, 2, AD, 615290 (3), Autosomal dominant  |
| <i>BIN1</i>    | 601248 | Centronuclear myopathy 2, 255200 (3), Autosomal recessive  |
| <i>BLK</i>     | 191305 | Maturity-onset diabetes of the young, type 11, 613375 (3), Autosomal dominant  |
| <i>BLM</i>     | 604610 | Bloom syndrome, 210900 (3), Autosomal recessive  |
| <i>BLMH</i>    | 602403 | No OMIM phenotype  |
| <i>BLNK</i>    | 604515 | ?Agammaglobulinemia 4, 613502 (3), Autosomal recessive   |
| <i>BLOC1S3</i> | 609762 | Hermansky-Pudlak syndrome 8, 614077 (3), Autosomal recessive   |
| <i>BLOC1S6</i> | 604310 | ?Hermansky-pudlak syndrome 9, 614171 (3), Autosomal recessive  |
| <i>BLVRA</i>   | 109750 | Hyperbiliverdinemia, 614156 (3), Autosomal recessive, Autosomal dominant   |
| <i>BMP1</i>    | 112264 | Osteogenesis imperfecta, type XIII, 614856 (3), Autosomal recessive  |
| <i>BMP15</i>   | 300247 | Ovarian dysgenesis 2, 300510 (3), X-linked; Premature ovarian failure 4, 300510 (3), X-linked  |
| <i>BMP2</i>    | 112261 | Brachydactyly, type A2, 112600 (3), Autosomal dominant; {HFE hemochromatosis, modifier of}, 235200 (3), Autosomal recessive; Short stature, facial dysmorphism, and skeletal anomalies with or without cardiac anomalies, 617877 (3), Autosomal dominant                         |
| <i>BMPER</i>   | 608699 | Diaphanospondylodysostosis, 608022 (3), Autosomal recessive  |
| <i>BMPR1A</i>  | 601299 | Juvenile polyposis syndrome, infantile form, 174900 (3), Autosomal dominant; Polyposis syndrome, hereditary mixed, 2, 610069 (3); Polyposis, juvenile intestinal, 174900 (3), Autosomal dominant   |
| <i>BMPR2</i>   | 600799 | Pulmonary hypertension, familial primary, 1, with or without HHT, 178600 (3), Autosomal dominant; Pulmonary hypertension, primary, fenfluramine or dexfenfluramine-associated, 178600 (3), Autosomal dominant; Pulmonary venoocclusive disease 1, 265450 (3), Autosomal dominant |
| <i>BMS1</i>    | 611448 | ?Aplasia cutis congenita, nonsyndromic, 107600 (3), Autosomal dominant   |
| <i>BOLA3</i>   | 613183 | Multiple mitochondrial dysfunctions syndrome 2 with hyperglycinemia, 614299 (3), Autosomal recessive   |
| <i>PGM</i>     | 613896 | Erythrocytosis due to bisphosphoglycerate mutase deficiency, 222800 (3), Autosomal recessive   |
| <i>BPY2</i>    | 400013 | No OMIM phenotype  |

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| <i>BRAF</i>  | 164757 | Adenocarcinoma of lung, somatic, 211980 (3); Cardiofaciocutaneous syndrome, 115150 (3), Autosomal dominant; Colorectal cancer, somatic (3); LEOPARD syndrome 3, 613707 (3), Autosomal dominant; Melanoma, malignant, somatic (3); Nonsmall cell lung cancer, somatic (3); Noonan syndrome 7, 613706 (3), Autosomal dominant   |
| <i>BRAT1</i> | 614506 | Rigidity and multifocal seizure syndrome, lethal neonatal, 614498 (3), Autosomal recessive  |
| <i>BRCA1</i> | 113705 | {Breast-ovarian cancer, familial, 1}, 604370 (3), Autosomal dominant, Multifactorial; Fanconi anemia, complementation group S, 617883 (3), Autosomal recessive; {Pancreatic cancer, susceptibility to, 4}, 614320 (3)   |
| <i>BRCA2</i> | 600185 | {Breast cancer, male, susceptibility to}, 114480 (3), Autosomal dominant; {Breast-ovarian cancer, familial, 2}, 612555 (3), Autosomal dominant; Fanconi anemia, complementation group D1, 605724 (3), Autosomal recessive; {Glioblastoma 3}, 613029 (3), Autosomal recessive; {Medulloblastoma}, 155255 (3), Autosomal recessive, Autosomal dominant; {Pancreatic cancer 2}, 613347 (3); {Prostate cancer}, 176807 (3), Autosomal dominant; Wilms tumor, 194070 (3), Autosomal dominant, Somatic mutation |
| <i>BRF1</i>  | 604902 | Cerebellofaciodental syndrome, 616202 (3), Autosomal recessive  |
| <i>BRIP1</i> | 605882 | Breast cancer, early-onset, 114480 (3), Autosomal dominant; Fanconi anemia, complementation group J, 609054 (3)   |
| <i>BRPF1</i> | 602410 | Intellectual developmental disorder with dysmorphic facies and ptosis, 617333 (3), Autosomal dominant   |
| <i>BRWD3</i> | 300553 | Mental retardation, X-linked 93, 300659 (3), X-linked recessive   |
| <i>BSCL2</i> | 606158 | Encephalopathy, progressive, with or without lipodystrophy, 615924 (3), Autosomal recessive; Lipodystrophy, congenital generalized, type 2, 269700 (3), Autosomal recessive; Neuropathy, distal hereditary motor, type VA, 600794 (3), Autosomal dominant; Silver spastic paraplegia syndrome, 270685 (3), Autosomal dominant   |
| <i>BSG</i>   | 109480 | [Blood group, OK], 111380 (3)   |
| <i>BSND</i>  | 606412 | Bartter syndrome, type 4a, 602522 (3), Autosomal recessive; Sensorineural deafness with mild renal dysfunction, 602522 (3), Autosomal recessive   |
| <i>BTD</i>   | 609019 | Biotinidase deficiency, 253260 (3), Autosomal recessive   |
| <i>BTK</i>   | 300300 | Agammaglobulinemia and isolated hormone deficiency, 307200 (3), X-linked recessive; Agammaglobulinemia, X-linked 1, 300755 (3), X-linked recessive  |
| <i>BTNL2</i> | 606000 | {Sarcoidosis, susceptibility to, 2}, 612387 (3), Autosomal dominant   |
| <i>BUB1B</i> | 602860 | Colorectal cancer, somatic, 114500 (3); Mosaic variegated aneuploidy syndrome 1, 257300 (3), Autosomal recessive; [Premature chromatid separation trait], 176430 (3), Autosomal dominant  |
| <i>BVES</i>  | 604577 | ?Muscular dystrophy, limb-girdle, type 2X, 616812 (3), Autosomal recessive  |

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| <i>C12orf65</i>  | 613541 | Combined oxidative phosphorylation deficiency 7, 613559 (3),<br>Autosomal recessive; Spastic paraplegia 55, autosomal recessive,<br>615035 (3), Autosomal recessive                                   |
| <i>C15orf41</i>  | 615626 | Dyserythropoietic anemia, congenital, type Ib, 615631 (3), Autosomal<br>recessive   |
| <i>C19orf12</i>  | 614297 | Neurodegeneration with brain iron accumulation 4, 614298 (3),<br>Autosomal recessive; ?Spastic paraplegia 43, autosomal recessive,<br>615043 (3), Autosomal recessive                                 |
| <i>C1GALT1C1</i> | 300611 | Tn polyagglutination syndrome, somatic, 300622 (3)  |
| <i>C1QA</i>      | 120550 | C1q deficiency, 613652 (3), Autosomal recessive   |
| <i>C1QB</i>      | 120570 | C1q deficiency, 613652 (3), Autosomal recessive   |
| <i>C1QC</i>      | 120575 | C1q deficiency, 613652 (3), Autosomal recessive   |
| <i>C1R</i>       | 613785 | Ehlers-Danlos syndrome, periodontal type, 1, 130080 (3), Autosomal<br>dominant  |
| <i>C1S</i>       | 120580 | C1s deficiency, 613783 (3); Ehlers-Danlos syndrome, periodontal type,<br>2, 617174 (3), Autosomal dominant  |
| <i>C2</i>        | 613927 | C2 deficiency, 217000 (3), Autosomal recessive; {Macular<br>degeneration, age-related, 14, reduced risk of}, 615489 (3)   |
| <i>C2CD3</i>     | 615944 | ?Orofaciodigital syndrome XIV, 615948 (3), Autosomal recessive  |
| <i>C3</i>        | 120700 | C3 deficiency, 613779 (3), Autosomal recessive; {Hemolytic uremic<br>syndrome, atypical, susceptibility to, 5}, 612925 (3), Autosomal<br>dominant; {Macular degeneration, age-related, 9}, 611378 (3) |
| <i>C4A</i>       | 120810 | [Blood group, Rodgers], 614374 (3); C4a deficiency, 614380 (3),<br>Autosomal recessive  |
| <i>C4B</i>       | 120820 | C4B deficiency, 614379 (3)  |
| <i>C5</i>        | 120900 | C5 deficiency, 609536 (3); [Eculizumab, poor response to], 615749 (3),<br>Autosomal dominant  |
| <i>C7</i>        | 217070 | C7 deficiency, 610102 (3)   |
| <i>C8A</i>       | 120950 | C8 deficiency, type I, 613790 (3), Autosomal recessive  |
| <i>C8B</i>       | 120960 | C8 deficiency, type II, 613789 (3), Autosomal recessive   |
| <i>C8orf37</i>   | 614477 | Bardet-Biedl syndrome 21, 617406 (3), Autosomal recessive; Cone-rod<br>dystrophy 16, 614500 (3), Autosomal recessive; Retinitis pigmentosa<br>64, 614500 (3), Autosomal recessive                     |
| <i>C9</i>        | 120940 | C9 deficiency, 613825 (3); {Macular degeneration, age-related, 15,<br>susceptibility to}, 615591 (3)  |
| <i>C9orf72</i>   | 614260 | Frontotemporal dementia and/or amyotrophic lateral sclerosis 1,<br>105550 (3), Autosomal dominant   |
| <i>CA12</i>      | 603263 | Hyperchlorhidrosis, isolated, 143860 (3), Autosomal recessive   |
| <i>CA2</i>       | 611492 | Osteopetrosis, autosomal recessive 3, with renal tubular acidosis,<br>259730 (3), Autosomal recessive   |
| <i>CA4</i>       | 114760 | Retinitis pigmentosa 17, 600852 (3), Autosomal dominant   |
| <i>CA5A</i>      | 114761 | Hyperammonemia due to carbonic anhydrase VA deficiency, 615751<br>(3), Autosomal recessive  |

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| <i>CA8</i>      | 114815 | Cerebellar ataxia and mental retardation with or without quadrupedal locomotion 3, 613227 (3), Autosomal recessive   |
| <i>CABP2</i>    | 607314 | Deafness, autosomal recessive 93, 614899 (3), Autosomal recessive  |
| <i>CACNA1A</i>  | 601011 | Epileptic encephalopathy, early infantile, 42, 617106 (3), Autosomal dominant; Episodic ataxia, type 2, 108500 (3), Autosomal dominant; Migraine, familial hemiplegic, 1, 141500 (3), Autosomal dominant; Migraine, familial hemiplegic, 1, with progressive cerebellar ataxia, 141500 (3), Autosomal dominant; Spinocerebellar ataxia 6, 183086 (3), Autosomal dominant |
| <i>CACNA1B</i>  | 601012 | ?Dystonia 23, 614860 (3), Autosomal dominant   |
| <i>CACNA1D</i>  | 114206 | Primary aldosteronism, seizures, and neurologic abnormalities, 615474 (3), Autosomal dominant; Sinoatrial node dysfunction and deafness, 614896 (3), Autosomal recessive   |
| <i>CACNA1F</i>  | 300110 | Aland Island eye disease, 300600 (3), X-linked; Cone-rod dystrophy, X-linked, 3, 300476 (3), X-linked recessive; Night blindness, congenital stationary (incomplete), 2A, X-linked, 300071 (3), X-linked   |
| <i>CACNA1G</i>  | 604065 | Spinocerebellar ataxia 42, 616795 (3), Autosomal dominant<br>{Epilepsy, childhood absence, susceptibility to, 6}, 611942 (3);  |
| <i>CACNA1H</i>  | 607904 | {Epilepsy, idiopathic generalized, susceptibility to, 6}, 611942 (3); Hyperaldosteronism, familial, type IV, 617027 (3), Autosomal dominant  |
| <i>CACNA1S</i>  | 114208 | Hypokalemic periodic paralysis, type 1, 170400 (3), Autosomal dominant; {Malignant hyperthermia susceptibility 5}, 601887 (3), Autosomal dominant; {Thyrotoxic periodic paralysis, susceptibility to, 1}, 188580 (3), Isolated cases   |
| <i>CACNA2D4</i> | 608171 | Retinal cone dystrophy 4, 610478 (3), Autosomal recessive  |
| <i>CACNB2</i>   | 600003 | Brugada syndrome 4, 611876 (3)   |
| <i>CACNG2</i>   | 602911 | ?Mental retardation, autosomal dominant 10, 614256 (3)   |
| <i>CAD</i>      | 114010 | Epileptic encephalopathy, early infantile, 50, 616457 (3), Autosomal recessive   |
| <i>CALCR</i>    | 114131 | {Osteoporosis, postmenopausal, susceptibility}, 166710 (3), Autosomal dominant   |
| <i>CALM1</i>    | 114180 | Long QT syndrome 14, 616247 (3), Autosomal dominant; Ventricular tachycardia, catecholaminergic polymorphic, 4, 614916 (3), Autosomal dominant   |
| <i>CALM2</i>    | 114182 | Long QT syndrome 15, 616249 (3), Autosomal dominant  |
| <i>CALR</i>     | 109091 | Myelofibrosis, somatic, 254450 (3); Thrombocythemia, somatic, 187950 (3)   |
| <i>CALR3</i>    | 611414 | ?Cardiomyopathy, hypertrophic, 19, 613875 (3), Autosomal dominant  |
| <i>CAMTA1</i>   | 611501 | Cerebellar ataxia, nonprogressive, with mental retardation, 614756 (3), Autosomal dominant   |
| <i>CANT1</i>    | 613165 | Desbuquois dysplasia 1, 251450 (3), Autosomal recessive; Epiphyseal dysplasia, multiple, 7, 617719 (3), Autosomal recessive  |
| <i>CAPN1</i>    | 114220 | Spastic paraplegia 76, autosomal recessive, 616907 (3), Autosomal recessive  |

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| <i>CAPN10</i>   | 605286 | {Diabetes mellitus, noninsulin-dependent 1}, 601283 (3)  |
| <i>CAPN3</i>    | 114240 | Muscular dystrophy, limb-girdle, type 2A, 253600 (3), Autosomal recessive  |
| <i>CARD11</i>   | 607210 | B-cell expansion with NFKB and T-cell anergy, 616452 (3), Autosomal dominant; Immunodeficiency 11A, 615206 (3), Autosomal recessive; Immunodeficiency 11B with atopic dermatitis, 617638 (3), Autosomal dominant   |
| <i>CARD14</i>   | 607211 | Pityriasis rubra pilaris, 173200 (3), Autosomal dominant; Psoriasis 2, 602723 (3), Autosomal dominant  |
| <i>CARD9</i>    | 607212 | Candidiasis, familial, 2, autosomal recessive, 212050 (3), Autosomal recessive   |
| <i>CARS2</i>    | 612800 | Combined oxidative phosphorylation deficiency 27, 616672 (3), Autosomal recessive  |
| <i>CARTPT</i>   | 602606 | {?Obesity, susceptibility to}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>CASK</i>     | 300172 | FG syndrome 4, 300422 (3); Mental retardation and microcephaly with pontine and cerebellar hypoplasia, 300749 (3), X-linked dominant; Mental retardation, with or without nystagmus, 300422 (3)  |
| <i>CASP10</i>   | 601762 | Autoimmune lymphoproliferative syndrome, type II, 603909 (3), Autosomal dominant; Gastric cancer, somatic, 613659 (3); Lymphoma, non-Hodgkin, somatic, 605027 (3)  |
| <i>CASP14</i>   | 605848 | Ichthyosis, congenital, autosomal recessive 12, 617320 (3), Autosomal recessive  |
| <i>CASP8</i>    | 601763 | ?Autoimmune lymphoproliferative syndrome, type IIB, 607271 (3), Autosomal recessive; {Breast cancer, protection against}, 114480 (3), Autosomal dominant; Hepatocellular carcinoma, somatic, 114550 (3); {Lung cancer, protection against}, 211980 (3), Autosomal recessive  |
| <i>CASQ1</i>    | 114250 | Myopathy, vacuolar, with CASQ1 aggregates, 616231 (3), Autosomal dominant  |
| <i>CASQ2</i>    | 114251 | Ventricular tachycardia, catecholaminergic polymorphic, 2, 611938 (3), Autosomal recessive   |
| <i>CASR</i>     | 601199 | {Calcium, serum level of} (3); {Epilepsy idiopathic generalized, susceptibility to, 8}, 612899 (3); Hypercalciuric hypercalcemia (3); Hyperparathyroidism, neonatal, 239200 (3), Autosomal recessive, Autosomal dominant; Hypocalcemia, autosomal dominant, 601198 (3), Autosomal dominant; Hypocalcemia, autosomal dominant, with Bartter syndrome, 601198 (3), Autosomal dominant; Hypocalciuric hypercalcemia, type I, 145980 (3), Autosomal dominant |
| <i>CAT</i>      | 115500 | Acatalasemia, 614097 (3)   |
| <i>CATSPER1</i> | 606389 | Spermatogenic failure 7, 612997 (3), Autosomal recessive   |
| <i>CATSPER2</i> | 607249 | No OMIM phenotype  |

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| <i>CAV1</i>    | 601047 | ?Lipodystrophy, congenital generalized, type 3, 612526 (3); ?Partial lipodystrophy, congenital cataracts, and neurodegeneration syndrome, 606721 (3), Autosomal dominant; Pulmonary hypertension, primary, 3, 615343 (3), Autosomal dominant   |
| <i>CAV3</i>    | 601253 | Cardiomyopathy, familial hypertrophic, 192600 (3), Autosomal dominant; Creatine phosphokinase, elevated serum, 123320 (3), Autosomal dominant; Long QT syndrome 9, 611818 (3), Autosomal dominant; Muscular dystrophy, limb-girdle, type IC, 607801 (3), Autosomal recessive, Autosomal dominant; Myopathy, distal, Tateyama type, 614321 (3), Autosomal dominant; Rippling muscle disease, 606072 (3), Autosomal dominant |
| <i>CAVIN1</i>  | 603198 | Lipodystrophy, congenital generalized, type 4, 613327 (3), Autosomal recessive   |
| <i>CBL</i>     | 165360 | ?Juvenile myelomonocytic leukemia, 607785 (3), Autosomal dominant, Somatic mutation; Noonan syndrome-like disorder with or without juvenile myelomonocytic leukemia, 613563 (3), Autosomal dominant  |
| <i>CBS</i>     | 613381 | Homocystinuria, B6-responsive and nonresponsive types, 236200 (3), Autosomal recessive; Thrombosis, hyperhomocysteinemic, 236200 (3), Autosomal recessive  |
| <i>CBX2</i>    | 602770 | ?46XY sex reversal 5, 613080 (3), Autosomal recessive  |
| <i>CC2D1A</i>  | 610055 | Mental retardation, autosomal recessive 3, 608443 (3), Autosomal recessive   |
| <i>CC2D2A</i>  | 612013 | COACH syndrome, 216360 (3), Autosomal recessive; Joubert syndrome 9, 612285 (3), Autosomal recessive; Meckel syndrome 6, 612284 (3), Autosomal recessive   |
| <i>CCBE1</i>   | 612753 | Hennekam lymphangiectasia-lymphedema syndrome 1, 235510 (3), Autosomal recessive   |
| <i>CCDC114</i> | 615038 | Ciliary dyskinesia, primary, 20, 615067 (3), Autosomal recessive   |
| <i>CCDC115</i> | 613734 | Congenital disorder of glycosylation, type IIo, 616828 (3), Autosomal recessive  |
| <i>CCDC141</i> | 616031 | No OMIM phenotype  |
| <i>CCDC151</i> | 615956 | Ciliary dyskinesia, primary, 30, 616037 (3), Autosomal recessive   |
| <i>CCDC174</i> | 616735 | Hypotonia, infantile, with psychomotor retardation, 616816 (3), Autosomal recessive  |
| <i>CCDC22</i>  | 300859 | Ritscher-Schinzel syndrome 2, 300963 (3), X-linked recessive   |
| <i>CCDC39</i>  | 613798 | Ciliary dyskinesia, primary, 14, 613807 (3)  |
| <i>CCDC40</i>  | 613799 | Ciliary dyskinesia, primary, 15, 613808 (3)  |
| <i>CCDC50</i>  | 611051 | ?Deafness, autosomal dominant 44, 607453 (3), Autosomal dominant   |
| <i>CCDC6</i>   | 601985 | No OMIM phenotype  |
| <i>CCDC65</i>  | 611088 | Ciliary dyskinesia, primary, 27, 615504 (3), Autosomal recessive   |
| <i>CCDC78</i>  | 614666 | ?Centronuclear myopathy 4, 614807 (3), Autosomal dominant  |
| <i>CCDC8</i>   | 614145 | 3-M syndrome 3, 614205 (3), Autosomal recessive  |
| <i>CCDC88A</i> | 609736 | ?PEHO syndrome-like, 617507 (3), Autosomal recessive   |

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| <i>CCDC88C</i>           | 611204 | Hydrocephalus, nonsyndromic, autosomal recessive, 236600 (3),<br>Autosomal recessive; ?Spinocerebellar ataxia 40, 616053 (3),<br>Autosomal dominant  |
| <i>CCL11</i>             | 601156 | {Asthma, susceptibility to}, 600807 (3), Autosomal dominant; {HIV1, resistance to}, 609423 (3)   |
| <i>CCL2</i>              | 158105 | {Coronary artery disease, modifier of} (3); {HIV-1, resistance to}, 609423 (3); {Mycobacterium tuberculosis, susceptibility to}, 607948 (3); {Spina bifida, susceptibility to}, 182940 (3), Autosomal dominant               |
| <i>CCL3</i>              | 182283 | {HIV infection, resistance to}, 609423 (2)   |
| <i>CCM2</i>              | 607929 | Cerebral cavernous malformations-2, 603284 (3), Autosomal dominant   |
| <i>CCND1</i>             | 168461 | {Colorectal cancer, susceptibility to}, 114500 (3), Autosomal dominant;<br>{Multiple myeloma, susceptibility to}, 254500 (3), Somatic mutation;<br>{von Hippel-Lindau syndrome, modifier of}, 193300 (3), Autosomal dominant |
| <i>CCND2</i>             | 123833 | Megalencephaly-polymicrogyria-polydactyly-hydrocephalus syndrome 3, 615938 (3), Autosomal dominant   |
| <i>CCNO</i>              | 607752 | Ciliary dyskinesia, primary, 29, 615872 (3), Autosomal recessive   |
| <i>CCNQ<br/>(FAM58A)</i> | 300708 | STAR syndrome, 300707 (3), X-linked dominant   |
| <i>CCR5</i>              | 601373 | {Diabetes mellitus, insulin-dependent, 22}, 612522 (3); {HIV infection, susceptibility/resistance to} (3); {Hepatitis C virus, resistance to}, 609532 (3); {West nile virus, susceptibility to}, 610379 (3)                  |
| <i>CCT5</i>              | 610150 | Neuropathy, hereditary sensory, with spastic paraparesis, 256840 (3), Autosomal recessive  |
| <i>CD151</i>             | 602243 | [Blood group, Raph], 179620 (3); Nephropathy with pretibial epidermolysis bullosa and deafness, 609057 (3)   |
| <i>CD164</i>             | 603356 | ?Deafness, autosomal dominant 66, 616969 (3), Autosomal dominant   |
| <i>CD19</i>              | 107265 | Immunodeficiency, common variable, 3, 613493 (3), Autosomal recessive  |
| <i>CD207</i>             | 604862 | [?Birbeck granule deficiency], 613393 (3)  |
| <i>CD209</i>             | 604672 | {Dengue fever, protection against}, 614371 (3); {HIV type 1, susceptibility to}, 609423 (3); {Mycobacterium tuberculosis, susceptibility to}, 607948 (3)   |
| <i>CD244</i>             | 605554 | {Rheumatoid arthritis, susceptibility to}, 180300 (3)  |
| <i>CD247</i>             | 186780 | ?Immunodeficiency 25, 610163 (3), Autosomal recessive  |
| <i>CD27</i>              | 186711 | Lymphoproliferative syndrome 2, 615122 (3), Autosomal recessive  |
| <i>CD2AP</i>             | 604241 | Glomerulosclerosis, focal segmental, 3, 607832 (3)   |
| <i>CD320</i>             | 606475 | Methylmalonic aciduria, transient, due to transcobalamin receptor defect, 613646 (3)   |
| <i>CD3D</i>              | 186790 | Immunodeficiency 19, 615617 (3), Autosomal recessive   |
| <i>CD3E</i>              | 186830 | Immunodeficiency 18, 615615 (3), Autosomal recessive;<br>Immunodeficiency 18, SCID variant, 615615 (3), Autosomal recessive  |
| <i>CD3G</i>              | 186740 | Immunodeficiency 17, CD3 gamma deficient, 615607 (3), Autosomal recessive  |
| <i>CD4</i>               | 186940 | OKT4 epitope deficiency, 613949 (3)  |

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| <i>CD40</i>   | 109535 | Immunodeficiency with hyper-IgM, type 3, 606843 (3), Autosomal recessive   |
| <i>CD40LG</i> | 300386 | Immunodeficiency, X-linked, with hyper-IgM, 308230 (3), X-linked recessive   |
| <i>CD44</i>   | 107269 | [Blood group, Indian system], 609027 (3)   |
| <i>CD46</i>   | 120920 | {Hemolytic uremic syndrome, atypical, susceptibility to, 2}, 612922 (3), Autosomal recessive, Autosomal dominant   |
| <i>CD55</i>   | 125240 | [Blood group Cromer], 613793 (3), Autosomal recessive; Complement hyperactivation, angiopathic thrombosis, and protein-losing enteropathy, 226300 (3), Autosomal recessive   |
| <i>CD59</i>   | 107271 | Hemolytic anemia, CD59-mediated, with or without immune-mediated polyneuropathy, 612300 (3), Autosomal recessive   |
| <i>CD79A</i>  | 112205 | Agammaglobulinemia 3, 613501 (3), Autosomal recessive  |
| <i>CD79B</i>  | 147245 | Agammaglobulinemia 6, 612692 (3), Autosomal recessive  |
| <i>CD81</i>   | 186845 | Immunodeficiency, common variable, 6, 613496 (3), Autosomal recessive  |
| <i>CD82</i>   | 600623 | {Prostate cancer, susceptibility to}, 176807 (2), Autosomal dominant   |
| <i>CD8A</i>   | 186910 | CD8 deficiency, familial, 608957 (3), Autosomal recessive  |
| <i>CD96</i>   | 606037 | C syndrome, 211750 (3), Autosomal dominant   |
| <i>CDAN1</i>  | 607465 | Dyserythropoietic anemia, congenital, type Ia, 224120 (3), Autosomal recessive   |
| <i>CDC14A</i> | 603504 | Deafness, autosomal recessive 105, 616958 (3), Autosomal recessive   |
| <i>CDC42</i>  | 116952 | Takenouchi-Kosaki syndrome, 616737 (3), Autosomal dominant   |
| <i>CDC45</i>  | 603465 | Meier-Gorlin syndrome 7, 617063 (3), Autosomal recessive   |
| <i>CDC6</i>   | 602627 | ?Meier-Gorlin syndrome 5, 613805 (3), Autosomal recessive<br>Hyperparathyroidism, familial primary, 145000 (3), Autosomal dominant; Hyperparathyroidism-jaw tumor syndrome, 145001 (3), Autosomal dominant; Parathyroid adenoma with cystic changes, 145001 (3), Autosomal dominant; Parathyroid carcinoma, 608266 (3)   |
| <i>CDC73</i>  | 607393 | Immunodeficiency-centromeric instability-facial anomalies syndrome 3, 616910 (3), Autosomal recessive  |
| <i>CDCA7</i>  | 609937 | Blepharocheilodontic syndrome 1, 119580 (3), Autosomal dominant; {Breast cancer, lobular}, 114480 (3), Autosomal dominant; Endometrial carcinoma, somatic, 608089 (3); Gastric cancer, familial diffuse, with or without cleft lip and/or palate, 137215 (3), Autosomal dominant; Ovarian carcinoma, somatic, 167000 (3); {Prostate cancer, susceptibility to}, 176807 (3), Autosomal dominant |
| <i>CDH1</i>   | 192090 | Mental retardation, autosomal dominant 3, 612580 (3)<br>Deafness, autosomal recessive 12, 601386 (3), Autosomal recessive; {Pituitary adenoma 5, multiple types}, 617540 (3), Autosomal dominant; Usher syndrome, type 1D, 601067 (3), Autosomal recessive, Digenic recessive; Usher syndrome, type 1D/F digenic, 601067 (3), Autosomal recessive, Digenic recessive                           |
| <i>CDH15</i>  | 114019 |  |
| <i>CDH23</i>  | 605516 |  |

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| <i>CDH3</i>     | 114021 | Ectodermal dysplasia, ectrodactyly, and macular dystrophy, 225280 (3), Autosomal recessive; Hypotrichosis, congenital, with juvenile macular dystrophy, 601553 (3), Autosomal recessive   |
| <i>CDHR1</i>    | 609502 | Cone-rod dystrophy 15, 613660 (3), Autosomal recessive; Retinitis pigmentosa 65, 613660 (3), Autosomal recessive  |
| <i>CDK13</i>    | 603309 | Congenital heart defects, dysmorphic facial features, and intellectual developmental disorder, 617360 (3), Autosomal dominant   |
| <i>CDK4</i>     | 123829 | {Melanoma, cutaneous malignant, 3}, 609048 (3), Autosomal dominant  |
| <i>CDK5</i>     | 123831 | ?Lissencephaly 7 with cerebellar hypoplasia, 616342 (3), Autosomal recessive  |
| <i>CDK5RAP2</i> | 608201 | Microcephaly 3, primary, autosomal recessive, 604804 (3), Autosomal recessive   |
| <i>CDK6</i>     | 603368 | ?Microcephaly 12, primary, autosomal recessive, 616080 (3), Autosomal recessive   |
| <i>CDKAL1</i>   | 611259 | No OMIM phenotype   |
| <i>CDKL5</i>    | 300203 | Epileptic encephalopathy, early infantile, 2, 300672 (3), X-linked dominant   |
| <i>CDKN1B</i>   | 600778 | Multiple endocrine neoplasia, type IV, 610755 (3), Autosomal dominant   |
| <i>CDKN1C</i>   | 600856 | Beckwith-Wiedemann syndrome, 130650 (3), Autosomal dominant; IMAGE syndrome, 614732 (3), Autosomal dominant   |
| <i>CDKN2A</i>   | 600160 | Melanoma and neural system tumor syndrome, 155755 (3), Autosomal dominant; {Melanoma, cutaneous malignant, 2}, 155601 (3), Autosomal dominant; Orolaryngeal cancer, multiple (3); Pancreatic cancer/melanoma syndrome, 606719 (3), Autosomal dominant |
| <i>CDON</i>     | 608707 | Holoprosencephaly 11, 614226 (3), Autosomal dominant, Isolated cases  |
| <i>CDSN</i>     | 602593 | Hypotrichosis 2, 146520 (3), Autosomal dominant; Peeling skin syndrome 1, 270300 (3), Autosomal recessive   |
| <i>CDT1</i>     | 605525 | Meier-Gorlin syndrome 4, 613804 (3), Autosomal recessive  |
| <i>CDY1</i>     | 400016 | No OMIM phenotype   |
| <i>CDY2A</i>    | 400018 | No OMIM phenotype   |
| <i>CEACAM16</i> | 614591 | Deafness, autosomal dominant 4B, 614614 (3), Autosomal dominant   |
| <i>CEBPA</i>    | 116897 | ?Leukemia, acute myeloid, 601626 (3), Autosomal dominant; Leukemia, acute myeloid, somatic, 601626 (3)  |
| <i>CEBPE</i>    | 600749 | Specific granule deficiency, 245480 (3), Autosomal recessive  |
| <i>CEL</i>      | 114840 | Maturity-onset diabetes of the young, type VIII, 609812 (3), Autosomal dominant   |
| <i>CENPE</i>    | 117143 | ?Microcephaly 13, primary, autosomal recessive, 616051 (3), Autosomal recessive   |
| <i>CENPF</i>    | 600236 | Stromme syndrome, 243605 (3), Autosomal recessive   |
| <i>CEP104</i>   | 616690 | Joubert syndrome 25, 616781 (3), Autosomal recessive  |

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| <i>CEP120</i>                 | 613446 | Joubert syndrome 31, 617761 (3), Autosomal recessive; Short-rib thoracic dysplasia 13 with or without polydactyly, 616300 (3), Autosomal recessive  |
| <i>CEP135</i>                 | 611423 | Microcephaly 8, primary, autosomal recessive, 614673 (3), Autosomal recessive   |
| <i>CEP152</i>                 | 613529 | Microcephaly 9, primary, autosomal recessive, 614852 (3), Autosomal recessive; Seckel syndrome 5, 613823 (3), Autosomal recessive   |
| <i>CEP164</i>                 | 614848 | Nephronophthisis 15, 614845 (3), Autosomal recessive  |
| <i>CEP19</i>                  | 615586 | Morbid obesity and spermatogenic failure, 615703 (3), Autosomal recessive   |
| <i>CEP290</i>                 | 610142 | ?Bardet-Biedl syndrome 14, 615991 (3), Autosomal recessive; Joubert syndrome 5, 610188 (3), Autosomal recessive; Leber congenital amaurosis 10, 611755 (3); Meckel syndrome 4, 611134 (3), Autosomal recessive; Senior-Loken syndrome 6, 610189 (3), Autosomal recessive  |
| <i>CEP41</i>                  | 610523 | Joubert syndrome 15, 614464 (3), Autosomal recessive  |
| <i>CEP78</i>                  | 617110 | Cone-rod dystrophy and hearing loss, 617236 (3), Autosomal recessive  |
| <i>CEP83</i>                  | 615847 | Nephronophthisis 18, 615862 (3), Autosomal recessive  |
| <i>CERKL</i>                  | 608381 | Retinitis pigmentosa 26, 608380 (3)   |
| <i>CERS1</i>                  | 606919 | ?Epilepsy, progressive myoclonic, 8, 616230 (3), Autosomal recessive<br>[High density lipoprotein cholesterol level QTL 10], 143470 (3), Autosomal dominant; Hyperalphalipoproteinemia, 143470 (3), Autosomal dominant  |
| <i>CETP</i>                   | 118470 | Autosomal dominant; Hyperalphalipoproteinemia, 143470 (3), Autosomal dominant   |
| <i>CFAP298<br/>(C21orf59)</i> | 615494 | Ciliary dyskinesia, primary, 26, 615500 (3), Autosomal recessive  |
| <i>CFAP53</i>                 | 614759 | Heterotaxy, visceral, 6, autosomal recessive, 614779 (3), Autosomal recessive   |
| <i>CFB</i>                    | 138470 | ?Complement factor B deficiency, 615561 (3); {Hemolytic uremic syndrome, atypical, susceptibility to, 4}, 612924 (3), Autosomal dominant; {Macular degeneration, age-related, 14, reduced risk of}, 615489 (3)  |
| <i>CFC1</i>                   | 605194 | Heterotaxy, visceral, 2, autosomal, 605376 (3), Autosomal dominant  |
| <i>CFD</i>                    | 134350 | Complement factor D deficiency, 613912 (3), Autosomal recessive   |
| <i>CFH</i>                    | 134370 | Basal laminar drusen, 126700 (3), Autosomal dominant; Complement factor H deficiency, 609814 (3), Autosomal recessive, Autosomal dominant; {Hemolytic uremic syndrome, atypical, susceptibility to, 1}, 235400 (3), Autosomal recessive, Autosomal dominant; {Macular degeneration, age-related, 4}, 610698 (3) |
| <i>CFHR1</i>                  | 134371 | {Hemolytic uremic syndrome, atypical, susceptibility to}, 235400 (3), Autosomal recessive, Autosomal dominant; {Macular degeneration, age-related, reduced risk of}, 603075 (3), Autosomal dominant   |
| <i>CFHR3</i>                  | 605336 | {Hemolytic uremic syndrome, atypical, susceptibility to}, 235400 (3), Autosomal recessive, Autosomal dominant; {Macular degeneration, age-related, reduced risk of}, 603075 (3), Autosomal dominant   |
| <i>CFHR5</i>                  | 608593 | Nephropathy due to CFHR5 deficiency, 614809 (3), Autosomal dominant   |

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| <i>CFI</i>     | 217030 | Complement factor I deficiency, 610984 (3), Autosomal recessive; {Hemolytic uremic syndrome, atypical, susceptibility to, 3}, 612923 (3), Autosomal dominant; {Macular degeneration, age-related, 13, susceptibility to}, 615439 (3), Autosomal dominant  |
| <i>CFL2</i>    | 601443 | Nemaline myopathy 7, autosomal recessive, 610687 (3), Autosomal recessive   |
| <i>CFP</i>     | 300383 | Properdin deficiency, X-linked, 312060 (3), X-linked recessive  |
| <i>CFTR</i>    | 602421 | {Bronchiectasis with or without elevated sweat chloride 1, modifier of}, 211400 (3), Autosomal dominant; Congenital bilateral absence of vas deferens, 277180 (3), Autosomal recessive; Cystic fibrosis, 219700 (3), Autosomal recessive; {Hypertrypsinemia, neonatal} (3); {Pancreatitis, hereditary}, 167800 (3), Autosomal dominant; Sweat chloride elevation without CF (3) |
| <i>CHAMP1</i>  | 616327 | Mental retardation, autosomal dominant 40, 616579 (3), Autosomal dominant   |
| <i>CHCHD10</i> | 615903 | Frontotemporal dementia and/or amyotrophic lateral sclerosis 2, 615911 (3), Autosomal dominant; ?Myopathy, isolated mitochondrial, autosomal dominant, 616209 (3), Autosomal dominant; Spinal muscular atrophy, Jokela type, 615048 (3), Autosomal dominant   |
| <i>CHCHD2</i>  | 616244 | Parkinson disease 22, autosomal dominant, 616710 (3), Autosomal dominant  |
| <i>CHD2</i>    | 602119 | Epileptic encephalopathy, childhood-onset, 615369 (3), Autosomal dominant   |
| <i>CHD4</i>    | 603277 | Sifrim-Hitz-Weiss syndrome, 617159 (3), Autosomal dominant<br>CHARGE syndrome, 214800 (3), Autosomal dominant;  |
| <i>CHD7</i>    | 608892 | Hypogonadotropic hypogonadism 5 with or without anosmia, 612370 (3), Autosomal dominant   |
| <i>CHD8</i>    | 610528 | {Autism, susceptibility to, 18}, 615032 (3), Autosomal dominant   |
| <i>CHEK2</i>   | 604373 | {Breast and colorectal cancer, susceptibility to} (3); {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant; Li-Fraumeni syndrome, 609265 (3); Osteosarcoma, somatic, 259500 (3); {Prostate cancer, familial, susceptibility to}, 176807 (3), Autosomal dominant  |
| <i>CHI3L1</i>  | 601525 | {Asthma-related traits, susceptibility to, 7}, 611960 (3); {Schizophrenia, susceptibility to}, 181500 (3), Autosomal dominant   |
| <i>CHIT1</i>   | 600031 | [Chitotriosidase deficiency], 614122 (3), Autosomal recessive   |
| <i>CHKB</i>    | 612395 | Muscular dystrophy, congenital, megaconial type, 602541 (3), Autosomal recessive  |
| <i>CHM</i>     | 300390 | Choroideremia, 303100 (3), X-linked dominant  |
| <i>CHMP1A</i>  | 164010 | Pontocerebellar hypoplasia, type 8, 614961 (3), Autosomal recessive   |
| <i>CHMP2B</i>  | 609512 | Amyotrophic lateral sclerosis 17, 614696 (3), Autosomal dominant; Dementia, familial, nonspecific, 600795 (3), Autosomal dominant   |
| <i>CHMP4B</i>  | 610897 | Cataract 31, multiple types, 605387 (3), Autosomal dominant   |
| <i>CHN1</i>    | 118423 | Duane retraction syndrome 2, 604356 (3)   |
| <i>CHRM3</i>   | 118494 | ?Prune belly syndrome, 100100 (3), Autosomal recessive  |

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| <i>CHRNA1</i> | 100690 | Multiple pterygium syndrome, lethal type, 253290 (3), Autosomal recessive; Myasthenic syndrome, congenital, 1A, slow-channel, 601462 (3), Autosomal dominant; Myasthenic syndrome, congenital, 1B, fast-channel, 608930 (3), Autosomal recessive, Autosomal dominant  |
| <i>CHRNA2</i> | 118502 | Epilepsy, nocturnal frontal lobe, type 4, 610353 (3), Autosomal dominant  |
| <i>CHRNA3</i> | 118503 | {Lung cancer susceptibility 2}, 612052 (3)  |
| <i>CHRNA4</i> | 118504 | Epilepsy, nocturnal frontal lobe, 1, 600513 (3), Autosomal dominant; {Nicotine addiction, susceptibility to}, 188890 (3)  |
| <i>CHRNA5</i> | 118505 | {Lung cancer susceptibility 2}, 612052 (3); {Nicotine dependence, susceptibility to}, 612052 (3)  |
| <i>CHRNA7</i> | 118511 | No OMIM phenotype   |
| <i>CHRNB1</i> | 100710 | Myasthenic syndrome, congenital, 2A, slow-channel, 616313 (3), Autosomal dominant; ?Myasthenic syndrome, congenital, 2C, associated with acetylcholine receptor deficiency, 616314 (3), Autosomal recessive   |
| <i>CHRNB2</i> | 118507 | Epilepsy, nocturnal frontal lobe, 3, 605375 (3)   |
| <i>CHRND</i>  | 100720 | Multiple pterygium syndrome, lethal type, 253290 (3), Autosomal recessive; ?Myasthenic syndrome, congenital, 3A, slow-channel, 616321 (3), Autosomal dominant; Myasthenic syndrome, congenital, 3B, fast-channel, 616322 (3), Autosomal recessive; ?Myasthenic syndrome, congenital, 3C, associated with acetylcholine receptor deficiency, 616323 (3), Autosomal recessive |
| <i>CHRNE</i>  | 100725 | Myasthenic syndrome, congenital, 4A, slow-channel, 605809 (3), Autosomal recessive, Autosomal dominant; Myasthenic syndrome, congenital, 4B, fast-channel, 616324 (3), Autosomal recessive; Myasthenic syndrome, congenital, 4C, associated with acetylcholine receptor deficiency, 608931 (3), Autosomal recessive   |
| <i>CHRNG</i>  | 100730 | Escobar syndrome, 265000 (3), Autosomal recessive; Multiple pterygium syndrome, lethal type, 253290 (3), Autosomal recessive  |
| <i>CHST3</i>  | 603799 | Spondyloepiphyseal dysplasia with congenital joint dislocations, 143095 (3), Autosomal recessive  |
| <i>CHST6</i>  | 605294 | Macular corneal dystrophy, 217800 (3), Autosomal recessive  |
| <i>CHST8</i>  | 610190 | ?Peeling skin syndrome 3, 616265 (3), Autosomal recessive   |
| <i>CHSY1</i>  | 608183 | Temtamy preaxial brachydactyly syndrome, 605282 (3), Autosomal recessive  |
| <i>CHUK</i>   | 600664 | Cocoon syndrome, 613630 (3)   |
| <i>CIB2</i>   | 605564 | Deafness, autosomal recessive 48, 609439 (3), Autosomal recessive; Usher syndrome, type IJ, 614869 (3), Autosomal recessive   |
| <i>CIDEC</i>  | 612120 | ?Lipodystrophy, familial partial, type 5, 615238 (3), Autosomal recessive   |
| <i>CIITA</i>  | 600005 | Bare lymphocyte syndrome, type II, complementation group A, 209920 (3), Autosomal recessive; {Rheumatoid arthritis, susceptibility to}, 180300 (3)  |
| <i>CILP</i>   | 603489 | {Lumbar disc disease, susceptibility to}, 603932 (3)  |

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| <i>CISD2</i>  | 611507 | Wolfram syndrome 2, 604928 (3), Autosomal recessive   |
| <i>CISH</i>   | 602441 | {Bacteremia, susceptibility to}, 614383 (3); {Malaria, susceptibility to}, 611162 (3); {Tuberculosis, susceptibility to}, 607948 (3)  |
| <i>CIT</i>    | 605629 | Microcephaly 17, primary, autosomal recessive, 617090 (3),<br>Autosomal recessive   |
| <i>CITED2</i> | 602937 | Atrial septal defect 8, 614433 (3), Autosomal dominant; Ventricular<br>septal defect 2, 614431 (3), Autosomal dominant  |
| <i>CKAP2L</i> | 616174 | Filippi syndrome, 272440 (3), Autosomal recessive   |
| <i>CLCF1</i>  | 607672 | Cold-induced sweating syndrome 2, 610313 (3), Autosomal recessive   |
| <i>CLCN1</i>  | 118425 | Myotonia congenita, dominant, 160800 (3), Autosomal dominant;<br>Myotonia congenita, recessive, 255700 (3), Autosomal recessive;<br>Myotonia levior, recessive (3)  |
| <i>CLCN2</i>  | 600570 | {Epilepsy, idiopathic generalized, susceptibility to, 11}, 607628 (3),<br>Autosomal dominant; {Epilepsy, juvenile absence, susceptibility to, 2},<br>607628 (3), Autosomal dominant; {Epilepsy, juvenile myoclonic,<br>susceptibility to, 8}, 607628 (3), Autosomal dominant;<br>Leukoencephalopathy with ataxia, 615651 (3), Autosomal recessive |
| <i>CLCN4</i>  | 302910 | Mental retardation, X-linked 49/15, 300114 (3), X-linked recessive  |
| <i>CLCN5</i>  | 300008 | Dent disease, 300009 (3), X-linked recessive; Hypophosphatemic<br>rickets, 300554 (3), X-linked recessive; Nephrolithiasis, type I, 310468<br>(3), X-linked recessive; Proteinuria, low molecular weight, with<br>hypercalciuric nephrocalcinosis, 308990 (3), X-linked recessive   |
| <i>CLCN7</i>  | 602727 | Osteopetrosis, autosomal dominant 2, 166600 (3), Autosomal<br>dominant; Osteopetrosis, autosomal recessive 4, 611490 (3)  |
| <i>CLCNKA</i> | 602024 | Bartter syndrome, type 4b, digenic, 613090 (3), Digenic recessive   |
| <i>CLCNKB</i> | 602023 | Bartter syndrome, type 3, 607364 (3), Autosomal recessive; Bartter<br>syndrome, type 4b, digenic, 613090 (3), Digenic recessive   |
| <i>CLDN1</i>  | 603718 | Ichthyosis, leukocyte vacuoles, alopecia, and sclerosing cholangitis,<br>607626 (3), Autosomal recessive  |
| <i>CLDN14</i> | 605608 | Deafness, autosomal recessive 29, 614035 (3), Autosomal recessive   |
| <i>CLDN16</i> | 603959 | Hypomagnesemia 3, renal, 248250 (3), Autosomal recessive  |
| <i>CLDN19</i> | 610036 | Hypomagnesemia 5, renal, with ocular involvement, 248190 (3),<br>Autosomal recessive  |
| <i>CLEC7A</i> | 606264 | {Aspergillosis, susceptibility to}, 614079 (3); Candidiasis, familial, 4,<br>autosomal recessive, 613108 (3), Autosomal recessive   |
| <i>CLIC2</i>  | 300138 | ?Mental retardation, X-linked, syndromic 32, 300886 (3), X-linked<br>recessive  |
| <i>CLIC5</i>  | 607293 | ?Deafness, autosomal recessive 103, 616042 (3), Autosomal recessive   |
| <i>CLMP</i>   | 611693 | Congenital short bowel syndrome, 615237 (3), Autosomal recessive  |
| <i>CLN3</i>   | 607042 | Ceroid lipofuscinosis, neuronal, 3, 204200 (3), Autosomal recessive   |
| <i>CLN5</i>   | 608102 | Ceroid lipofuscinosis, neuronal, 5, 256731 (3), Autosomal recessive   |
| <i>CLN6</i>   | 606725 | Ceroid lipofuscinosis, neuronal, 6, 601780 (3), Autosomal recessive;<br>Ceroid lipofuscinosis, neuronal, Kufs type, adult onset, 204300 (3),<br>Autosomal recessive   |

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| <i>CLP1</i>    | 608757 | Pontocerebellar hypoplasia, type 10, 615803 (3), Autosomal recessive   |
| <i>CLPB</i>    | 616254 | 3-methylglutaconic aciduria, type VII, with cataracts, neurologic involvement and neutropenia, 616271 (3), Autosomal recessive   |
| <i>CLPP</i>    | 601119 | Perrault syndrome 3, 614129 (3), Autosomal recessive   |
| <i>CLRN1</i>   | 606397 | Retinitis pigmentosa 61, 614180 (3); Usher syndrome, type 3A, 276902 (3), Autosomal recessive  |
| <i>CNBP</i>    | 116955 | Myotonic dystrophy 2, 602668 (3), Autosomal dominant   |
| <i>CNGA1</i>   | 123825 | Retinitis pigmentosa 49, 613756 (3)  |
| <i>CNGA3</i>   | 600053 | Achromatopsia 2, 216900 (3), Autosomal recessive   |
| <i>CNGB1</i>   | 600724 | Retinitis pigmentosa 45, 613767 (3), Autosomal recessive   |
| <i>CNGB3</i>   | 605080 | Achromatopsia 3, 262300 (3), Autosomal recessive; Macular degeneration, juvenile, 248200 (3), Autosomal recessive  |
| <i>CNNM2</i>   | 607803 | Hypomagnesemia 6, renal, 613882 (3), Autosomal dominant; Hypomagnesemia, seizures, and mental retardation, 616418 (3), Autosomal recessive, Autosomal dominant                     |
| <i>CNNM4</i>   | 607805 | Jalili syndrome, 217080 (3), Autosomal recessive   |
| <i>CNTN2</i>   | 190197 | ?Epilepsy, myoclonic, familial adult, 5, 615400 (3), Autosomal recessive   |
| <i>CNTNAP1</i> | 602346 | Lethal congenital contracture syndrome 7, 616286 (3), Autosomal recessive  |
| <i>CNTNAP2</i> | 604569 | {Autism susceptibility 15}, 612100 (3); Cortical dysplasia-focal epilepsy syndrome, 610042 (3), Autosomal recessive; Pitt-Hopkins like syndrome 1, 610042 (3), Autosomal recessive |
| <i>COA5</i>    | 613920 | ?Cardioencephalomyopathy, fatal infantile, due to cytochrome c oxidase deficiency 3, 616500 (3), Autosomal recessive   |
| <i>COA6</i>    | 614772 | Cardioencephalomyopathy, fatal infantile, due to cytochrome c oxidase deficiency 4, 616501 (3), Autosomal recessive  |
| <i>COASY</i>   | 609855 | Neurodegeneration with brain iron accumulation 6, 615643 (3), Autosomal recessive  |
| <i>COCH</i>    | 603196 | Deafness, autosomal dominant 9, 601369 (3), Autosomal dominant   |
| <i>COG1</i>    | 606973 | Congenital disorder of glycosylation, type IIg, 611209 (3)   |
| <i>COG2</i>    | 606974 | ?Congenital disorder of glycosylation, type IIq, 617395 (3), Autosomal recessive   |
| <i>COG4</i>    | 606976 | Congenital disorder of glycosylation, type IIj, 613489 (3), Autosomal recessive  |
| <i>COG5</i>    | 606821 | Congenital disorder of glycosylation, type III, 613612 (3)   |
| <i>COG6</i>    | 606977 | Congenital disorder of glycosylation, type III, 614576 (3), Autosomal recessive; Shaheen syndrome, 615328 (3), Autosomal recessive   |
| <i>COG7</i>    | 606978 | Congenital disorder of glycosylation, type IIe, 608779 (3)   |
| <i>COG8</i>    | 606979 | Congenital disorder of glycosylation, type IIh, 611182 (3)   |
| <i>COL10A1</i> | 120110 | Metaphyseal chondrodysplasia, Schmid type, 156500 (3), Autosomal dominant  |

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| <i>COL11A1</i> | 120280 | Fibrochondrogenesis 1, 228520 (3), Autosomal recessive; {Lumbar disc herniation, susceptibility to}, 603932 (3); Marshall syndrome, 154780 (3), Autosomal dominant; Stickler syndrome, type II, 604841 (3), Autosomal dominant  |
| <i>COL11A2</i> | 120290 | Deafness, autosomal dominant 13, 601868 (3), Autosomal dominant; Deafness, autosomal recessive 53, 609706 (3), Autosomal recessive; Fibrochondrogenesis 2, 614524 (3), Autosomal recessive, Autosomal dominant; Otospondylomegaepiphyseal dysplasia, autosomal dominant, 184840 (3), Autosomal dominant; Otospondylomegaepiphyseal dysplasia, autosomal recessive, 215150 (3), Autosomal recessive  |
| <i>COL13A1</i> | 120350 | Myasthenic syndrome, congenital, 19, 616720 (3), Autosomal recessive  |
| <i>COL17A1</i> | 113811 | Epidermolysis bullosa, junctional, localisata variant, 226650 (3), Autosomal recessive; Epidermolysis bullosa, junctional, non-Herlitz type, 226650 (3), Autosomal recessive; Epithelial recurrent erosion dystrophy, 122400 (3), Autosomal dominant  |
| <i>COL18A1</i> | 120328 | Knobloch syndrome, type 1, 267750 (3), Autosomal recessive {Bone mineral density variation QTL, osteoporosis}, 166710 (3), Autosomal dominant; Caffey disease, 114000 (3), Autosomal dominant; Ehlers-Danlos syndrome, arthrochalasia type, 1, 130060 (3), Autosomal dominant; Osteogenesis imperfecta, type I, 166200 (3), Autosomal dominant; Osteogenesis imperfecta, type II, 166210 (3), Autosomal dominant; Osteogenesis imperfecta, type III, 259420 (3), Autosomal dominant; Osteogenesis imperfecta, type IV, 166220 (3), Autosomal dominant |
| <i>COL1A1</i>  | 120150 | Ehlers-Danlos syndrome, arthrochalasia type, 2, 617821 (3), Autosomal dominant; Ehlers-Danlos syndrome, cardiac valvular type, 225320 (3), Autosomal recessive; imperfecta, type III, 259420 (3), Autosomal dominant; Osteogenesis imperfecta, type II, 166210 (3), Autosomal dominant; Osteogenesis imperfecta, type IV, 166220 (3), Autosomal dominant; {Osteoporosis, postmenopausal}, 166710 (3), Autosomal dominant  |
| <i>COL1A2</i>  | 120160 | Fibrosis of extraocular muscles, congenital, 5, 616219 (3), Autosomal recessive   |
| <i>COL25A1</i> | 610004 | ?Steel syndrome, 615155 (3), Autosomal recessive  |
| <i>COL27A1</i> | 608461 |   |

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| <i>COL2A1</i>   | 120140 | Achondrogenesis, type II or hypochondrogenesis, 200610 (3), Autosomal dominant; Avascular necrosis of the femoral head, 608805 (3), Autosomal dominant; Czech dysplasia, 609162 (3), Autosomal dominant; Epiphyseal dysplasia, multiple, with myopia and deafness, 132450 (3), Autosomal dominant; Kniest dysplasia, 156550 (3), Autosomal dominant; Legg-Calve-Perthes disease, 150600 (3), Autosomal dominant; Osteoarthritis with mild chondrodysplasia, 604864 (3), Autosomal dominant; Platyspondylic skeletal dysplasia, Torrance type, 151210 (3), Autosomal dominant; SED congenita, 183900 (3), Autosomal dominant; SMED Strudwick type, 184250 (3), Autosomal dominant; Spondyloepiphyseal dysplasia, Stanescu type, 616583 (3), Autosomal dominant; Spondyloperipheral dysplasia, 271700 (3), Autosomal dominant; Stickler syndrome, type I, nonsyndromic ocular, 609508 (3), Autosomal dominant; Stickler syndrome, type I, 108300 (3), Autosomal dominant; Vitreoretinopathy with phalangeal epiphyseal dysplasia (3) |
| <i>COL3A1</i>   | 120180 | Ehlers-Danlos syndrome, vascular type, 130050 (3), Autosomal dominant  |
| <i>COL4A1</i>   | 120130 | Angiopathy, hereditary, with nephropathy, aneurysms, and muscle cramps, 611773 (3), Autosomal dominant; Brain small vessel disease with or without ocular anomalies, 607595 (3), Autosomal dominant; {Hemorrhage, intracerebral, susceptibility to}, 614519 (3); Porencephaly 1, 175780 (3), Autosomal dominant; ?Retinal arteries, tortuosity of, 180000 (3), Autosomal dominant; Schizencephaly, 269160 (3)  |
| <i>COL4A2</i>   | 120090 | {Hemorrhage, intracerebral, susceptibility to}, 614519 (3); Porencephaly 2, 614483 (3), Autosomal dominant   |
| <i>COL4A3</i>   | 120070 | Alport syndrome, autosomal dominant, 104200 (3), Autosomal dominant; Alport syndrome, autosomal recessive, 203780 (3), Autosomal recessive; Hematuria, benign familial, 141200 (3), Autosomal dominant   |
| <i>COL4A3BP</i> | 604677 | Mental retardation, autosomal dominant 34, 616351 (3), Autosomal dominant  |
| <i>COL4A4</i>   | 120131 | Alport syndrome, autosomal recessive, 203780 (3), Autosomal recessive; Hematuria, familial benign (3)  |
| <i>COL4A5</i>   | 303630 | Alport syndrome, 301050 (3), X-linked dominant   |
| <i>COL5A1</i>   | 120215 | Ehlers-Danlos syndrome, classic type, 1, 130000 (3), Autosomal dominant  |
| <i>COL5A2</i>   | 120190 | Ehlers-Danlos syndrome, classic type, 2, 130010 (3), Autosomal dominant  |
| <i>COL6A1</i>   | 120220 | Bethlem myopathy 1, 158810 (3), Autosomal recessive, Autosomal dominant; Ullrich congenital muscular dystrophy 1, 254090 (3), Autosomal recessive, Autosomal dominant  |
| <i>COL6A2</i>   | 120240 | Bethlem myopathy 1, 158810 (3), Autosomal recessive, Autosomal dominant; ?Myosclerosis, congenital, 255600 (3), Autosomal recessive; Ullrich congenital muscular dystrophy 1, 254090 (3), Autosomal recessive, Autosomal dominant  |

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| <i>COL7A1</i> | 120120 | EBD inversa, 226600 (3), Autosomal recessive; EBD, Bart type, 132000 (3), Autosomal dominant; EBD, localisata variant (3); Epidermolysis bullosa dystrophica, AD, 131750 (3), Autosomal dominant; Epidermolysis bullosa dystrophica, AR, 226600 (3), Autosomal recessive; Epidermolysis bullosa pruriginosa, 604129 (3), Autosomal recessive, Autosomal dominant; Epidermolysis bullosa, pretibial, 131850 (3), Autosomal recessive, Autosomal dominant; Toenail dystrophy, isolated, 607523 (3), Autosomal dominant; Transient bullous of the newborn, 131705 (3), Autosomal recessive, Autosomal dominant |
| <i>COL8A2</i> | 120252 | Corneal dystrophy, Fuchs endothelial, 1, 136800 (3), Autosomal dominant; Corneal dystrophy, posterior polymorphous 2, 609140 (3), Autosomal dominant  |
| <i>COL9A1</i> | 120210 | ?Epiphyseal dysplasia, multiple, 6, 614135 (3), Autosomal dominant; Stickler syndrome, type IV, 614134 (3)  |
| <i>COL9A2</i> | 120260 | Epiphyseal dysplasia, multiple, 2, 600204 (3), Autosomal dominant; ?Stickler syndrome, type V, 614284 (3), Autosomal recessive  |
| <i>COL9A3</i> | 120270 | Epiphyseal dysplasia, multiple, 3, with or without myopathy, 600969 (3), Autosomal dominant; {Intervertebral disc disease, susceptibility to}, 603932 (3)   |
| <i>COLQ</i>   | 603033 | Myasthenic syndrome, congenital, 5, 603034 (3), Autosomal recessive   |
| <i>COMP</i>   | 600310 | Epiphyseal dysplasia, multiple, 1, 132400 (3), Autosomal dominant; Pseudoachondroplasia, 177170 (3), Autosomal dominant   |
| <i>COPA</i>   | 601924 | {Autoimmune interstitial lung, joint, and kidney disease}, 616414 (3), Autosomal dominant   |
| <i>COQ2</i>   | 609825 | Coenzyme Q10 deficiency, primary, 1, 607426 (3), Autosomal recessive; {Multiple system atrophy, susceptibility to}, 146500 (3), Autosomal recessive, Autosomal dominant   |
| <i>COQ4</i>   | 612898 | Coenzyme Q10 deficiency, primary, 7, 616276 (3), Autosomal recessive  |
| <i>COQ7</i>   | 601683 | ?Coenzyme Q10 deficiency, primary, 8, 616733 (3), Autosomal recessive   |
| <i>COQ8A</i>  | 606980 | Coenzyme Q10 deficiency, primary, 4, 612016 (3), Autosomal recessive  |
| <i>COQ8B</i>  | 615567 | Nephrotic syndrome, type 9, 615573 (3), Autosomal recessive   |
| <i>COQ9</i>   | 612837 | Coenzyme Q10 deficiency, primary, 5, 614654 (3), Autosomal recessive  |
| <i>CORIN</i>  | 605236 | Preeclampsia/eclampsia 5, 614595 (3)  |
| <i>COX10</i>  | 602125 | Leigh syndrome due to mitochondrial COX4 deficiency, 256000 (3), Autosomal recessive, Mitochondrial; Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial  |
| <i>COX14</i>  | 614478 | ?Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial  |
| <i>COX20</i>  | 614698 | Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial   |
| <i>COX4I2</i> | 607976 | Exocrine pancreatic insufficiency, dyserythropoietic anemia, and calvarial hyperostosis, 612714 (3), Autosomal recessive  |

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| <i>COX6A1</i>                        | 602072 | Charcot-Marie-Tooth disease, recessive intermediate D, 616039 (3), Autosomal recessive   |
| <i>COX6B1</i>                        | 124089 | Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial  |
| <i>COX7B</i>                         | 300885 | Linear skin defects with multiple congenital anomalies 2, 300887 (3), X-linked dominant  |
| <i>CP</i>                            | 117700 | Cerebellar ataxia, 604290 (3), Autosomal recessive; Hemosiderosis, systemic, due to aceruloplasminemia, 604290 (3), Autosomal recessive; [Hypoceruloplasminemia, hereditary], 604290 (3), Autosomal recessive  |
| <i>CPA6</i>                          | 609562 | Epilepsy, familial temporal lobe, 5, 614417 (3), Autosomal recessive, Autosomal dominant; Febrile seizures, familial, 11, 614418 (3), Autosomal recessive  |
| <i>CPAMD8</i>                        | 608841 | Anterior segment dysgenesis 8, 617319 (3), Autosomal recessive   |
| <i>CPLANE1</i><br>( <i>C5orf42</i> ) | 614571 | Joubert syndrome 17, 614615 (3), Autosomal recessive; Orofaciodigital syndrome VI, 277170 (3), Autosomal recessive   |
| <i>CPLX1</i>                         | 605032 | Epileptic encephalopathy, early infantile, 63, 617976 (3), Autosomal recessive   |
| <i>CPN1</i>                          | 603103 | Carboxypeptidase N deficiency, 212070 (3), Autosomal recessive   |
| <i>CPOX</i>                          | 612732 | Coproporphoria, 121300 (3), Autosomal dominant; Harderoporphoria, 121300 (3), Autosomal dominant   |
| <i>CPS1</i>                          | 608307 | Carbamoylphosphate synthetase I deficiency, 237300 (3), Autosomal recessive; {Pulmonary hypertension, neonatal, susceptibility to}, 615371 (3); {Venoocclusive disease after bone marrow transplantation} (3)  |
| <i>CPT1C</i>                         | 608846 | ?Spastic paraplegia 73, autosomal dominant, 616282 (3), Autosomal dominant   |
| <i>CPT2</i>                          | 600650 | CPT II deficiency, infantile, 600649 (3), Autosomal recessive; CPT II deficiency, lethal neonatal, 608836 (3), Autosomal recessive; CPT II deficiency, myopathic, stress-induced, 255110 (3), Autosomal recessive, Autosomal dominant; {Encephalopathy, acute, infection-induced, 4, susceptibility to}, 614212 (3), Autosomal recessive, Autosomal dominant |
| <i>CR1</i>                           | 120620 | [Blood group, Knops system], 607486 (3); CR1 deficiency (1); {Malaria, severe, resistance to}, 611162 (3); {?SLE susceptibility} (1)   |
| <i>CR2</i>                           | 120650 | Immunodeficiency, common variable, 7, 614699 (3), Autosomal recessive; {Systemic lupus erythematosus, susceptibility to, 9}, 610927 (3)  |
| <i>CRADD</i>                         | 603454 | Mental retardation, autosomal recessive 34, with variant lissencephaly, 614499 (3), Autosomal recessive  |
| <i>CRB1</i>                          | 604210 | Leber congenital amaurosis 8, 613835 (3); Pigmented paravenous chorioretinal atrophy, 172870 (3), Autosomal dominant; Retinitis pigmentosa-12, autosomal recessive, 600105 (3), Autosomal recessive  |
| <i>CRB2</i>                          | 609720 | Focal segmental glomerulosclerosis 9, 616220 (3), Autosomal recessive; Ventriculomegaly with cystic kidney disease, 219730 (3), Autosomal recessive  |

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| <i>CRBN</i>    | 609262 | Mental retardation, autosomal recessive 2, 607417 (3), Autosomal recessive   |
| <i>CREB1</i>   | 123810 | Histiocytoma, angiomatoid fibrous, somatic, 612160 (3)   |
| <i>CREBBP</i>  | 600140 | Rubinstein-Taybi syndrome 1, 180849 (3), Autosomal dominant  |
| <i>CRELD1</i>  | 607170 | Atrioventricular septal defect, partial, with heterotaxy syndrome, 606217 (3), Autosomal dominant; {Atrioventricular septal defect, susceptibility to, 2}, 606217 (3), Autosomal dominant  |
| <i>CRIP1</i>   | 604594 | Short stature with microcephaly and distinctive facies, 615789 (3), Autosomal recessive  |
| <i>CRLF1</i>   | 604237 | Cold-induced sweating syndrome 1, 272430 (3), Autosomal recessive  |
| <i>CRTAP</i>   | 605497 | Osteogenesis imperfecta, type VII, 610682 (3), Autosomal recessive   |
| <i>CRX</i>     | 602225 | Cone-rod retinal dystrophy-2, 120970 (3), Autosomal dominant; Leber congenital amaurosis 7, 613829 (3)   |
| <i>CRYAA</i>   | 123580 | Cataract 9, multiple types, 604219 (3), Autosomal recessive, Autosomal dominant  |
| <i>CRYAB</i>   | 123590 | Cardiomyopathy, dilated, 1II, 615184 (3), Autosomal dominant; Cataract 16, multiple types, 613763 (3), Autosomal recessive, Autosomal dominant; Myopathy, myofibrillar, 2, 608810 (3), Autosomal dominant; Myopathy, myofibrillar, fatal infantile hypertonic, alpha-B crystallin-related, 613869 (3), Autosomal recessive |
| <i>CRYBA1</i>  | 123610 | Cataract 10, multiple types, 600881 (3), Autosomal dominant  |
| <i>CRYBA2</i>  | 600836 | ?Cataract 42, 115900 (3), Autosomal dominant   |
| <i>CRYBA4</i>  | 123631 | Cataract 23, 610425 (3)  |
| <i>CRYBB1</i>  | 600929 | Cataract 17, multiple types, 611544 (3), Autosomal recessive, Autosomal dominant   |
| <i>CRYBB2</i>  | 123620 | Cataract 3, multiple types, 601547 (3), Autosomal dominant   |
| <i>CRYBB3</i>  | 123630 | Cataract 22, 609741 (3), Autosomal recessive, Autosomal dominant   |
| <i>CRYGB</i>   | 123670 | Cataract 39, multiple types, autosomal dominant, 615188 (3), Autosomal dominant  |
| <i>CRYGC</i>   | 123680 | Cataract 2, multiple types, 604307 (3), Autosomal dominant   |
| <i>CRYGD</i>   | 123690 | Cataract 4, multiple types, 115700 (3), Autosomal dominant   |
| <i>CRYGS</i>   | 123730 | Cataract 20, multiple types, 116100 (3), Autosomal dominant  |
| <i>CRYM</i>    | 123740 | Deafness, autosomal dominant 40, 616357 (3), Autosomal dominant  |
| <i>CSF1R</i>   | 164770 | Leukoencephalopathy, diffuse hereditary, with spheroids, 221820 (3), Autosomal dominant  |
| <i>CSF2RB</i>  | 138981 | Surfactant metabolism dysfunction, pulmonary, 5, 614370 (3), Autosomal recessive   |
| <i>CSF3R</i>   | 138971 | Neutropenia, severe congenital, 7, autosomal recessive, 617014 (3), Autosomal recessive  |
| <i>CSNK1D</i>  | 600864 | Advanced sleep-phase syndrome, familial, 2, 615224 (3), Autosomal dominant   |
| <i>CSNK2A1</i> | 115440 | Okur-Chung neurodevelopmental syndrome, 617062 (3), Autosomal dominant   |
| <i>CSPP1</i>   | 611654 | Joubert syndrome 21, 615636 (3), Autosomal recessive   |

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| <i>CSRP3</i>  | 600824 | ?Cardiomyopathy, dilated, 1M, 607482 (3); Cardiomyopathy, hypertrophic, 12, 612124 (3), Autosomal dominant   |
| <i>CST3</i>   | 604312 | Cerebral amyloid angiopathy, 105150 (3), Autosomal dominant; {Macular degeneration, age-related, 11}, 611953 (3)   |
| <i>CSTA</i>   | 184600 | Peeling skin syndrome 4, 607936 (3), Autosomal recessive   |
| <i>CSTB</i>   | 601145 | Epilepsy, progressive myoclonic 1A (Unverricht and Lundborg), 254800 (3), Autosomal recessive  |
| <i>CTBP1</i>  | 602618 | Hypotonia, ataxia, developmental delay, and tooth enamel defect syndrome, 617915 (3), Autosomal dominant   |
| <i>CTC1</i>   | 613129 | Cerebroretinal microangiopathy with calcifications and cysts, 612199 (3), Autosomal recessive  |
| <i>CTCF</i>   | 604167 | Mental retardation, autosomal dominant 21, 615502 (3), Autosomal dominant  |
| <i>CTDP1</i>  | 604927 | Congenital cataracts, facial dysmorphism, and neuropathy, 604168 (3), Autosomal recessive  |
| <i>CTH</i>    | 607657 | Cystathioninuria, 219500 (3), Autosomal recessive; Homocysteine, total plasma, elevated (3)  |
| <i>CTHRC1</i> | 610635 | Barrett esophagus/esophageal adenocarcinoma, 614266 (3)<br>Autoimmune lymphoproliferative syndrome, type V, 616100 (3), Autosomal dominant; {Celiac disease, susceptibility to, 3}, 609755 (3); {Diabetes mellitus, insulin-dependent, 12}, 601388 (3); {Hashimoto thyroiditis}, 140300 (3), Autosomal dominant; {Systemic lupus erythematosus, susceptibility to}, 152700 (3), Autosomal dominant |
| <i>CTLA4</i>  | 123890 |  |
| <i>CTNNA1</i> | 116805 | Macular dystrophy, patterned, 2, 608970 (3), Autosomal dominant  |
| <i>CTNNA3</i> | 607667 | Arrhythmogenic right ventricular dysplasia, familial, 13, 615616 (3), Autosomal dominant   |
| <i>CTNNB1</i> | 116806 | Colorectal cancer, somatic, 114500 (3); Exudative vitreoretinopathy 7, 617572 (3), Autosomal dominant; Hepatocellular carcinoma, somatic, 114550 (3); Medulloblastoma, somatic, 155255 (3); Mental retardation, autosomal dominant 19, 615075 (3), Autosomal dominant; Ovarian cancer, somatic, 167000 (3); Pilomatricoma, somatic, 132600 (3)   |
| <i>CTNS</i>   | 606272 | Cystinosis, atypical nephropathic, 219800 (3), Autosomal recessive; Cystinosis, late-onset juvenile or adolescent nephropathic, 219900 (3), Autosomal recessive; Cystinosis, nephropathic, 219800 (3), Autosomal recessive; Cystinosis, ocular nonnephropathic, 219750 (3), Autosomal recessive  |
| <i>CTPS1</i>  | 123860 | Immunodeficiency 24, 615897 (3), Autosomal recessive   |
| <i>CTRC</i>   | 601405 | {Pancreatitis, chronic, susceptibility to}, 167800 (3), Autosomal dominant   |
| <i>CTSA</i>   | 613111 | Galactosialidosis, 256540 (3), Autosomal recessive   |
| <i>CTSC</i>   | 602365 | Haim-Munk syndrome, 245010 (3), Autosomal recessive; Papillon-Lefevre syndrome, 245000 (3), Autosomal recessive; Periodontitis 1, juvenile, 170650 (3), Autosomal recessive  |
| <i>CTSD</i>   | 116840 | Ceroid lipofuscinosis, neuronal, 10, 610127 (3), Autosomal recessive   |

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| <i>CTSF</i>    | 603539 | Ceroid lipofuscinoses, neuronal, 13, Kufs type, 615362 (3), Autosomal recessive   |
| <i>CTSK</i>    | 601105 | Pycnodynatoses, 265800 (3), Autosomal recessive   |
| <i>CUBN</i>    | 602997 | Megaloblastic anemia-1, Finnish type, 261100 (3), Autosomal recessive   |
| <i>CUL3</i>    | 603136 | Pseudohypoaldosteronism, type IIE, 614496 (3), Autosomal dominant   |
| <i>CUL4B</i>   | 300304 | Mental retardation, X-linked, syndromic 15 (Cabezas type), 300354 (3), X-linked recessive   |
| <i>CWF19L1</i> | 616120 | Spinocerebellar ataxia, autosomal recessive 17, 616127 (3), Autosomal recessive   |
| <i>CX3CR1</i>  | 601470 | {Coronary artery disease, resistance to}, 607339 (3); {Macular degeneration, age-related, 12}, 613784 (3); {Rapid progression to AIDS from HIV1 infection}, 609423 (3)  |
| <i>CXCL12</i>  | 600835 | {AIDS, resistance to}, 609423 (3)   |
| <i>CXCR1</i>   | 146929 | {AIDS, slow progression to}, 609423 (3)   |
| <i>CXCR4</i>   | 162643 | Myelokathexis, isolated (3); WHIM syndrome, 193670 (3), Autosomal dominant  |
| <i>CYB5A</i>   | 613218 | Methemoglobinemia and ambiguous genitalia, 250790 (3), Autosomal recessive  |
| <i>CYB5R3</i>  | 613213 | Methemoglobinemia, type I, 250800 (3), Autosomal recessive; Methemoglobinemia, type II, 250800 (3), Autosomal recessive   |
| <i>CYBA</i>    | 608508 | Chronic granulomatous disease, autosomal, due to deficiency of CYBA, 233690 (3), Autosomal recessive  |
| <i>CYBB</i>    | 300481 | Chronic granulomatous disease, X-linked, 306400 (3), X-linked recessive; Immunodeficiency 34, mycobacteriosis, X-linked, 300645 (3), X-linked recessive   |
| <i>CYC1</i>    | 123980 | Mitochondrial complex III deficiency, nuclear type 6, 615453 (3), Autosomal recessive   |
| <i>CYCS</i>    | 123970 | Thrombocytopenia 4, 612004 (3), Autosomal dominant  |
| <i>CYP11A1</i> | 118485 | Adrenal insufficiency, congenital, with 46XY sex reversal, partial or complete, 613743 (3)  |
| <i>CYP11B1</i> | 610613 | Adrenal hyperplasia, congenital, due to 11-beta-hydroxylase deficiency, 202010 (3), Autosomal recessive; Aldosteronism, glucocorticoid-remediable, 103900 (3), Autosomal dominant   |
| <i>CYP11B2</i> | 124080 | Aldosterone to renin ratio raised (3); Hypoaldosteronism, congenital, due to CMO I deficiency, 203400 (3), Autosomal recessive; Hypoaldosteronism, congenital, due to CMO II deficiency, 610600 (3), Autosomal recessive; {Low renin hypertension, susceptibility to} (3) |
| <i>CYP17A1</i> | 609300 | 17-alpha-hydroxylase/17,20-lyase deficiency, 202110 (3), Autosomal recessive; 17,20-lyase deficiency, isolated, 202110 (3), Autosomal recessive   |
| <i>CYP19A1</i> | 107910 | Aromatase deficiency, 613546 (3); Aromatase excess syndrome, 139300 (3), Autosomal dominant   |

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| <i>CYP1B1</i>  | 601771 | Anterior segment dysgenesis 6, multiple subtypes, 617315 (3); Glaucoma 3A, primary open angle, congenital, juvenile, or adult onset, 231300 (3), Autosomal recessive   |
| <i>CYP21A2</i> | 613815 | Adrenal hyperplasia, congenital, due to 21-hydroxylase deficiency, 201910 (3), Autosomal recessive; Hyperandrogenism, nonclassic type, due to 21-hydroxylase deficiency, 201910 (3), Autosomal recessive   |
| <i>CYP24A1</i> | 126065 | Hypercalcemia, infantile, 1, 143880 (3), Autosomal recessive   |
| <i>CYP26B1</i> | 605207 | Craniosynostosis with radiohumeral fusions and other skeletal and craniofacial anomalies, 614416 (3)   |
| <i>CYP26C1</i> | 608428 | Focal facial dermal dysplasia 4, 614974 (3), Autosomal recessive   |
| <i>CYP27A1</i> | 606530 | Cerebrotendinous xanthomatosis, 213700 (3), Autosomal recessive  |
| <i>CYP27B1</i> | 609506 | Vitamin D-dependent rickets, type I, 264700 (3), Autosomal recessive   |
| <i>CYP2A6</i>  | 122720 | Coumarin resistance, 122700 (3), Autosomal dominant; {Lung cancer, resistance to}, 211980 (3), Autosomal recessive; {Nicotine addiction, protection from}, 188890 (3)  |
| <i>CYP2B6</i>  | 123930 | {Efavirenz central nervous system toxicity, susceptibility to}, 614546 (3); Efavirenz, poor metabolism of, 614546 (3)  |
| <i>CYP2C19</i> | 124020 | Clopidogrel, impaired responsiveness to, 609535 (3), Autosomal recessive; Mephenytoin poor metabolizer, 609535 (3), Autosomal recessive; Omeprazole poor metabolizer, 609535 (3), Autosomal recessive; Proguanil poor metabolizer, 609535 (3), Autosomal recessive |
| <i>CYP2C9</i>  | 601130 | Tolbutamide poor metabolizer (3); Warfarin sensitivity, 122700 (3), Autosomal dominant   |
| <i>CYP2D6</i>  | 124030 | {Codeine sensitivity}, 608902 (3), Autosomal recessive; {Debrisoquine sensitivity}, 608902 (3), Autosomal recessive  |
| <i>CYP2R1</i>  | 608713 | Rickets due to defect in vitamin D 25-hydroxylation, 600081 (3), Autosomal recessive   |
| <i>CYP2U1</i>  | 610670 | Spastic paraplegia 56, autosomal recessive, 615030 (3), Autosomal recessive  |
| <i>CYP3A5</i>  | 605325 | {Hypertension, salt-sensitive essential, susceptibility to}, 145500 (3), Multifactorial  |
| <i>CYP4V2</i>  | 608614 | Bietti crystalline corneoretinal dystrophy, 210370 (3), Autosomal recessive  |
| <i>CYP7B1</i>  | 603711 | Bile acid synthesis defect, congenital, 3, 613812 (3), Autosomal recessive; Spastic paraplegia 5A, autosomal recessive, 270800 (3), Autosomal recessive  |
| <i>D2HGDH</i>  | 609186 | D-2-hydroxyglutaric aciduria, 600721 (3), Autosomal recessive  |
| <i>DAO</i>     | 124050 | No OMIM phenotype  |
| <i>DAOA</i>    | 607408 | {Schizophrenia}, 181500 (2), Autosomal dominant  |
| <i>DARS</i>    | 603084 | Hypomyelination with brainstem and spinal cord involvement and leg spasticity, 615281 (3), Autosomal recessive   |
| <i>DARS2</i>   | 610956 | Leukoencephalopathy with brain stem and spinal cord involvement and lactate elevation, 611105 (3), Autosomal recessive   |
| <i>DAZ1</i>    | 400003 | ?Sertoli-cell-only syndrome (1)  |

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| <i>DAZ2</i>   | 400026 | No OMIM phenotype  |
| <i>DAZ3</i>   | 400027 | No OMIM phenotype  |
| <i>DBH</i>    | 609312 | Dopamine beta-hydroxylase deficiency, 223360 (3), Autosomal recessive; [Dopamine-beta-hydroxylase activity levels, plasma] (3)   |
| <i>DBT</i>    | 248610 | Maple syrup urine disease, type II, 248600 (3), Autosomal recessive  |
| <i>DCAF17</i> | 612515 | Woodhouse-Sakati syndrome, 241080 (3), Autosomal recessive   |
| <i>DCAF8</i>  | 615820 | ?Giant axonal neuropathy 2, autosomal dominant, 610100 (3), Autosomal dominant   |
| <i>DCC</i>    | 120470 | Colorectal cancer, somatic, 114500 (3); Esophageal carcinoma, somatic, 133239 (3); Gaze palsy, familial horizontal, with progressive scoliosis, 2, 617542 (3), Autosomal recessive; Mirror movements 1 and/or agenesis of the corpus callosum, 157600 (3), Autosomal dominant                  |
| <i>DCDC2</i>  | 605755 | ?Deafness, autosomal recessive 66, 610212 (3), Autosomal recessive; Nephronophthisis 19, 616217 (3), Autosomal recessive; Sclerosing cholangitis, neonatal, 617394 (3), Autosomal recessive  |
| <i>DCHS1</i>  | 603057 | Mitral valve prolapse 2, 607829 (3), Autosomal dominant; Van Maldergem syndrome 1, 601390 (3), Autosomal recessive   |
| <i>DCN</i>    | 125255 | Corneal dystrophy, congenital stromal, 610048 (3), Autosomal dominant  |
| <i>DCPS</i>   | 610534 | Al-Raqad syndrome, 616459 (3), Autosomal recessive<br>{Amyotrophic lateral sclerosis, susceptibility to}, 105400 (3), Autosomal recessive, Autosomal dominant; Neuropathy, distal hereditary motor, type VIIIB, 607641 (3), Autosomal dominant; Perry syndrome, 168605 (3), Autosomal dominant |
| <i>DCTN1</i>  | 601143 | Lissencephaly, X-linked, 300067 (3), X-linked; Subcortical laminar heterotopia, X-linked, 300067 (3), X-linked   |
| <i>DCX</i>    | 300121 | [Pentosuria], 260800 (3), Autosomal recessive  |
| <i>DCXR</i>   | 608347 | Xeroderma pigmentosum, group E, DDB-negative subtype, 278740 (3), Autosomal recessive  |
| <i>DDB2</i>   | 600811 | Aromatic L-amino acid decarboxylase deficiency, 608643 (3), Autosomal recessive  |
| <i>DDC</i>    | 107930 | Spastic paraplegia 28, autosomal recessive, 609340 (3), Autosomal recessive  |
| <i>DDHD1</i>  | 614603 | Spastic paraplegia 54, autosomal recessive, 615033 (3), Autosomal recessive  |
| <i>DDIT3</i>  | 126337 | Myxoid liposarcoma, 613488 (1)   |
| <i>DDOST</i>  | 602202 | ?Congenital disorder of glycosylation, type I <sub>r</sub> , 614507 (3), Autosomal recessive   |
| <i>DDR2</i>   | 191311 | Spondylometaphyseal dysplasia, short limb-hand type, 271665 (3), Autosomal recessive   |
| <i>DDX11</i>  | 601150 | Warsaw breakage syndrome, 613398 (3), Autosomal recessive  |
| <i>DDX3X</i>  | 300160 | Mental retardation, X-linked 102, 300958 (3), X-linked recessive, X-linked dominant  |

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| <i>DDX41</i>   | 608170 | {Myeloproliferative/lymphoproliferative neoplasms, familial (multiple types), susceptibility to}, 616871 (3), Autosomal dominant   |
| <i>DDX58</i>   | 609631 | Singleton-Merten syndrome 2, 616298 (3), Autosomal dominant  |
| <i>DDX59</i>   | 615464 | Orofaciodigital syndrome V, 174300 (3), Autosomal recessive  |
| <i>DEAF1</i>   | 602635 | ?Dyskinesia, seizures, and intellectual developmental disorder, 617171 (3), Autosomal recessive; Mental retardation, autosomal dominant 24, 615828 (3), Autosomal dominant   |
| <i>DEC1</i>    | 604767 | Esophageal squamous cell carcinoma, 133239 (1), Autosomal dominant   |
| <i>DENND5A</i> | 617278 | Epileptic encephalopathy, early infantile, 49, 617281 (3), Autosomal recessive   |
| <i>DEPDC5</i>  | 614191 | Epilepsy, familial focal, with variable foci 1, 604364 (3), Autosomal dominant   |
| <i>DES</i>     | 125660 | Cardiomyopathy, dilated, 1I, 604765 (3); ?Muscular dystrophy, limb-girdle, type 2R, 615325 (3), Autosomal recessive; Myopathy, myofibrillar, 1, 601419 (3), Autosomal recessive, Autosomal dominant; Scapuloperoneal syndrome, neurogenic, Kaeser type, 181400 (3), Autosomal dominant           |
| <i>DGAT1</i>   | 604900 | ?Diarrhea 7, 615863 (3), Autosomal recessive   |
| <i>DGCR2</i>   | 600594 | No OMIM phenotype  |
| <i>DGCR6</i>   | 601279 | No OMIM phenotype  |
| <i>DGCR8</i>   | 609030 | No OMIM phenotype  |
| <i>DGKE</i>    | 601440 | {Hemolytic uremic syndrome, atypical, susceptibility to, 7}, 615008 (3), Autosomal recessive; Nephrotic syndrome, type 7, 615008 (3), Autosomal recessive  |
| <i>DGUOK</i>   | 601465 | Mitochondrial DNA depletion syndrome 3 (hepatocerebral type), 251880 (3), Autosomal recessive; Portal hypertension, noncirrhotic, 617068 (3), Autosomal recessive; Progressive external ophthalmoplegia with mitochondrial DNA deletions, autosomal recessive 4, 617070 (3), Autosomal recessive |
| <i>DHCR24</i>  | 606418 | Desmosterolemia, 602398 (3), Autosomal recessive   |
| <i>DHCR7</i>   | 602858 | Smith-Lemli-Opitz syndrome, 270400 (3), Autosomal recessive  |
| <i>DHDDS</i>   | 608172 | ?Congenital disorder of glycosylation, type 1bb, 613861 (3), Autosomal recessive; Developmental delay and seizures with or without movement abnormalities, 617836 (3), Autosomal dominant; Retinitis pigmentosa 59, 613861 (3), Autosomal recessive  |
| <i>DHFR</i>    | 126060 | Megaloblastic anemia due to dihydrofolate reductase deficiency, 613839 (3), Autosomal recessive  |
| <i>DHH</i>     | 605423 | 46XY partial gonadal dysgenesis, with minifascicular neuropathy, 607080 (3); 46XY sex reversal 7, 233420 (3), Autosomal recessive  |
| <i>DHODH</i>   | 126064 | Miller syndrome, 263750 (3), Autosomal recessive   |
| <i>DHTKD1</i>  | 614984 | 2-aminoacidipic 2-oxoadipic aciduria, 204750 (3), Autosomal recessive; ?Charcot-Marie-Tooth disease, axonal, type 2Q, 615025 (3), Autosomal dominant   |
| <i>DIABLO</i>  | 605219 | Deafness, autosomal dominant 64, 614152 (3), Autosomal dominant  |

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| <i>DIAPH1</i> | 602121 | Deafness, autosomal dominant 1, 124900 (3), Autosomal dominant; Seizures, cortical blindness, microcephaly syndrome, 616632 (3), Autosomal recessive                             |
| <i>DIAPH2</i> | 300108 | ?Premature ovarian failure 2A, 300511 (3), X-linked dominant   |
| <i>DIP2B</i>  | 611379 | Mental retardation, FRA12A type, 136630 (3), Autosomal dominant  |
| <i>DIRC2</i>  | 602773 | Renal cell carcinoma, 144700 (1)   |
| <i>DIS3L2</i> | 614184 | Perlman syndrome, 267000 (3), Autosomal recessive  |
| <i>DISC1</i>  | 605210 | {Schizophrenia 9, susceptibility to}, 604906 (3)   |
| <i>DKC1</i>   | 300126 | Dyskeratosis congenita, X-linked, 305000 (3), X-linked recessive   |
| <i>DLAT</i>   | 608770 | Pyruvate dehydrogenase E2 deficiency, 245348 (3), Autosomal recessive  |
| <i>DLC1</i>   | 604258 | Colorectal cancer, somatic, 114500 (3)   |
| <i>DLD</i>    | 238331 | Dihydrolipoamide dehydrogenase deficiency, 246900 (3), Autosomal recessive   |
| <i>DLEC1</i>  | 604050 | Esophageal cancer, 133239 (1), Autosomal dominant; Lung cancer, 211980 (1), Autosomal recessive  |
| <i>DLG3</i>   | 300189 | Mental retardation, X-linked 90, 300850 (3), X-linked recessive  |
| <i>DLL3</i>   | 602768 | Spondylocostal dysostosis 1, autosomal recessive, 277300 (3), Autosomal recessive  |
| <i>DLL4</i>   | 605185 | Adams-Oliver syndrome 6, 616589 (3), Autosomal dominant  |
| <i>DLX3</i>   | 600525 | Amelogenesis imperfecta, type IV, 104510 (3), Autosomal dominant; Trichodontoosseous syndrome, 190320 (3), Autosomal dominant  |
| <i>DLX4</i>   | 601911 | ?Orofacial cleft 15, 616788 (3), Autosomal dominant  |
| <i>DLX5</i>   | 600028 | ?Split-hand/foot malformation 1 with sensorineural hearing loss, 220600 (3), Autosomal recessive   |
| <i>DMGDH</i>  | 605849 | Dimethylglycine dehydrogenase deficiency, 605850 (3), Autosomal recessive  |
| <i>DMP1</i>   | 600980 | Hypophosphatemic rickets, AR, 241520 (3), Autosomal recessive  |
| <i>DMPK</i>   | 605377 | Myotonic dystrophy 1, 160900 (3), Autosomal dominant   |
| <i>DMXL2</i>  | 612186 | ?Deafness, autosomal dominant 71, 617605 (3), Autosomal dominant; ?Polyendocrine-polyneuropathy syndrome, 616113 (3), Autosomal recessive  |
| <i>DNA2</i>   | 601810 | Progressive external ophthalmoplegia with mitochondrial DNA deletions, autosomal dominant 6, 615156 (3), Autosomal dominant; ?Seckel syndrome 8, 615807 (3), Autosomal recessive |
| <i>DNAAF1</i> | 613190 | Ciliary dyskinesia, primary, 13, 613193 (3), Autosomal recessive   |
| <i>DNAAF2</i> | 612517 | Ciliary dyskinesia, primary, 10, 612518 (3)  |
| <i>DNAAF3</i> | 614566 | Ciliary dyskinesia, primary, 2, 606763 (3), Autosomal recessive  |
| <i>DNAAF4</i> | 608706 | Ciliary dyskinesia, primary, 25, 615482 (3), Autosomal recessive; {Dyslexia, susceptibility to, 1}, 127700 (3), Autosomal dominant   |
| <i>DNAAF5</i> | 614864 | Ciliary dyskinesia, primary, 18, 614874 (3), Autosomal recessive   |
| <i>DNAH11</i> | 603339 | Ciliary dyskinesia, primary, 7, with or without situs inversus, 611884 (3), Autosomal recessive  |
| <i>DNAH5</i>  | 603335 | Ciliary dyskinesia, primary, 3, with or without situs inversus, 608644 (3)   |

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| <i>DNAI1</i>    | 604366 | Ciliary dyskinesia, primary, 1, with or without situs inversus, 244400 (3), Autosomal recessive  |
| <i>DNAI2</i>    | 605483 | Ciliary dyskinesia, primary, 9, with or without situs inversus, 612444 (3)   |
| <i>DNAJB13</i>  | 610263 | Ciliary dyskinesia, primary, 34, 617091 (3), Autosomal recessive   |
| <i>DNAJB2</i>   | 604139 | Spinal muscular atrophy, distal, autosomal recessive, 5, 614881 (3), Autosomal recessive   |
| <i>DNAJB6</i>   | 611332 | Muscular dystrophy, limb-girdle, type 1E, 603511 (3), Autosomal dominant   |
| <i>DNAJC12</i>  | 606060 | Hyperphenylalaninemia, mild, non-BH4-deficient, 617384 (3), Autosomal recessive  |
| <i>DNAJC13</i>  | 614334 | No OMIM phenotype  |
| <i>DNAJC19</i>  | 608977 | 3-methylglutaconic aciduria, type V, 610198 (3), Autosomal recessive   |
| <i>DNAJC21</i>  | 617048 | Bone marrow failure syndrome 3, 617052 (3), Autosomal recessive  |
| <i>DNAJC3</i>   | 601184 | ?Ataxia, combined cerebellar and peripheral, with hearing loss and diabetes mellitus, 616192 (3), Autosomal recessive  |
| <i>DNAJC6</i>   | 608375 | Parkinson disease 19a, juvenile-onset, 615528 (3), Autosomal recessive; Parkinson disease 19b, early-onset, 615528 (3), Autosomal recessive  |
| <i>DNAL4</i>    | 610565 | ?Mirror movements 3, 616059 (3), Autosomal recessive   |
| <i>DNASE1</i>   | 125505 | {Systemic lupus erythematosus, susceptibility to}, 152700 (3), Autosomal dominant  |
| <i>DNASE1L3</i> | 602244 | Systemic lupus erythematosus 16, 614420 (3), Autosomal recessive   |
| <i>DNM1</i>     | 602377 | Epileptic encephalopathy, early infantile, 31, 616346 (3), Autosomal dominant  |
| <i>DNM1L</i>    | 603850 | Encephalopathy, lethal, due to defective mitochondrial peroxisomal fission 1, 614388 (3), Autosomal recessive, Autosomal dominant; Optic atrophy 5, 610708 (3), Autosomal dominant   |
| <i>DNM2</i>     | 602378 | Centronuclear myopathy 1, 160150 (3), Autosomal dominant; Charcot-Marie-Tooth disease, axonal type 2M, 606482 (3), Autosomal dominant; Charcot-Marie-Tooth disease, dominant intermediate B, 606482 (3), Autosomal dominant; Lethal congenital contracture syndrome 5, 615368 (3), Autosomal recessive |
| <i>DNMT1</i>    | 126375 | Cerebellar ataxia, deafness, and narcolepsy, autosomal dominant, 604121 (3), Autosomal dominant; Neuropathy, hereditary sensory, type IE, 614116 (3), Autosomal dominant   |
| <i>DNMT3A</i>   | 602769 | Acute myeloid leukemia, somatic, 601626 (3); Tatton-Brown-Rahman syndrome, 615879 (3), Autosomal dominant  |
| <i>DNMT3B</i>   | 602900 | Immunodeficiency-centromeric instability-facial anomalies syndrome 1, 242860 (3), Autosomal recessive  |
| <i>DOCK2</i>    | 603122 | Immunodeficiency 40, 616433 (3), Autosomal recessive   |
| <i>DOCK6</i>    | 614194 | Adams-Oliver syndrome 2, 614219 (3), Autosomal recessive   |
| <i>DOCK8</i>    | 611432 | Hyper-IgE recurrent infection syndrome, autosomal recessive, 243700 (3), Autosomal recessive   |

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| <i>DOK7</i>    | 610285 | ?Fetal akinesia deformation sequence, 208150 (3), Autosomal recessive; Myasthenic syndrome, congenital, 10, 254300 (3), Autosomal recessive   |
| <i>DOLK</i>    | 610746 | Congenital disorder of glycosylation, type Im, 610768 (3), Autosomal recessive  |
| <i>DPAGT1</i>  | 191350 | Congenital disorder of glycosylation, type Ij, 608093 (3), Autosomal recessive; Myasthenic syndrome, congenital, 13, with tubular aggregates, 614750 (3), Autosomal recessive   |
| <i>DPH1</i>    | 603527 | Developmental delay with short stature, dysmorphic features, and sparse hair, 616901 (3), Autosomal recessive   |
| <i>DPM1</i>    | 603503 | Congenital disorder of glycosylation, type Ie, 608799 (3), Autosomal recessive  |
| <i>DPM2</i>    | 603564 | Congenital disorder of glycosylation, type Iu, 615042 (3), Autosomal recessive  |
| <i>DPM3</i>    | 605951 | Congenital disorder of glycosylation, type Io, 612937 (3)   |
| <i>DPP6</i>    | 126141 | Mental retardation, autosomal dominant 33, 616311 (3); {Ventricular fibrillation, paroxysmal familial, 2}, 612956 (3), Autosomal dominant   |
| <i>DPY19L2</i> | 613893 | Spermatogenic failure 9, 613958 (3), Autosomal recessive  |
| <i>DPYD</i>    | 612779 | Dihydropyrimidine dehydrogenase deficiency, 274270 (3), Autosomal recessive; 5-fluorouracil toxicity, 274270 (3), Autosomal recessive   |
| <i>DPYS</i>    | 613326 | Dihydropyrimidinuria, 222748 (3), Autosomal recessive   |
| <i>DRAM2</i>   | 613360 | Cone-rod dystrophy 21, 616502 (3), Autosomal recessive  |
| <i>DRC1</i>    | 615288 | Ciliary dyskinesia, primary, 21, 615294 (3), Autosomal recessive  |
| <i>DRD2</i>    | 126450 | No OMIM phenotype   |
| <i>DRD3</i>    | 126451 | {Essential tremor, hereditary, 1}, 190300 (3), Autosomal dominant; {Schizophrenia, susceptibility to}, 181500 (3), Autosomal dominant   |
| <i>DRD4</i>    | 126452 | {Attention deficit-hyperactivity disorder}, 143465 (3), Autosomal dominant; Autonomic nervous system dysfunction (3); [Novelty seeking personality], 601696 (1), ?Autosomal dominant  |
| <i>DRD5</i>    | 126453 | {Attention deficit-hyperactivity disorder, susceptibility to}, 143465 (3), Autosomal dominant; {Blepharospasm, primary benign}, 606798 (3), Isolated cases  |
| <i>DSC2</i>    | 125645 | Arrhythmogenic right ventricular dysplasia 11, 610476 (3), Autosomal recessive, Autosomal dominant; Arrhythmogenic right ventricular dysplasia 11 with mild palmoplantar keratoderma and woolly hair, 610476 (3), Autosomal recessive, Autosomal dominant |
| <i>DSG1</i>    | 125670 | Erythroderma, congenital, with palmoplantar keratoderma, hypotrichosis, and hyper IgE, 615508 (3), Autosomal recessive; Keratosis palmoplantaris striata I, AD, 148700 (3), Autosomal dominant  |
| <i>DSG2</i>    | 125671 | Arrhythmogenic right ventricular dysplasia 10, 610193 (3), Autosomal dominant; Cardiomyopathy, dilated, 1BB, 612877 (3)   |
| <i>DSG4</i>    | 607892 | Hypotrichosis 6, 607903 (3), Autosomal recessive  |

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| <i>DSP</i>      | 125647 | Arrhythmogenic right ventricular dysplasia 8, 607450 (3), Autosomal dominant; Cardiomyopathy, dilated, with woolly hair and keratoderma, 605676 (3), Autosomal recessive; Dilated cardiomyopathy with woolly hair, keratoderma, and tooth agenesis, 615821 (3), Autosomal dominant; Epidermolysis bullosa, lethal acantholytic, 609638 (3), Autosomal recessive; Keratosis palmoplantaris striata II, 612908 (3), Autosomal dominant; Skin fragility-woolly hair syndrome, 607655 (3), Autosomal recessive |
| <i>DSPP</i>     | 125485 | Deafness, autosomal dominant 39, with dentinogenesis, 605594 (3), Autosomal dominant; Dentin dysplasia, type II, 125420 (3), Autosomal dominant; Dentinogenesis imperfecta, Shields type II, 125490 (3), Autosomal dominant; Dentinogenesis imperfecta, Shields type III, 125500 (3), Autosomal dominant   |
| <i>DST</i>      | 113810 | Epidermolysis bullosa simplex, autosomal recessive 2, 615425 (3), Autosomal recessive; ?Neuropathy, hereditary sensory and autonomic, type VI, 614653 (3), Autosomal recessive   |
| <i>DSTYK</i>    | 612666 | Congenital anomalies of kidney and urinary tract 1, 610805 (3), Autosomal dominant; Spastic paraparesis 23, 270750 (3), Autosomal recessive  |
| <i>DTNA</i>     | 601239 | Left ventricular noncompaction 1, with or without congenital heart defects, 604169 (3), Autosomal dominant   |
| <i>DTNBP1</i>   | 607145 | Hermansky-Pudlak syndrome 7, 614076 (3), Autosomal recessive   |
| <i>DUOX2</i>    | 606759 | Thyroid dyshormonogenesis 6, 607200 (3), Autosomal recessive   |
| <i>DUOXA2</i>   | 612772 | Thyroid dyshormonogenesis 5, 274900 (3), Autosomal recessive   |
| <i>DUSP6</i>    | 602748 | Hypogonadotropic hypogonadism 19 with or without anosmia, 615269 (3), Autosomal dominant   |
| <i>DVL1</i>     | 601365 | Robinow syndrome, autosomal dominant 2, 616331 (3), Autosomal dominant   |
| <i>DVL3</i>     | 601368 | Robinow syndrome, autosomal dominant 3, 616894 (3), Autosomal dominant   |
| <i>DYM</i>      | 607461 | Dyggve-Melchior-Clausen disease, 223800 (3), Autosomal recessive; Smith-McCort dysplasia, 607326 (3), Autosomal recessive  |
| <i>DYNC1H1</i>  | 600112 | Charcot-Marie-Tooth disease, axonal, type 20, 614228 (3), Autosomal dominant; Mental retardation, autosomal dominant 13, 614563 (3), Autosomal dominant; Spinal muscular atrophy, lower extremity-predominant 1, AD, 158600 (3), Autosomal dominant  |
| <i>DYNC2LI1</i> | 617083 | Short-rib thoracic dysplasia 15 with polydactyly, 617088 (3), Autosomal recessive  |
| <i>DYRK1A</i>   | 600855 | Mental retardation, autosomal dominant 7, 614104 (3), Autosomal dominant   |
| <i>DYRK1B</i>   | 604556 | Abdominal obesity-metabolic syndrome 3, 615812 (3), Autosomal dominant   |
| <i>DYSF</i>     | 603009 | Miyoshi muscular dystrophy 1, 254130 (3), Autosomal recessive; Muscular dystrophy, limb-girdle, type 2B, 253601 (3), Autosomal recessive; Myopathy, distal, with anterior tibial onset, 606768 (3), Autosomal recessive  |

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| <i>EBP</i>     | 300205 | Chondrodysplasia punctata, X-linked dominant, 302960 (3), X-linked dominant; MEND syndrome, 300960 (3), X-linked recessive   |
| <i>ECE1</i>    | 600423 | ?Hirschsprung disease, cardiac defects, and autonomic dysfunction, 613870 (3), Autosomal dominant; {Hypertension, essential, susceptibility to}, 145500 (3), Multifactorial  |
| <i>ECEL1</i>   | 605896 | Arthrogryposis, distal, type 5D, 615065 (3), Autosomal recessive   |
| <i>ECHS1</i>   | 602292 | Mitochondrial short-chain enoyl-CoA hydratase 1 deficiency, 616277 (3), Autosomal recessive  |
| <i>ECM1</i>    | 602201 | Urbach-Wiethe disease, 247100 (3), Autosomal recessive   |
| <i>EDA</i>     | 300451 | Ectodermal dysplasia 1, hypohidrotic, X-linked, 305100 (3), X-linked recessive; Tooth agenesis, selective, X-linked 1, 313500 (3), X-linked dominant   |
| <i>EDAR</i>    | 604095 | Ectodermal dysplasia 10A, hypohidrotic/hair/nail type, autosomal dominant, 129490 (3), Autosomal dominant; Ectodermal dysplasia 10B, hypohidrotic/hair/tooth type, autosomal recessive, 224900 (3), Autosomal recessive; [Hair morphology 1, hair thickness], 612630 (3) |
| <i>EDARADD</i> | 606603 | Ectodermal dysplasia 11A, hypohidrotic/hair/tooth type, autosomal dominant, 614940 (3), Autosomal dominant; Ectodermal dysplasia 11B, hypohidrotic/hair/tooth type, autosomal recessive, 614941 (3), Autosomal recessive   |
| <i>EDC3</i>    | 609842 | ?Mental retardation, autosomal recessive 50, 616460 (3), Autosomal recessive   |
| <i>EDN1</i>    | 131240 | Auriculocondylar syndrome 3, 615706 (3), Autosomal recessive; {High density lipoprotein cholesterol level QTL 7} (3); Question mark ears, isolated, 612798 (3), Autosomal dominant   |
| <i>EDN3</i>    | 131242 | Central hypoventilation syndrome, congenital, 209880 (3), Autosomal dominant; {Hirschsprung disease, susceptibility to, 4}, 613712 (3), Autosomal dominant; Waardenburg syndrome, type 4B, 613265 (3), Autosomal recessive, Autosomal dominant                           |
| <i>EDNRA</i>   | 131243 | Mandibulofacial dysostosis with alopecia, 616367 (3), Autosomal dominant; {Migraine, resistance to}, 157300 (3), Autosomal dominant  |
| <i>EDNRB</i>   | 131244 | ABCD syndrome, 600501 (3), Autosomal recessive; {Hirschsprung disease, susceptibility to, 2}, 600155 (3), Autosomal dominant; Waardenburg syndrome, type 4A, 277580 (3), Autosomal recessive, Autosomal dominant   |
| <i>EEF1A2</i>  | 602959 | Epileptic encephalopathy, early infantile, 33, 616409 (3), Autosomal dominant; Mental retardation, autosomal dominant 38, 616393 (3), Autosomal dominant   |
| <i>EEF2</i>    | 130610 | ?Spinocerebellar ataxia 26, 609306 (3), Autosomal dominant   |
| <i>EFEMP1</i>  | 601548 | Doyne honeycomb degeneration of retina, 126600 (3), Autosomal dominant   |
| <i>EFEMP2</i>  | 604633 | Cutis laxa, autosomal recessive, type IB, 614437 (3), Autosomal recessive  |

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| <i>EFHC1</i>   | 608815 | {Epilepsy, juvenile absence, susceptibility to, 1}, 607631 (3), Autosomal dominant; {Myoclonic epilepsy, juvenile, susceptibility to, 1}, 254770 (3), Autosomal dominant   |
| <i>EFNB1</i>   | 300035 | Craniofrontonasal dysplasia, 304110 (3), X-linked dominant   |
| <i>EGF</i>     | 131530 | Hypomagnesemia 4, renal, 611718 (3)  |
| <i>EGFR</i>    | 131550 | Adenocarcinoma of lung, response to tyrosine kinase inhibitor in, 211980 (3), Autosomal recessive; ?Inflammatory skin and bowel disease, neonatal, 2, 616069 (3), Autosomal recessive; Nonsmall cell lung cancer, response to tyrosine kinase inhibitor in, 211980 (3), Autosomal recessive; {Nonsmall cell lung cancer, susceptibility to}, 211980 (3), Autosomal recessive |
| <i>EGLN1</i>   | 606425 | Erythrocytosis, familial, 3, 609820 (3), Autosomal dominant; [Hemoglobin, high altitude adaptation], 609070 (3), Autosomal dominant  |
| <i>EHBP1</i>   | 609922 | {Prostate cancer, hereditary, 12}, 611868 (3)  |
| <i>EHHADH</i>  | 607037 | ?Fanconi renotubular syndrome 3, 615605 (3), Autosomal dominant  |
| <i>EHMT1</i>   | 607001 | Kleefstra syndrome 1, 610253 (3), Autosomal dominant   |
| <i>EIF2AK4</i> | 609280 | Pulmonary venoocclusive disease 2, 234810 (3), Autosomal recessive   |
| <i>EIF2B1</i>  | 606686 | Leukoencephalopathy with vanishing white matter, 603896 (3), Autosomal recessive   |
| <i>EIF2B2</i>  | 606454 | Leukoencephalopathy with vanishing white matter, 603896 (3), Autosomal recessive; Ovariolekodystrophy, 603896 (3), Autosomal recessive   |
| <i>EIF2B3</i>  | 606273 | Leukoencephalopathy with vanishing white matter, 603896 (3), Autosomal recessive   |
| <i>EIF2B5</i>  | 603945 | Leukoencephalopathy with vanishing white matter, 603896 (3), Autosomal recessive; Ovariolekodystrophy, 603896 (3), Autosomal recessive   |
| <i>EIF2S3</i>  | 300161 | MEHMO syndrome, 300148 (3), X-linked recessive   |
| <i>EIF4A3</i>  | 608546 | Robin sequence with cleft mandible and limb anomalies, 268305 (3), Autosomal recessive   |
| <i>EIF4E</i>   | 133440 | {Autism, susceptibility to, 19}, 615091 (3)  |
| <i>EIF4G1</i>  | 600495 | {Parkinson disease 18}, 614251 (3), Autosomal dominant   |
| <i>ELAC2</i>   | 605367 | Combined oxidative phosphorylation deficiency 17, 615440 (3), Autosomal recessive; {Prostate cancer, hereditary, 2, susceptibility to}, 614731 (3)   |
| <i>ELANE</i>   | 130130 | Neutropenia, cyclic, 162800 (3), Autosomal dominant; Neutropenia, severe congenital 1, autosomal dominant, 202700 (3), Autosomal dominant  |
| <i>ELMO2</i>   | 606421 | Vascular malformation, primary intraosseous, 606893 (3), Autosomal recessive   |
| <i>ELN</i>     | 130160 | Cutis laxa, autosomal dominant, 123700 (3), Autosomal dominant; Supravalvar aortic stenosis, 185500 (3), Autosomal dominant  |
| <i>ELOVL5</i>  | 611805 | Spinocerebellar ataxia 38, 615957 (3), Autosomal dominant  |
| <i>ELP1</i>    | 603722 | Dysautonomia, familial, 223900 (3), Autosomal recessive  |

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| <i>ELP2</i>   | 616054       | Mental retardation, autosomal recessive 58, 617270 (3), Autosomal recessive   |
| <i>ELP4</i>   | 606985       | ?Aniridia 2, 617141 (3), Autosomal dominant   |
| <i>EMC1</i>   | 616846       | Cerebellar atrophy, visual impairment, and psychomotor retardation, 616875 (3), Autosomal recessive   |
| <i>EMD</i>    | 300384       | Emery-Dreifuss muscular dystrophy 1, X-linked, 310300 (3), X-linked recessive   |
| <i>EMG1</i>   | 611531       | Bowen-Conradi syndrome, 211180 (3), Autosomal recessive   |
| <i>EML1</i>   | 602033       | Band heterotopia, 600348 (3), Autosomal recessive   |
| <i>EMP2</i>   | 602334       | Nephrotic syndrome, type 10, 615861 (3), Autosomal recessive  |
| <i>EMX2</i>   | 600035       | Schizencephaly, 269160 (3)  |
| <i>ENAM</i>   | 606585       | Amelogenesis imperfecta, type IB, 104500 (3), Autosomal dominant; Amelogenesis imperfecta, type IC, 204650 (3), Autosomal recessive   |
| <i>ENG</i>    | 131195       | Telangiectasia, hereditary hemorrhagic, type 1, 187300 (3), Autosomal dominant  |
| <i>ENO3</i>   | 131370       | ?Glycogen storage disease XIII, 612932 (3), Autosomal recessive   |
| <i>ENO4</i>   | No OMIM gene | No OMIM phenotype   |
| <i>ENPP1</i>  | 173335       | Arterial calcification, generalized, of infancy, 1, 208000 (3), Autosomal recessive; Cole disease, 615522 (3), Autosomal dominant; {Diabetes mellitus, non-insulin-dependent, susceptibility to}, 125853 (3), Autosomal dominant; Hypophosphatemic rickets, autosomal recessive, 2, 613312 (3), Autosomal dominant; {Obesity, susceptibility to}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial |
| <i>ENTPD1</i> | 601752       | Spastic paraparesis 64, autosomal recessive, 615683 (3), Autosomal recessive  |
| <i>EOGT</i>   | 614789       | Adams-Oliver syndrome 4, 615297 (3), Autosomal recessive  |
| <i>EP300</i>  | 602700       | Colorectal cancer, somatic, 114500 (3); Rubinstein-Taybi syndrome 2, 613684 (3), Autosomal dominant   |
| <i>EPAS1</i>  | 603349       | Erythrocytosis, familial, 4, 611783 (3)   |
| <i>EPB41</i>  | 130500       | Elliptocytosis-1, 611804 (3), Autosomal recessive, Autosomal dominant   |
| <i>EPCAM</i>  | 185535       | Colorectal cancer, hereditary nonpolyposis, type 8, 613244 (3); Diarrhea 5, with tufting enteropathy, congenital, 613217 (3), Autosomal recessive   |
| <i>EPG5</i>   | 615068       | Vici syndrome, 242840 (3), Autosomal recessive  |
| <i>EPHA2</i>  | 176946       | Cataract 6, multiple types, 116600 (3), Autosomal dominant  |
| <i>EPHB2</i>  | 600997       | {Prostate cancer/brain cancer susceptibility, somatic}, 603688 (3)  |
| <i>EPHB4</i>  | 600011       | {Hydrops fetalis, nonimmune, and/or atrial septal defect}, 617300 (3), Autosomal dominant   |
| <i>EPHX1</i>  | 132810       | ?Hypercholanemia, familial, 607748 (3)  |
| <i>EPHX2</i>  | 132811       | {Hypercholesterolemia, familial, due to LDLR defect, modifier of}, 143890 (3), Autosomal dominant   |
| <i>EPM2A</i>  | 607566       | Epilepsy, progressive myoclonic 2A (Lafora), 254780 (3), Autosomal recessive  |

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| <i>EPO</i>     | 133170 | ?Diamond-Blackfan anemia-like, 617911 (3), Autosomal recessive; Erythrocytosis, familial, 5, 617907 (3), Autosomal dominant; {Microvascular complications of diabetes 2}, 612623 (3)  |
| <i>EPOR</i>    | 133171 | [Erythrocytosis, familial, 1], 133100 (3), Autosomal dominant   |
| <i>EPS8</i>    | 600206 | ?Deafness, autosomal recessive 102, 615974 (3), Autosomal recessive   |
| <i>EPX</i>     | 131399 | [Eosinophil peroxidase deficiency], 261500 (3), Autosomal recessive   |
| <i>ERBB2</i>   | 164870 | Adenocarcinoma of lung, somatic, 211980 (3); Gastric cancer, somatic, 613659 (3); Glioblastoma, somatic, 137800 (3); Ovarian cancer, somatic (3)  |
| <i>ERBB3</i>   | 190151 | Lethal congenital contractual syndrome 2, 607598 (3), Autosomal recessive   |
| <i>ERBB4</i>   | 600543 | Amyotrophic lateral sclerosis 19, 615515 (3), Autosomal dominant  |
| <i>ERCC1</i>   | 126380 | Cerebrooculofacioskeletal syndrome 4, 610758 (3), Autosomal recessive   |
| <i>ERCC2</i>   | 126340 | ?Cerebrooculofacioskeletal syndrome 2, 610756 (3), Autosomal recessive; Trichothiodystrophy 1, photosensitive, 601675 (3), Autosomal recessive; Xeroderma pigmentosum, group D, 278730 (3), Autosomal recessive   |
| <i>ERCC3</i>   | 133510 | Trichothiodystrophy 2, photosensitive, 616390 (3), Autosomal recessive; Xeroderma pigmentosum, group B, 610651 (3), Autosomal recessive   |
| <i>ERCC4</i>   | 133520 | Fanconi anemia, complementation group Q, 615272 (3), Autosomal recessive; ?XFE progeroid syndrome, 610965 (3); Xeroderma pigmentosum, group F, 278760 (3), Autosomal recessive; Xeroderma pigmentosum, type F/Cockayne syndrome, 278760 (3), Autosomal recessive  |
| <i>ERCC5</i>   | 133530 | Cerebrooculofacioskeletal syndrome 3, 616570 (3), Autosomal recessive; Xeroderma pigmentosum, group G, 278780 (3), Autosomal recessive; Xeroderma pigmentosum, group G/Cockayne syndrome, 278780 (3), Autosomal recessive   |
| <i>ERCC6</i>   | 609413 | Cerebrooculofacioskeletal syndrome 1, 214150 (3), Autosomal recessive; Cockayne syndrome, type B, 133540 (3), Autosomal recessive; De Sanctis-Cacchione syndrome, 278800 (3), Autosomal recessive; {Lung cancer, susceptibility to}, 211980 (3), Autosomal recessive; {Macular degeneration, age-related, susceptibility to, 5}, 613761 (3); Premature ovarian failure 11, 616946 (3), Autosomal dominant; UV-sensitive syndrome 1, 600630 (3), Autosomal recessive |
| <i>ERCC6L2</i> | 615667 | Bone marrow failure syndrome 2, 615715 (3), Autosomal recessive   |
| <i>ERCC8</i>   | 609412 | Cockayne syndrome, type A, 216400 (3), Autosomal recessive; UV-sensitive syndrome 2, 614621 (3), Autosomal recessive  |
| <i>ERLIN1</i>  | 611604 | Spastic paraplegia 62, 615681 (3), Autosomal recessive  |
| <i>ERLIN2</i>  | 611605 | Spastic paraplegia 18, autosomal recessive, 611225 (3), Autosomal recessive   |
| <i>ERMAP</i>   | 609017 | [Blood group, Radin], 111620 (3); [Blood group, Scianna system], 111750 (3)   |

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| <i>ERMARD</i> | 615532 | ?Periventricular nodular heterotopia 6, 615544 (3), Autosomal dominant   |
| <i>ESCO2</i>  | 609353 | Roberts syndrome, 268300 (3), Autosomal recessive; SC phocomelia syndrome, 269000 (3), Autosomal recessive   |
| <i>ESPN</i>   | 606351 | Deafness, autosomal recessive 36, 609006 (3), Autosomal recessive; Deafness, neurosensory, without vestibular involvement, autosomal dominant (3)  |
| <i>ESS2</i>   | 601755 | No OMIM phenotype  |
| <i>ETFA</i>   | 608053 | Glutaric acidemia IIA, 231680 (3), Autosomal recessive   |
| <i>ETFB</i>   | 130410 | Glutaric acidemia IIB, 231680 (3), Autosomal recessive   |
| <i>ETFDH</i>  | 231675 | Glutaric acidemia IIC, 231680 (3), Autosomal recessive   |
| <i>ETHE1</i>  | 608451 | Ethylmalonic encephalopathy, 602473 (3), Autosomal recessive   |
| <i>ETV6</i>   | 600618 | Leukemia, acute myeloid, somatic, 601626 (3); Thrombocytopenia 5, 616216 (3), Autosomal dominant   |
| <i>EVC</i>    | 604831 | Ellis-van Creveld syndrome, 225500 (3), Autosomal recessive; ?Weyers acrofacial dysostosis, 193530 (3), Autosomal dominant   |
| <i>EVC2</i>   | 607261 | Ellis-van Creveld syndrome, 225500 (3), Autosomal recessive; Weyers acrofacial dysostosis, 193530 (3), Autosomal dominant  |
| <i>EWSR1</i>  | 133450 | Ewing sarcoma, 612219 (3); Neuroepithelioma, 612219 (3)  |
| <i>EXOSC3</i> | 606489 | Pontocerebellar hypoplasia, type 1B, 614678 (3), Autosomal recessive   |
| <i>EXOSC8</i> | 606019 | Pontocerebellar hypoplasia, type 1C, 616081 (3), Autosomal recessive   |
| <i>EXT1</i>   | 608177 | Chondrosarcoma, 215300 (3), Autosomal recessive; Exostoses, multiple, type 1, 133700 (3), Autosomal dominant   |
| <i>EYA1</i>   | 601653 | Anterior segment anomalies with or without cataract, 602588 (3), Autosomal dominant; Branchiootic syndrome 1, 602588 (3), Autosomal dominant; Branchiootorenal syndrome 1, with or without cataracts, 113650 (3), Autosomal dominant; ?Otofaciocervical syndrome, 166780 (3), Autosomal dominant |
| <i>EYA4</i>   | 603550 | ?Cardiomyopathy, dilated, 1J, 605362 (3), Autosomal dominant; Deafness, autosomal dominant 10, 601316 (3), Autosomal dominant  |
| <i>EYS</i>    | 612424 | Retinitis pigmentosa 25, 602772 (3), Autosomal recessive   |
| <i>F10</i>    | 613872 | Factor X deficiency, 227600 (3), Autosomal recessive   |
| <i>F11</i>    | 264900 | Factor XI deficiency, autosomal dominant, 612416 (3); Factor XI deficiency, autosomal recessive, 612416 (3)  |
| <i>F12</i>    | 610619 | Angioedema, hereditary, type III, 610618 (3), Autosomal dominant; Factor XII deficiency, 234000 (3), Autosomal recessive   |
| <i>F13A1</i>  | 134570 | Factor XIII A deficiency, 613225 (3), Autosomal recessive; {Myocardial infarction, protection against}, 608446 (3); {Venous thrombosis, protection against}, 188050 (3), Autosomal dominant  |
| <i>F13B</i>   | 134580 | Factor XIII B deficiency, 613235 (3), Autosomal recessive  |

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| <i>F2</i>      | 176930       | Dysprothrombinemia, 613679 (3), Autosomal recessive;<br>Hypoprothrombinemia, 613679 (3), Autosomal recessive; {Pregnancy loss, recurrent, susceptibility to, 2}, 614390 (3), Autosomal dominant; {Stroke, ischemic, susceptibility to}, 601367 (3), Multifactorial; Thrombophilia due to thrombin defect, 188050 (3), Autosomal dominant   |
| <i>F5</i>      | 612309       | {Budd-Chiari syndrome}, 600880 (3), Autosomal recessive; Factor V deficiency, 227400 (3), Autosomal recessive; {Pregnancy loss, recurrent, susceptibility to, 1}, 614389 (3), Autosomal dominant; {Stroke, ischemic, susceptibility to}, 601367 (3), Multifactorial; Thrombophilia due to activated protein C resistance, 188055 (3), Autosomal dominant; {Thrombophilia, susceptibility to, due to factor V Leiden}, 188055 (3), Autosomal dominant |
| <i>F7</i>      | 613878       | Factor VII deficiency, 227500 (3), Autosomal recessive; {Myocardial infarction, decreased susceptibility to}, 608446 (3)   |
| <i>F8</i>      | 300841       | Hemophilia A, 306700 (3), X-linked recessive   |
| <i>F9</i>      | 300746       | {Deep venous thrombosis, protection against}, 300807 (3); Hemophilia B, 306900 (3), X-linked recessive; Thrombophilia, X-linked, due to factor IX defect, 300807 (3); {Warfarin sensitivity}, 122700 (3), Autosomal dominant   |
| <i>FA2H</i>    | 611026       | Spastic paraparesis 35, autosomal recessive, 612319 (3), Autosomal recessive   |
| <i>FAAH</i>    | 602935       | {Drug addiction, susceptibility to}, 606581 (3)  |
| <i>FADD</i>    | 602457       | Infections, recurrent, with encephalopathy, hepatic dysfunction, and cardiovascular malformations, 613759 (3), Autosomal recessive   |
| <i>FAH</i>     | 613871       | Tyrosinemia, type I, 276700 (3), Autosomal recessive   |
| <i>FAM111A</i> | 615292       | Gracile bone dysplasia, 602361 (3), Autosomal dominant; Kenny-Caffey syndrome, type 2, 127000 (3), Autosomal dominant  |
| <i>FAM111B</i> | 615584       | Poikiloderma, hereditary fibrosis, with tendon contractures, myopathy, and pulmonary fibrosis, 615704 (3), Autosomal dominant  |
| <i>FAM126A</i> | 610531       | Leukodystrophy, hypomyelinating, 5, 610532 (3), Autosomal recessive  |
| <i>FAM161A</i> | 613596       | Retinitis pigmentosa 28, 606068 (3)  |
| <i>FAM187A</i> | No OMIM gene | No OMIM phenotype  |
| <i>FAM20A</i>  | 611062       | Amelogenesis imperfecta, type IG (enamel-renal syndrome), 204690 (3), Autosomal recessive  |
| <i>FAM20C</i>  | 611061       | Raine syndrome, 259775 (3), Autosomal recessive  |
| <i>FAM83H</i>  | 611927       | Amelogenesis imperfecta, type IIIA, 130900 (3), Autosomal dominant   |
| <i>FAN1</i>    | 613534       | Interstitial nephritis, karyomegalic, 614817 (3), Autosomal recessive  |
| <i>FANCA</i>   | 607139       | Fanconi anemia, complementation group A, 227650 (3), Autosomal recessive   |
| <i>FANCC</i>   | 613899       | Fanconi anemia, complementation group C, 227645 (3), Autosomal recessive   |
| <i>FANCD2</i>  | 613984       | Fanconi anemia, complementation group D2, 227646 (3), Autosomal recessive  |
| <i>FANCE</i>   | 613976       | Fanconi anemia, complementation group E, 600901 (3), Autosomal recessive   |

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| <i>FANCF</i>   | 613897 | Fanconi anemia, complementation group F, 603467 (3)  |
| <i>FANCG</i>   | 602956 | Fanconi anemia, complementation group G, 614082 (3)  |
| <i>FANCI</i>   | 611360 | Fanconi anemia, complementation group I, 609053 (3), Autosomal recessive   |
| <i>FANCL</i>   | 608111 | Fanconi anemia, complementation group L, 614083 (3), Autosomal recessive   |
| <i>FANCM</i>   | 609644 | No OMIM phenotype  |
| <i>FAR1</i>    | 616107 | Peroxisomal fatty acyl-CoA reductase 1 disorder, 616154 (3), Autosomal recessive   |
| <i>FARS2</i>   | 611592 | Combined oxidative phosphorylation deficiency 14, 614946 (3), Autosomal recessive; Spastic paraplegia 77, autosomal recessive, 617046 (3), Autosomal recessive   |
| <i>FAS</i>     | 134637 | Autoimmune lymphoproliferative syndrome, type IA, 601859 (3), Autosomal dominant; {Autoimmune lymphoproliferative syndrome}, 601859 (3), Autosomal dominant; Squamous cell carcinoma, burn scar-related, somatic (3)   |
| <i>FASLG</i>   | 134638 | Autoimmune lymphoproliferative syndrome, type IB, 601859 (3), Autosomal dominant; {Lung cancer, susceptibility to}, 211980 (3), Autosomal recessive  |
| <i>FASTKD2</i> | 612322 | ?Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial   |
| <i>FAT4</i>    | 612411 | Hennekam lymphangiectasia-lymphedema syndrome 2, 616006 (3), Autosomal recessive; Van Maldergem syndrome 2, 615546 (3), Autosomal recessive  |
| <i>FBLN1</i>   | 135820 | Synpolydactyly, 3/3'4, associated with metacarpal and metatarsal synostoses, 608180 (4), Autosomal dominant  |
| <i>FBLN5</i>   | 604580 | Cutis laxa, autosomal dominant 2, 614434 (3); Cutis laxa, autosomal recessive, type IA, 219100 (3), Autosomal recessive; Macular degeneration, age-related, 3, 608895 (3), Autosomal dominant; Neuropathy, hereditary, with or without age-related macular degeneration, 608895 (3), Autosomal dominant  |
| <i>FBN1</i>    | 134797 | Acromicric dysplasia, 102370 (3), Autosomal dominant; Ectopia lentis, familial, 129600 (3), Autosomal dominant; Geleophysic dysplasia 2, 614185 (3), Autosomal dominant; MASS syndrome, 604308 (3); Marfan lipodystrophy syndrome, 616914 (3), Autosomal dominant; Marfan syndrome, 154700 (3), Autosomal dominant; Stiff skin syndrome, 184900 (3), Autosomal dominant; Weill-Marchesani syndrome 2, dominant, 608328 (3), Autosomal dominant |
| <i>FBN2</i>    | 612570 | Contractural arachnodactyly, congenital, 121050 (3), Autosomal dominant; Macular degeneration, early-onset, 616118 (3), Autosomal dominant   |
| <i>FBP1</i>    | 611570 | Fructose-1,6-bisphosphatase deficiency, 229700 (3), Autosomal recessive  |
| <i>FBXL4</i>   | 605654 | Mitochondrial DNA depletion syndrome 13 (encephalomyopathic type), 615471 (3), Autosomal recessive   |

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| <i>FBXO31</i> | 609102 | ?Mental retardation, autosomal recessive 45, 615979 (3), Autosomal recessive  |
| <i>FBXO38</i> | 608533 | Neuronopathy, distal hereditary motor, type IID, 615575 (3), Autosomal dominant   |
| <i>FBXO7</i>  | 605648 | Parkinson disease 15, autosomal recessive, 260300 (3), Autosomal recessive  |
| <i>FCGR2A</i> | 146790 | {Lupus nephritis, susceptibility to}, 152700 (3), Autosomal dominant; {Malaria, severe, susceptibility to}, 611162 (3); {Pseudomonas aeruginosa, susceptibility to chronic infection by, in cystic fibrosis}, 219700 (3), Autosomal recessive |
| <i>FCGR2B</i> | 604590 | {Malaria, resistance to}, 611162 (3); {Systemic lupus erythematosus, susceptibility to}, 152700 (3), Autosomal dominant   |
| <i>FCGR3A</i> | 146740 | Immunodeficiency 20, 615707 (3), Autosomal recessive  |
| <i>FCN3</i>   | 604973 | Immunodeficiency due to ficolin 3 deficiency, 613860 (3), Autosomal recessive   |
| <i>FDPS</i>   | 134629 | Porokeratosis 9, multiple types, 616631 (3), Autosomal dominant   |
| <i>FECH</i>   | 612386 | Protoporphyrina, erythropoietic, 1, 177000 (3), Autosomal recessive   |
| <i>FERMT1</i> | 607900 | Kindler syndrome, 173650 (3), Autosomal recessive   |
| <i>FERMT3</i> | 607901 | Leukocyte adhesion deficiency, type III, 612840 (3), Autosomal recessive  |
| <i>FEZF1</i>  | 613301 | Hypogonadotropic hypogonadism 22, with or without anosmia, 616030 (3), Autosomal recessive  |
| <i>FFAR4</i>  | 609044 | {Obesity, susceptibility to}, 607514 (3)<br>Afibrinogenemia, congenital, 202400 (3), Autosomal recessive;   |
| <i>FGA</i>    | 134820 | Amyloidosis, familial visceral, 105200 (3), Autosomal dominant;<br>Dysfibrinogenemia, congenital, 616004 (3); Hypodysfibrinogenemia, congenital, 616004 (3)   |
| <i>FGB</i>    | 134830 | Afibrinogenemia, congenital, 202400 (3), Autosomal recessive;<br>Dysfibrinogenemia, congenital, 616004 (3); Hypofibrinogenemia, congenital, 202400 (3), Autosomal recessive   |
| <i>FGD1</i>   | 300546 | Aarskog-Scott syndrome, 305400 (3), X-linked recessive; Mental retardation, X-linked syndromic 16, 305400 (3), X-linked recessive   |
| <i>FGD4</i>   | 611104 | Charcot-Marie-Tooth disease, type 4H, 609311 (3), Autosomal recessive   |
| <i>FGF10</i>  | 602115 | Aplasia of lacrimal and salivary glands, 180920 (3), Autosomal dominant; LADD syndrome, 149730 (3), Autosomal dominant  |
| <i>FGF14</i>  | 601515 | Spinocerebellar ataxia 27, 609307 (3), Autosomal dominant   |
| <i>FGF16</i>  | 300827 | Metacarpal 4-5 fusion, 309630 (3), X-linked recessive   |
| <i>FGF17</i>  | 603725 | Hypogonadotropic hypogonadism 20 with or without anosmia, 615270 (3), Autosomal dominant  |
| <i>FGF20</i>  | 605558 | ?Renal hypodysplasia/aplasia 2, 615721 (3), Autosomal recessive<br>Hypophosphatemic rickets, autosomal dominant, 193100 (3),  |
| <i>FGF23</i>  | 605380 | Autosomal dominant; Osteomalacia, tumor-induced (1); Tumoral calcinosis, hyperphosphatemic, familial, 2, 617993 (3)   |

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| <i>FGF3</i>   | 164950 | Deafness, congenital with inner ear agenesis, microtia, and microdontia, 610706 (3), Autosomal recessive  |
| <i>FGF5</i>   | 165190 | Trichomegaly, 190330 (3), Autosomal recessive   |
| <i>FGF8</i>   | 600483 | Hypogonadotropic hypogonadism 6 with or without anosmia, 612702 (3), Autosomal dominant   |
| <i>FGF9</i>   | 600921 | Multiple synostoses syndrome 3, 612961 (3), Autosomal dominant<br>Antley-Bixler syndrome without genital anomalies or disordered steroidogenesis, 207410 (3), Autosomal dominant; Apert syndrome, 101200 (3), Autosomal dominant; Beare-Stevenson cutis gyrata syndrome, 123790 (3), Autosomal dominant; Bent bone dysplasia syndrome, 614592 (3), Autosomal dominant; Craniofacial-skeletal-dermatologic dysplasia, 101600 (3), Autosomal dominant;<br>Craniosynostosis, nonspecific (3); Crouzon syndrome, 123500 (3), Autosomal dominant; Gastric cancer, somatic, 613659 (3); Jackson-Weiss syndrome, 123150 (3), Autosomal dominant; LADD syndrome, 149730 (3), Autosomal dominant; Pfeiffer syndrome, 101600 (3), Autosomal dominant; Saethre-Chotzen syndrome, 101400 (3), Autosomal dominant; Scaphocephaly and Axenfeld-Rieger anomaly (3); Scaphocephaly, maxillary retrusion, and mental retardation, 609579 (3) |
| <i>FGFR2</i>  | 176943 | Achondroplasia, 100800 (3), Autosomal dominant; Bladder cancer, somatic, 109800 (3); CATSHL syndrome, 610474 (3), Autosomal recessive, Autosomal dominant; Cervical cancer, somatic, 603956 (3); Colorectal cancer, somatic, 114500 (3); Crouzon syndrome with acanthosis nigricans, 612247 (3), Autosomal dominant;  |
| <i>FGFR3</i>  | 134934 | Hypochondroplasia, 146000 (3), Autosomal dominant; LADD syndrome, 149730 (3), Autosomal dominant; Muenke syndrome, 602849 (3), Autosomal dominant; Nevus, epidermal, somatic, 162900 (3); SADDAN, 616482 (3), Autosomal dominant; Spermatocytic seminoma, somatic, 273300 (3); Thanatophoric dysplasia, type I, 187600 (3), Autosomal dominant; Thanatophoric dysplasia, type II, 187601 (3), Autosomal dominant  |
| <i>FGFRL1</i> | 605830 | No OMIM phenotype   |
| <i>FGG</i>    | 134850 | Afibrinogenemia, congenital, 202400 (3), Autosomal recessive; Dysfibrinogenemia, congenital, 616004 (3); Hypodysfibrinogenemia, 616004 (3); Hypofibrinogenemia, congenital, 202400 (3), Autosomal recessive   |
| <i>FH</i>     | 136850 | Fumarase deficiency, 606812 (3), Autosomal recessive; Leiomyomatosis and renal cell cancer, 150800 (3), Autosomal dominant  |

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| <i>FHL1</i>   | 300163 | Emery-Dreifuss muscular dystrophy 6, X-linked, 300696 (3), X-linked recessive; Myopathy, X-linked, with postural muscle atrophy, 300696 (3), X-linked recessive; Reducing body myopathy, X-linked 1a, severe, infantile or early childhood onset, 300717 (3), X-linked dominant; Reducing body myopathy, X-linked 1b, with late childhood or adult onset, 300718 (3), X-linked; Scapuloperoneal myopathy, X-linked dominant, 300695 (3), X-linked dominant; ?Uruguay faciocardiomusculoskeletal syndrome, 300280 (3), X-linked recessive   |
| <i>FIBP</i>   | 608296 | Thauvin-Robinet-Faivre syndrome, 617107 (3), Autosomal recessive   |
| <i>FIG4</i>   | 609390 | Amyotrophic lateral sclerosis 11, 612577 (3), Autosomal dominant; Charcot-Marie-Tooth disease, type 4J, 611228 (3), Autosomal recessive; ?Polymicrogyria, bilateral temporooccipital, 612691 (3), Autosomal recessive; Yunis-Varon syndrome, 216340 (3), Autosomal recessive   |
| <i>FIGLA</i>  | 608697 | Premature ovarian failure 6, 612310 (3), Autosomal dominant  |
| <i>FKBP10</i> | 607063 | Bruck syndrome 1, 259450 (3), Autosomal recessive; Osteogenesis imperfecta, type XI, 610968 (3), Autosomal recessive   |
| <i>FKBP14</i> | 614505 | Ehlers-Danlos syndrome, kyphoscoliotic type, 2, 614557 (3), Autosomal recessive  |
| <i>FKBP5</i>  | 602623 | {Major depressive disorder and accelerated response to antidepressant drug treatment}, 608516 (3)  |
| <i>FLAD1</i>  | 610595 | Lipid storage myopathy due to flavin adenine dinucleotide synthetase deficiency, 255100 (3), Autosomal recessive   |
| <i>FLCN</i>   | 607273 | Birt-Hogg-Dube syndrome, 135150 (3), Autosomal dominant; Colorectal cancer, somatic, 114500 (3); Pneumothorax, primary spontaneous, 173600 (3), Autosomal dominant; Renal carcinoma, chromophobe, somatic, 144700 (3)  |
| <i>FLG</i>    | 135940 | {Dermatitis, atopic, susceptibility to, 2}, 605803 (3); Ichthyosis vulgaris, 146700 (3), Autosomal dominant  |
| <i>FLNA</i>   | 300017 | Cardiac valvular dysplasia, X-linked, 314400 (3), X-linked recessive; Congenital short bowel syndrome, 300048 (3), X-linked recessive; ?FG syndrome 2, 300321 (3), X-linked; Frontometaphyseal dysplasia 1, 305620 (3), X-linked recessive; Heterotopia, periventricular, 300049 (3), X-linked dominant; Intestinal pseudoobstruction, neuronal, 300048 (3), X-linked recessive; Melnick-Needles syndrome, 309350 (3), X-linked dominant; Otopalatodigital syndrome, type I, 311300 (3), X-linked dominant; Otopalatodigital syndrome, type II, 304120 (3), X-linked dominant; Terminal osseous dysplasia, 300244 (3), X-linked dominant |
| <i>FLNB</i>   | 603381 | Atelosteogenesis, type I, 108720 (3), Autosomal dominant; Atelosteogenesis, type III, 108721 (3), Autosomal dominant; Boomerang dysplasia, 112310 (3), Autosomal dominant; Larsen syndrome, 150250 (3), Autosomal dominant; Spondylocarpotarsal synostosis syndrome, 272460 (3), Autosomal recessive   |

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| <i>FLNC</i>   | 102565 | Cardiomyopathy, familial hypertrophic, 26 (3); Cardiomyopathy, familial restrictive 5, 617047 (3), Autosomal dominant; Myopathy, distal, 4, 614065 (3), Autosomal dominant; Myopathy, myofibrillar, 5, 609524 (3), Autosomal dominant |
| <i>FLRT3</i>  | 604808 | Hypogonadotropic hypogonadism 21 with anosmia, 615271 (3), Autosomal dominant   |
| <i>FLT3</i>   | 136351 | Leukemia, acute lymphoblastic, somatic, 613065 (3); Leukemia, acute myeloid, reduced survival in, somatic, 601626 (3); Leukemia, acute myeloid, somatic, 601626 (3)   |
| <i>FLVCR1</i> | 609144 | Ataxia, posterior column, with retinitis pigmentosa, 609033 (3), Autosomal recessive  |
| <i>FLVCR2</i> | 610865 | Proliferative vasculopathy and hydranencephaly-hydrocephaly syndrome, 225790 (3), Autosomal recessive   |
| <i>FMN2</i>   | 606373 | Mental retardation, autosomal recessive 47, 616193 (3), Autosomal recessive   |
| <i>FMO3</i>   | 136132 | Trimethylaminuria, 602079 (3), Autosomal recessive  |
| <i>FMR1</i>   | 309550 | Fragile X syndrome, 300624 (3), X-linked dominant; Fragile X tremor/ataxia syndrome, 300623 (3), X-linked dominant; Premature ovarian failure 1, 311360 (3), X-linked   |
| <i>FN1</i>    | 135600 | Glomerulopathy with fibronectin deposits 2, 601894 (3), Autosomal dominant; Plasma fibronectin deficiency, 614101 (1), Autosomal dominant; Spondylometaphyseal dysplasia, corner fracture type, 184255 (3), Autosomal dominant        |
| <i>FOLR1</i>  | 136430 | Neurodegeneration due to cerebral folate transport deficiency, 613068 (3), Autosomal recessive  |
| <i>FOXC1</i>  | 601090 | Anterior segment dysgenesis 3, multiple subtypes, 601631 (3), Autosomal dominant; Axenfeld-Rieger syndrome, type 3, 602482 (3), Autosomal dominant  |
| <i>FOXC2</i>  | 602402 | Lymphedema-distichiasis syndrome, 153400 (3), Autosomal dominant; Lymphedema-distichiasis syndrome with renal disease and diabetes mellitus, 153400 (3), Autosomal dominant   |
| <i>FOXD3</i>  | 611539 | {Autoimmune disease, susceptibility to, 1}, 607836 (3), Autosomal dominant  |
| <i>FOXE1</i>  | 602617 | Bamforth-Lazarus syndrome, 241850 (3), Autosomal recessive; {Thyroid cancer, nonmedullary, 4}, 616534 (3), Autosomal dominant   |
| <i>FOXE3</i>  | 601094 | Anterior segment dysgenesis 2, multiple subtypes, 610256 (3), Autosomal recessive; {Aortic aneurysm, familial thoracic 11, susceptibility to}, 617349 (3), Autosomal dominant; Cataract 34, multiple types, 612968 (3)                |
| <i>FOXF1</i>  | 601089 | Alveolar capillary dysplasia with misalignment of pulmonary veins, 265380 (3), Autosomal dominant   |
| <i>FOXG1</i>  | 164874 | Rett syndrome, congenital variant, 613454 (3), Autosomal dominant   |
| <i>FOXI1</i>  | 601093 | Enlarged vestibular aqueduct, 600791 (3), Autosomal recessive   |

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| <i>FOXL2</i>   | 605597 | Blepharophimosis, epicanthus inversus, and ptosis, type 1, 110100 (3), Autosomal dominant; Blepharophimosis, epicanthus inversus, and ptosis, type 2, 110100 (3), Autosomal dominant; Premature ovarian failure 3, 608996 (3), Autosomal dominant         |
| <i>FOXO1</i>   | 136533 | Rhabdomyosarcoma, alveolar, 268220 (3), Autosomal recessive   |
| <i>FOXP1</i>   | 605515 | Mental retardation with language impairment and with or without autistic features, 613670 (3), Autosomal dominant   |
| <i>FOXP2</i>   | 605317 | Speech-language disorder-1, 602081 (3), Autosomal dominant  |
| <i>FOXP3</i>   | 300292 | {Diabetes mellitus, type I, susceptibility to}, 222100 (3), Autosomal recessive; Immunodysregulation, polyendocrinopathy, and enteropathy, X-linked, 304790 (3), X-linked recessive   |
| <i>FOXRED1</i> | 613622 | Leigh syndrome due to mitochondrial complex I deficiency, 256000 (3), Autosomal recessive, Mitochondrial; Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>FRAS1</i>   | 607830 | Fraser syndrome 1, 219000 (3), Autosomal recessive  |
| <i>FREM2</i>   | 608945 | Fraser syndrome 2, 617666 (3), Autosomal recessive  |
| <i>FRG1</i>    | 601278 | No OMIM phenotype   |
| <i>FRMD4A</i>  | 616305 | ?Corpus callosum, agenesis of, with facial anomalies and cerebellar ataxia, 616819 (3), Autosomal recessive   |
| <i>FRMD7</i>   | 300628 | Nystagmus 1, congenital, X-linked, 310700 (3), X-linked; Nystagmus, infantile periodic alternating, X-linked, 310700 (3), X-linked  |
| <i>FRMPD4</i>  | 300838 | Mental retardation, X-linked 104, 300983 (3), X-linked recessive  |
| <i>FRRS1L</i>  | 604574 | Epileptic encephalopathy, early infantile, 37, 616981 (3), Autosomal recessive  |
| <i>FRZB</i>    | 605083 | {Osteoarthritis susceptibility 1}, 165720 (3), Multifactorial   |
| <i>FSHB</i>    | 136530 | Hypogonadotropic hypogonadism 24 without anosmia, 229070 (3), Autosomal recessive   |
| <i>FSHR</i>    | 136435 | Ovarian dysgenesis 1, 233300 (3), Autosomal recessive; Ovarian hyperstimulation syndrome, 608115 (3), Autosomal dominant; Ovarian response to FSH stimulation, 276400 (3), Autosomal recessive  |
| <i>FTCD</i>    | 606806 | Glutamate formiminotransferase deficiency, 229100 (3), Autosomal recessive  |
| <i>FTH1</i>    | 134770 | ?Hemochromatosis, type 5, 615517 (3), Autosomal dominant  |
| <i>FTL</i>     | 134790 | Hyperferritinemia-cataract syndrome, 600886 (3), Autosomal dominant; L-ferritin deficiency, dominant and recessive, 615604 (3), Autosomal recessive, Autosomal dominant; Neurodegeneration with brain iron accumulation 3, 606159 (3), Autosomal dominant |
| <i>FTSJ1</i>   | 300499 | Mental retardation, X-linked 9/44, 309549 (3), X-linked recessive   |
| <i>FUCA1</i>   | 612280 | Fucosidosis, 230000 (3), Autosomal recessive  |
| <i>FUS</i>     | 137070 | Amyotrophic lateral sclerosis 6, with or without frontotemporal dementia, 608030 (3); Essential tremor, hereditary, 4, 614782 (3), Autosomal dominant   |
| <i>FUT1</i>    | 211100 | [Bombay phenotype], 616754 (3), Autosomal recessive   |

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| <i>FUT2</i>   | 182100 | [Bombay phenotype] (3); {Norwalk virus infection, resistance to} (3); {Vitamin B12 plasma level QTL1}, 612542 (3)  |
| <i>FUT6</i>   | 136836 | Fucosyltransferase 6 deficiency, 613852 (3)  |
| <i>FUZ</i>    | 610622 | Neural tube defects, 182940 (3), Autosomal dominant  |
| <i>FXN</i>    | 606829 | Friedreich ataxia, 229300 (3), Autosomal recessive; Friedreich ataxia with retained reflexes, 229300 (3), Autosomal recessive  |
| <i>FXYD2</i>  | 601814 | Hypomagnesemia 2, renal, 154020 (3), Autosomal dominant  |
| <i>FYCO1</i>  | 607182 | Cataract 18, autosomal recessive, 610019 (3), Autosomal recessive  |
| <i>FZD4</i>   | 604579 | Exudative vitreoretinopathy 1, 133780 (3), Autosomal dominant; Retinopathy of prematurity, 133780 (3), Autosomal dominant  |
| <i>FZD6</i>   | 603409 | Nail disorder, nonsyndromic congenital, 10, (claw-shaped nails), 614157 (3), Autosomal recessive   |
| <i>G6PC</i>   | 613742 | Glycogen storage disease Ia, 232200 (3), Autosomal recessive   |
| <i>G6PC3</i>  | 611045 | Dursun syndrome, 612541 (3), Autosomal recessive; Neutropenia, severe congenital 4, autosomal recessive, 612541 (3), Autosomal recessive   |
| <i>G6PD</i>   | 305900 | Hemolytic anemia, G6PD deficient (favism), 300908 (3), X-linked dominant; {Resistance to malaria due to G6PD deficiency}, 611162 (3)   |
| <i>GAA</i>    | 606800 | Glycogen storage disease II, 232300 (3), Autosomal recessive   |
| <i>GABBR2</i> | 607340 | Epileptic encephalopathy, early infantile, 59, 617904 (3), Autosomal dominant; Neurodevelopmental disorder with poor language and loss of hand skills, 617903 (3), Autosomal dominant; {Nicotine dependence, protection against}, 188890 (3); {Nicotine dependence, susceptibility to}, 188890 (3) |
| <i>GABRA1</i> | 137160 | {Epilepsy, childhood absence, susceptibility to, 4}, 611136 (3); {Epilepsy, juvenile myoclonic, susceptibility to, 5}, 611136 (3); Epileptic encephalopathy, early infantile, 19, 615744 (3), Autosomal dominant   |
| <i>GABRA2</i> | 137140 | {Alcohol dependence, susceptibility to}, 103780 (3), Multifactorial  |
| <i>GABRB1</i> | 137190 | Epileptic encephalopathy, early infantile, 45, 617153 (3), Autosomal dominant  |
| <i>GABRB3</i> | 137192 | {Epilepsy, childhood absence, susceptibility to, 5}, 612269 (3); Epileptic encephalopathy, early infantile, 43, 617113 (3), Autosomal dominant   |
| <i>GABRD</i>  | 137163 | {Epilepsy, generalized, with febrile seizures plus, type 5, susceptibility to}, 613060 (3), Autosomal dominant; {Epilepsy, idiopathic generalized, 10}, 613060 (3), Autosomal dominant; {Epilepsy, juvenile myoclonic, susceptibility to}, 613060 (3), Autosomal dominant                          |
| <i>GABRG2</i> | 137164 | {Epilepsy, childhood absence, susceptibility to, 2}, 607681 (3), Autosomal dominant; Epilepsy, generalized, with febrile seizures plus, type 3, 611277 (3), Autosomal dominant; Febrile seizures, familial, 8, 611277 (3), Autosomal dominant  |
| <i>GAD1</i>   | 605363 | ?Cerebral palsy, spastic quadriplegic, 1, 603513 (3), Autosomal recessive  |
| <i>GAL</i>    | 137035 | ?Epilepsy, familial temporal lobe, 8, 616461 (3), Autosomal dominant   |
| <i>GALE</i>   | 606953 | Galactose epimerase deficiency, 230350 (3), Autosomal recessive  |

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| <i>GALK1</i>       | 604313 | Galactokinase deficiency with cataracts, 230200 (3), Autosomal recessive   |
| <i>GALK2 (GK2)</i> | 137028 | No OMIM phenotype  |
| <i>GALNS</i>       | 612222 | Mucopolysaccharidosis IVA, 253000 (3), Autosomal recessive   |
| <i>GALNT12</i>     | 610290 | {Colorectal cancer, susceptibility to, 1}, 608812 (3)  |
| <i>GALT</i>        | 606999 | Galactosemia, 230400 (3), Autosomal recessive  |
| <i>GAMT</i>        | 601240 | Cerebral creatine deficiency syndrome 2, 612736 (3), Autosomal recessive   |
| <i>GAN</i>         | 605379 | Giant axonal neuropathy-1, 256850 (3), Autosomal recessive   |
| <i>GARS</i>        | 600287 | Charcot-Marie-Tooth disease, type 2D, 601472 (3), Autosomal dominant; Neuropathy, distal hereditary motor, type VA, 600794 (3), Autosomal dominant   |
| <i>GAS8</i>        | 605178 | Ciliary dyskinesia, primary, 33, 616726 (3), Autosomal recessive<br>Anemia, X-linked, with/without neutropenia and/or platelet abnormalities, 300835 (3), X-linked recessive; Leukemia, megakaryoblastic, with or without Down syndrome, somatic, 190685 (3); Thrombocytopenia with beta-thalassemia, X-linked, 314050 (3), X-linked recessive; Thrombocytopenia, X-linked, with or without dyserythropoietic anemia, 300367 (3), X-linked recessive |
| <i>GATA1</i>       | 305371 | Emberger syndrome, 614038 (3), Autosomal dominant;<br>Immunodeficiency 21, 614172 (3), Autosomal dominant; {Leukemia, acute myeloid, susceptibility to}, 601626 (3), Autosomal dominant; {Myelodysplastic syndrome, susceptibility to}, 614286 (3)   |
| <i>GATA2</i>       | 137295 | Hypoparathyroidism, sensorineural deafness, and renal dysplasia, 146255 (3), Autosomal dominant<br>Atrial septal defect 2, 607941 (3), Autosomal dominant; Atrioventricular septal defect 4, 614430 (3), Autosomal dominant;   |
| <i>GATA3</i>       | 131320 | ?Testicular anomalies with or without congenital heart disease, 615542 (3), Autosomal dominant; Tetralogy of Fallot, 187500 (3), Autosomal dominant; Ventricular septal defect 1, 614429 (3), Autosomal dominant   |
| <i>GATA4</i>       | 600576 | Atrial septal defect 9, 614475 (3), Autosomal dominant; Atrioventricular septal defect 5, 614474 (3), Autosomal dominant; Pancreatic agenesis and congenital heart defects, 600001 (3), Autosomal dominant; Persistent truncus arteriosus, 217095 (3); Tetralogy of Fallot, 187500 (3), Autosomal dominant   |
| <i>GATA6</i>       | 601656 | ?Cardiomyopathy, dilated, 2B, 614672 (3), Autosomal recessive  |
| <i>GATAD1</i>      | 614518 | Mental retardation, autosomal dominant 18, 615074 (3), Autosomal dominant  |
| <i>GATAD2B</i>     | 614998 | Cerebral creatine deficiency syndrome 3, 612718 (3), Autosomal recessive   |
| <i>GATM</i>        | 602360 |  |

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| <i>GBA</i>   | 606463 | Gaucher disease, perinatal lethal, 608013 (3), Autosomal recessive; Gaucher disease, type I, 230800 (3), Autosomal recessive; Gaucher disease, type II, 230900 (3), Autosomal recessive; Gaucher disease, type III, 231000 (3), Autosomal recessive; Gaucher disease, type IIIC, 231005 (3), Autosomal recessive; {Lewy body dementia, susceptibility to}, 127750 (3), Autosomal dominant; {Parkinson disease, late-onset, susceptibility to}, 168600 (3), Isolated cases, Multifactorial |
| <i>GBE1</i>  | 607839 | Glycogen storage disease IV, 232500 (3), Autosomal recessive; Polyglucosan body disease, adult form, 263570 (3), Autosomal recessive  |
| <i>GCGR</i>  | 138033 | {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant   |
| <i>GCH1</i>  | 600225 | Dystonia, DOPA-responsive, with or without hyperphenylalaninemia, 128230 (3), Autosomal recessive, Autosomal dominant; Hyperphenylalaninemia, BH4-deficient, B, 233910 (3), Autosomal recessive   |
| <i>GCK</i>   | 138079 | Diabetes mellitus, noninsulin-dependent, late onset, 125853 (3), Autosomal dominant; Diabetes mellitus, permanent neonatal, 606176 (3), Autosomal recessive, Autosomal dominant; Hyperinsulinemic hypoglycemia, familial, 3, 602485 (3), Autosomal dominant; MODY, type II, 125851 (3), Autosomal dominant  |
| <i>GCKR</i>  | 600842 | [Fasting plasma glucose level QTL 5], 613463 (3)  |
| <i>GCLC</i>  | 606857 | Hemolytic anemia due to gamma-glutamylcysteine synthetase deficiency, 230450 (3), Autosomal recessive; {Myocardial infarction, susceptibility to}, 608446 (3)   |
| <i>GCLM</i>  | 601176 | {Myocardial infarction, susceptibility to}, 608446 (3)  |
| <i>GCM2</i>  | 603716 | Hyperparathyroidism 4, 617343 (3), Autosomal dominant; Hypoparathyroidism, familial isolated, 146200 (3), Autosomal dominant  |
| <i>GCNT2</i> | 600429 | Adult i phenotype without cataract, 110800 (3), Autosomal dominant; [Blood group, ii], 110800 (3), Autosomal dominant; Cataract 13 with adult i phenotype, 116700 (3), Autosomal recessive  |
| <i>GCSH</i>  | 238330 | ?Glycine encephalopathy, 605899 (3), Autosomal recessive  |
| <i>GDAP1</i> | 606598 | Charcot-Marie-Tooth disease, axonal, type 2K, 607831 (3), Autosomal recessive, Autosomal dominant; Charcot-Marie-Tooth disease, axonal, with vocal cord paresis, 607706 (3), Autosomal recessive; Charcot-Marie-Tooth disease, recessive intermediate, A, 608340 (3), Autosomal recessive; Charcot-Marie-Tooth disease, type 4A, 214400 (3), Autosomal recessive  |
| <i>GDF2</i>  | 605120 | Telangiectasia, hereditary hemorrhagic, type 5, 615506 (3), Autosomal dominant  |
| <i>GDF3</i>  | 606522 | Klippel-Feil syndrome 3, autosomal dominant, 613702 (3); Microphthalmia with coloboma 6, 613703 (3), Autosomal dominant; Microphthalmia, isolated 7, 613704 (3), Autosomal dominant   |

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| <i>GDF5</i>   | 601146 | ?Acromesomelic dysplasia, Hunter-Thompson type, 201250 (3),<br>Autosomal recessive; Brachydactyly, type A1, C, 615072 (3),<br>Autosomal recessive, Autosomal dominant; Brachydactyly, type A2,<br>112600 (3), Autosomal dominant; Brachydactyly, type C, 113100 (3),<br>Autosomal dominant; Chondrodysplasia, Grebe type, 200700 (3),<br>Autosomal recessive; Du Pan syndrome, 228900 (3), Autosomal<br>recessive; Multiple synostoses syndrome 2, 610017 (3), Autosomal<br>dominant; {Osteoarthritis-5}, 612400 (3); Symphalangism, proximal,<br>1B, 615298 (3) |
| <i>GDF6</i>   | 601147 | Klippel-Feil syndrome 1, autosomal dominant, 118100 (3), Autosomal<br>dominant; Leber congenital amaurosis 17, 615360 (3), Autosomal<br>recessive; Microphthalmia with coloboma 6, digenic, 613703 (3),<br>Autosomal dominant; Microphthalmia, isolated 4, 613094 (3); Multiple<br>synostoses syndrome 4, 617898 (3), Autosomal dominant   |
| <i>GDI1</i>   | 300104 | Mental retardation, X-linked 41, 300849 (3), X-linked dominant   |
| <i>GDNF</i>   | 600837 | Central hypoventilation syndrome, 209880 (3), Autosomal dominant;<br>{Hirschsprung disease, susceptibility to, 3}, 613711 (3), Autosomal<br>dominant; {Pheochromocytoma, modifier of}, 171300 (3), Autosomal<br>dominant   |
| <i>GFAP</i>   | 137780 | Alexander disease, 203450 (3), Autosomal dominant  |
| <i>GFER</i>   | 600924 | Myopathy, mitochondrial progressive, with congenital cataract,<br>hearing loss, and developmental delay, 613076 (3)  |
| <i>GFI1</i>   | 600871 | ?Neutropenia, nonimmune chronic idiopathic, of adults, 607847 (3),<br>Autosomal dominant; ?Neutropenia, severe congenital 2, autosomal<br>dominant, 613107 (3), Autosomal dominant   |
| <i>GFI1B</i>  | 604383 | Bleeding disorder, platelet-type, 17, 187900 (3), Autosomal recessive,<br>Autosomal dominant   |
| <i>GFM1</i>   | 606639 | Combined oxidative phosphorylation deficiency 1, 609060 (3),<br>Autosomal recessive  |
| <i>GFPT1</i>  | 138292 | Myasthenia, congenital, 12, with tubular aggregates, 610542 (3),<br>Autosomal recessive  |
| <i>GGCX</i>   | 137167 | Pseudoxanthoma elasticum-like disorder with multiple coagulation<br>factor deficiency, 610842 (3); Vitamin K-dependent clotting factors,<br>combined deficiency of, 1, 277450 (3), Autosomal recessive   |
| <i>GH1</i>    | 139250 | Growth hormone deficiency, isolated, type IA, 262400 (3), Autosomal<br>recessive; Growth hormone deficiency, isolated, type IB, 612781 (3);<br>Growth hormone deficiency, isolated, type II, 173100 (3), Autosomal<br>dominant; Kowarski syndrome, 262650 (3), Autosomal recessive   |
| <i>GHRHR</i>  | 139191 | Growth hormone deficiency, isolated, type IB, 612781 (3)   |
| <i>GHRL</i>   | 605353 | {Obesity, susceptibility to}, 601665 (3), Autosomal recessive,<br>Autosomal dominant, Multifactorial   |
| <i>GIF</i>    | 609342 | Intrinsic factor deficiency, 261000 (3), Autosomal recessive   |
| <i>GIGYF2</i> | 612003 | {Parkinson disease 11}, 607688 (3)   |
| <i>GIPC3</i>  | 608792 | Deafness, autosomal recessive 15, 601869 (3), Autosomal recessive  |

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| <i>GJA1</i> | 121014 | Atrioventricular septal defect 3, 600309 (3), Autosomal dominant; Craniometaphyseal dysplasia, autosomal recessive, 218400 (3), Autosomal recessive; Erythrokeratodermia variabilis et progressiva 3, 617525 (3), Autosomal dominant; Hypoplastic left heart syndrome 1, 241550 (3), Autosomal recessive; Oculodentodigital dysplasia, 164200 (3), Autosomal dominant; Oculodentodigital dysplasia, autosomal recessive, 257850 (3), Autosomal recessive; Palmoplantar keratoderma with congenital alopecia, 104100 (3), Autosomal dominant; Syndactyly, type III, 186100 (3), Autosomal dominant |
| <i>GJA3</i> | 121015 | Cataract 14, multiple types, 601885 (3), Autosomal dominant   |
| <i>GJA5</i> | 121013 | Atrial fibrillation, familial, 11, 614049 (3), Autosomal dominant; Atrial standstill, digenic (GJA5/SCN5A), 108770 (3), Autosomal dominant  |
| <i>GJA8</i> | 600897 | Cataract 1, multiple types, 116200 (3), Autosomal dominant  |
| <i>GJB1</i> | 304040 | Charcot-Marie-Tooth neuropathy, X-linked dominant, 1, 302800 (3), X-linked dominant   |
| <i>GJB2</i> | 121011 | Bart-Pumphrey syndrome, 149200 (3), Autosomal dominant; Deafness, autosomal dominant 3A, 601544 (3), Autosomal dominant; Deafness, autosomal recessive 1A, 220290 (3), Autosomal recessive; Hystrix-like ichthyosis with deafness, 602540 (3), Autosomal dominant; Keratitis-ichthyosis-deafness syndrome, 148210 (3), Autosomal dominant; Keratoderma, palmoplantar, with deafness, 148350 (3), Autosomal dominant; Vohwinkel syndrome, 124500 (3), Autosomal dominant   |
| <i>GJB3</i> | 603324 | Deafness, autosomal dominant 2B, 612644 (3), Autosomal dominant; Deafness, autosomal dominant, with peripheral neuropathy (3); Deafness, autosomal recessive (3); Deafness, digenic, GJB2/GJB3, 220290 (3), Autosomal recessive; Erythrokeratodermia variabilis et progressiva 1, 133200 (3), Autosomal recessive, Autosomal dominant   |
| <i>GJB4</i> | 605425 | Erythrokeratodermia variabilis et progressiva 2, 617524 (3), Autosomal dominant   |
| <i>GJB6</i> | 604418 | Deafness, autosomal dominant 3B, 612643 (3), Autosomal dominant; Deafness, autosomal recessive 1B, 612645 (3), Autosomal recessive; Deafness, digenic GJB2/GJB6, 220290 (3), Autosomal recessive; Ectodermal dysplasia 2, Clouston type, 129500 (3), Autosomal dominant   |
| <i>GJC2</i> | 608803 | Leukodystrophy, hypomyelinating, 2, 608804 (3), Autosomal recessive; Lymphedema, hereditary, IC, 613480 (3), Autosomal dominant; Spastic paraplegia 44, autosomal recessive, 613206 (3), Autosomal recessive  |
| <i>GK</i>   | 300474 | Glycerol kinase deficiency, 307030 (3), X-linked recessive  |
| <i>GLA</i>  | 300644 | Fabry disease, 301500 (3), X-linked; Fabry disease, cardiac variant, 301500 (3), X-linked   |
| <i>GLB1</i> | 611458 | GM1-gangliosidosis, type I, 230500 (3), Autosomal recessive; GM1-gangliosidosis, type II, 230600 (3), Autosomal recessive; GM1-gangliosidosis, type III, 230650 (3), Autosomal recessive; Mucopolysaccharidosis type IVB (Morquio), 253010 (3), Autosomal recessive   |

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| <i>GLCCI1</i> | 614283 | {Glucocorticoid therapy, response to}, 614400 (3)   |
| <i>GLDC</i>   | 238300 | Glycine encephalopathy, 605899 (3), Autosomal recessive   |
| <i>GLE1</i>   | 603371 | Arthrogryposis, lethal, with anterior horn cell disease, 611890 (3); Lethal congenital contracture syndrome 1, 253310 (3), Autosomal recessive  |
| <i>GLI2</i>   | 165230 | Culler-Jones syndrome, 615849 (3), Autosomal dominant; Holoprosencephaly 9, 610829 (3), Autosomal dominant  |
| <i>GLI3</i>   | 165240 | Greig cephalopolysyndactyly syndrome, 175700 (3), Autosomal dominant; {Hypothalamic hamartomas, somatic}, 241800 (3); Pallister-Hall syndrome, 146510 (3), Autosomal dominant; Polydactyly, postaxial, types A1 and B, 174200 (3), Autosomal dominant; Polydactyly, preaxial, type IV, 174700 (3), Autosomal dominant                                   |
| <i>GLIS2</i>  | 608539 | Nephronophthisis 7, 611498 (3)  |
| <i>GLIS3</i>  | 610192 | Diabetes mellitus, neonatal, with congenital hypothyroidism, 610199 (3), Autosomal recessive  |
| <i>GLMN</i>   | 601749 | Glomuvenous malformations, 138000 (3), Autosomal dominant   |
| <i>GLRA1</i>  | 138491 | Hyperekplexia 1, 149400 (3), Autosomal recessive, Autosomal dominant  |
| <i>GLRB</i>   | 138492 | Hyperekplexia 2, 614619 (3), Autosomal recessive  |
| <i>GLRX5</i>  | 609588 | Anemia, sideroblastic, 3, pyridoxine-refractory, 616860 (3), Autosomal recessive; Spasticity, childhood-onset, with hyperglycinemia, 616859 (3), Autosomal recessive  |
| <i>GLUD1</i>  | 138130 | Hyperinsulinism-hyperammonemia syndrome, 606762 (3), Autosomal dominant   |
| <i>GLUD2</i>  | 300144 | {Parkinson disease, age of onset, modifier}, 168600 (3), Isolated cases, Multifactorial   |
| <i>GLUL</i>   | 138290 | Glutamine deficiency, congenital, 610015 (3), Autosomal recessive   |
| <i>GLYCTK</i> | 610516 | D-glyceric aciduria, 220120 (3), Autosomal recessive  |
| <i>GM2A</i>   | 613109 | GM2-gangliosidosis, AB variant, 272750 (3), Autosomal recessive   |
| <i>GMPPB</i>  | 615320 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 14, 615350 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (congenital with mental retardation), type B, 14, 615351 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (limb-girdle), type C, 14, 615352 (3), Autosomal recessive |
| <i>GNAI3</i>  | 139370 | Auriculocondylar syndrome 1, 602483 (3), Autosomal dominant   |
| <i>GNAL</i>   | 139312 | Dystonia 25, 615073 (3), Autosomal dominant   |
| <i>GNAO1</i>  | 139311 | Epileptic encephalopathy, early infantile, 17, 615473 (3), Autosomal dominant; Neurodevelopmental disorder with involuntary movements, 617493 (3), Autosomal dominant   |
| <i>GNAQ</i>   | 600998 | Capillary malformations, congenital, 1, somatic, mosaic, 163000 (3); Sturge-Weber syndrome, somatic, mosaic, 185300 (3)   |

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| <i>GNAS</i>   | 139320 | ACTH-independent macronodular adrenal hyperplasia, 219080 (3), Isolated cases; McCune-Albright syndrome, somatic, mosaic, 174800 (3); Osseous heteroplasia, progressive, 166350 (3), Autosomal dominant; Pituitary adenoma 3, multiple types, somatic, 617686 (3); Pseudohypoparathyroidism Ia, 103580 (3), Autosomal dominant; Pseudohypoparathyroidism Ib, 603233 (3), Autosomal dominant; Pseudohypoparathyroidism Ic, 612462 (3), Autosomal dominant; Pseudopseudohypoparathyroidism, 612463 (3), Autosomal dominant |
| <i>GNAT1</i>  | 139330 | Night blindness, congenital stationary, autosomal dominant 3, 610444 (3), Autosomal dominant; Night blindness, congenital stationary, type 1G, 616389 (3), Autosomal recessive   |
| <i>GNAT2</i>  | 139340 | Achromatopsia 4, 613856 (3)  |
| <i>GNB1</i>   | 139380 | Leukemia, acute lymphoblastic, somatic, 613065 (3); Mental retardation, autosomal dominant 42, 616973 (3), Autosomal dominant {Hypertension, essential, susceptibility to}, 145500 (3), Multifactorial;  |
| <i>GNB3</i>   | 139130 | Night blindness, congenital stationary, type 1H, 617024 (3), Autosomal recessive   |
| <i>GNB4</i>   | 610863 | Charcot-Marie-Tooth disease, dominant intermediate F, 615185 (3), Autosomal dominant   |
| <i>GNB5</i>   | 604447 | Intellectual developmental disorder with cardiac arrhythmia, 617173 (3), Autosomal recessive; Language delay and ADHD/cognitive impairment with or without cardiac arrhythmia, 617182 (3), Autosomal recessive   |
| <i>GNE</i>    | 603824 | Nonaka myopathy, 605820 (3), Autosomal recessive; Sialuria, 269921 (3), Autosomal dominant   |
| <i>GNMT</i>   | 606628 | Glycine N-methyltransferase deficiency, 606664 (3), Autosomal recessive  |
| <i>GNPAT</i>  | 602744 | Rhizomelic chondrodysplasia punctata, type 2, 222765 (3), Autosomal recessive  |
| <i>GNPTAB</i> | 607840 | Mucolipidosis II alpha/beta, 252500 (3), Autosomal recessive; Mucolipidosis III alpha/beta, 252600 (3), Autosomal recessive  |
| <i>GNPTG</i>  | 607838 | Mucolipidosis III gamma, 252605 (3), Autosomal recessive   |
| <i>GNRHR</i>  | 138850 | Hypogonadotropic hypogonadism 7 without anosmia, 146110 (3), Autosomal recessive   |
| <i>GNS</i>    | 607664 | Mucopolysaccharidosis type IIID, 252940 (3), Autosomal recessive   |
| <i>GOLGA5</i> | 606918 | No OMIM phenotype  |
| <i>GORAB</i>  | 607983 | Geroderma osteodysplasticum, 231070 (3), Autosomal recessive   |
| <i>GOSR2</i>  | 604027 | Epilepsy, progressive myoclonic 6, 614018 (3), Autosomal recessive   |
| <i>GOT1</i>   | 138180 | Aspartate aminotransferase, serum level of, QTL1, 614419 (3)   |
| <i>GP1BA</i>  | 606672 | Bernard-Soulier syndrome, type A1 (recessive), 231200 (3), Autosomal recessive; Bernard-Soulier syndrome, type A2 (dominant), 153670 (3), Autosomal dominant; {Nonarteritic anterior ischemic optic neuropathy, susceptibility to}, 258660 (3), Autosomal recessive; von Willebrand disease, platelet-type, 177820 (3), Autosomal dominant   |

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| <i>GP1BB</i>   | 138720 | Bernard-Soulier syndrome, type B, 231200 (3), Autosomal recessive; Giant platelet disorder, isolated, 231200 (3), Autosomal recessive  |
| <i>GP6</i>     | 605546 | Bleeding disorder, platelet-type, 11, 614201 (3), Autosomal recessive  |
| <i>GP9</i>     | 173515 | Bernard-Soulier syndrome, type C, 231200 (3), Autosomal recessive  |
| <i>GPC3</i>    | 300037 | Simpson-Golabi-Behmel syndrome, type 1, 312870 (3), X-linked recessive; Wilms tumor, somatic, 194070 (3)   |
| <i>GPC4</i>    | 300168 | No OMIM phenotype  |
| <i>GPC6</i>    | 604404 | Omodyplasia 1, 258315 (3), Autosomal recessive   |
| <i>GPD1</i>    | 138420 | Hypertriglyceridemia, transient infantile, 614480 (3), Autosomal recessive   |
| <i>GPD1L</i>   | 611778 | Brugada syndrome 2, 611777 (3)   |
| <i>GPHN</i>    | 603930 | Molybdenum cofactor deficiency C, 615501 (3), Autosomal recessive  |
| <i>GPI</i>     | 172400 | Hemolytic anemia, nonspherocytic, due to glucose phosphate isomerase deficiency, 613470 (3), Autosomal recessive   |
| <i>GPIHBP1</i> | 612757 | Hyperlipoproteinemia, type 1D, 615947 (3), Autosomal recessive   |
| <i>GPR101</i>  | 300393 | Pituitary adenoma 2, GH-secreting, 300943 (3)  |
| <i>GPR143</i>  | 300808 | Nystagmus 6, congenital, X-linked, 300814 (3); Ocular albinism, type I, Nettleship-Falls type, 300500 (3), X-linked  |
| <i>GPR179</i>  | 614515 | Night blindness, congenital stationary (complete), 1E, autosomal recessive, 614565 (3), Autosomal recessive  |
| <i>GPR88</i>   | 607468 | ?Chorea, childhood-onset, with psychomotor retardation, 616939 (3), Autosomal recessive  |
| <i>GPT2</i>    | 138210 | Mental retardation, autosomal recessive 49, 616281 (3), Autosomal recessive  |
| <i>GPX1</i>    | 138320 | Hemolytic anemia due to glutathione peroxidase deficiency, 614164 (1), Autosomal recessive   |
| <i>GPX4</i>    | 138322 | Spondylometaphyseal dysplasia, Sedaghatian type, 250220 (3), Autosomal recessive   |
| <i>GREM2</i>   | 608832 | Tooth agenesis, selective, 9, 617275 (3), Autosomal dominant   |
| <i>GRHPR</i>   | 604296 | Hyperoxaluria, primary, type II, 260000 (3), Autosomal recessive   |
| <i>GRIA3</i>   | 305915 | Mental retardation, X-linked 94, 300699 (3), X-linked recessive  |
| <i>GRID2</i>   | 602368 | Spinocerebellar ataxia, autosomal recessive 18, 616204 (3), Autosomal recessive  |
| <i>GRIN1</i>   | 138249 | Neurodevelopmental disorder with or without hyperkinetic movements and seizures, autosomal dominant, 614254 (3), Autosomal dominant; Neurodevelopmental disorder with or without hyperkinetic movements and seizures, autosomal recessive, 617820 (3), Autosomal recessive |
| <i>GRIN2B</i>  | 138252 | Epileptic encephalopathy, early infantile, 27, 616139 (3), Autosomal dominant; Mental retardation, autosomal dominant 6, 613970 (3), Autosomal dominant  |
| <i>GRIN2D</i>  | 602717 | Epileptic encephalopathy, early infantile, 46, 617162 (3), Autosomal dominant  |
| <i>GRIP1</i>   | 604597 | Fraser syndrome 3, 617667 (3), Autosomal recessive   |
| <i>GRK1</i>    | 180381 | Oguchi disease-2, 613411 (3)   |

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| <i>GRM1</i>              | 604473 | Spinocerebellar ataxia 44, 617691 (3), Autosomal dominant; Spinocerebellar ataxia, autosomal recessive 13, 614831 (3), Autosomal recessive  |
| <i>GRM6</i>              | 604096 | Night blindness, congenital stationary (complete), 1B, autosomal recessive, 257270 (3), Autosomal recessive   |
| <i>GRN</i>               | 138945 | Aphasia, primary progressive, 607485 (3), Autosomal dominant; Ceroid lipofuscinosi, neuronal, 11, 614706 (3), Autosomal recessive; Frontotemporal lobar degeneration with ubiquitin-positive inclusions, 607485 (3), Autosomal dominant |
| <i>GRXCR1</i>            | 613283 | Deafness, autosomal recessive 25, 613285 (3), Autosomal recessive   |
| <i>GRXCR2</i>            | 615762 | ?Deafness, autosomal recessive 101, 615837 (3), Autosomal recessive   |
| <i>GSC</i>               | 138890 | Short stature, auditory canal atresia, mandibular hypoplasia, skeletal abnormalities, 602471 (3), Autosomal recessive   |
| <i>GSDME (DFNA5)</i>     | 608798 | Deafness, autosomal dominant 5, 600994 (3), Autosomal dominant  |
| <i>GSS</i>               | 601002 | Glutathione synthetase deficiency, 266130 (3), Autosomal recessive; Hemolytic anemia due to glutathione synthetase deficiency, 231900 (3), Autosomal recessive  |
| <i>GTF2E2</i>            | 189964 | Trichothiodystrophy 6, nonphotosensitive, 616943 (3), Autosomal recessive   |
| <i>GTF2H5</i>            | 608780 | Trichothiodystrophy 3, photosensitive, 616395 (3)   |
| <i>GTPBP3</i>            | 608536 | Combined oxidative phosphorylation deficiency 23, 616198 (3), Autosomal recessive   |
| <i>GUCA1A</i>            | 600364 | Cone dystrophy-3, 602093 (3), Autosomal dominant; Cone-rod dystrophy 14, 602093 (3), Autosomal dominant   |
| <i>GUCA1B</i>            | 602275 | Retinitis pigmentosa 48, 613827 (3)   |
| <i>GUCY1A1 (GUCY1A3)</i> | 139396 | Moyamoya 6 with achalasia, 615750 (3), Autosomal recessive  |
| <i>GUCY2C</i>            | 601330 | Diarrhea 6, 614616 (3), Autosomal dominant; Meconium ileus, 614665 (3), Autosomal recessive   |
| <i>GUCY2D</i>            | 600179 | ?Central areolar choroidal dystrophy 1, 215500 (3), Autosomal recessive; Cone-rod dystrophy 6, 601777 (3), Autosomal recessive, Autosomal dominant; Leber congenital amaurosis 1, 204000 (3), Autosomal recessive                       |
| <i>GUF1</i>              | 617064 | ?Epileptic encephalopathy, early infantile, 40, 617065 (3), Autosomal recessive   |
| <i>GUSB</i>              | 611499 | Mucopolysaccharidosis VII, 253220 (3), Autosomal recessive  |
| <i>GYG1</i>              | 603942 | ?Glycogen storage disease XV, 613507 (3), Autosomal recessive; Polyglucosan body myopathy 2, 616199 (3), Autosomal recessive  |
| <i>GYPA</i>              | 617922 | [Blood group, MNSs system], 111300 (3); {Malaria, resistance to}, 611162 (3)  |
| <i>GYPB</i>              | 617923 | [Blood group, Ss], 111740 (3); {Malaria, resistance to}, 611162 (3)   |
| <i>GPC</i>               | 110750 | [Blood group, Gerbich], 616089 (3); {Malaria, resistance to}, 611162 (3)  |
| <i>GYS1</i>              | 138570 | Glycogen storage disease 0, muscle, 611556 (3), Autosomal recessive   |

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| <i>GYS2</i>   | 138571 | Glycogen storage disease 0, liver, 240600 (3), Autosomal recessive   |
| <i>H6PD</i>   | 138090 | Cortisone reductase deficiency 1, 604931 (3), Autosomal recessive  |
| <i>HABP2</i>  | 603924 | {?Thyroid cancer, nonmedullary, 5}, 616535 (3), Autosomal dominant; {Venous thromboembolism, susceptibility to}, 188050 (3), Autosomal dominant  |
| <i>HACE1</i>  | 610876 | Spastic paraparesis and psychomotor retardation with or without seizures, 616756 (3), Autosomal recessive  |
| <i>HADH</i>   | 601609 | 3-hydroxyacyl-CoA dehydrogenase deficiency, 231530 (3), Autosomal recessive; Hyperinsulinemic hypoglycemia, familial, 4, 609975 (3), Autosomal recessive   |
| <i>HADHA</i>  | 600890 | Fatty liver, acute, of pregnancy, 609016 (3), Autosomal recessive; HELLP syndrome, maternal, of pregnancy, 609016 (3), Autosomal recessive; LCHAD deficiency, 609016 (3), Autosomal recessive; Trifunctional protein deficiency, 609015 (3), Autosomal recessive   |
| <i>HADHB</i>  | 143450 | Trifunctional protein deficiency, 609015 (3), Autosomal recessive  |
| <i>HAGH</i>   | 138760 | [Glyoxalase II deficiency], 614033 (1), Autosomal dominant   |
| <i>HAL</i>    | 609457 | [Histidinemia], 235800 (3), Autosomal recessive, Autosomal dominant  |
| <i>HAMP</i>   | 606464 | Hemochromatosis, type 2B, 613313 (3), Autosomal recessive  |
| <i>HARS</i>   | 142810 | Charcot-Marie-Tooth disease, axonal, type 2W, 616625 (3), Autosomal dominant; Usher syndrome type 3B, 614504 (3), Autosomal recessive  |
| <i>HARS2</i>  | 600783 | ?Perrault syndrome 2, 614926 (3), Autosomal recessive  |
| <i>HAVCR1</i> | 606518 | No OMIM phenotype  |
| <i>HAX1</i>   | 605998 | Neutropenia, severe congenital 3, autosomal recessive, 610738 (3), Autosomal recessive   |
| <i>HBA1</i>   | 141800 | Erythrocytosis, 7, 617981 (3); Heinz body anemias, alpha-, 140700 (3), Autosomal dominant; Hemoglobin H disease, nondeletional, 613978 (3); Methemoglobinemia, alpha type, 617973 (3); Thalassemias, alpha-, 604131 (3)  |
| <i>HBA2</i>   | 141850 | Erythrocytosis 7, 617981 (3); Heinz body anemia, 140700 (3), Autosomal dominant; Hemoglobin H disease, deletional and nondeletional, 613978 (3); Thalassemia, alpha-, 604131 (3)   |
| <i>HBB</i>    | 141900 | Delta-beta thalassemia, 141749 (3), Autosomal dominant; Erythrocytosis 6, 617980 (3); Heinz body anemia, 140700 (3), Autosomal dominant; Hereditary persistence of fetal hemoglobin, 141749 (3), Autosomal dominant; {Malaria, resistance to}, 611162 (3); Methemoglobinemia, beta type, 617971 (3); Sickle cell anemia, 603903 (3), Autosomal recessive; Thalassemia, beta, 613985 (3); Thalassemia-beta, dominant inclusion-body, 603902 (3) |
| <i>HBG1</i>   | 142200 | Fetal hemoglobin quantitative trait locus 1, 141749 (3), Autosomal dominant  |
| <i>HBG2</i>   | 142250 | Cyanosis, transient neonatal, 613977 (3), Autosomal dominant; Fetal hemoglobin quantitative trait locus 1, 141749 (3), Autosomal dominant  |
| <i>HCCS</i>   | 300056 | Linear skin defects with multiple congenital anomalies 1, 309801 (3), X-linked dominant  |

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| <i>HCFC1</i>   | 300019       | Mental retardation, X-linked 3 (methylmalonic acidemia and homocystinemia, cblX type ), 309541 (3), X-linked recessive   |
| <i>HCN1</i>    | 602780       | Epileptic encephalopathy, early infantile, 24, 615871 (3), Autosomal dominant  |
| <i>HCN4</i>    | 605206       | Brugada syndrome 8, 613123 (3); Sick sinus syndrome 2, 163800 (3), Autosomal dominant  |
| <i>HCRT</i>    | 602358       | ?Narcolepsy 1, 161400 (3), Autosomal dominant  |
| <i>HDAC6</i>   | 300272       | ?Chondrodysplasia with platyspondyly, distinctive brachydactyly, hydrocephaly, and microphthalmia, 300863 (3), X-linked dominant   |
| <i>HDC</i>     | 142704       | {Gilles de la Tourette syndrome, susceptibility to}, 137580 (3), Autosomal dominant  |
| <i>HELLS</i>   | 603946       | Immunodeficiency-centromeric instability-facial anomalies syndrome 4, 616911 (3), Autosomal recessive  |
| <i>HEPACAM</i> | 611642       | Megalencephalic leukoencephalopathy with subcortical cysts 2A, 613925 (3), Autosomal recessive; Megalencephalic leukoencephalopathy with subcortical cysts 2B, remitting, with or without mental retardation, 613926 (3), Autosomal dominant   |
| <i>HERC1</i>   | 605109       | Macrocephaly, dysmorphic facies, and psychomotor retardation, 617011 (3), Autosomal recessive  |
| <i>HERC2</i>   | 605837       | Mental retardation, autosomal recessive 38, 615516 (3), Autosomal recessive; [Skin/hair/eye pigmentation 1, blond/brown hair], 227220 (3), Autosomal recessive; [Skin/hair/eye pigmentation 1, blue/nonblue eyes], 227220 (3), Autosomal recessive   |
| <i>HERC3</i>   | 605200       | No OMIM phenotype  |
| <i>HES7</i>    | 608059       | Spondylocostal dysostosis 4, autosomal recessive, 613686 (3), Autosomal recessive  |
| <i>HESX1</i>   | 601802       | Growth hormone deficiency with pituitary anomalies, 182230 (3), Autosomal recessive, Autosomal dominant; Pituitary hormone deficiency, combined, 5, 182230 (3), Autosomal recessive, Autosomal dominant; Septooptic dysplasia, 182230 (3), Autosomal recessive, Autosomal dominant   |
| <i>HEXA</i>    | 606869       | GM2-gangliosidosis, several forms, 272800 (3), Autosomal recessive; [Hex A pseudodeficiency], 272800 (3), Autosomal recessive; Tay-Sachs disease, 272800 (3), Autosomal recessive  |
| <i>HEXB</i>    | 606873       | Sandhoff disease, infantile, juvenile, and adult forms, 268800 (3), Autosomal recessive  |
| <i>HFE</i>     | 613609       | {Alzheimer disease, susceptibility to}, 104300 (3), Autosomal dominant; Hemochromatosis, 235200 (3), Autosomal recessive; {Microvascular complications of diabetes 7}, 612635 (3); {Porphyria cutanea tarda, susceptibility to}, 176100 (3), Autosomal recessive, Autosomal dominant; {Porphyria variegata, susceptibility to}, 176200 (3), Autosomal dominant; [Transferrin serum level QTL2], 614193 (3) |
| <i>HFE2</i>    | No OMIM gene | No OMIM phenotype  |
| <i>HFM1</i>    | 615684       | Premature ovarian failure 9, 615724 (3), Autosomal recessive   |
| <i>HGD</i>     | 607474       | Alkaptonuria, 203500 (3), Autosomal recessive  |

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| <i>HGF</i>      | 142409 | Deafness, autosomal recessive 39, 608265 (3), Autosomal recessive  |
| <i>HGSNAT</i>   | 610453 | Mucopolysaccharidosis type IIIC (Sanfilippo C), 252930 (3), Autosomal recessive; Retinitis pigmentosa 73, 616544 (3), Autosomal recessive  |
| <i>HIBCH</i>    | 610690 | 3-hydroxyisobutyryl-CoA hydrolase deficiency, 250620 (3), Autosomal recessive  |
| <i>HINT1</i>    | 601314 | Neuromyotonia and axonal neuropathy, autosomal recessive, 137200 (3), Autosomal recessive  |
| <i>HIVEP2</i>   | 143054 | Mental retardation, autosomal dominant 43, 616977 (3), Autosomal dominant  |
| <i>HLA-A</i>    | 142800 | {Hypersensitivity syndrome, carbamazepine-induced, susceptibility to}, 608579 (3)  |
| <i>HLA-B</i>    | 142830 | {Abacavir hypersensitivity, susceptibility to} (3); {Drug-induced liver injury due to flucloxacillin} (3); {Spondyloarthropathy, susceptibility to}, 106300 (3), Multifactorial; {Stevens-Johnson syndrome, susceptibility to}, 608579 (3); {Synovitis, chronic, susceptibility to} (3); {Toxic epidermal necrolysis, susceptibility to}, 608579 (3) |
| <i>HLA-C</i>    | 142840 | {HIV-1 viremia, susceptibility to}, 609423 (3); {Psoriasis susceptibility 1}, 177900 (3), Multifactorial   |
| <i>HLA-DQA1</i> | 146880 | {Celiac disease, susceptibility to}, 212750 (3), Autosomal recessive, Multifactorial   |
| <i>HLA-DQB1</i> | 604305 | {Celiac disease, susceptibility to}, 212750 (3), Autosomal recessive, Multifactorial; {Creutzfeldt-Jakob disease, variant, resistance to}, 123400 (3), Autosomal dominant; {Multiple sclerosis, susceptibility to}, 1}, 126200 (3), Multifactorial   |
| <i>HLA-DRB1</i> | 142857 | {Multiple sclerosis, susceptibility to, 1}, 126200 (3), Multifactorial; {Sarcoidosis, susceptibility to, 1}, 181000 (3), Autosomal dominant  |
| <i>HLA-G</i>    | 142871 | {Asthma, susceptibility to}, 600807 (2), Autosomal dominant  |
| <i>HLCS</i>     | 609018 | Holocarboxylase synthetase deficiency, 253270 (3), Autosomal recessive   |
| <i>HMCN1</i>    | 608548 | {Macular degeneration, age-related, 1}, 603075 (3), Autosomal dominant   |
| <i>HMGA1</i>    | 600701 | {Diabetes mellitus, noninsulin-dependent, susceptibility to}, 125853 (3), Autosomal dominant   |
| <i>HMGCL</i>    | 613898 | HMG-CoA lyase deficiency, 246450 (3), Autosomal recessive  |
| <i>HMGCS2</i>   | 600234 | HMG-CoA synthase-2 deficiency, 605911 (3), Autosomal recessive   |
| <i>HMMR</i>     | 600936 | {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant   |
| <i>HMOX1</i>    | 141250 | Heme oxygenase-1 deficiency, 614034 (3); {Pulmonary disease, chronic obstructive, susceptibility to}, 606963 (3)   |
| <i>HMX1</i>     | 142992 | Oculoauricular syndrome, 612109 (3), Autosomal recessive   |
| <i>HNF1A</i>    | 142410 | Diabetes mellitus, insulin-dependent, 20, 612520 (3); {Diabetes mellitus, insulin-dependent}, 222100 (3), Autosomal recessive; {Diabetes mellitus, noninsulin-dependent, 2}, 125853 (3), Autosomal dominant; Hepatic adenoma, somatic, 142330 (3); MODY, type III, 600496 (3), Autosomal dominant; Renal cell carcinoma, 144700 (3)                  |

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| <i>HNF1B</i>     | 189907 | Diabetes mellitus, noninsulin-dependent, 125853 (3), Autosomal dominant; {Renal cell carcinoma}, 144700 (3); Renal cysts and diabetes syndrome, 137920 (3), Autosomal dominant   |
| <i>HNF4A</i>     | 600281 | {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant; Fanconi renotubular syndrome 4, with maturity-onset diabetes of the young, 616026 (3), Autosomal dominant; MODY, type I, 125850 (3), Autosomal dominant                                 |
| <i>HNMT</i>      | 605238 | {Asthma, susceptibility to}, 600807 (3), Autosomal dominant; Mental retardation, autosomal recessive 51, 616739 (3), Autosomal recessive   |
| <i>HNRNPA1</i>   | 164017 | Amyotrophic lateral sclerosis 20, 615426 (3), Autosomal dominant; ?Inclusion body myopathy with early-onset Paget disease without frontotemporal dementia 3, 615424 (3), Autosomal dominant  |
| <i>HNRNPA2B1</i> | 600124 | ?Inclusion body myopathy with early-onset Paget disease with or without frontotemporal dementia 2, 615422 (3)  |
| <i>HNRNPDL</i>   | 607137 | Muscular dystrophy, limb-girdle, type 1G, 609115 (3), Autosomal dominant   |
| <i>HNRNPH2</i>   | 300610 | Mental retardation, X-linked, syndromic, Bain type, 300986 (3), X-linked dominant  |
| <i>HNRNPK</i>    | 600712 | Au-Kline syndrome, 616580 (3), Autosomal dominant  |
| <i>HNRNPU</i>    | 602869 | Epileptic encephalopathy, early infantile, 54, 617391 (3), Autosomal dominant  |
| <i>HOGA1</i>     | 613597 | Hyperoxaluria, primary, type III, 613616 (3)   |
| <i>HOMER2</i>    | 604799 | ?Deafness, autosomal dominant 68, 616707 (3), Autosomal dominant   |
| <i>HOXA1</i>     | 142955 | Athabaskan brainstem dysgenesis syndrome, 601536 (3); Bosley-Salih-Alorainy syndrome, 601536 (3)   |
| <i>HOXA11</i>    | 142958 | Radioradial synostosis with amegakaryocytic thrombocytopenia 1, 605432 (3), Autosomal dominant   |
| <i>HOXA13</i>    | 142959 | Guttmacher syndrome, 176305 (3), Autosomal dominant; Hand-foot-uterus syndrome, 140000 (3), Autosomal dominant   |
| <i>HOXA2</i>     | 604685 | Microtia with or without hearing impairment (AD), 612290 (3), Autosomal recessive, Autosomal dominant; ?Microtia, hearing impairment, and cleft palate (AR), 612290 (3), Autosomal recessive, Autosomal dominant   |
| <i>HOXC13</i>    | 142976 | Ectodermal dysplasia 9, hair/nail type, 614931 (3), Autosomal recessive  |
| <i>HOXD10</i>    | 142984 | Charcot-Marie-Tooth disease, foot deformity of, 192950 (3), Autosomal dominant; Vertical talus, congenital, 192950 (3), Autosomal dominant   |
| <i>HOXD13</i>    | 142989 | Brachydactyly, type D, 113200 (3), Autosomal dominant; Brachydactyly, type E, 113300 (3), Autosomal dominant; ?Brachydactyly-syndactyly syndrome, 610713 (3); Syndactyly, type V, 186300 (3), Autosomal dominant; Synpolydactyly 1, 186000 (3), Autosomal dominant |
| <i>HP</i>        | 140100 | [Anhaptoglobinemia], 614081 (3); [Hypohaptoglobinemia], 614081 (3)   |
| <i>HPCA</i>      | 142622 | Dystonia 2, torsion, autosomal recessive, 224500 (3), Autosomal recessive  |

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| <i>HPD</i>      | 609695 | Hawkinsinuria, 140350 (3), Autosomal dominant; Tyrosinemia, type III, 276710 (3), Autosomal recessive   |
| <i>HPGD</i>     | 601688 | Cranioosteoarthropathy, 259100 (3), Autosomal recessive; Digital clubbing, isolated congenital, 119900 (3), Autosomal recessive; Hypertrophic osteoarthropathy, primary, autosomal recessive 1, 259100 (3), Autosomal recessive   |
| <i>HPRT1</i>    | 308000 | HPRT-related gout, 300323 (3), X-linked recessive; Lesch-Nyhan syndrome, 300322 (3), X-linked recessive   |
| <i>HPS1</i>     | 604982 | Hermansky-Pudlak syndrome 1, 203300 (3), Autosomal recessive  |
| <i>HPS3</i>     | 606118 | Hermansky-Pudlak syndrome 3, 614072 (3), Autosomal recessive  |
| <i>HPS4</i>     | 606682 | Hermansky-Pudlak syndrome 4, 614073 (3), Autosomal recessive  |
| <i>HPS5</i>     | 607521 | Hermansky-Pudlak syndrome 5, 614074 (3), Autosomal recessive  |
| <i>HPS6</i>     | 607522 | Hermansky-Pudlak syndrome 6, 614075 (3), Autosomal recessive  |
| <i>HPSE2</i>    | 613469 | Urofacial syndrome 1, 236730 (3), Autosomal recessive   |
| <i>HR</i>       | 602302 | Alopecia universalis, 203655 (3), Autosomal recessive; Atrichia with papular lesions, 209500 (3), Autosomal recessive; Hypotrichosis 4, 146550 (3), Autosomal dominant  |
| <i>HRAS</i>     | 190020 | {Bladder cancer, somatic}, 109800 (3); Congenital myopathy with excess of muscle spindles, 218040 (3), Autosomal dominant, Isolated cases; Costello syndrome, 218040 (3), Autosomal dominant, Isolated cases; {Nevus sebaceous or woolly hair nevus, somatic}, 162900 (3); Schimmelpenning-Feuerstein-Mims syndrome, somatic mosaic, 163200 (3); {Spitz nevus or nevus spilus, somatic}, 137550 (3); {Thyroid carcinoma, follicular, somatic}, 188470 (3) |
| <i>HRG</i>      | 142640 | Thrombophilia due to HRG deficiency, 613116 (3), Autosomal dominant; Thrombophilia due to elevated HRG, 613116 (1), Autosomal dominant  |
| <i>HS6ST1</i>   | 604846 | {Hypogonadotropic hypogonadism 15 with or without anosmia}, 614880 (3), Autosomal dominant  |
| <i>HSD11B1</i>  | 600713 | Cortisone reductase deficiency 2, 614662 (3), Autosomal dominant  |
| <i>HSD11B2</i>  | 614232 | Apparent mineralocorticoid excess, 218030 (3), Autosomal recessive  |
| <i>HSD17B10</i> | 300256 | HSD10 mitochondrial disease, 300438 (3), X-linked dominant  |
| <i>HSD17B3</i>  | 605573 | Pseudohermaphroditism, male, with gynecomastia, 264300 (3), Autosomal recessive   |
| <i>HSD17B4</i>  | 601860 | D-bifunctional protein deficiency, 261515 (3), Autosomal recessive; Perrault syndrome 1, 233400 (3), Autosomal recessive  |
| <i>HSD3B2</i>   | 613890 | Adrenal hyperplasia, congenital, due to 3-beta-hydroxysteroid dehydrogenase 2 deficiency, 201810 (3), Autosomal recessive   |
| <i>HSD3B7</i>   | 607764 | Bile acid synthesis defect, congenital, 1, 607765 (3), Autosomal recessive  |
| <i>HSF4</i>     | 602438 | Cataract 5, multiple types, 116800 (3), Autosomal dominant  |
| <i>HSFY1</i>    | 400029 | No OMIM phenotype   |
| <i>HSPA9</i>    | 600548 | Anemia, sideroblastic, 4, 182170 (3), Autosomal dominant; Even-plus syndrome, 616854 (3), Autosomal recessive   |

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| <i>HSPB1</i> | 602195 | Charcot-Marie-Tooth disease, axonal, type 2F, 606595 (3), Autosomal dominant; Neuropathy, distal hereditary motor, type IIB, 608634 (3), Autosomal dominant  |
| <i>HSPB3</i> | 604624 | ?Neuronopathy, distal hereditary motor, type IIC, 613376 (3), Autosomal dominant   |
| <i>HSPB8</i> | 608014 | Charcot-Marie-Tooth disease, axonal, type 2L, 608673 (3), Autosomal dominant; Neuropathy, distal hereditary motor, type IIA, 158590 (3), Autosomal dominant  |
| <i>HSPD1</i> | 118190 | Leukodystrophy, hypomyelinating, 4, 612233 (3), Autosomal recessive; Spastic paraplegia 13, autosomal dominant, 605280 (3), Autosomal dominant   |
| <i>HSPG2</i> | 142461 | Dyssegmental dysplasia, Silverman-Handmaker type, 224410 (3), Autosomal recessive; Schwartz-Jampel syndrome, type 1, 255800 (3), Autosomal recessive   |
| <i>HTR1A</i> | 109760 | Periodic fever, menstrual cycle dependent, 614674 (3), Autosomal dominant  |
| <i>HTR2A</i> | 182135 | {Alcohol dependence, susceptibility to}, 103780 (3), Multifactorial; {Anorexia nervosa, susceptibility to}, 606788 (3); {Major depressive disorder, response to citalopram therapy in}, 608516 (3); {Obsessive-compulsive disorder, susceptibility to}, 164230 (3), Autosomal dominant; {Schizophrenia, susceptibility to}, 181500 (3), Autosomal dominant; {Seasonal affective disorder, susceptibility to}, 608516 (3) |
| <i>HTRA1</i> | 602194 | CARASIL syndrome, 600142 (3), Autosomal recessive; Cerebral arteriopathy, autosomal dominant, with subcortical infarcts and leukoencephalopathy, type 2, 616779 (3), Autosomal dominant; {Macular degeneration, age-related, 7}, 610149 (3); {Macular degeneration, age-related, neovascular type}, 610149 (3)   |
| <i>HTRA2</i> | 606441 | 3-methylglutaconic aciduria, type VIII, 617248 (3), Autosomal recessive; {Parkinson disease 13}, 610297 (3)  |
| <i>HTT</i>   | 613004 | Huntington disease, 143100 (3), Autosomal dominant; Lopes-Maciel-Rodan syndrome, 617435 (3), Autosomal recessive   |
| <i>HUWE1</i> | 300697 | Mental retardation, X-linked syndromic, Turner type, 300706 (3)  |
| <i>HYAL1</i> | 607071 | ?Mucopolysaccharidosis type IX, 601492 (3), Autosomal recessive  |
| <i>HYDIN</i> | 610812 | Ciliary dyskinesia, primary, 5, 608647 (3), Autosomal recessive  |
| <i>HYLS1</i> | 610693 | Hydrocephalus syndrome, 236680 (3), Autosomal recessive  |
| <i>IARS2</i> | 612801 | ?Cataracts, growth hormone deficiency, sensory neuropathy, sensorineural hearing loss, and skeletal dysplasia, 616007 (3), Autosomal recessive   |
| <i>IBA57</i> | 615316 | Multiple mitochondrial dysfunctions syndrome 3, 615330 (3), Autosomal recessive; ?Spastic paraplegia 74, autosomal recessive, 616451 (3), Autosomal recessive  |
| <i>ICAM1</i> | 147840 | {Malaria, cerebral, susceptibility to}, 611162 (3)   |
| <i>ICAM4</i> | 614088 | [Blood group, Landsteiner-Wiener], 111250 (3)  |
| <i>ICOS</i>  | 604558 | Immunodeficiency, common variable, 1, 607594 (3), Autosomal recessive  |

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| <i>IDH1</i>    | 147700 | {Glioma, susceptibility to, somatic}, 137800 (3)   |
| <i>IDH2</i>    | 147650 | D-2-hydroxyglutaric aciduria 2, 613657 (3)   |
| <i>IDH3B</i>   | 604526 | Retinitis pigmentosa 46, 612572 (3)  |
| <i>IDS</i>     | 300823 | Mucopolysaccharidosis II, 309900 (3), X-linked recessive   |
| <i>IDUA</i>    | 252800 | Mucopolysaccharidosis Ih, 607014 (3), Autosomal recessive; Mucopolysaccharidosis Ih/s, 607015 (3), Autosomal recessive; Mucopolysaccharidosis Is, 607016 (3), Autosomal recessive  |
| <i>IER3IP1</i> | 609382 | Microcephaly, epilepsy, and diabetes syndrome, 614231 (3), Autosomal recessive   |
| <i>IFIH1</i>   | 606951 | Aicardi-Goutieres syndrome 7, 615846 (3), Autosomal dominant; Singleton-Merten syndrome 1, 182250 (3), Autosomal dominant  |
| <i>IFITM3</i>  | 605579 | {Influenza, severe, susceptibility to}, 614680 (3)   |
| <i>IFITM5</i>  | 614757 | Osteogenesis imperfecta, type V, 610967 (3), Autosomal dominant  |
| <i>IFNAR2</i>  | 602376 | {Hepatitis B virus, susceptibility to}, 610424 (3); ?Immunodeficiency 45, 616669 (3), Autosomal recessive  |
| <i>IFNG</i>    | 147570 | {AIDS, rapid progression to}, 609423 (3); {Aplastic anemia}, 609135 (3); {Hepatitis C virus, response to therapy of}, 609532 (3); {TSC2 angiomyolipomas, renal, modifier of}, 613254 (3), Autosomal dominant; {Tuberculosis, protection against}, 607948 (3)   |
| <i>IFNGR1</i>  | 107470 | {H. pylori infection, susceptibility to}, 600263 (3); {Hepatitis B virus infection, susceptibility to}, 610424 (3); Immunodeficiency 27A, mycobacteriosis, AR, 209950 (3), Autosomal recessive; Immunodeficiency 27B, mycobacteriosis, AD, 615978 (3), Autosomal dominant; {Tuberculosis infection, protection against}, 607948 (3); {Tuberculosis, susceptibility to}, 607948 (3) |
| <i>IFNGR2</i>  | 147569 | Immunodeficiency 28, mycobacteriosis, 614889 (3), Autosomal recessive  |
| <i>IFNL3</i>   | 607402 | {Hepatitis C virus infection, response to therapy of}, 609532 (3)  |
| <i>IFT122</i>  | 606045 | Cranioectodermal dysplasia 1, 218330 (3), Autosomal recessive  |
| <i>IFT140</i>  | 614620 | Retinitis pigmentosa 80, 617781 (3), Autosomal recessive; Short-rib thoracic dysplasia 9 with or without polydactyly, 266920 (3), Autosomal recessive  |
| <i>IFT172</i>  | 607386 | Retinitis pigmentosa 71, 616394 (3), Autosomal recessive; Short-rib thoracic dysplasia 10 with or without polydactyly, 615630 (3), Autosomal recessive   |
| <i>IFT27</i>   | 615870 | ?Bardet-Biedl syndrome 19, 615996 (3), Autosomal recessive   |
| <i>IFT43</i>   | 614068 | ?Cranioectodermal dysplasia 3, 614099 (3), Autosomal recessive; ?Retinitis pigmentosa 81, 617871 (3), Autosomal recessive; Short-rib thoracic dysplasia 18 with polydactyly, 617866 (3), Autosomal recessive   |
| <i>IFT52</i>   | 617094 | Short-rib thoracic dysplasia 16 with or without polydactyly, 617102 (3), Autosomal recessive   |
| <i>IFT80</i>   | 611177 | Short-rib thoracic dysplasia 2 with or without polydactyly, 611263 (3), Autosomal recessive  |
| <i>IGBP1</i>   | 300139 | Corpus callosum, agenesis of, with mental retardation, ocular coloboma and micrognathia, 300472 (3), X-linked recessive  |

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| <i>IGF1</i>    | 147440 | Growth retardation with deafness and mental retardation due to IGF1 deficiency, 608747 (3), Autosomal recessive  |
| <i>IGF1R</i>   | 147370 | Insulin-like growth factor I, resistance to, 270450 (3), Autosomal recessive, Autosomal dominant   |
| <i>IGF2BP2</i> | 608289 | {Diabetes mellitus, noninsulin-dependent, susceptibility to}, 125853 (3), Autosomal dominant   |
| <i>IGF2R</i>   | 147280 | Hepatocellular carcinoma, somatic, 114550 (3)  |
| <i>IGFALS</i>  | 601489 | Acid-labile subunit, deficiency of, 615961 (3)   |
| <i>IGFBP7</i>  | 602867 | Retinal arterial macroaneurysm with supravalvular pulmonic stenosis, 614224 (3), Autosomal recessive   |
| <i>IGHMBP2</i> | 600502 | Charcot-Marie-Tooth disease, axonal, type 2S, 616155 (3), Autosomal recessive; Neuropathy, distal hereditary motor, type VI, 604320 (3), Autosomal recessive   |
| <i>IGLL1</i>   | 146770 | Agammaglobulinemia 2, 613500 (3), Autosomal recessive  |
| <i>IGSF1</i>   | 300137 | Hypothyroidism, central, and testicular enlargement, 300888 (3), X-linked recessive  |
| <i>IGSF3</i>   | 603491 | ?Lacrimal duct defect, 149700 (3), Autosomal recessive   |
| <i>IHH</i>     | 600726 | Acrocapitofemoral dysplasia, 607778 (3), Autosomal recessive; Brachydactyly, type A1, 112500 (3), Autosomal dominant   |
| <i>IKBKB</i>   | 603258 | Immunodeficiency 15, 615592 (3), Autosomal recessive   |
| <i>IKBKG</i>   | 300248 | Ectodermal dysplasia, hypohidrotic, with immune deficiency, 300291 (3); Ectodermal, dysplasia, anhidrotic, lymphedema and immunodeficiency, 300301 (3); Immunodeficiency 33, 300636 (3), X-linked recessive; Immunodeficiency, isolated, 300584 (3); Incontinentia pigmenti, 308300 (3), X-linked dominant; Invasive pneumococcal disease, recurrent isolated, 2, 300640 (3) |
| <i>IKZF1</i>   | 603023 | Immunodeficiency, common variable, 13, 616873 (3), Autosomal dominant  |
| <i>IL10</i>    | 124092 | {Graft-versus-host disease, protection against}, 614395 (3); {HIV-1, susceptibility to}, 609423 (3); {Rheumatoid arthritis, progression of}, 180300 (3)  |
| <i>IL10RA</i>  | 146933 | Inflammatory bowel disease 28, early onset, autosomal recessive, 613148 (3), Autosomal recessive   |
| <i>IL10RB</i>  | 123889 | {Hepatitis B virus, susceptibility to}, 610424 (3); Inflammatory bowel disease 25, early onset, autosomal recessive, 612567 (3), Autosomal recessive   |
| <i>IL11RA</i>  | 600939 | Craniosynostosis and dental anomalies, 614188 (3), Autosomal recessive   |
| <i>IL12B</i>   | 161561 | Immunodeficiency 29, mycobacteriosis, 614890 (3), Autosomal recessive  |
| <i>IL13</i>    | 147683 | {Allergic rhinitis, susceptibility to}, 607154 (3); {Asthma, susceptibility to}, 600807 (3), Autosomal dominant  |
| <i>IL17F</i>   | 606496 | ?Candidiasis, familial, 6, autosomal dominant, 613956 (3)  |
| <i>IL17RA</i>  | 605461 | Immunodeficiency 51, 613953 (3), Autosomal recessive   |
| <i>IL17RC</i>  | 610925 | Candidiasis, familial, 9, 616445 (3), Autosomal recessive  |

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| <i>IL17RD</i>   | 606807 | Hypogonadotropic hypogonadism 18 with or without anosmia, 615267 (3), Autosomal recessive, Autosomal dominant  |
| <i>IL1B</i>     | 147720 | {Gastric cancer risk after H. pylori infection}, 137215 (3), Autosomal dominant  |
| <i>IL1RAPL1</i> | 300206 | Mental retardation, X-linked 21/34, 300143 (3), X-linked recessive   |
| <i>IL1RN</i>    | 147679 | {Gastric cancer risk after H. pylori infection}, 137215 (3), Autosomal dominant; Interleukin 1 receptor antagonist deficiency, 612852 (3), Autosomal recessive; {Microvascular complications of diabetes 4}, 612628 (3)  |
| <i>IL21</i>     | 605384 | ?Immunodeficiency, common variable, 11, 615767 (3), Autosomal recessive  |
| <i>IL23R</i>    | 607562 | {Inflammatory bowel disease 17, protection against}, 612261 (3); {Psoriasis, protection against}, 605606 (3)   |
| <i>IL2RA</i>    | 147730 | {Diabetes, mellitus, insulin-dependent, susceptibility to}, 10, 601942 (3); Immunodeficiency 41 with lymphoproliferation and autoimmunity, 606367 (3), Autosomal recessive   |
| <i>IL2RG</i>    | 308380 | Combined immunodeficiency, X-linked, moderate, 312863 (3), X-linked recessive; Severe combined immunodeficiency, X-linked, 300400 (3), X-linked recessive  |
| <i>IL31RA</i>   | 609510 | ?Amyloidosis, primary localized cutaneous, 2, 613955 (3), Autosomal dominant   |
| <i>IL36RN</i>   | 605507 | Psoriasis 14, pustular, 614204 (3), Autosomal recessive  |
| <i>IL4R</i>     | 147781 | {AIDS, slow progression to}, 609423 (3); {Atopy, susceptibility to}, 147050 (3), Autosomal dominant  |
| <i>IL6</i>      | 147620 | {Crohn disease-associated growth failure}, 266600 (3), Multifactorial; {Diabetes, susceptibility to}, 222100 (3), Autosomal recessive; {Intracranial hemorrhage in brain cerebrovascular malformations, susceptibility to}, 108010 (3), Autosomal dominant; {Kaposi sarcoma, susceptibility to}, 148000 (3), Autosomal dominant; {Rheumatoid arthritis, systemic juvenile}, 604302 (3) |
| <i>IL6R</i>     | 147880 | [Interleukin 6, serum level of, QTL], 614752 (3); [Interleukin-6 receptor, soluble, serum level of, QTL], 614689 (3)   |
| <i>IL7R</i>     | 146661 | Severe combined immunodeficiency, T-cell negative, B-cell/natural killer cell-positive type, 608971 (3), Autosomal recessive   |
| <i>ILDR1</i>    | 609739 | Deafness, autosomal recessive 42, 609646 (3), Autosomal recessive  |
| <i>IMPA1</i>    | 602064 | Mental retardation, autosomal recessive 59, 617323 (3), Autosomal recessive  |
| <i>IMPAD1</i>   | 614010 | Chondrodysplasia with joint dislocations, GPAPP type, 614078 (3), Autosomal recessive  |
| <i>IMPDH1</i>   | 146690 | Leber congenital amaurosis 11, 613837 (3); Retinitis pigmentosa 10, 180105 (3), Autosomal dominant   |
| <i>IMPG1</i>    | 602870 | Macular dystrophy, vitelliform, 4, 616151 (3), Autosomal dominant  |
| <i>IMPG2</i>    | 607056 | Macular dystrophy, vitelliform, 5, 616152 (3), Autosomal dominant; Retinitis pigmentosa 56, 613581 (3), Autosomal recessive  |

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| <i>INF2</i>   | 610982 | Charcot-Marie-Tooth disease, dominant intermediate E, 614455 (3), Autosomal dominant; Glomerulosclerosis, focal segmental, 5, 613237 (3)  |
| <i>ING1</i>   | 601566 | Squamous cell carcinoma, head and neck, somatic, 275355 (3)   |
| <i>INPP5E</i> | 613037 | Joubert syndrome 1, 213300 (3), Autosomal recessive; Mental retardation, truncal obesity, retinal dystrophy, and micropenis, 610156 (3), Autosomal recessive  |
| <i>INPPL1</i> | 600829 | Opsismodysplasia, 258480 (3), Autosomal recessive   |
| <i>INS</i>    | 176730 | Diabetes mellitus, insulin-dependent, 2, 125852 (3), Autosomal dominant; Diabetes mellitus, permanent neonatal, 606176 (3), Autosomal recessive, Autosomal dominant; Hyperproinsulinemia, 616214 (3), Autosomal dominant; Maturity-onset diabetes of the young, type 10, 613370 (3), Autosomal dominant |
| <i>INSL3</i>  | 146738 | Cryptorchidism, 219050 (3), Autosomal dominant  |
| <i>INSR</i>   | 147670 | Diabetes mellitus, insulin-resistant, with acanthosis nigricans, 610549 (3); Hyperinsulinemic hypoglycemia, familial, 5, 609968 (3), Autosomal dominant; Leprechaunism, 246200 (3), Autosomal recessive; Rabson-Mendenhall syndrome, 262190 (3), Autosomal recessive                                    |
| <i>INVS</i>   | 243305 | Nephronophthisis 2, infantile, 602088 (3), Autosomal recessive  |
| <i>IQCB1</i>  | 609237 | Senior-Loken syndrome 5, 609254 (3), Autosomal recessive  |
| <i>IQSEC2</i> | 300522 | Mental retardation, X-linked 1/78, 309530 (3), X-linked dominant  |
| <i>IRAK3</i>  | 604459 | {Asthma susceptibility 5}, 611064 (3)   |
| <i>IRAK4</i>  | 606883 | IRAK4 deficiency, 607676 (3); Invasive pneumococcal disease, recurrent isolated, 1, 610799 (3)  |
| <i>IRF1</i>   | 147575 | Gastric cancer, somatic, 613659 (3); Myelodysplastic syndrome, preleukemic (3); Myelogenous leukemia, acute (3); Nonsmall cell lung cancer, somatic, 211980 (3)   |
| <i>IRF4</i>   | 601900 | [Skin/hair/eye pigmentation, variation in, 8], 611724 (3)   |
| <i>IRF6</i>   | 607199 | {Orofacial cleft 6}, 608864 (3), Isolated cases; Popliteal pterygium syndrome 1, 119500 (3), Autosomal dominant; van der Woude syndrome, 119300 (3), Autosomal dominant   |
| <i>IRF7</i>   | 605047 | ?Immunodeficiency 39, 616345 (3), Autosomal recessive   |
| <i>IRF8</i>   | 601565 | Immunodeficiency 32A, mycobacteriosis, autosomal dominant, 614893 (3), Autosomal dominant; Immunodeficiency 32B, monocyte and dendritic cell deficiency, autosomal recessive, 226990 (3), Autosomal recessive   |
| <i>IRGM</i>   | 608212 | {Inflammatory bowel disease (Crohn disease) 19}, 612278 (3); {Mycobacterium tuberculosis, protection against}, 607948 (3)   |
| <i>IRS1</i>   | 147545 | {Coronary artery disease, susceptibility to} (3); {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant   |
| <i>IRS2</i>   | 600797 | {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant   |
| <i>IRX5</i>   | 606195 | Hamamy syndrome, 611174 (3), Autosomal recessive  |
| <i>ISCA2</i>  | 615317 | Multiple mitochondrial dysfunctions syndrome 4, 616370 (3), Autosomal recessive   |

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| <i>ISCU</i>   | 611911 | Myopathy with lactic acidosis, hereditary, 255125 (3), Autosomal recessive  |
| <i>ISG15</i>  | 147571 | Immunodeficiency 38, 616126 (3), Autosomal recessive  |
| <i>ISPD</i>   | 614631 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 7, 614643 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (limb-girdle), type C, 7, 616052 (3), Autosomal recessive                            |
| <i>ITGA2</i>  | 192974 | ?Glycoprotein Ia deficiency, 614200 (1), Autosomal dominant   |
|               |        | Bleeding disorder, platelet-type, 16, autosomal dominant, 187800 (3),   |
| <i>ITGA2B</i> | 607759 | Autosomal dominant; Glanzmann thrombasthenia, 273800 (3),<br>Autosomal recessive; Thrombocytopenia, neonatal alloimmune, BAK antigen related (3)  |
| <i>ITGA3</i>  | 605025 | Interstitial lung disease, nephrotic syndrome, and epidermolysis bullosa, congenital, 614748 (3), Autosomal recessive   |
| <i>ITGA6</i>  | 147556 | Epidermolysis bullosa, junctional, with pyloric stenosis, 226730 (3), Autosomal recessive   |
| <i>ITGA7</i>  | 600536 | Muscular dystrophy, congenital, due to ITGA7 deficiency, 613204 (3), Autosomal recessive  |
| <i>ITGA8</i>  | 604063 | Renal hypodysplasia/aplasia 1, 191830 (3), Autosomal recessive  |
| <i>ITGAM</i>  | 120980 | {Systemic lupus erythematosus, association with susceptibility to}, 609939 (3)  |
| <i>ITGB2</i>  | 600065 | Leukocyte adhesion deficiency, 116920 (3), Autosomal recessive  |
|               |        | Bleeding disorder, platelet-type, 16, autosomal dominant, 187800 (3),   |
| <i>ITGB3</i>  | 173470 | Autosomal dominant; Glanzmann thrombasthenia, 273800 (3),<br>Autosomal recessive; {Myocardial infarction, susceptibility to}, 608446 (3); Purpura, posttransfusion (3); Thrombocytopenia, neonatal alloimmune (3)                                       |
| <i>ITGB4</i>  | 147557 | Epidermolysis bullosa of hands and feet, 131800 (3), Autosomal dominant; Epidermolysis bullosa, junctional, non-Herlitz type, 226650 (3), Autosomal recessive; Epidermolysis bullosa, junctional, with pyloric atresia, 226730 (3), Autosomal recessive |
| <i>ITGB6</i>  | 147558 | Amelogenesis imperfecta, type IH, 616221 (3), Autosomal recessive   |
| <i>ITIH4</i>  | 600564 | {Hypercholesterolemia, susceptibility to}, 143890 (3), Autosomal dominant   |
| <i>ITK</i>    | 186973 | Lymphoproliferative syndrome 1, 613011 (3), Autosomal recessive   |
|               |        | Dementia, familial British, 176500 (3), Autosomal dominant;   |
| <i>ITM2B</i>  | 603904 | Dementia, familial Danish, 117300 (3), Autosomal dominant; ?Retinal dystrophy with inner retinal dysfunction and ganglion cell abnormalities, 616079 (3), Autosomal dominant  |
| <i>ITPA</i>   | 147520 | Epileptic encephalopathy, early infantile, 35, 616647 (3), Autosomal recessive; [Inosine triphosphatase deficiency], 613850 (3)   |
| <i>ITPKC</i>  | 606476 | {Kawasaki disease, susceptibility to}, 611775 (3)   |
| <i>ITPR2</i>  | 600144 | ?Anhidrosis, isolated, with normal sweat glands, 106190 (3), Autosomal recessive  |
| <i>ITPR3</i>  | 147267 | {Diabetes, type 1, susceptibility to}, 222100 (2), Autosomal recessive  |

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| <i>IVD</i>     | 607036 | Isovaleric acidemia, 243500 (3), Autosomal recessive  |
| <i>IYD</i>     | 612025 | Thyroid dyshormonogenesis 4, 274800 (3), Autosomal recessive  |
| <i>JAG1</i>    | 601920 | Alagille syndrome 1, 118450 (3), Autosomal dominant; ?Deafness, congenital heart defects, and posterior embryotoxon, 617992 (3); Tetralogy of Fallot, 187500 (3), Autosomal dominant  |
| <i>JAGN1</i>   | 616012 | Neutropenia, severe congenital, 6, autosomal recessive, 616022 (3), Autosomal recessive   |
| <i>JAK2</i>    | 147796 | {Budd-Chiari syndrome, somatic}, 600880 (3); Erythrocytosis, somatic, 133100 (3); Leukemia, acute myeloid, somatic, 601626 (3); Myelofibrosis, somatic, 254450 (3); Polycythemia vera, somatic, 263300 (3); Thrombocythemia 3, 614521 (3), Autosomal dominant, Somatic mutation |
| <i>JAK3</i>    | 600173 | SCID, autosomal recessive, T-negative/B-positive type, 600802 (3), Autosomal recessive  |
| <i>JAM3</i>    | 606871 | Hemorrhagic destruction of the brain, subependymal calcification, and cataracts, 613730 (3), Autosomal recessive  |
| <i>JPH1</i>    | 605266 | ?Charcot-Marie-Tooth disease, axonal, autosomal dominant, type 2K, 607831 (3), Autosomal recessive, Autosomal dominant  |
| <i>JPH2</i>    | 605267 | Cardiomyopathy, hypertrophic, 17, 613873 (3), Autosomal dominant  |
| <i>JPH3</i>    | 605268 | ?Huntington disease-like 2, 606438 (3), Autosomal dominant  |
| <i>KANK2</i>   | 614610 | Nephrotic syndrome 16, 617783 (3), Autosomal recessive; Palmoplantar keratoderma and woolly hair, 616099 (3), Autosomal recessive   |
| <i>KARS</i>    | 601421 | ?Charcot-Marie-Tooth disease, recessive intermediate, B, 613641 (3), Autosomal recessive; Deafness, autosomal recessive 89, 613916 (3), Autosomal recessive   |
| <i>KAT6A</i>   | 601408 | Mental retardation, autosomal dominant 32, 616268 (3), Autosomal dominant   |
| <i>KAT6B</i>   | 605880 | Genitopatellar syndrome, 606170 (3), Autosomal dominant; SBBYSS syndrome, 603736 (3), Autosomal dominant  |
| <i>KATNB1</i>  | 602703 | Lissencephaly 6, with microcephaly, 616212 (3), Autosomal recessive   |
| <i>KBTBD13</i> | 613727 | Nemaline myopathy 6, autosomal dominant, 609273 (3), Autosomal dominant   |
| <i>KCNA1</i>   | 176260 | Episodic ataxia/myokymia syndrome, 160120 (3), Autosomal dominant   |
| <i>KCNA5</i>   | 176267 | Atrial fibrillation, familial, 7, 612240 (3), Autosomal dominant  |
| <i>KCNB1</i>   | 600397 | Epileptic encephalopathy, early infantile, 26, 616056 (3), Autosomal dominant   |
| <i>KCNC1</i>   | 176258 | Epilepsy, progressive myoclonic 7, 616187 (3), Autosomal dominant   |
| <i>KCND3</i>   | 605411 | Brugada syndrome 9, 616399 (3), Autosomal dominant; Spinocerebellar ataxia 19, 607346 (3), Autosomal dominant   |
| <i>KCNE1</i>   | 176261 | Jervell and Lange-Nielsen syndrome 2, 612347 (3), Autosomal recessive; Long QT syndrome 5, 613695 (3), Autosomal dominant   |
| <i>KCNE2</i>   | 603796 | Atrial fibrillation, familial, 4, 611493 (3); Long QT syndrome 6, 613693 (3), Autosomal dominant  |

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| <i>KCNH1</i>  | 603305 | Temple-Baraitser syndrome, 611816 (3), Autosomal dominant; Zimmermann-Laband syndrome 1, 135500 (3), Autosomal dominant  |
| <i>KCNH2</i>  | 152427 | Long QT syndrome 2, 613688 (3), Autosomal dominant; {Long QT syndrome 2, acquired, susceptibility to}, 613688 (3), Autosomal dominant; Short QT syndrome 1, 609620 (3)   |
| <i>KCNJ10</i> | 602208 | Enlarged vestibular aqueduct, digenic, 600791 (3), Autosomal recessive; SESAME syndrome, 612780 (3), Autosomal recessive   |
| <i>KCNJ11</i> | 600937 | Diabetes mellitus, transient neonatal, 3, 610582 (3), Autosomal dominant; {Diabetes mellitus, type 2, susceptibility to}, 125853 (3), Autosomal dominant; Diabetes, permanent neonatal, with or without neurologic features, 606176 (3), Autosomal recessive, Autosomal dominant; Hyperinsulinemic hypoglycemia, familial, 2, 601820 (3), Autosomal recessive; Maturity-onset diabetes of the young, type 13, 616329 (3), Autosomal dominant |
| <i>KCNJ13</i> | 603208 | Leber congenital amaurosis 16, 614186 (3), Autosomal recessive; Snowflake vitreoretinal degeneration, 193230 (3), Autosomal dominant   |
| <i>KCNJ18</i> | 613236 | {Thyrotoxic periodic paralysis, susceptibility to, 2}, 613239 (3), Isolated cases  |
| <i>KCNJ2</i>  | 600681 | Andersen syndrome, 170390 (3), Autosomal dominant; Atrial fibrillation, familial, 9, 613980 (3), Autosomal dominant; Short QT syndrome 3, 609622 (3)   |
| <i>KCNJ5</i>  | 600734 | Hyperaldosteronism, familial, type III, 613677 (3), Autosomal dominant; Long QT syndrome 13, 613485 (3), Autosomal dominant  |
| <i>KCNJ6</i>  | 600877 | Keppen-Lubinsky syndrome, 614098 (3), Autosomal dominant   |
| <i>KCNK18</i> | 613655 | {Migraine, with or without aura, susceptibility to, 13}, 613656 (3)  |
| <i>KCNK3</i>  | 603220 | Pulmonary hypertension, primary, 4, 615344 (3), Autosomal dominant   |
| <i>KCNK9</i>  | 605874 | Birk-Barel mental retardation dysmorphism syndrome, 612292 (3)   |
| <i>KCNMA1</i> | 600150 | ?Cerebellar atrophy, developmental delay, and seizures, 617643 (3), Autosomal recessive; Paroxysmal nonkinesigenic dyskinesia, 3, with or without generalized epilepsy, 609446 (3), Autosomal dominant   |
| <i>KCNMB1</i> | 603951 | {Hypertension, diastolic, resistance to}, 608622 (3), Autosomal dominant   |
| <i>KCNN4</i>  | 602754 | Dehydrated hereditary stomatocytosis 2, 616689 (3), Autosomal dominant   |
| <i>KCNQ1</i>  | 607542 | Atrial fibrillation, familial, 3, 607554 (3), Autosomal dominant; Jervell and Lange-Nielsen syndrome, 220400 (3), Autosomal recessive; Long QT syndrome 1, 192500 (3), Autosomal dominant; {Long QT syndrome 1, acquired, susceptibility to}, 192500 (3), Autosomal dominant; Short QT syndrome 2, 609621 (3), Autosomal dominant  |
| <i>KCNQ2</i>  | 602235 | Epileptic encephalopathy, early infantile, 7, 613720 (3), Autosomal dominant; Myokymia, 121200 (3), Autosomal dominant; Seizures, benign neonatal, 1, 121200 (3), Autosomal dominant   |
| <i>KCNQ4</i>  | 603537 | Deafness, autosomal dominant 2A, 600101 (3), Autosomal dominant  |

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| <i>KCNT1</i>     | 608167 | Epilepsy, nocturnal frontal lobe, 5, 615005 (3), Autosomal dominant; Epileptic encephalopathy, early infantile, 14, 614959 (3), Autosomal dominant  |
| <i>KCNV2</i>     | 607604 | Retinal cone dystrophy 3B, 610356 (3), Autosomal recessive  |
| <i>KCTD1</i>     | 613420 | Scalp-ear-nipple syndrome, 181270 (3), Autosomal dominant   |
| <i>KCTD17</i>    | 616386 | Dystonia 26, myoclonic, 616398 (3), Autosomal dominant  |
| <i>KCTD7</i>     | 611725 | Epilepsy, progressive myoclonic 3, with or without intracellular inclusions, 611726 (3), Autosomal recessive  |
| <i>KDF1</i>      | 616758 | ?Ectodermal dysplasia 12, hypohidrotic/hair/tooth/nail type, 617337 (3), Autosomal dominant   |
| <i>KDM5C</i>     | 314690 | Mental retardation, X-linked, syndromic, Claes-Jensen type, 300534 (3), X-linked recessive  |
| <i>KDM5D</i>     | 426000 | No OMIM phenotype   |
| <i>KDM6A</i>     | 300128 | Kabuki syndrome 2, 300867 (3), X-linked dominant  |
| <i>KDR</i>       | 191306 | Hemangioma, capillary infantile, somatic, 602089 (3); {Hemangioma, capillary infantile, susceptibility to}, 602089 (3), Autosomal dominant  |
| <i>KEL</i>       | 613883 | [Blood group, Kell], 110900 (3)   |
| <i>KERA</i>      | 603288 | Cornea plana 2, autosomal recessive, 217300 (3), Autosomal recessive  |
| <i>KHDC3L</i>    | 611687 | Hydatidiform mole, recurrent, 2, 614293 (3), Autosomal recessive  |
| <i>KHK</i>       | 614058 | [Fructosuria], 229800 (3), Autosomal recessive  |
| <i>KIAA0319</i>  | 609269 | No OMIM phenotype   |
| <i>KIAA0556</i>  | 616650 | Joubert syndrome 26, 616784 (3), Autosomal recessive  |
| <i>KIAA0586</i>  | 610178 | Joubert syndrome 23, 616490 (3), Autosomal recessive; Short-rib thoracic dysplasia 14 with polydactyly, 616546 (3), Autosomal recessive   |
| <i>KIDINS220</i> | 615759 | Spastic paraparesis, intellectual disability, nystagmus, and obesity, 617296 (3), Autosomal dominant  |
| <i>KIF11</i>     | 148760 | Microcephaly with or without chorioretinopathy, lymphedema, or mental retardation, 152950 (3), Autosomal dominant   |
| <i>KIF14</i>     | 611279 | ?Meckel syndrome 12, 616258 (3), Autosomal recessive; Microcephaly 20, primary, autosomal recessive, 617914 (3), Autosomal recessive  |
| <i>KIF1A</i>     | 601255 | Mental retardation, autosomal dominant 9, 614255 (3), Autosomal dominant; Neuropathy, hereditary sensory, type IIC, 614213 (3), Autosomal recessive; Spastic paraparesis 30, autosomal recessive, 610357 (3), Autosomal recessive |
| <i>KIF1B</i>     | 605995 | ?Charcot-Marie-Tooth disease, type 2A1, 118210 (3), Autosomal dominant; {Neuroblastoma, susceptibility to, 1}, 256700 (3), Autosomal dominant, Isolated cases; Pheochromocytoma, 171300 (3), Autosomal dominant                   |
| <i>KIF1BP</i>    | 609367 | Goldberg-Shprintzen megacolon syndrome, 609460 (3), Autosomal recessive   |
| <i>KIF1C</i>     | 603060 | Spastic ataxia 2, autosomal recessive, 611302 (3), Autosomal recessive  |
| <i>KIF2A</i>     | 602591 | Cortical dysplasia, complex, with other brain malformations 3, 615411 (3), Autosomal dominant   |
| <i>KIF4A</i>     | 300521 | ?Mental retardation, X-linked 100, 300923 (3), X-linked recessive   |

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| <i>KIF5A</i>   | 602821 | {Amyotrophic lateral sclerosis, susceptibility to, 25}, 617921 (3), Autosomal dominant; Myoclonus, intractable, neonatal, 617235 (3), Autosomal dominant; Spastic paraplegia 10, autosomal dominant, 604187 (3), Autosomal dominant  |
| <i>KIF5C</i>   | 604593 | Cortical dysplasia, complex, with other brain malformations 2, 615282 (3), Autosomal dominant  |
| <i>KIF7</i>    | 611254 | Acrocallosal syndrome, 200990 (3), Autosomal recessive; ?Al-Gazali-Bakalinova syndrome, 607131 (3), Autosomal recessive; ?Hydrocephalus syndrome 2, 614120 (3), Autosomal recessive; Joubert syndrome 12, 200990 (3), Autosomal recessive  |
| <i>KIR3DL1</i> | 604946 | {AIDS, delayed/rapid progression to}, 609423 (3)   |
| <i>KIRREL3</i> | 607761 | No OMIM phenotype  |
| <i>KISS1</i>   | 603286 | ?Hypogonadotropic hypogonadism 13 with or without anosmia, 614842 (3), Autosomal recessive   |
| <i>KISS1R</i>  | 604161 | Hypogonadotropic hypogonadism 8 with or without anosmia, 614837 (3), Autosomal recessive; ?Precocious puberty, central, 1, 176400 (3), Autosomal dominant  |
| <i>KIT</i>     | 164920 | Gastrointestinal stromal tumor, familial, 606764 (3), Autosomal dominant, Isolated cases; Germ cell tumors, somatic, 273300 (3); Leukemia, acute myeloid, 601626 (3), Autosomal dominant; Mastocytosis, cutaneous, 154800 (3), Autosomal dominant; Mastocytosis, systemic, somatic, 154800 (3); Piebaldism, 172800 (3), Autosomal dominant |
| <i>KITLG</i>   | 184745 | Deafness, autosomal dominant 69, unilateral or asymmetric, 616697 (3), Autosomal dominant; Hyperpigmentation with or without hypopigmentation, 145250 (3), Autosomal dominant; [Skin/hair/eye pigmentation 7, blond/brown hair], 611664 (3)  |
| <i>KLF1</i>    | 600599 | Blood group--Lutheran inhibitor, 111150 (3); Dyserythropoietic anemia, congenital, type IV, 613673 (3), Autosomal dominant; [Hereditary persistence of fetal hemoglobin], 613566 (3)   |
| <i>KLF11</i>   | 603301 | Maturity-onset diabetes of the young, type VII, 610508 (3)   |
| <i>KLF13</i>   | 605328 | No OMIM phenotype  |
| <i>KLF6</i>    | 602053 | Gastric cancer, somatic, 613659 (3); Prostate cancer, somatic, 176807 (3)  |
| <i>KLHDC8B</i> | 613169 | {Hodgkin lymphoma, susceptibility to}, 236000 (3), Autosomal recessive   |
| <i>KLHL10</i>  | 608778 | Spermatogenic failure 11, 615081 (3), Autosomal dominant   |
| <i>KLHL15</i>  | 300980 | Mental retardation, X-linked 103, 300982 (3), X-linked recessive   |
| <i>KLHL24</i>  | 611295 | Epidermolysis bullosa simplex, generalized, with scarring and hair loss, 617294 (3), Autosomal dominant  |
| <i>KLHL3</i>   | 605775 | Pseudohypoaldosteronism, type IID, 614495 (3), Autosomal recessive, Autosomal dominant   |
| <i>KLHL40</i>  | 615340 | Nemaline myopathy 8, autosomal recessive, 615348 (3)   |
| <i>KLHL41</i>  | 607701 | Nemaline myopathy 9, 615731 (3), Autosomal recessive   |
| <i>KLK1</i>    | 147910 | [Kallikrein, decreased urinary activity of], 615953 (3)  |

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| <i>KLK4</i>    | 603767 | Amelogenesis imperfecta, type IIA1, 204700 (3), Autosomal recessive   |
| <i>KLKB1</i>   | 229000 | Fletcher factor (prekallikrein) deficiency, 612423 (3), Autosomal recessive   |
| <i>KLLN</i>    | 612105 | Cowden syndrome 4, 615107 (3)   |
| <i>KMT2B</i>   | 606834 | Dystonia 28, childhood-onset, 617284 (3), Autosomal dominant  |
| <i>KMT2D</i>   | 602113 | Kabuki syndrome 1, 147920 (3), Autosomal dominant   |
| <i>KNG1</i>    | 612358 | [High molecular weight kininogen deficiency], 228960 (3), Autosomal recessive; [Kininogen deficiency], 228960 (3), Autosomal recessive  |
| <i>KPTN</i>    | 615620 | Mental retardation, autosomal recessive 41, 615637 (3), Autosomal recessive   |
| <i>KREMEN1</i> | 609898 | Ectodermal dysplasia 13, hair/tooth type, 617392 (3), Autosomal recessive   |
| <i>KRIT1</i>   | 604214 | Cavernous malformations of CNS and retina, 116860 (3), Autosomal dominant; Cerebral cavernous malformations-1, 116860 (3), Autosomal dominant; Hyperkeratotic cutaneous capillary-venous malformations associated with cerebral capillary malformations, 116860 (3), Autosomal dominant   |
| <i>KRT1</i>    | 139350 | Epidermolytic hyperkeratosis, 113800 (3), Autosomal recessive, Autosomal dominant; Ichthyosis histrix, Curth-Macklin type, 146590 (3), Autosomal dominant; Ichthyosis, cyclic, with epidermolytic hyperkeratosis, 607602 (3), Autosomal dominant; Keratosis palmoplantaris striata III, 607654 (3); Palmoplantar keratoderma, epidermolytic, 144200 (3), Autosomal dominant; Palmoplantar keratoderma, nonepidermolytic, 600962 (3), Autosomal dominant                         |
| <i>KRT10</i>   | 148080 | Epidermolytic hyperkeratosis, 113800 (3), Autosomal recessive, Autosomal dominant; Ichthyosis with confetti, 609165 (3), Autosomal dominant; Ichthyosis, cyclic, with epidermolytic hyperkeratosis, 607602 (3), Autosomal dominant  |
| <i>KRT12</i>   | 601687 | Meesmann corneal dystrophy, 122100 (3), Autosomal dominant  |
| <i>KRT13</i>   | 148065 | White sponge nevus 2, 615785 (3), Autosomal dominant  |
| <i>KRT14</i>   | 148066 | Dermatopathia pigmentosa reticularis, 125595 (3), Autosomal dominant; Epidermolysis bullosa simplex, Dowling-Meara type, 131760 (3), Autosomal dominant; Epidermolysis bullosa simplex, Koebner type, 131900 (3), Autosomal dominant; Epidermolysis bullosa simplex, Weber-Cockayne type, 131800 (3), Autosomal dominant; Epidermolysis bullosa simplex, recessive 1, 601001 (3), Autosomal recessive; Naegeli-Franceschetti-Jadassohn syndrome, 161000 (3), Autosomal dominant |
| <i>KRT16</i>   | 148067 | Pachyonychia congenita 1, 167200 (3), Autosomal dominant; Palmoplantar keratoderma, nonepidermolytic, focal, 613000 (3), Autosomal dominant   |
| <i>KRT17</i>   | 148069 | Pachyonychia congenita 2, 167210 (3), Autosomal dominant; Steatocystoma multiplex, 184500 (3), Autosomal dominant   |
| <i>KRT2</i>    | 600194 | Ichthyosis bullosa of Siemens, 146800 (3), Autosomal dominant   |
| <i>KRT25</i>   | 616646 | Woolly hair, autosomal recessive 3, 616760 (3), Autosomal recessive   |

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| <i>KRT3</i>   | 148043 | Meesmann corneal dystrophy, 122100 (3), Autosomal dominant  |
| <i>KRT4</i>   | 123940 | White sponge nevus 1, 193900 (3), Autosomal dominant  |
| <i>KRT5</i>   | 148040 | Dowling-Degos disease 1, 179850 (3), Autosomal dominant; Epidermolysis bullosa simplex, Dowling-Meara type, 131760 (3), Autosomal dominant; Epidermolysis bullosa simplex, Koebner type, 131900 (3), Autosomal dominant; Epidermolysis bullosa simplex, Weber-Cockayne type, 131800 (3), Autosomal dominant; Epidermolysis bullosa simplex, recessive 1, 601001 (3), Autosomal recessive; Epidermolysis bullosa simplex-MCR, 609352 (3); Epidermolysis bullosa simplex-MP, 131960 (3), Autosomal dominant |
| <i>KRT6A</i>  | 148041 | Pachyonychia congenita 3, 615726 (3)  |
| <i>KRT6B</i>  | 148042 | Pachyonychia congenita 4, 615728 (3)  |
| <i>KRT6C</i>  | 612315 | Palmoplantar keratoderma, nonepidermolytic, focal or diffuse, 615735 (3), Autosomal dominant  |
| <i>KRT71</i>  | 608245 | ?Hypotrichosis 13, 615896 (3), Autosomal dominant   |
| <i>KRT74</i>  | 608248 | ?Ectodermal dysplasia 7, hair/nail type, 614929 (3), Autosomal recessive; ?Hypotrichosis 3, 613981 (3), Autosomal dominant; Woolly hair, autosomal dominant, 194300 (3), Autosomal dominant   |
| <i>KRT75</i>  | 609025 | {Pseudofolliculitis barbae, susceptibility to}, 612318 (3)  |
| <i>KRT81</i>  | 602153 | Monilethrix, 158000 (3), Autosomal dominant   |
| <i>KRT83</i>  | 602765 | Erythrokeratoderma variabilis et progressiva 5, 617756 (3), Autosomal recessive; Monilethrix, 158000 (3), Autosomal dominant  |
| <i>KRT85</i>  | 602767 | Ectodermal dysplasia 4, hair/nail type, 602032 (3), Autosomal recessive   |
| <i>KRT86</i>  | 601928 | Monilethrix, 158000 (3), Autosomal dominant   |
| <i>KRT9</i>   | 607606 | Palmoplantar keratoderma, epidermolytic, 144200 (3), Autosomal dominant   |
| <i>KY</i>     | 605739 | Myopathy, myofibrillar, 7, 617114 (3), Autosomal recessive  |
| <i>KYNU</i>   | 605197 | ?Hydroxykynureninuria, 236800 (3), Autosomal recessive; Vertebral, cardiac, renal, and limb defects syndrome 2, 617661 (3), Autosomal recessive   |
| <i>L1CAM</i>  | 308840 | CRASH syndrome, 303350 (3), X-linked recessive; Corpus callosum, partial agenesis of, 304100 (3), X-linked recessive; Hydrocephalus due to aqueductal stenosis, 307000 (3), X-linked recessive; Hydrocephalus with Hirschsprung disease, 307000 (3), X-linked recessive; Hydrocephalus with congenital idiopathic intestinal pseudoobstruction, 307000 (3), X-linked recessive; MASA syndrome, 303350 (3), X-linked recessive   |
| <i>L2HGDH</i> | 609584 | L-2-hydroxyglutaric aciduria, 236792 (3), Autosomal recessive   |
| <i>LAMA1</i>  | 150320 | Poretti-Boltshauser syndrome, 615960 (3), Autosomal recessive   |
| <i>LAMA2</i>  | 156225 | Muscular dystrophy, congenital merosin-deficient, 607855 (3), Autosomal recessive; Muscular dystrophy, congenital, due to partial LAMA2 deficiency, 607855 (3), Autosomal recessive   |

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| <i>LAMA3</i>   | 600805 | Epidermolysis bullosa, generalized atrophic benign, 226650 (3), Autosomal recessive; Epidermolysis bullosa, junctional, Herlitz type, 226700 (3), Autosomal recessive; Laryngoonychocutaneous syndrome, 245660 (3), Autosomal recessive             |
| <i>LAMA4</i>   | 600133 | Cardiomyopathy, dilated, 1JJ, 615235 (3), Autosomal dominant  |
| <i>LAMB1</i>   | 150240 | Lissencephaly 5, 615191 (3), Autosomal recessive  |
| <i>LAMB2</i>   | 150325 | Nephrotic syndrome, type 5, with or without ocular abnormalities, 614199 (3); Pierson syndrome, 609049 (3), Autosomal recessive   |
| <i>LAMB3</i>   | 150310 | Amelogenesis imperfecta, type IA, 104530 (3), Autosomal dominant; Epidermolysis bullosa, junctional, Herlitz type, 226700 (3), Autosomal recessive; Epidermolysis bullosa, junctional, non-Herlitz type, 226650 (3), Autosomal recessive            |
| <i>LAMC2</i>   | 150292 | Epidermolysis bullosa, junctional, Herlitz type, 226700 (3), Autosomal recessive; Epidermolysis bullosa, junctional, non-Herlitz type, 226650 (3), Autosomal recessive  |
| <i>LAMC3</i>   | 604349 | Cortical malformations, occipital, 614115 (3), Autosomal recessive  |
| <i>LAMP2</i>   | 309060 | Danon disease, 300257 (3), X-linked dominant  |
| <i>LAMTOR2</i> | 610389 | Immunodeficiency due to defect in MAPBP-interacting protein, 610798 (3), Autosomal recessive  |
| <i>LARGE1</i>  | 603590 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 6, 613154 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (congenital with mental retardation), type B, 6, 608840 (3), Autosomal recessive |
| <i>LARP7</i>   | 612026 | Alazami syndrome, 615071 (3), Autosomal recessive<br>?Hydrops, lactic acidosis, and sideroblastic anemia, 617021 (3),   |
| <i>LARS2</i>   | 604544 | Autosomal recessive; Perrault syndrome 4, 615300 (3), Autosomal recessive   |
| <i>LAS1L</i>   | 300964 | Wilson-Turner syndrome, 309585 (3), X-linked recessive  |
| <i>LBR</i>     | 600024 | Greenberg skeletal dysplasia, 215140 (3), Autosomal recessive; Pelger-Huet anomaly, 169400 (3), Autosomal dominant; Pelger-Huet anomaly with mild skeletal anomalies, 618019 (3); ?Reynolds syndrome, 613471 (3), Autosomal dominant                |
| <i>LCA5</i>    | 611408 | Leber congenital amaurosis 5, 604537 (3)  |
| <i>LCAT</i>    | 606967 | Fish-eye disease, 136120 (3), Autosomal recessive; Norum disease, 245900 (3), Autosomal recessive   |
| <i>LCK</i>     | 153390 | ?Immunodeficiency 22, 615758 (3), Autosomal recessive   |
| <i>LCT</i>     | 603202 | Lactase deficiency, congenital, 223000 (3), Autosomal recessive<br>Cardiomyopathy, dilated, 1C, with or without LVNC, 601493 (3),   |
| <i>LDB3</i>    | 605906 | Autosomal dominant; Cardiomyopathy, hypertrophic, 24, 601493 (3),<br>Autosomal dominant; Left ventricular noncompaction 3, 601493 (3),<br>Autosomal dominant; Myopathy, myofibrillar, 4, 609452 (3),<br>Autosomal dominant                          |
| <i>LDHA</i>    | 150000 | Glycogen storage disease XI, 612933 (3), Autosomal recessive  |
| <i>LDLR</i>    | 606945 | Hypercholesterolemia, familial, 143890 (3), Autosomal dominant; LDL cholesterol level QTL2, 143890 (3), Autosomal dominant  |

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| <i>LDLRAP1</i> | 605747 | Hypercholesterolemia, familial, autosomal recessive, 603813 (3),<br>Autosomal recessive  |
| <i>LEMD3</i>   | 607844 | Buschke-Ollendorff syndrome, 166700 (3), Autosomal dominant;<br>Osteopoikilosis with or without melorheostosis, 166700 (3),<br>Autosomal dominant  |
| <i>LEP</i>     | 164160 | Obesity, morbid, due to leptin deficiency, 614962 (3), Autosomal<br>recessive  |
| <i>LEPR</i>    | 601007 | Obesity, morbid, due to leptin receptor deficiency, 614963 (3)   |
| <i>LETM1</i>   | 604407 | No OMIM phenotype  |
| <i>LFNG</i>    | 602576 | ?Spondylocostal dysostosis 3, autosomal recessive, 609813 (3)  |
| <i>LGALS2</i>  | 150571 | {Myocardial infarction, susceptibility to}, 608446 (3)   |
| <i>LGI1</i>    | 604619 | Epilepsy, familial temporal lobe, 1, 600512 (3), Autosomal dominant  |
| <i>LGR4</i>    | 606666 | {Bone mineral density, low, susceptibility to}, 615311 (3)   |
| <i>LHB</i>     | 152780 | Hypogonadotropic hypogonadism 23 with or without anosmia, 228300<br>(3), Autosomal recessive   |
| <i>LHCGR</i>   | 152790 | Leydig cell adenoma, somatic, with precocious puberty, 176410 (3);<br>Leydig cell hypoplasia with hypergonadotropic hypogonadism, 238320<br>(3), Autosomal recessive; Leydig cell hypoplasia with<br>pseudohermaphroditism, 238320 (3), Autosomal recessive; Luteinizing<br>hormone resistance, female, 238320 (3), Autosomal recessive;<br>Precocious puberty, male, 176410 (3), Autosomal dominant |
| <i>LHFPL5</i>  | 609427 | Deafness, autosomal recessive 67, 610265 (3), Autosomal recessive  |
| <i>LHX3</i>    | 600577 | Pituitary hormone deficiency, combined, 3, 221750 (3), Autosomal<br>recessive  |
| <i>LHX4</i>    | 602146 | Pituitary hormone deficiency, combined, 4, 262700 (3), Autosomal<br>dominant   |
| <i>LIAS</i>    | 607031 | Hyperglycinemia, lactic acidosis, and seizures, 614462 (3), Autosomal<br>recessive   |
| <i>LIFR</i>    | 151443 | Stuve-Wiedemann syndrome/Schwartz-Jampel type 2 syndrome,<br>601559 (3), Autosomal recessive   |
| <i>LIM2</i>    | 154045 | Cataract 19, multiple types, 615277 (3), Autosomal recessive   |
| <i>LIMS2</i>   | 607908 | Muscular dystrophy, limb-girdle, type 2W, 616827 (3), Autosomal<br>recessive   |
| <i>LINS1</i>   | 610350 | Mental retardation, autosomal recessive 27, 614340 (3), Autosomal<br>recessive   |
| <i>LIPA</i>    | 613497 | Cholesteryl ester storage disease, 278000 (3), Autosomal recessive;<br>Wolman disease, 278000 (3), Autosomal recessive   |
| <i>LIPE</i>    | 151750 | Lipodystrophy, familial partial, type 6, 615980 (3), Autosomal recessive<br>Hypotrichosis 7, 604379 (3), Autosomal recessive; Woolly hair,   |
| <i>LIPH</i>    | 607365 | autosomal recessive 2 with or without hypotrichosis, 604379 (3),<br>Autosomal recessive  |
| <i>LIPI</i>    | 609252 | {Hypertriglyceridemia, susceptibility to}, 145750 (3), Autosomal<br>dominant   |
| <i>LIPN</i>    | 613924 | Ichthyosis, congenital, autosomal recessive 8, 613943 (3), Autosomal<br>recessive  |

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| <i>LMAN1</i>  | 601567 | Combined factor V and VIII deficiency, 227300 (3), Autosomal recessive  |
| <i>LMAN2L</i> | 609552 | ?Mental retardation, autosomal recessive, 52, 616887 (3), Autosomal recessive   |
| <i>LMBR1</i>  | 605522 | Acheiropody, 200500 (3), Autosomal recessive; Hypoplastic or aplastic tibia with polydactyly, 188740 (3), Autosomal dominant; Laurin-Sandrow syndrome, 135750 (3), Autosomal dominant; Polydactyly, preaxial type II, 174500 (3), Autosomal dominant; Syndactyly, type IV, 186200 (3), Autosomal dominant; Triphalangeal thumb, type I, 174500 (3), Autosomal dominant; Triphalangeal thumb-polysyndactyly syndrome, 174500 (3), Autosomal dominant   |
| <i>LMBRD1</i> | 612625 | Methylmalonic aciduria and homocystinuria, cblF type, 277380 (3), Autosomal recessive   |
| <i>LMNA</i>   | 150330 | Cardiomyopathy, dilated, 1A, 115200 (3), Autosomal dominant; Charcot-Marie-Tooth disease, type 2B1, 605588 (3), Autosomal recessive; Emery-Dreifuss muscular dystrophy 2, AD, 181350 (3), Autosomal dominant; Emery-Dreifuss muscular dystrophy 3, AR, 616516 (3), Autosomal recessive; Heart-hand syndrome, Slovenian type, 610140 (3), Autosomal dominant; Hutchinson-Gilford progeria, 176670 (3), Autosomal recessive, Autosomal dominant; Lipodystrophy, familial partial, type 2, 151660 (3), Autosomal dominant; Malouf syndrome, 212112 (3), Autosomal dominant; Mandibuloacral dysplasia, 248370 (3), Autosomal recessive; Muscular dystrophy, congenital, 613205 (3), Autosomal dominant; Muscular dystrophy, limb-girdle, type 1B, 159001 (3), Autosomal dominant; Restrictive dermopathy, lethal, 275210 (3), Autosomal recessive |
| <i>LMNB1</i>  | 150340 | Leukodystrophy, adult-onset, autosomal dominant, 169500 (3), Autosomal dominant   |
| <i>LMNB2</i>  | 150341 | ?Epilepsy, progressive myoclonic, 9, 616540 (3), Autosomal recessive; {Lipodystrophy, partial, acquired, susceptibility to}, 608709 (3), Autosomal dominant   |
| <i>LMOD3</i>  | 616112 | Nemaline myopathy 10, 616165 (3), Autosomal recessive   |
| <i>LMX1B</i>  | 602575 | Nail-patella syndrome, 161200 (3), Autosomal dominant   |
| <i>LONP1</i>  | 605490 | CODAS syndrome, 600373 (3), Autosomal recessive   |
| <i>LOR</i>    | 152445 | Vohwinkel syndrome with ichthyosis, 604117 (3), Autosomal dominant  |
| <i>LOX</i>    | 153455 | Aortic aneurysm, familial thoracic 10, 617168 (3), Autosomal dominant   |
| <i>LOXHD1</i> | 613072 | Deafness, autosomal recessive 77, 613079 (3), Autosomal recessive   |
| <i>LOXL1</i>  | 153456 | {Exfoliation syndrome, susceptibility to}, 177650 (3), Autosomal dominant   |
| <i>LPAR6</i>  | 609239 | Hypotrichosis 8, 278150 (3), Autosomal recessive; Woolly hair, autosomal recessive 1, with or without hypotrichosis, 278150 (3), Autosomal recessive  |
| <i>LPIN2</i>  | 605519 | Majeed syndrome, 609628 (3)   |
| <i>LPL</i>    | 609708 | Combined hyperlipidemia, familial, 144250 (3), Autosomal dominant; [High density lipoprotein cholesterol level QTL 11] (3); Lipoprotein lipase deficiency, 238600 (3), Autosomal recessive  |

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| <i>LRAT</i>   | 604863 | Leber congenital amaurosis 14, 613341 (3), Autosomal recessive; Retinal dystrophy, early-onset severe, 613341 (3), Autosomal recessive; Retinitis pigmentosa, juvenile, 613341 (3), Autosomal recessive  |
| <i>LRBA</i>   | 606453 | Immunodeficiency, common variable, 8, with autoimmunity, 614700 (3), Autosomal recessive   |
| <i>LRIG2</i>  | 608869 | Urofacial syndrome 2, 615112 (3), Autosomal recessive  |
| <i>LRIT3</i>  | 615004 | Night blindness, congenital stationary (complete), 1F, autosomal recessive, 615058 (3), Autosomal recessive  |
| <i>LRMDA</i>  | 614537 | Albinism, oculocutaneous, type VII, 615179 (3), Autosomal recessive  |
| <i>LRP1</i>   | 107770 | ?Keratosis pilaris atrophicans, 604093 (3), Autosomal recessive  |
| <i>LRP2</i>   | 600073 | Donnai-Barrow syndrome, 222448 (3), Autosomal recessive  |
| <i>LRP4</i>   | 604270 | Cenani-Lenz syndactyly syndrome, 212780 (3), Autosomal recessive; ?Myasthenic syndrome, congenital, 17, 616304 (3), Autosomal recessive; Sclerosteosis 2, 614305 (3), Autosomal recessive, Autosomal dominant  |
| <i>LRP5</i>   | 603506 | [Bone mineral density variability 1], 601884 (3), Autosomal dominant; Exudative vitreoretinopathy 4, 601813 (3), Autosomal recessive, Autosomal dominant; Hyperostosis, endosteal, 144750 (3), Autosomal dominant; Osteopetrosis, autosomal dominant 1, 607634 (3), Autosomal dominant; Osteoporosis-pseudoglioma syndrome, 259770 (3), Autosomal recessive; {Osteoporosis}, 166710 (3), Autosomal dominant; Osteosclerosis, 144750 (3), Autosomal dominant; Polycystic liver disease 4 with or without kidney cysts, 617875 (3), Autosomal dominant; van Buchem disease, type 2, 607636 (3), Autosomal dominant |
| <i>LRP6</i>   | 603507 | {Coronary artery disease, autosomal dominant, 2}, 610947 (3), Autosomal dominant; Tooth agenesis, selective, 7, 616724 (3), Autosomal dominant   |
| <i>LRP8</i>   | 602600 | {Myocardial infarction, susceptibility to}, 608446 (3)   |
| <i>LRPAP1</i> | 104225 | Myopia 23, autosomal recessive, 615431 (3), Autosomal recessive  |
| <i>LRPPRC</i> | 607544 | Leigh syndrome, French-Canadian type, 220111 (3), Autosomal recessive  |
| <i>LRRC6</i>  | 614930 | Ciliary dyskinesia, primary, 19, 614935 (3), Autosomal recessive   |
| <i>LRRC8A</i> | 608360 | ?Agammaglobulinemia 5, 613506 (3), Autosomal dominant  |
| <i>LRRK2</i>  | 609007 | {Parkinson disease 8}, 607060 (3), Autosomal dominant  |
| <i>LRSAM1</i> | 610933 | Charcot-Marie-Tooth disease, axonal, type 2P, 614436 (3), Autosomal recessive, Autosomal dominant  |
| <i>LRTOMT</i> | 612414 | Deafness, autosomal recessive 63, 611451 (3), Autosomal recessive  |
| <i>LTA</i>    | 153440 | {Leprosy, susceptibility to, 4}, 610988 (3); {Myocardial infarction, susceptibility to}, 608446 (3); {Psoriatic arthritis, susceptibility to}, 607507 (3)  |
| <i>LTBP2</i>  | 602091 | Glaucoma 3, primary congenital, D, 613086 (3); Microspherophakia and/or megalocornea, with ectopia lentis and with or without secondary glaucoma, 251750 (3), Autosomal recessive; ?Weill-Marchesani syndrome 3, recessive, 614819 (3), Autosomal recessive  |

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| <i>LTBP3</i>   | 602090 | Dental anomalies and short stature, 601216 (3), Autosomal recessive; Geleophysic dysplasia 3, 617809 (3), Autosomal dominant                 |
| <i>LTC4S</i>   | 246530 | Leukotriene C4 synthase deficiency, 614037 (1), Autosomal recessive  |
| <i>LYRM4</i>   | 613311 | ?Combined oxidative phosphorylation deficiency 19, 615595 (3), Autosomal recessive   |
| <i>LYRM7</i>   | 615831 | Mitochondrial complex III deficiency, nuclear type 8, 615838 (3), Autosomal recessive  |
| <i>LYST</i>    | 606897 | Chediak-Higashi syndrome, 214500 (3), Autosomal recessive  |
| <i>LYZ</i>     | 153450 | Amyloidosis, renal, 105200 (3), Autosomal dominant   |
| <i>LZTFL1</i>  | 606568 | Bardet-Biedl syndrome 17, 615994 (3), Autosomal recessive<br>Noonan syndrome 10, 616564 (3), Autosomal dominant;                             |
| <i>LZTR1</i>   | 600574 | {Schwannomatosis-2, susceptibility to}, 615670 (3), Autosomal dominant   |
| <i>LZTS1</i>   | 606551 | Esophageal squamous cell carcinoma, 133239 (3), Autosomal dominant   |
| <i>MAB21L2</i> | 604357 | Microphtalmia/coloboma and skeletal dysplasia syndrome, 615877 (3), Autosomal recessive, Autosomal dominant                                  |
| <i>MAD2L2</i>  | 604094 | ?Fanconi anemia, complementation group V, 617243 (3), Autosomal recessive  |
| <i>MAF</i>     | 177075 | Ayme-Gripp syndrome, 601088 (3), Autosomal dominant; Cataract 21, multiple types, 610202 (3), Autosomal dominant                             |
| <i>MAFB</i>    | 608968 | Duane retraction syndrome 3, 617041 (3), Autosomal dominant;<br>Multicentric carpotarsal osteolysis syndrome, 166300 (3), Autosomal dominant |
| <i>MAG</i>     | 159460 | Spastic paraparesis 75, autosomal recessive, 616680 (3), Autosomal recessive   |
| <i>MAGED2</i>  | 300470 | Bartter syndrome, type 5, antenatal, transient, 300971 (3), X-linked recessive   |
| <i>MAGEL2</i>  | 605283 | Schaaf-Yang syndrome, 615547 (3), Autosomal dominant   |
| <i>MAGT1</i>   | 300715 | Immunodeficiency, X-linked, with magnesium defect, Epstein-Barr virus infection and neoplasia, 300853 (3)                                    |
| <i>MAK</i>     | 154235 | Retinitis pigmentosa 62, 614181 (3), Autosomal recessive   |
| <i>MALT1</i>   | 604860 | Immunodeficiency 12, 615468 (3), Autosomal recessive   |
| <i>MAMLD1</i>  | 300120 | Hypospadias 2, X-linked, 300758 (3), X-linked recessive  |
| <i>MAN1B1</i>  | 604346 | Mental retardation, autosomal recessive 15, 614202 (3), Autosomal recessive  |
| <i>MAN2B1</i>  | 609458 | Mannosidosis, alpha-, types I and II, 248500 (3), Autosomal recessive  |
| <i>MANBA</i>   | 609489 | Mannosidosis, beta, 248510 (3), Autosomal recessive  |
| <i>MAOA</i>    | 309850 | {Antisocial behavior}, 300615 (3), X-linked recessive; Brunner syndrome, 300615 (3), X-linked recessive                                      |
| <i>MAP2K1</i>  | 176872 | Cardiofaciocutaneous syndrome 3, 615279 (3)  |
| <i>MAP2K2</i>  | 601263 | Cardiofaciocutaneous syndrome 4, 615280 (3)  |
| <i>MAP3K1</i>  | 600982 | 46XY sex reversal 6, 613762 (3), Autosomal dominant  |

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| <i>MAP3K20</i>  | 609479 | Centronuclear myopathy 6 with fiber-type disproportion, 617760 (3), Autosomal recessive; Split-foot malformation with mesoaxial polydactyly, 616890 (3), Autosomal recessive   |
| <i>MAP3K7</i>   | 602614 | Cardiospondylocarpofacial syndrome, 157800 (3), Autosomal dominant; Frontometaphyseal dysplasia 2, 617137 (3), Autosomal dominant  |
| <i>MAP3K8</i>   | 191195 | Lung cancer, somatic, 211980 (3)   |
| <i>MAPK8IP1</i> | 604641 | {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant  |
| <i>MAPKAPK3</i> | 602130 | ?Macular dystrophy, patterned, 3, 617111 (3), Autosomal dominant   |
| <i>MAPKBP1</i>  | 616786 | Nephronophthisis 20, 617271 (3), Autosomal recessive   |
| <i>MAPRE2</i>   | 605789 | Symmetric circumferential skin creases, congenital, 2, 616734 (3), Autosomal dominant  |
| <i>MAPT</i>     | 157140 | Dementia, frontotemporal, with or without parkinsonism, 600274 (3), Autosomal dominant; {Parkinson disease, susceptibility to}, 168600 (3), Isolated cases, Multifactorial; Pick disease, 172700 (3), Autosomal dominant, Isolated cases; Supranuclear palsy, progressive, 601104 (3), Autosomal dominant; Supranuclear palsy, progressive atypical, 260540 (3), Autosomal recessive |
| <i>MARS</i>     | 156560 | Charcot-Marie-Tooth disease, axonal, type 2U, 616280 (3), Autosomal dominant; Interstitial lung and liver disease, 615486 (3), Autosomal recessive   |
| <i>MARS2</i>    | 609728 | ?Combined oxidative phosphorylation deficiency 25, 616430 (3), Autosomal recessive; Spastic ataxia 3, autosomal recessive, 611390 (3), Autosomal recessive   |
| <i>MARVELD2</i> | 610572 | Deafness, autosomal recessive 49, 610153 (3), Autosomal recessive  |
| <i>MASP1</i>    | 600521 | 3MC syndrome 1, 257920 (3), Autosomal recessive  |
| <i>MASP2</i>    | 605102 | MASP2 deficiency, 613791 (3), Autosomal recessive  |
| <i>MASTL</i>    | 608221 | No OMIM phenotype  |
| <i>MAT1A</i>    | 610550 | Hypermethioninemia, persistent, autosomal dominant, due to methionine adenosyltransferase I/III deficiency, 250850 (3), Autosomal recessive, Autosomal dominant; Methionine adenosyltransferase deficiency, autosomal recessive, 250850 (3), Autosomal recessive, Autosomal dominant   |
| <i>MATN3</i>    | 602109 | Epiphyseal dysplasia, multiple, 5, 607078 (3), Autosomal dominant; {Osteoarthritis susceptibility 2}, 140600 (3), Autosomal dominant; ?Spondyloepimetaphyseal dysplasia, 608728 (3), Autosomal recessive   |
| <i>MATR3</i>    | 164015 | Amyotrophic lateral sclerosis 21, 606070 (3), Autosomal dominant   |
| <i>MAX</i>      | 154950 | {Pheochromocytoma, susceptibility to}, 171300 (3), Autosomal dominant  |
| <i>MBL2</i>     | 154545 | {Chronic infections, due to MBL deficiency}, 614372 (3), Autosomal dominant  |
| <i>MBOAT7</i>   | 606048 | Mental retardation, autosomal recessive 57, 617188 (3), Autosomal recessive  |

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| <i>MBTPS2</i> | 300294 | IFAP syndrome with or without BRESHECK syndrome, 308205 (3), X-linked recessive; Keratosis follicularis spinulosa decalvans, X-linked, 308800 (3), X-linked recessive; ?Olmsted syndrome, X-linked, 300918 (3), X-linked recessive   |
| <i>MC1R</i>   | 155555 | {Albinism, oculocutaneous, type II, modifier of}, 203200 (3), Autosomal recessive; [Analgesia from kappa-opioid receptor agonist, female-specific], 613098 (3); {Melanoma, cutaneous malignant, 5}, 613099 (3); [Skin/hair/eye pigmentation 2, blond hair/fair skin], 266300 (3), Autosomal recessive; [Skin/hair/eye pigmentation 2, red hair/fair skin], 266300 (3), Autosomal recessive; {UV-induced skin damage}, 266300 (3), Autosomal recessive  |
| <i>MC3R</i>   | 155540 | {Mycobacterium tuberculosis, protection against}, 607948 (3); {Obesity, severe, susceptibility to, BMIQ9}, 602025 (3)  |
| <i>MC4R</i>   | 155541 | Obesity, autosomal dominant, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>MCCC2</i>  | 609014 | 3-Methylcrotonyl-CoA carboxylase 2 deficiency, 210210 (3), Autosomal recessive   |
| <i>MCEE</i>   | 608419 | Methylmalonyl-CoA epimerase deficiency, 251120 (3), Autosomal recessive  |
| <i>MCM2</i>   | 116945 | ?Deafness, autosomal dominant 70, 616968 (3), Autosomal dominant   |
| <i>MCM4</i>   | 602638 | Immunodeficiency 54, 609981 (3), Autosomal recessive   |
| <i>MCM6</i>   | 601806 | Lactase persistence/nonpersistence, 223100 (3), Autosomal dominant   |
| <i>MCM8</i>   | 608187 | ?Premature ovarian failure 10, 612885 (3), Autosomal recessive   |
| <i>MCM9</i>   | 610098 | Ovarian dysgenesis 4, 616185 (3), Autosomal recessive  |
| <i>MCOLN1</i> | 605248 | Mucolipidosis IV, 252650 (3), Autosomal recessive  |
| <i>MCPH1</i>  | 607117 | Microcephaly 1, primary, autosomal recessive, 251200 (3), Autosomal recessive  |
| <i>MDH2</i>   | 154100 | Epileptic encephalopathy, early infantile, 51, 617339 (3), Autosomal recessive   |
| <i>MDM2</i>   | 164785 | {Accelerated tumor formation, susceptibility to}, 614401 (3)   |
| <i>MECOM</i>  | 165215 | Radioulnar synostosis with amegakaryocytic thrombocytopenia 2, 616738 (3), Autosomal dominant<br>{Autism susceptibility, X-linked 3}, 300496 (3), Isolated cases, X-linked, Multifactorial; Encephalopathy, neonatal severe, 300673 (3), X-linked recessive; Mental retardation, X-linked syndromic, Lubs type, 300260 (3), X-linked recessive; Mental retardation, X-linked, syndromic 13, 300055 (3), X-linked recessive; Rett syndrome, 312750 (3), X-linked dominant; Rett syndrome, atypical, 312750 (3), X-linked dominant; Rett syndrome, preserved speech variant, 312750 (3), X-linked dominant |
| <i>MECP2</i>  | 300005 | Dystonia, childhood-onset, with optic atrophy and basal ganglia abnormalities, 617282 (3), Autosomal recessive   |
| <i>MECR</i>   | 608205 | Dystonia, childhood-onset, with optic atrophy and basal ganglia abnormalities, 617282 (3), Autosomal recessive   |
| <i>MED12</i>  | 300188 | Lujan-Fryns syndrome, 309520 (3), X-linked recessive; Ohdo syndrome, X-linked, 300895 (3), X-linked recessive; Opitz-Kaveggia syndrome, 305450 (3), X-linked recessive   |

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| <i>MED13L</i>  | 608771 | Mental retardation and distinctive facial features with or without cardiac defects, 616789 (3), Autosomal dominant; Transposition of the great arteries, dextro-looped 1, 608808 (3), Autosomal dominant   |
| <i>MED17</i>   | 603810 | Microcephaly, postnatal progressive, with seizures and brain atrophy, 613668 (3), Autosomal recessive  |
| <i>MED25</i>   | 610197 | Basel-Vanagait-Smirin-Yosef syndrome, 616449 (3), Autosomal recessive; ?Charcot-Marie-Tooth disease, type 2B2, 605589 (3), Autosomal recessive   |
| <i>MEF2A</i>   | 600660 | {Coronary artery disease, autosomal dominant, 1}, 608320 (3), Autosomal dominant   |
| <i>MEF2C</i>   | 600662 | Chromosome 5q14.3 deletion syndrome, 613443 (4), Autosomal dominant; Mental retardation, stereotypic movements, epilepsy, and/or cerebral malformations, 613443 (3), Autosomal dominant  |
| <i>MEFV</i>    | 608107 | Familial Mediterranean fever, AD, 134610 (3), Autosomal dominant; Familial Mediterranean fever, AR, 249100 (3), Autosomal recessive  |
| <i>MEGF10</i>  | 612453 | Myopathy, areflexia, respiratory distress, and dysphagia, early-onset, 614399 (3), Autosomal recessive; Myopathy, areflexia, respiratory distress, and dysphagia, early-onset, mild variant, 614399 (3), Autosomal recessive   |
| <i>MEGF8</i>   | 604267 | Carpenter syndrome 2, 614976 (3), Autosomal recessive  |
| <i>MEN1</i>    | 613733 | Adrenal adenoma, somatic (3); Angiofibroma, somatic (3); Carcinoid tumor of lung (3); Lipoma, somatic (3); Multiple endocrine neoplasia 1, 131100 (3), Autosomal dominant; Parathyroid adenoma, somatic (3)  |
| <i>MEOX1</i>   | 600147 | Klippel-Feil syndrome 2, 214300 (3), Autosomal recessive   |
| <i>MERTK</i>   | 604705 | Retinitis pigmentosa 38, 613862 (3), Autosomal recessive   |
| <i>MESP2</i>   | 605195 | Spondylocostal dysostosis 2, autosomal recessive, 608681 (3)<br>?Deafness, autosomal recessive 97, 616705 (3), Autosomal recessive; Hepatocellular carcinoma, childhood type, somatic, 114550 (3); {Osteofibrous dysplasia, susceptibility to}, 607278 (3), Autosomal dominant; Renal cell carcinoma, papillary, 1, familial and somatic, 605074 (3) |
| <i>METTL23</i> | 615262 | Mental retardation, autosomal recessive 44, 615942 (3), Autosomal recessive  |
| <i>MFAP5</i>   | 601103 | Aortic aneurysm, familial thoracic 9, 616166 (3), Autosomal dominant<br>Charcot-Marie-Tooth disease, axonal, type 2A2A, 609260 (3), Autosomal dominant; Charcot-Marie-Tooth disease, axonal, type 2A2B, 617087 (3), Autosomal recessive; Hereditary motor and sensory neuropathy VIA, 601152 (3), Autosomal dominant                                 |
| <i>MFN2</i>    | 608507 | Microphthalmia, isolated 5, 611040 (3), Autosomal recessive; Nanophthalmos 2, 609549 (3)   |
| <i>MFRP</i>    | 606227 | Microcephaly 15, primary, autosomal recessive, 616486 (3), Autosomal recessive   |
| <i>MFSD2A</i>  | 614397 | Ceroid lipofuscinosis, neuronal, 7, 610951 (3), Autosomal recessive; Macular dystrophy with central cone involvement, 616170 (3), Autosomal recessive  |
| <i>MFSD8</i>   | 611124 | Ceroid lipofuscinosis, neuronal, 7, 610951 (3), Autosomal recessive; Macular dystrophy with central cone involvement, 616170 (3), Autosomal recessive  |

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| <i>MGAT2</i>  | 602616 | Congenital disorder of glycosylation, type IIa, 212066 (3), Autosomal recessive   |
| <i>MGME1</i>  | 615076 | Mitochondrial DNA depletion syndrome 11, 615084 (3), Autosomal recessive  |
| <i>MGP</i>    | 154870 | Keutel syndrome, 245150 (3), Autosomal recessive  |
| <i>MIB1</i>   | 608677 | Left ventricular noncompaction 7, 615092 (3), Autosomal dominant  |
| <i>MICU1</i>  | 605084 | Myopathy with extrapyramidal signs, 615673 (3), Autosomal recessive   |
| <i>MID1</i>   | 300552 | Opitz GBBB syndrome, type I, 300000 (3), X-linked recessive   |
| <i>MID2</i>   | 300204 | ?Mental retardation, X-linked 101, 300928 (3), X-linked recessive   |
| <i>MIF</i>    | 153620 | {Rheumatoid arthritis, systemic juvenile, susceptibility to}, 604302 (3)  |
| <i>MINPP1</i> | 605391 | Thyroid carcinoma, follicular, 188470 (3), Autosomal dominant   |
| <i>MIP</i>    | 154050 | Cataract 15, multiple types, 615274 (3), Autosomal dominant   |
| <i>MIPEP</i>  | 602241 | Combined oxidative phosphorylation deficiency 31, 617228 (3), Autosomal recessive   |
| <i>MIR204</i> | 610942 | ?Retinal dystrophy and iris coloboma with or without cataract, 616722 (3), Autosomal dominant   |
| <i>MITF</i>   | 156845 | COMMAD syndrome, 617306 (3), Autosomal recessive; {Melanoma, cutaneous malignant, susceptibility to, 8}, 614456 (3); Tietz albinism-deafness syndrome, 103500 (3), Autosomal dominant; Waardenburg syndrome, type 2A, 193510 (3), Autosomal dominant; Waardenburg syndrome/ocular albinism, digenic, 103470 (3), Autosomal dominant |
| <i>MKKS</i>   | 604896 | Bardet-Biedl syndrome 6, 605231 (3), Autosomal recessive; McKusick-Kaufman syndrome, 236700 (3), Autosomal recessive  |
| <i>MKRN3</i>  | 603856 | Precocious puberty, central, 2, 615346 (3), Autosomal dominant  |
| <i>MKS1</i>   | 609883 | Bardet-Biedl syndrome 13, 615990 (3), Autosomal recessive; Joubert syndrome 28, 617121 (3), Autosomal recessive; Meckel syndrome 1, 249000 (3), Autosomal recessive   |
| <i>MLC1</i>   | 605908 | Megalencephalic leukoencephalopathy with subcortical cysts, 604004 (3), Autosomal recessive   |
| <i>MLH3</i>   | 604395 | Colorectal cancer, hereditary nonpolyposis, type 7, 614385 (3); Colorectal cancer, somatic, 114500 (3); {Endometrial cancer, susceptibility to}, 608089 (3)   |
| <i>MLLT11</i> | 604684 | No OMIM phenotype   |
| <i>MLPH</i>   | 606526 | Griscelli syndrome, type 3, 609227 (3), Autosomal recessive   |
| <i>MLXIPL</i> | 605678 | No OMIM phenotype   |
| <i>MLYCD</i>  | 606761 | Malonyl-CoA decarboxylase deficiency, 248360 (3), Autosomal recessive   |
| <i>MMAA</i>   | 607481 | Methylmalonic aciduria, vitamin B12-responsive, 251100 (3), Autosomal recessive   |
| <i>MMAB</i>   | 607568 | Methylmalonic aciduria, vitamin B12-responsive, due to defect in synthesis of adenosylcobalamin, cblB complementation type, 251110 (3), Autosomal recessive   |
| <i>MMACHC</i> | 609831 | Methylmalonic aciduria and homocystinuria, cblC type, 277400 (3), Autosomal recessive   |

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| <i>MMADHC</i> | 611935 | Homocystinuria, cbID type, variant 1, 277410 (3), Autosomal recessive; Methylmalonic aciduria and homocystinuria, cbID type, 277410 (3), Autosomal recessive; Methylmalonic aciduria, cbID type, variant 2, 277410 (3), Autosomal recessive |
| <i>MME</i>    | 120520 | Charcot-Marie-Tooth disease, axonal, type 2T, 617017 (3), Autosomal recessive, Autosomal dominant; ?Spinocerebellar ataxia 43, 617018 (3), Autosomal dominant   |
| <i>MMP1</i>   | 120353 | COPD, rate of decline of lung function in, 606963 (3); {Epidermolysis bullosa dystrophica, autosomal recessive, modifier of}, 226600 (3), Autosomal recessive   |
| <i>MMP13</i>  | 600108 | Metaphyseal anadysplasia 1, 602111 (3), Autosomal dominant; Metaphyseal dysplasia, Spahr type, 250400 (3), Autosomal recessive; Spondyloepimetaphyseal dysplasia, Missouri type, 602111 (3), Autosomal dominant                             |
| <i>MMP14</i>  | 600754 | ?Winchester syndrome, 277950 (3)  |
| <i>MMP19</i>  | 601807 | Cavitory optic disc anomalies, 611543 (3), Autosomal dominant   |
| <i>MMP20</i>  | 604629 | Amelogenesis imperfecta, type IIA2, 612529 (3), Autosomal recessive   |
| <i>MMP21</i>  | 608416 | Heterotaxy, visceral, 7, autosomal, 616749 (3), Autosomal recessive   |
| <i>MMP3</i>   | 185250 | {Coronary heart disease, susceptibility to, 6}, 614466 (3)  |
| <i>MMP9</i>   | 120361 | Metaphyseal anadysplasia 2, 613073 (3)  |
| <i>MN1</i>    | 156100 | Meningioma, 607174 (3), Autosomal dominant  |
| <i>MNX1</i>   | 142994 | Currarino syndrome, 176450 (3), Autosomal dominant  |
| <i>MOCOS</i>  | 613274 | Xanthinuria, type II, 603592 (3), Autosomal recessive   |
| <i>MOCS2</i>  | 603708 | Molybdenum cofactor deficiency B, 252160 (3), Autosomal recessive   |
| <i>MOG</i>    | 159465 | ?Narcolepsy 7, 614250 (3), Autosomal dominant   |
| <i>MOGS</i>   | 601336 | Congenital disorder of glycosylation, type IIb, 606056 (3), Autosomal recessive   |
| <i>MORC2</i>  | 616661 | Charcot-Marie-Tooth disease, axonal, type 2Z, 616688 (3), Autosomal dominant  |
| <i>MPDU1</i>  | 604041 | Congenital disorder of glycosylation, type If, 609180 (3), Autosomal recessive  |
| <i>MPDZ</i>   | 603785 | Hydrocephalus, nonsyndromic, autosomal recessive 2, 615219 (3), Autosomal recessive   |
| <i>MPI</i>    | 154550 | Congenital disorder of glycosylation, type Ib, 602579 (3), Autosomal recessive  |
| <i>MPL</i>    | 159530 | Myelofibrosis with myeloid metaplasia, somatic, 254450 (3); Thrombocythemia 2, 601977 (3), Autosomal dominant, Somatic mutation; Thrombocytopenia, congenital amegakaryocytic, 604498 (3), Autosomal recessive                              |
| <i>MPLKIP</i> | 609188 | Trichothiodystrophy 4, nonphotosensitive, 234050 (3), Autosomal recessive   |
| <i>MPO</i>    | 606989 | {Alzheimer disease, susceptibility to}, 104300 (3), Autosomal dominant; {Lung cancer, protection against, in smokers} (3); Myeloperoxidase deficiency, 254600 (3), Autosomal recessive  |

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| <i>MPV17</i>  | 137960 | Mitochondrial DNA depletion syndrome 6 (hepatocerebral type), 256810 (3), Autosomal recessive   |
| <i>MPZ</i>    | 159440 | Charcot-Marie-Tooth disease, dominant intermediate D, 607791 (3), Autosomal dominant; Charcot-Marie-Tooth disease, type 1B, 118200 (3), Autosomal dominant; Charcot-Marie-Tooth disease, type 2I, 607677 (3), Autosomal dominant; Charcot-Marie-Tooth disease, type 2J, 607736 (3), Autosomal dominant; Dejerine-Sottas disease, 145900 (3), Autosomal recessive, Autosomal dominant; Neuropathy, congenital hypomyelinating, 605253 (3), Autosomal recessive, Autosomal dominant; Roussy-Levy syndrome, 180800 (3), Autosomal dominant |
| <i>MRAP</i>   | 609196 | Glucocorticoid deficiency 2, 607398 (3), Autosomal recessive  |
| <i>MRAP2</i>  | 615410 | {?Obesity, susceptibility to, BMIQ18}, 615457 (3), Autosomal dominant   |
| <i>MRE11</i>  | 600814 | Ataxia-telangiectasia-like disorder 1, 604391 (3), Autosomal recessive  |
| <i>MRPL3</i>  | 607118 | Combined oxidative phosphorylation deficiency 9, 614582 (3), Autosomal recessive  |
| <i>MRPL44</i> | 611849 | ?Combined oxidative phosphorylation deficiency 16, 615395 (3), Autosomal recessive  |
| <i>MRPS16</i> | 609204 | Combined oxidative phosphorylation deficiency 2, 610498 (3), Autosomal recessive  |
| <i>MRPS22</i> | 605810 | Combined oxidative phosphorylation deficiency 5, 611719 (3), Autosomal recessive  |
| <i>MS4A1</i>  | 112210 | Immunodeficiency, common variable, 5, 613495 (3), Autosomal recessive   |
| <i>MS4A2</i>  | 147138 | {Atopy, susceptibility to}, 147050 (3), Autosomal dominant  |
| <i>MSH2</i>   | 609309 | Colorectal cancer, hereditary nonpolyposis, type 1, 120435 (3), Autosomal dominant; Mismatch repair cancer syndrome, 276300 (3), Autosomal recessive; Muir-Torre syndrome, 158320 (3), Autosomal dominant   |
| <i>MSH3</i>   | 600887 | Colorectal cancer, hereditary nonpolyposis, type 5, 614350 (3), Autosomal dominant; Endometrial cancer, familial, 608089 (3); Mismatch repair cancer syndrome, 276300 (3), Autosomal recessive  |
| <i>MSH6</i>   | 600678 | Endometrial carcinoma, somatic, 608089 (3); Familial adenomatous polyposis 4, 617100 (3), Autosomal recessive   |
| <i>MSMB</i>   | 157145 | {Prostate cancer, hereditary, 13}, 611928 (3)   |
| <i>MSMO1</i>  | 607545 | Microcephaly, congenital cataract, and psoriasiform dermatitis, 616834 (3), Autosomal recessive   |
| <i>MSN</i>    | 309845 | Immunodeficiency 50, 300988 (3), X-linked recessive   |
| <i>MSR1</i>   | 153622 | Barrett esophagus/esophageal adenocarcinoma, 614266 (3)   |
| <i>MSRB3</i>  | 613719 | Deafness, autosomal recessive 74, 613718 (3), Autosomal recessive   |
| <i>MSTN</i>   | 601788 | Muscle hypertrophy, 614160 (3)  |
| <i>MSX1</i>   | 142983 | Ectodermal dysplasia 3, Witkop type, 189500 (3), Autosomal dominant; Orofacial cleft 5, 608874 (3); Tooth agenesis, selective, 1, with or without orofacial cleft, 106600 (3), Autosomal dominant   |

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| <i>MSX2</i>   | 123101 | Craniosynostosis 2, 604757 (3), Autosomal dominant; Parietal foramina 1, 168500 (3), Autosomal dominant; Parietal foramina with cleidocranial dysplasia, 168550 (3), Autosomal dominant   |
| <i>MTFMT</i>  | 611766 | Combined oxidative phosphorylation deficiency 15, 614947 (3), Autosomal recessive   |
| <i>MTHFD1</i> | 172460 | Combined immunodeficiency and megaloblastic anemia with or without hyperhomocysteinemia, 617780 (3), Autosomal recessive; {Neural tube defects, folate-sensitive, susceptibility to}, 601634 (3), Autosomal recessive   |
| <i>MTHFR</i>  | 607093 | Homocystinuria due to MTHFR deficiency, 236250 (3), Autosomal recessive; {Neural tube defects, susceptibility to}, 601634 (3), Autosomal recessive; {Schizophrenia, susceptibility to}, 181500 (3), Autosomal dominant; {Thromboembolism, susceptibility to}, 188050 (3), Autosomal dominant; {Vascular disease, susceptibility to} (3) |
| <i>MTM1</i>   | 300415 | Myotubular myopathy, X-linked, 310400 (3), X-linked recessive   |
| <i>MTMR14</i> | 611089 | {Centronuclear myopathy, autosomal, modifier of}, 160150 (3), Autosomal dominant  |
| <i>MTNR1B</i> | 600804 | {Diabetes mellitus, type 2, susceptibility to}, 125853 (3), Autosomal dominant  |
| <i>MTO1</i>   | 614667 | Combined oxidative phosphorylation deficiency 10, 614702 (3), Autosomal recessive   |
| <i>MTOR</i>   | 601231 | Focal cortical dysplasia, type II, somatic, 607341 (3); Smith-Kingsmore syndrome, 616638 (3), Autosomal dominant  |
| <i>MTPAP</i>  | 613669 | ?Spastic ataxia 4, autosomal recessive, 613672 (3), Autosomal recessive   |
| <i>MTR</i>    | 156570 | Homocystinuria-megaloblastic anemia, cblG complementation type, 250940 (3), Autosomal recessive; {Neural tube defects, folate-sensitive, susceptibility to}, 601634 (3), Autosomal recessive  |
| <i>MTRR</i>   | 602568 | Homocystinuria-megaloblastic anemia, cbl E type, 236270 (3), Autosomal recessive; {Neural tube defects, folate-sensitive, susceptibility to}, 601634 (3), Autosomal recessive   |
| <i>MTTP</i>   | 157147 | Abetalipoproteinemia, 200100 (3), Autosomal recessive; {Metabolic syndrome, protection against}, 605552 (3), Autosomal dominant   |
| <i>MUC1</i>   | 158340 | Medullary cystic kidney disease 1, 174000 (3), Autosomal dominant   |
| <i>MUC5B</i>  | 600770 | {Pulmonary fibrosis, idiopathic, susceptibility to}, 178500 (3), Autosomal dominant   |
| <i>MUC7</i>   | 158375 | {Asthma, protection against}, 600807 (3), Autosomal dominant  |
| <i>MUSK</i>   | 601296 | Fetal akinesia deformation sequence, 208150 (3), Autosomal recessive; Myasthenic syndrome, congenital, 9, associated with acetylcholine receptor deficiency, 616325 (3), Autosomal recessive  |
| <i>MUT</i>    | 609058 | Methylmalonic aciduria, mut(0) type, 251000 (3), Autosomal recessive  |
| <i>MVD</i>    | 603236 | Porokeratosis 7, multiple types, 614714 (3), Autosomal dominant   |
| <i>MVK</i>    | 251170 | Hyper-IgD syndrome, 260920 (3), Autosomal recessive; Mevalonic aciduria, 610377 (3), Autosomal recessive; Porokeratosis 3, multiple types, 175900 (3), Autosomal dominant   |

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| <i>MXI1</i>   | 600020 | Neurofibrosarcoma (3); {Prostate cancer, susceptibility to}, 176807 (3), Autosomal dominant   |
| <i>MYBPC3</i> | 600958 | Cardiomyopathy, dilated, 1MM, 615396 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 4, 115197 (3), Autosomal dominant; Left ventricular noncompaction 10, 615396 (3), Autosomal dominant  |
| <i>MYC</i>    | 190080 | Burkitt lymphoma, 113970 (3), Isolated cases  |
| <i>MYCN</i>   | 164840 | Feingold syndrome 1, 164280 (3), Autosomal dominant   |
| <i>MYD88</i>  | 602170 | Macroglobulinemia, Waldenstrom, somatic, 153600 (3); Pyogenic bacterial infections, recurrent, due to MYD88 deficiency, 612260 (3)  |
| <i>MYF6</i>   | 159991 | Centronuclear myopathy 3, 614408 (3), Autosomal dominant  |
| <i>MYH11</i>  | 160745 | Aortic aneurysm, familial thoracic 4, 132900 (3), Autosomal dominant  |
| <i>MYH2</i>   | 160740 | Proximal myopathy and ophthalmoplegia, 605637 (3), Autosomal recessive, Autosomal dominant  |
| <i>MYH3</i>   | 160720 | Arthrogryposis, distal, type 2A, 193700 (3), Autosomal dominant; Arthrogryposis, distal, type 2B, 601680 (3), Autosomal dominant; Arthrogryposis, distal, type 8, 178110 (3), Autosomal dominant  |
| <i>MYH6</i>   | 160710 | Atrial septal defect 3, 614089 (3); Cardiomyopathy, dilated, 1EE, 613252 (3); Cardiomyopathy, hypertrophic, 14, 613251 (3), Autosomal dominant; {Sick sinus syndrome 3}, 614090 (3)   |
| <i>MYH7</i>   | 160760 | Cardiomyopathy, dilated, 1S, 613426 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 1, 192600 (3), Autosomal dominant; Laing distal myopathy, 160500 (3), Autosomal dominant; Left ventricular noncompaction 5, 613426 (3), Autosomal dominant; Myopathy, myosin storage, autosomal dominant, 608358 (3), Autosomal dominant; Myopathy, myosin storage, autosomal recessive, 255160 (3), Autosomal recessive; Scapuloperoneal syndrome, myopathic type, 181430 (3), Autosomal dominant |
| <i>MYH8</i>   | 160741 | Carney complex variant, 608837 (3); Trismus-pseudocampodactyly syndrome, 158300 (3), Autosomal dominant   |
| <i>MYH9</i>   | 160775 | Deafness, autosomal dominant 17, 603622 (3), Autosomal dominant; Macrothrombocytopenia and granulocyte inclusions with or without nephritis or sensorineural hearing loss, 155100 (3), Autosomal dominant   |
| <i>MYL2</i>   | 160781 | Cardiomyopathy, hypertrophic, 10, 608758 (3), Autosomal dominant  |
| <i>MYL3</i>   | 160790 | Cardiomyopathy, hypertrophic, 8, 608751 (3), Autosomal dominant   |
| <i>MYL4</i>   | 160770 | ?Atrial fibrillation, familial, 18, 617280 (3), Autosomal dominant  |
| <i>MYLK</i>   | 600922 | Aortic aneurysm, familial thoracic 7, 613780 (3), Autosomal dominant  |
| <i>MYLK2</i>  | 606566 | Cardiomyopathy, hypertrophic, 1, digenic, 192600 (3), Autosomal dominant  |
| <i>MYO18B</i> | 607295 | Klippel-Feil syndrome 4, autosomal recessive, with myopathy and facial dysmorphism, 616549 (3), Autosomal recessive   |
| <i>MYO1A</i>  | 601478 | No OMIM phenotype   |
| <i>MYO1E</i>  | 601479 | Glomerulosclerosis, focal segmental, 6, 614131 (3), Autosomal recessive   |
| <i>MYO3A</i>  | 606808 | Deafness, autosomal recessive 30, 607101 (3), Autosomal recessive   |

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| <i>MYO5B</i>  | 606540 | Microvillus inclusion disease, 251850 (3), Autosomal recessive<br>Deafness, autosomal dominant 22, 606346 (3), Autosomal dominant;   |
| <i>MYO6</i>   | 600970 | Deafness, autosomal dominant 22, with hypertrophic cardiomyopathy, 606346 (3), Autosomal dominant; Deafness, autosomal recessive 37, 607821 (3), Autosomal recessive   |
| <i>MYO9B</i>  | 602129 | {Celiac disease, susceptibility to, 4}, 609753 (3)   |
| <i>MYOC</i>   | 601652 | Glaucoma 1A, primary open angle, 137750 (3), Autosomal dominant  |
| <i>MYOT</i>   | 604103 | Muscular dystrophy, limb-girdle, type 1A, 159000 (3), Autosomal dominant; Myopathy, myofibrillar, 3, 609200 (3), Autosomal dominant; Myopathy, spheroid body, 182920 (3), Autosomal dominant                                       |
| <i>MYOZ2</i>  | 605602 | Cardiomyopathy, hypertrophic, 16, 613838 (3), Autosomal dominant   |
| <i>MYT1L</i>  | 613084 | Mental retardation, autosomal dominant 39, 616521 (3), Autosomal dominant  |
| <i>NAA10</i>  | 300013 | ?Microphtalmia, syndromic 1, 309800 (3), X-linked; Ogden syndrome, 300855 (3), X-linked recessive, X-linked dominant   |
| <i>NACC1</i>  | 610672 | Neurodevelopmental disorder with epilepsy, cataracts, feeding difficulties, and delayed brain myelination, 617393 (3), Autosomal dominant  |
| <i>NADK2</i>  | 615787 | ?2,4-dienoyl-CoA reductase deficiency, 616034 (3), Autosomal recessive   |
| <i>NAGA</i>   | 104170 | Kanzaki disease, 609242 (3), Autosomal recessive; Schindler disease, type I, 609241 (3), Autosomal recessive; Schindler disease, type III, 609241 (3), Autosomal recessive   |
| <i>NAGLU</i>  | 609701 | ?Charcot-Marie-Tooth disease, axonal, type 2V, 616491 (3), Autosomal dominant; Mucopolysaccharidosis type IIIB (Sanfilippo B), 252920 (3), Autosomal recessive   |
| <i>NAGS</i>   | 608300 | N-acetylglutamate synthase deficiency, 237310 (3), Autosomal recessive   |
| <i>NALCN</i>  | 611549 | Congenital contractures of the limbs and face, hypotonia, and developmental delay, 616266 (3), Autosomal dominant; Hypotonia, infantile, with psychomotor retardation and characteristic facies 1, 615419 (3), Autosomal recessive |
| <i>NANOS1</i> | 608226 | Spermatogenic failure 12, 615413 (3), Autosomal dominant   |
| <i>NANS</i>   | 605202 | Spondyloepimetaphyseal dysplasia, Camera-Genevieve type, 610442 (3), Autosomal recessive   |
| <i>NARS2</i>  | 612803 | Combined oxidative phosphorylation deficiency 24, 616239 (3), Autosomal recessive  |
| <i>NAT2</i>   | 612182 | [Acetylation, slow], 243400 (3), Autosomal recessive   |
| <i>NAT8L</i>  | 610647 | ?N-acetylaspartate deficiency, 614063 (3), Autosomal recessive   |
| <i>NAXE</i>   | 608862 | Encephalopathy, progressive, early-onset, with brain edema and/or leukoencephalopathy, 617186 (3), Autosomal recessive   |
| <i>NBAS</i>   | 608025 | Infantile liver failure syndrome 2, 616483 (3), Autosomal recessive; Short stature, optic nerve atrophy, and Pelger-Huet anomaly, 614800 (3), Autosomal recessive  |
| <i>NBEAL2</i> | 614169 | Gray platelet syndrome, 139090 (3), Autosomal recessive  |

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| <i>NBN</i>     | 602667 | Aplastic anemia, 609135 (3); Leukemia, acute lymphoblastic, 613065 (3); Nijmegen breakage syndrome, 251260 (3), Autosomal recessive   |
| <i>NCF1</i>    | 608512 | Chronic granulomatous disease due to deficiency of NCF-1, 233700 (3), Autosomal recessive   |
| <i>NCF2</i>    | 608515 | Chronic granulomatous disease due to deficiency of NCF-2, 233710 (3), Autosomal recessive   |
| <i>NCF4</i>    | 601488 | ?Granulomatous disease, chronic, autosomal recessive, cytochrome b-positive, type III, 613960 (3), Autosomal recessive  |
| <i>NCOA4</i>   | 601984 | No OMIM phenotype   |
| <i>NCR3</i>    | 611550 | {Malaria, mild, susceptibility to}, 609148 (3)  |
| <i>NCSTN</i>   | 605254 | Acne inversa, familial, 1, 142690 (3), Autosomal dominant   |
| <i>NDN</i>     | 602117 | Prader-Willi syndrome, 176270 (3), Isolated cases   |
| <i>NDP</i>     | 300658 | Exudative vitreoretinopathy 2, X-linked, 305390 (3); Norrie disease, 310600 (3), X-linked recessive   |
| <i>NDRG1</i>   | 605262 | Charcot-Marie-Tooth disease, type 4D, 601455 (3), Autosomal recessive   |
| <i>NDST1</i>   | 600853 | Mental retardation, autosomal recessive 46, 616116 (3), Autosomal recessive   |
| <i>NDUFA1</i>  | 300078 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFA10</i> | 603835 | Leigh syndrome, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>NDUFA11</i> | 612638 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFA12</i> | 614530 | Leigh syndrome due to mitochondrial complex 1 deficiency, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>NDUFA13</i> | 609435 | {Thyroid carcinoma, Hurthle cell}, 607464 (3)   |
| <i>NDUFA2</i>  | 602137 | Leigh syndrome due to mitochondrial complex I deficiency, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>NDUFA9</i>  | 603834 | Leigh syndrome due to mitochondrial complex I deficiency, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>NDUFAF1</i> | 606934 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFAF2</i> | 609653 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFAF3</i> | 612911 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFAF4</i> | 611776 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFAF5</i> | 612360 | Mitochondrial complex 1 deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFB11</i> | 300403 | Linear skin defects with multiple congenital anomalies 3, 300952 (3), X-linked dominant; ?Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial |

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| <i>NDUFB3</i>  | 603839 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFB9</i>  | 601445 | ?Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial  |
| <i>NDUFS1</i>  | 157655 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFS2</i>  | 602985 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFS3</i>  | 603846 | Leigh syndrome due to mitochondrial complex I deficiency, 256000 (3), Autosomal recessive, Mitochondrial; Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial                                       |
| <i>NDUFS4</i>  | 602694 | Leigh syndrome, 256000 (3), Autosomal recessive, Mitochondrial; Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFS6</i>  | 603848 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFS7</i>  | 601825 | Leigh syndrome, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>NDUFS8</i>  | 602141 | Leigh syndrome due to mitochondrial complex I deficiency, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>NDUFV1</i>  | 161015 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NDUFV2</i>  | 600532 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial   |
| <i>NEB</i>     | 161650 | Nemaline myopathy 2, autosomal recessive, 256030 (3), Autosomal recessive   |
| <i>NECAP1</i>  | 611623 | ?Epileptic encephalopathy, early infantile, 21, 615833 (3), Autosomal recessive   |
| <i>NECTIN1</i> | 600644 | Cleft lip/palate-ectodermal dysplasia syndrome, 225060 (3), Autosomal recessive; Orofacial cleft 7, 225060 (3), Autosomal recessive   |
| <i>NECTIN4</i> | 609607 | Ectodermal dysplasia-syndactyly syndrome 1, 613573 (3), Autosomal recessive   |
| <i>NEFH</i>    | 162230 | ?{Amyotrophic lateral sclerosis, susceptibility to}, 105400 (3), Autosomal recessive, Autosomal dominant; Charcot-Marie-Tooth disease, axonal, type 2CC, 616924 (3), Autosomal dominant   |
| <i>NEFL</i>    | 162280 | Charcot-Marie-Tooth disease, dominant intermediate G, 617882 (3), Autosomal dominant; Charcot-Marie-Tooth disease, type 1F, 607734 (3), Autosomal recessive, Autosomal dominant; Charcot-Marie-Tooth disease, type 2E, 607684 (3), Autosomal dominant |
| <i>NEK1</i>    | 604588 | {Amyotrophic lateral sclerosis, susceptibility to, 24}, 617892 (3); Short-rib thoracic dysplasia 6 with or without polydactyly, 263520 (3), Autosomal recessive, Digenic recessive  |
| <i>NEK2</i>    | 604043 | ?Retinitis pigmentosa 67, 615565 (3), Autosomal recessive   |

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| <i>NEK8</i>    | 609799 | ?Nephronophthisis 9, 613824 (3); Renal-hepatic-pancreatic dysplasia 2, 615415 (3), Autosomal recessive   |
| <i>NEK9</i>    | 609798 | ?Arthrogryposis, Perthes disease, and upward gaze palsy, 614262 (3), Autosomal recessive; Lethal congenital contracture syndrome 10, 617022 (3), Autosomal recessive; Nevus comedonicus, somatic, 617025 (3)   |
| <i>NEU1</i>    | 608272 | Sialidosis, type I, 256550 (3), Autosomal recessive; Sialidosis, type II, 256550 (3), Autosomal recessive  |
| <i>NEUROD1</i> | 601724 | {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant; Maturity-onset diabetes of the young 6, 606394 (3)  |
| <i>NEUROG3</i> | 604882 | Diarrhea 4, malabsorptive, congenital, 610370 (3), Autosomal recessive   |
| <i>NEXMIF</i>  | 300524 | Mental retardation, X-linked 98, 300912 (3), X-linked dominant   |
| <i>NEXN</i>    | 613121 | Cardiomyopathy, dilated, 1CC, 613122 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 20, 613876 (3), Autosomal dominant   |
| <i>NF1</i>     | 613113 | Leukemia, juvenile myelomonocytic, 607785 (3), Autosomal dominant, Somatic mutation; Neurofibromatosis, familial spinal, 162210 (3), Autosomal dominant; Neurofibromatosis, type 1, 162200 (3), Autosomal dominant; Neurofibromatosis-Noonan syndrome, 601321 (3), Autosomal dominant; Watson syndrome, 193520 (3), Autosomal dominant |
| <i>NF2</i>     | 607379 | Meningioma, NF2-related, somatic, 607174 (3); Neurofibromatosis, type 2, 101000 (3), Autosomal dominant; Schwannomatosis, somatic, 162091 (3)  |
| <i>NFKB1</i>   | 164011 | Immunodeficiency, common variable, 12, 616576 (3), Autosomal dominant  |
| <i>NFKB2</i>   | 164012 | Immunodeficiency, common variable, 10, 615577 (3), Autosomal dominant  |
| <i>NFKBIA</i>  | 164008 | Ectodermal dysplasia, anhidrotic, with T-cell immunodeficiency, 612132 (3), Autosomal dominant   |
| <i>NFU1</i>    | 608100 | Multiple mitochondrial dysfunctions syndrome 1, 605711 (3), Autosomal recessive  |
| <i>NGF</i>     | 162030 | Neuropathy, hereditary sensory and autonomic, type V, 608654 (3), Autosomal recessive  |
| <i>NGLY1</i>   | 610661 | Congenital disorder of deglycosylation, 615273 (3), Autosomal recessive  |
| <i>NHEJ1</i>   | 611290 | Severe combined immunodeficiency with microcephaly, growth retardation, and sensitivity to ionizing radiation, 611291 (3)  |
| <i>NHLRC1</i>  | 608072 | Epilepsy, progressive myoclonic 2B (Lafora), 254780 (3), Autosomal recessive   |
| <i>NHP2</i>    | 606470 | Dyskeratosis congenita, autosomal recessive 2, 613987 (3), Autosomal recessive   |
| <i>NIN</i>     | 608684 | ?Seckel syndrome 7, 614851 (3), Autosomal recessive  |
| <i>NIPA1</i>   | 608145 | Spastic paraparesis 6, autosomal dominant, 600363 (3), Autosomal dominant  |

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| <i>NIPAL4</i> | 609383 | Ichthyosis, congenital, autosomal recessive 6, 612281 (3), Autosomal recessive   |
| <i>NIPBL</i>  | 608667 | Cornelia de Lange syndrome 1, 122470 (3), Autosomal dominant<br>Chorea, hereditary benign, 118700 (3), Autosomal dominant;   |
| <i>NKX2-1</i> | 600635 | Choreoathetosis, hypothyroidism, and neonatal respiratory distress, 610978 (3), Autosomal dominant; {Thyroid cancer, nonmedullary, 1}, 188550 (3), Autosomal dominant  |
| <i>NKX2-5</i> | 600584 | Atrial septal defect 7, with or without AV conduction defects, 108900 (3), Autosomal dominant; Conotruncal heart malformations, variable, 217095 (3); Hypoplastic left heart syndrome 2, 614435 (3), Autosomal dominant; Hypothyroidism, congenital nongoitrous, 5, 225250 (3), Autosomal dominant; Tetralogy of Fallot, 187500 (3), Autosomal dominant; Ventricular septal defect 3, 614432 (3), Autosomal dominant |
| <i>NKX2-6</i> | 611770 | Conotruncal heart malformations, 217095 (3); Persistent truncus arteriosus, 217095 (3)   |
| <i>NKX3-2</i> | 602183 | Spondylo-megaepiphyseal-metaphyseal dysplasia, 613330 (3), Autosomal recessive   |
| <i>NLGN3</i>  | 300336 | {Asperger syndrome susceptibility, X-linked 1}, 300494 (3), Isolated cases, X-linked, Multifactorial; {Autism susceptibility, X-linked 1}, 300425 (3), Isolated cases, X-linked, Multifactorial  |
| <i>NLGN4X</i> | 300427 | {Asperger syndrome susceptibility, X-linked 2}, 300497 (3), Isolated cases, X-linked, Multifactorial; {Autism susceptibility, X-linked 2}, 300495 (3), Isolated cases, X-linked, Multifactorial; Mental retardation, X-linked, 300495 (3), Isolated cases, X-linked, Multifactorial  |
| <i>NLRC4</i>  | 606831 | Autoinflammation with infantile enterocolitis, 616050 (3), Autosomal dominant; ?Familial cold autoinflammatory syndrome 4, 616115 (3), Autosomal dominant  |
| <i>NLRP1</i>  | 606636 | Autoinflammation with arthritis and dyskeratosis, 617388 (3), Autosomal recessive, Autosomal dominant; Palmoplantar carcinoma, multiple self-healing, 615225 (3), Autosomal dominant; {Vitiligo-associated multiple autoimmune disease susceptibility 1}, 606579 (3)   |
| <i>NLRP12</i> | 609648 | Familial cold autoinflammatory syndrome 2, 611762 (3), Autosomal dominant  |
| <i>NLRP3</i>  | 606416 | CINCA syndrome, 607115 (3), Autosomal dominant; Deafness, autosomal dominant 34, with or without inflammation, 617772 (3), Autosomal dominant; Familial cold inflammatory syndrome 1, 120100 (3), Autosomal dominant; Keratoendothelitis fugax hereditaria, 148200 (3), Autosomal dominant; Muckle-Wells syndrome, 191900 (3), Autosomal dominant  |
| <i>NME1</i>   | 156490 | Neuroblastoma, 256700 (3), Autosomal dominant, Isolated cases  |
| <i>NME8</i>   | 607421 | Ciliary dyskinesia, primary, 6, 610852 (3), Autosomal recessive  |
| <i>NMNAT1</i> | 608700 | Leber congenital amaurosis 9, 608553 (3), Autosomal recessive  |
| <i>NNT</i>    | 607878 | Glucocorticoid deficiency 4, with or without mineralocorticoid deficiency, 614736 (3), Autosomal recessive   |

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| <i>NOBOX</i>  | 610934 | Premature ovarian failure 5, 611548 (3), Autosomal dominant<br>Blau syndrome, 186580 (3), Autosomal dominant; {Inflammatory bowel disease 1, Crohn disease}, 266600 (3), Multifactorial; {Psoriatic arthritis, susceptibility to}, 607507 (2); {Yao syndrome}, 617321 (3), Multifactorial  |
| <i>NOD2</i>   | 605956 |  |
| <i>NODAL</i>  | 601265 | Heterotaxy, visceral, 5, 270100 (3), Autosomal dominant<br>Brachydactyly, type B2, 611377 (3), Autosomal dominant; Multiple synostoses syndrome 1, 186500 (3), Autosomal dominant; Stapes ankylosis with broad thumbs and toes, 184460 (3), Autosomal dominant; Symphalangism, proximal, 1A, 185800 (3), Autosomal dominant; Tarsal-carpal coalition syndrome, 186570 (3), Autosomal dominant  |
| <i>NOG</i>    | 602991 |  |
| <i>NOL3</i>   | 605235 | Myoclonus, familial cortical, 614937 (3), Autosomal dominant   |
| <i>NONO</i>   | 300084 | Mental retardation, X-linked, syndromic 34, 300967 (3), X-linked   |
| <i>NOP10</i>  | 606471 | Dyskeratosis congenita, autosomal recessive 1, 224230 (3), Autosomal recessive   |
| <i>NOP56</i>  | 614154 | Spinocerebellar ataxia 36, 614153 (3), Autosomal dominant  |
| <i>NOS2</i>   | 163730 | {Hypertension, susceptibility to}, 145500 (2), Multifactorial; {Malaria, resistance to}, 611162 (3)<br><br>{Alzheimer disease, late-onset, susceptibility to}, 104300 (3), Autosomal dominant; {Coronary artery spasm 1, susceptibility to} (3); {Hypertension, pregnancy-induced}, 189800 (3), Autosomal dominant; {Hypertension, susceptibility to}, 145500 (3), Multifactorial; {Ischemic stroke, susceptibility to}, 601367 (3), Multifactorial; {Placental abruption} (3) |
| <i>NOTCH1</i> | 190198 | Adams-Oliver syndrome 5, 616028 (3), Autosomal dominant; Aortic valve disease 1, 109730 (3), Autosomal dominant  |
| <i>NOTCH2</i> | 600275 | Alagille syndrome 2, 610205 (3), Autosomal dominant; Hajdu-Cheney syndrome, 102500 (3), Autosomal dominant   |
| <i>NOTCH3</i> | 600276 | Cerebral arteriopathy with subcortical infarcts and leukoencephalopathy 1, 125310 (3), Autosomal dominant; Lateral meningocele syndrome, 130720 (3), Autosomal dominant; ?Myofibromatosis, infantile 2, 615293 (3), Autosomal dominant   |
| <i>NPAP1</i>  | 610922 | No OMIM phenotype  |
| <i>NPC1</i>   | 607623 | Niemann-Pick disease, type C1, 257220 (3), Autosomal recessive; Niemann-Pick disease, type D, 257220 (3), Autosomal recessive  |
| <i>NPC2</i>   | 601015 | Niemann-pick disease, type C2, 607625 (3), Autosomal recessive   |
| <i>NPHP1</i>  | 607100 | Joubert syndrome 4, 609583 (3), Autosomal recessive; Nephronophthisis 1, juvenile, 256100 (3), Autosomal recessive; Senior-Loken syndrome-1, 266900 (3), Autosomal recessive   |
| <i>NPHP3</i>  | 608002 | Meckel syndrome 7, 267010 (3), Autosomal recessive; Nephronophthisis 3, 604387 (3), Autosomal recessive; Renal-hepatic-pancreatic dysplasia 1, 208540 (3), Autosomal recessive   |
| <i>NPHP4</i>  | 607215 | Nephronophthisis 4, 606966 (3), Autosomal recessive; Senior-Loken syndrome 4, 606996 (3), Autosomal recessive  |

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| <i>NPHS1</i> | 602716 | Nephrotic syndrome, type 1, 256300 (3), Autosomal recessive   |
| <i>NPHS2</i> | 604766 | Nephrotic syndrome, type 2, 600995 (3), Autosomal recessive   |
| <i>NPPA</i>  | 108780 | Atrial fibrillation, familial, 6, 612201 (3), Autosomal dominant; Atrial standstill 2, 615745 (3), Autosomal recessive  |
| <i>NPR2</i>  | 108961 | Acromesomelic dysplasia, Maroteaux type, 602875 (3), Autosomal recessive; Epiphyseal chondrodysplasia, Miura type, 615923 (3), Autosomal dominant; Short stature with nonspecific skeletal abnormalities, 616255 (3), Autosomal dominant  |
| <i>NPRL2</i> | 607072 | Epilepsy, familial focal, with variable foci 2, 617116 (3), Autosomal dominant  |
| <i>NPRL3</i> | 600928 | Epilepsy, familial focal, with variable foci 3, 617118 (3), Autosomal dominant  |
| <i>NPSR1</i> | 608595 | {Asthma, susceptibility to, 2}, 608584 (3)  |
| <i>NQO2</i>  | 160998 | {?Breast cancer susceptibility}, 114480 (1), Autosomal dominant   |
| <i>NR0B1</i> | 300473 | Adrenal hypoplasia, congenital, 300200 (3), X-linked recessive; 46XY sex reversal 2, dosage-sensitive, 300018 (3), X-linked   |
| <i>NR0B2</i> | 604630 | Obesity, mild, early-onset, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>NR2E3</i> | 604485 | Enhanced S-cone syndrome, 268100 (3), Autosomal recessive; Retinitis pigmentosa 37, 611131 (3), Autosomal recessive, Autosomal dominant   |
| <i>NR2F1</i> | 132890 | Bosch-Boonstra-Schaaf optic atrophy syndrome, 615722 (3), Autosomal dominant  |
| <i>NR2F2</i> | 107773 | Congenital heart defects, multiple types, 4, 615779 (3), Autosomal dominant   |
| <i>NR3C2</i> | 600983 | Hypertension, early-onset, autosomal dominant, with exacerbation in pregnancy, 605115 (3); Pseudohypoaldosteronism type I, autosomal dominant, 177735 (3), Autosomal dominant   |
| <i>NR4A2</i> | 601828 | No OMIM phenotype   |
| <i>NR4A3</i> | 600542 | Chondrosarcoma, extraskeletal myxoid, 612237 (3)  |
| <i>NR5A1</i> | 184757 | Adrenocortical insufficiency, 612964 (3), Autosomal dominant; Premature ovarian failure 7, 612964 (3), Autosomal dominant; Spermatogenic failure 8, 613957 (3), Autosomal dominant; 46, XX sex reversal 4, 617480 (3), Autosomal dominant; 46XY sex reversal 3, 612965 (3), Autosomal dominant  |
| <i>NRAS</i>  | 164790 | Colorectal cancer, somatic, 114500 (3); Epidermal nevus, somatic, 162900 (3); Melanocytic nevus syndrome, congenital, somatic, 137550 (3); Neurocutaneous melanosis, somatic, 249400 (3); Noonan syndrome 6, 613224 (3), Autosomal dominant; ?RAS-associated autoimmune lymphoproliferative syndrome type IV, somatic, 614470 (3); Schimmelpenning-Feuerstein-Mims syndrome, somatic mosaic, 163200 (3); Thyroid carcinoma, follicular, somatic, 188470 (3) |
| <i>NRG1</i>  | 142445 | {?Schizophrenia, susceptibility to}, 603013 (1)   |
| <i>NRL</i>   | 162080 | Retinal degeneration, autosomal recessive, clumped pigment type (3); Retinitis pigmentosa 27, 613750 (3), Autosomal dominant  |

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| <i>NRXN1</i>  | 600565 | Pitt-Hopkins-like syndrome 2, 614325 (3), Autosomal recessive; {Schizophrenia, susceptibility to, 17}, 614332 (3)  |
| <i>NSD1</i>   | 606681 | Leukemia, acute myeloid, 601626 (1), Autosomal dominant; Sotos syndrome 1, 117550 (3), Autosomal dominant  |
| <i>NSD2</i>   | 602952 | No OMIM phenotype  |
| <i>NSMCE3</i> | 608243 | Lung disease, immunodeficiency, and chromosome breakage syndrome, 617241 (3), Autosomal recessive  |
| <i>NSMF</i>   | 608137 | Hypogonadotropic hypogonadism 9 with or without anosmia, 614838 (3), Autosomal dominant  |
| <i>NSUN2</i>  | 610916 | Mental retardation, autosomal recessive 5, 611091 (3), Autosomal recessive   |
| <i>NT5C3A</i> | 606224 | Anemia, hemolytic, due to UMPH1 deficiency, 266120 (3), Autosomal recessive  |
| <i>NT5E</i>   | 129190 | Calcification of joints and arteries, 211800 (3), Autosomal recessive  |
| <i>NTF4</i>   | 162662 | Glaucoma 1, open angle, 1O, 613100 (3)   |
| <i>NTHL1</i>  | 602656 | Familial adenomatous polyposis 3, 616415 (3), Autosomal recessive  |
| <i>NTRK1</i>  | 191315 | Insensitivity to pain, congenital, with anhidrosis, 256800 (3), Autosomal recessive; Medullary thyroid carcinoma, familial, 155240 (3), Autosomal dominant                 |
| <i>NTRK2</i>  | 600456 | Epileptic encephalopathy, early infantile, 58, 617830 (3), Autosomal dominant; Obesity, hyperphagia, and developmental delay, 613886 (3), Autosomal dominant               |
| <i>NUBPL</i>  | 613621 | Mitochondrial complex I deficiency, 252010 (3), Autosomal recessive, X-linked dominant, Mitochondrial  |
| <i>NUDT15</i> | 615792 | {Thiopurines, poor metabolism of, 2}, 616903 (3), Autosomal dominant   |
| <i>NUMA1</i>  | 164009 | Leukemia, acute promyelocytic, somatic, 612376 (3)   |
| <i>NUP107</i> | 607617 | Nephrotic syndrome, type 11, 616730 (3), Autosomal recessive   |
| <i>NUP155</i> | 606694 | ?Atrial fibrillation 15, 615770 (3), Autosomal recessive   |
| <i>NUP205</i> | 614352 | ?Nephrotic syndrome, type 13, 616893 (3)   |
| <i>NUP214</i> | 114350 | Leukemia, T-cell acute lymphoblastic, somatic, 613065 (3); Leukemia, acute myeloid, somatic, 601626 (3)  |
| <i>NUP62</i>  | 605815 | Striatonigral degeneration, infantile, 271930 (3), Autosomal recessive   |
| <i>NUP93</i>  | 614351 | Nephrotic syndrome, type 12, 616892 (3), Autosomal recessive   |
| <i>NUS1</i>   | 610463 | ?Congenital disorder of glycosylation, type 1aa, 617082 (3), Autosomal recessive; Mental retardation, autosomal dominant 55, with seizures, 617831 (3), Autosomal dominant |
| <i>NYX</i>    | 300278 | Night blindness, congenital stationary (complete), 1A, X-linked, 310500 (3), X-linked recessive  |
| <i>OAS1</i>   | 164350 | No OMIM phenotype  |
| <i>OAT</i>    | 613349 | Gyrate atrophy of choroid and retina with or without ornithinuria, 258870 (3), Autosomal recessive   |
| <i>OBSL1</i>  | 610991 | 3-M syndrome 2, 612921 (3)   |

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| <i>OCA2</i>                        | 611409 | Albinism, brown oculocutaneous, 203200 (3), Autosomal recessive; Albinism, oculocutaneous, type II, 203200 (3), Autosomal recessive; [Skin/hair/eye pigmentation 1, blond/brown hair], 227220 (3), Autosomal recessive; [Skin/hair/eye pigmentation 1, blue/nonblue eyes], 227220 (3), Autosomal recessive    |
| <i>OCLN</i>                        | 602876 | Pseudo-TORCH syndrome 1, 251290 (3), Autosomal recessive  |
| <i>OCRL</i>                        | 300535 | Dent disease 2, 300555 (3), X-linked recessive; Lowe syndrome, 309000 (3), X-linked recessive   |
| <i>ODAPH</i><br>( <i>C4orf26</i> ) | 614829 | Amelogenesis imperfecta, type IIA4, 614832 (3), Autosomal recessive   |
| <i>OFD1</i>                        | 300170 | Joubert syndrome 10, 300804 (3), X-linked recessive; Orofaciodigital syndrome I, 311200 (3), X-linked dominant; ?Retinitis pigmentosa 23, 300424 (3), X-linked recessive; Simpson-Golabi-Behmel syndrome, type 2, 300209 (3), X-linked recessive  |
| <i>OGDH</i>                        | 613022 | Alpha-ketoglutarate dehydrogenase deficiency, 203740 (1), Autosomal recessive   |
| <i>OGG1</i>                        | 601982 | Renal cell carcinoma, clear cell, somatic, 144700 (3)   |
| <i>OLR1</i>                        | 602601 | {Myocardial infarction, susceptibility to}, 608446 (3)  |
| <i>OPA1</i>                        | 605290 | Behr syndrome, 210000 (3), Autosomal recessive; {Glaucoma, normal tension, susceptibility to}, 606657 (3); ?Mitochondrial DNA depletion syndrome 14 (encephalocardiomyopathic type), 616896 (3); Optic atrophy 1, 165500 (3), Autosomal dominant; Optic atrophy plus syndrome, 125250 (3), Autosomal dominant |
| <i>OPA3</i>                        | 606580 | 3-methylglutaconic aciduria, type III, 258501 (3), Autosomal recessive; Optic atrophy 3 with cataract, 165300 (3), Autosomal dominant   |
| <i>OPCML</i>                       | 600632 | {Ovarian cancer, somatic}, 167000 (3)   |
| <i>OPHN1</i>                       | 300127 | Mental retardation, X-linked, with cerebellar hypoplasia and distinctive facial appearance, 300486 (3), X-linked recessive  |
| <i>OPLAH</i>                       | 614243 | 5-oxoprolinase deficiency, 260005 (3), Autosomal recessive, Autosomal dominant  |
| <i>OPN1LW</i>                      | 300822 | Blue cone monochromacy, 303700 (3), X-linked recessive; Colorblindness, protan, 303900 (3), X-linked  |
| <i>OPN1MW</i>                      | 300821 | Blue cone monochromacy, 303700 (3), X-linked recessive; Colorblindness, deutan, 303800 (3), X-linked  |
| <i>OPN1SW</i>                      | 613522 | Colorblindness, tritan, 190900 (3), Autosomal dominant  |
| <i>OPTN</i>                        | 602432 | Amyotrophic lateral sclerosis 12, 613435 (3); Glaucoma 1, open angle, E, 137760 (3), Autosomal dominant; {Glaucoma, normal tension, susceptibility to}, 606657 (3)  |
| <i>OR2J3</i>                       | 615016 | [C3HEX, ability to smell], 615082 (3), Autosomal dominant   |
| <i>ORC1</i>                        | 601902 | Meier-Gorlin syndrome 1, 224690 (3), Autosomal recessive  |
| <i>ORC4</i>                        | 603056 | Meier-Gorlin syndrome 2, 613800 (3), Autosomal recessive  |
| <i>ORC6</i>                        | 607213 | Meier-Gorlin syndrome 3, 613803 (3), Autosomal recessive  |
| <i>OSBPL2</i>                      | 606731 | Deafness, autosomal dominant 67, 616340 (3), Autosomal dominant   |

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| <i>OSMR</i>     | 601743 | Amyloidosis, primary localized cutaneous, 1, 105250 (3), Autosomal dominant  |
| <i>OSTM1</i>    | 607649 | Osteopetrosis, autosomal recessive 5, 259720 (3), Autosomal recessive  |
| <i>OTC</i>      | 300461 | Ornithine transcarbamylase deficiency, 311250 (3), X-linked recessive  |
| <i>OTOA</i>     | 607038 | Deafness, autosomal recessive 22, 607039 (3), Autosomal recessive  |
| <i>OTOF</i>     | 603681 | Auditory neuropathy, autosomal recessive, 1, 601071 (3), Autosomal recessive; Deafness, autosomal recessive 9, 601071 (3), Autosomal recessive                                 |
| <i>OTOG</i>     | 604487 | Deafness, autosomal recessive 18B, 614945 (3), Autosomal recessive   |
| <i>OTOGL</i>    | 614925 | Deafness, autosomal recessive 84B, 614944 (3), Autosomal recessive   |
| <i>OTULIN</i>   | 615712 | Autoinflammation, panniculitis, and dermatosis syndrome, 617099 (3), Autosomal recessive   |
| <i>OVOL2</i>    | 616441 | Corneal dystrophy, posterior polymorphous, 1, 122000 (3), Autosomal dominant   |
| <i>OXCT1</i>    | 601424 | Succinyl CoA:3-oxoacid CoA transferase deficiency, 245050 (3)  |
| <i>P2RX1</i>    | 600845 | No OMIM phenotype  |
| <i>P2RX2</i>    | 600844 | Deafness, autosomal dominant 41, 608224 (3), Autosomal dominant  |
| <i>P2RY12</i>   | 600515 | Bleeding disorder, platelet-type, 8, 609821 (3), Autosomal recessive   |
| <i>P3H1</i>     | 610339 | Osteogenesis imperfecta, type VIII, 610915 (3), Autosomal recessive  |
| <i>P3H2</i>     | 610341 | Myopia, high, with cataract and vitreoretinal degeneration, 614292 (3), Autosomal recessive  |
| <i>P4HA2</i>    | 600608 | Myopia 25, autosomal dominant, 617238 (3), Autosomal dominant  |
| <i>P4HB</i>     | 176790 | Cole-Carpenter syndrome 1, 112240 (3), Autosomal dominant  |
| <i>PABPN1</i>   | 602279 | Oculopharyngeal muscular dystrophy, 164300 (3), Autosomal dominant   |
| <i>PACS1</i>    | 607492 | Schuurs-Hoeijmakers syndrome, 615009 (3), Autosomal dominant   |
| <i>PADI3</i>    | 606755 | Uncombable hair syndrome, 191480 (3), Autosomal recessive  |
| <i>PADI4</i>    | 605347 | {Rheumatoid arthritis, susceptibility to}, 180300 (3)  |
| <i>PADI6</i>    | 610363 | Preimplantation embryonic lethality 2, 617234 (3), Autosomal recessive   |
| <i>PAFAH1B1</i> | 601545 | Lissencephaly 1, 607432 (3), Isolated cases; Subcortical laminar heterotopia, 607432 (3), Isolated cases   |
| <i>PAH</i>      | 612349 | [Hyperphenylalaninemia, non-PKU mild], 261600 (3), Autosomal recessive; Phenylketonuria, 261600 (3), Autosomal recessive   |
| <i>PALB2</i>    | 610355 | {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant; Fanconi anemia, complementation group N, 610832 (3); {Pancreatic cancer, susceptibility to, 3}, 613348 (3) |
| <i>PALLD</i>    | 608092 | {Pancreatic cancer, susceptibility to, 1}, 606856 (3)  |
| <i>PAM16</i>    | 614336 | Spondylometaphyseal dysplasia, Megarbane-Dagher-Melike type, 613320 (3), Autosomal recessive   |
| <i>PAPSS2</i>   | 603005 | Brachyolmia 4 with mild epiphyseal and metaphyseal changes, 612847 (3), Autosomal recessive  |
| <i>PARK7</i>    | 602533 | Parkinson disease 7, autosomal recessive early-onset, 606324 (3), Autosomal recessive  |

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| <i>PARN</i>                        | 604212 | Dyskeratosis congenita, autosomal recessive 6, 616353 (3), Autosomal recessive; Pulmonary fibrosis and/or bone marrow failure, telomere-related, 4, 616371 (3), Autosomal dominant   |
| <i>PAX1</i>                        | 167411 | ?Otofaciocervical syndrome 2, 615560 (3), Autosomal recessive<br>Craniofacial-deafness-hand syndrome, 122880 (3), Autosomal dominant; Rhabdomyosarcoma 2, alveolar, 268220 (3), Autosomal recessive; Waardenburg syndrome, type 1, 193500 (3), Autosomal dominant; Waardenburg syndrome, type 3, 148820 (3), Autosomal recessive, Autosomal dominant   |
| <i>PAX3</i>                        | 606597 |  |
| <i>PAX4</i>                        | 167413 | {Diabetes mellitus, ketosis-prone, susceptibility to}, 612227 (3), Autosomal recessive, Autosomal dominant; Diabetes mellitus, type 2, 125853 (3), Autosomal dominant; Maturity-onset diabetes of the young, type IX, 612225 (3)   |
| <i>PAX5</i>                        | 167414 | {Leukemia, acute lymphoblastic, susceptibility to}, 615545 (3)   |
| <i>PAX6</i>                        | 607108 | Aniridia, 106210 (3), Autosomal dominant; Anterior segment dysgenesis 5, multiple subtypes, 604229 (3); Cataract with late-onset corneal dystrophy, 106210 (3), Autosomal dominant; ?Coloboma of optic nerve, 120430 (3), Autosomal dominant; ?Coloboma, ocular, 120200 (3), Autosomal dominant; Foveal hypoplasia 1, 136520 (3), Autosomal dominant; Keratitis, 148190 (3), Autosomal dominant; ?Morning glory disc anomaly, 120430 (3), Autosomal dominant; Optic nerve hypoplasia, 165550 (3), Autosomal dominant |
| <i>PAX7</i>                        | 167410 | Rhabdomyosarcoma 2, alveolar, 268220 (3), Autosomal recessive  |
| <i>PAX8</i>                        | 167415 | Hypothyroidism, congenital, due to thyroid dysgenesis or hypoplasia, 218700 (3), Autosomal dominant  |
| <i>PAX9</i>                        | 167416 | Tooth agenesis, selective, 3, 604625 (3), Autosomal dominant   |
| <i>PAXIP1</i>                      | 608254 | No OMIM phenotype  |
| <i>PC</i>                          | 608786 | Pyruvate carboxylase deficiency, 266150 (3), Autosomal recessive   |
| <i>PCARE</i><br>( <i>C2orf71</i> ) | 613425 | Retinitis pigmentosa 54, 613428 (3)  |
| <i>PCBD1</i>                       | 126090 | Hyperphenylalaninemia, BH4-deficient, D, 264070 (3), Autosomal recessive   |
| <i>PCCA</i>                        | 232000 | Propionicacidemia, 606054 (3), Autosomal recessive   |
| <i>PCCB</i>                        | 232050 | Propionicacidemia, 606054 (3), Autosomal recessive   |
| <i>PCDH15</i>                      | 605514 | Deafness, autosomal recessive 23, 609533 (3), Autosomal recessive; Usher syndrome, type 1D/F digenic, 601067 (3), Autosomal recessive, Digenic recessive; Usher syndrome, type 1F, 602083 (3), Autosomal recessive   |
| <i>PCDH19</i>                      | 300460 | Epileptic encephalopathy, early infantile, 9, 300088 (3), X-linked   |
| <i>PCK1</i>                        | 614168 | ?Phosphoenolpyruvate carboxykinase deficiency, cytosolic, 261680 (3), Autosomal recessive  |
| <i>PCK2</i>                        | 614095 | PEPCK deficiency, mitochondrial, 261650 (1), Autosomal recessive   |
| <i>PCLO</i>                        | 604918 | ?Pontocerebellar hypoplasia, type 3, 608027 (3), Autosomal recessive   |
| <i>PCM1</i>                        | 600299 | No OMIM phenotype  |
| <i>PCNA</i>                        | 176740 | ?Ataxia-telangiectasia-like disorder 2, 615919 (3), Autosomal recessive  |

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| <i>PCNT</i>   | 605925 | Microcephalic osteodysplastic primordial dwarfism, type II, 210720 (3),<br>Autosomal recessive  |
| <i>PCSK1</i>  | 162150 | Obesity with impaired prohormone processing, 600955 (3), Autosomal<br>recessive; {Obesity, susceptibility to, BMIQ12}, 612362 (3)   |
| <i>PCSK9</i>  | 607786 | Hypercholesterolemia, familial, 3, 603776 (3); {Low density lipoprotein<br>cholesterol level QTL 1}, 603776 (3)   |
| <i>PCYT1A</i> | 123695 | Spondylometaphyseal dysplasia with cone-rod dystrophy, 608940 (3),<br>Autosomal recessive   |
| <i>PDE11A</i> | 604961 | Pigmented nodular adrenocortical disease, primary, 2, 610475 (3),<br>Autosomal dominant   |
| <i>PDE3A</i>  | 123805 | Hypertension and brachydactyly syndrome, 112410 (3), Autosomal<br>dominant  |
| <i>PDE6A</i>  | 180071 | Retinitis pigmentosa 43, 613810 (3)   |
| <i>PDE6B</i>  | 180072 | Night blindness, congenital stationary, autosomal dominant 2, 163500<br>(3), Autosomal dominant; Retinitis pigmentosa-40, 613801 (3),<br>Autosomal recessive  |
| <i>PDE6C</i>  | 600827 | Cone dystrophy 4, 613093 (3), Autosomal recessive   |
| <i>PDE6D</i>  | 602676 | ?Joubert syndrome 22, 615665 (3), Autosomal recessive   |
| <i>PDE6G</i>  | 180073 | Retinitis pigmentosa 57, 613582 (3), Autosomal recessive  |
| <i>PDE6H</i>  | 601190 | Achromatopsia 6, 610024 (3), Autosomal recessive, Autosomal<br>dominant; Retinal cone dystrophy 3, 610024 (3), Autosomal recessive,<br>Autosomal dominant   |
| <i>PDE8B</i>  | 603390 | Pigmented nodular adrenocortical disease, primary, 3, 614190 (3);<br>Striatal degeneration, autosomal dominant, 609161 (3), Autosomal<br>dominant   |
| <i>PDGFB</i>  | 190040 | Basal ganglia calcification, idiopathic, 5, 615483 (3), Autosomal<br>dominant; Dermatofibrosarcoma protuberans, 607907 (3);<br>Meningioma, SIS-related, 607174 (3), Autosomal dominant  |
| <i>PDGFRA</i> | 173490 | Gastrointestinal stromal tumor, somatic, 606764 (3);<br>Hypereosinophilic syndrome, idiopathic, resistant to imatinib, 607685<br>(3), Isolated cases, Somatic mutation  |
| <i>PDGFRB</i> | 173410 | Basal ganglia calcification, idiopathic, 4, 615007 (3), Autosomal<br>dominant; Kosaki overgrowth syndrome, 616592 (3), Autosomal<br>dominant; Myeloproliferative disorder with eosinophilia, 131440 (4),<br>Autosomal dominant; Myofibromatosis, infantile, 1, 228550 (3),<br>Autosomal dominant; Premature aging syndrome, Penttinen type,<br>601812 (3), Autosomal dominant |
| <i>PDGFRL</i> | 604584 | Colorectal cancer, somatic, 114500 (3); Hepatocellular cancer,<br>somatic, 114550 (3)   |
| <i>PDHA1</i>  | 300502 | Pyruvate dehydrogenase E1-alpha deficiency, 312170 (3), X-linked<br>dominant  |
| <i>PDHB</i>   | 179060 | Pyruvate dehydrogenase E1-beta deficiency, 614111 (3)   |
| <i>PDHX</i>   | 608769 | Lacticacidemia due to PDX1 deficiency, 245349 (3), Autosomal<br>recessive   |
| <i>PDLIM4</i> | 603422 | {Osteoporosis, susceptibility to}, 166710 (3), Autosomal dominant   |

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| <i>PDSS1</i>  | 607429 | Coenzyme Q10 deficiency, primary, 2, 614651 (3), Autosomal recessive  |
| <i>PDSS2</i>  | 610564 | Coenzyme Q10 deficiency, primary, 3, 614652 (3), Autosomal recessive  |
| <i>PDX1</i>   | 600733 | {Diabetes mellitus, type II, susceptibility to}, 125853 (3), Autosomal dominant; MODY, type IV, 606392 (3); Pancreatic agenesis 1, 260370 (3), Autosomal recessive  |
| <i>PDYN</i>   | 131340 | Spinocerebellar ataxia 23, 610245 (3), Autosomal dominant   |
| <i>PDZD7</i>  | 612971 | Deafness, autosomal recessive 57, 618003 (3), Autosomal recessive; {Retinal disease in Usher syndrome type IIA, modifier of}, 276901 (3), Autosomal recessive; Usher syndrome, type IIC, GPR98/PDZD7 digenic, 605472 (3), Autosomal recessive |
| <i>PEPD</i>   | 613230 | Prolidase deficiency, 170100 (3), Autosomal recessive   |
| <i>PER2</i>   | 603426 | Advanced sleep phase syndrome, familial, 1, 604348 (3), Autosomal dominant  |
| <i>PER3</i>   | 603427 | ?Advanced sleep phase syndrome, familial, 3, 616882 (3), Autosomal dominant   |
| <i>PET100</i> | 614770 | Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial   |
| <i>PEX1</i>   | 602136 | Heimler syndrome 1, 234580 (3), Autosomal recessive; Peroxisome biogenesis disorder 1A (Zellweger), 214100 (3), Autosomal recessive; Peroxisome biogenesis disorder 1B (NALD/IRD), 601539 (3), Autosomal recessive                            |
| <i>PEX10</i>  | 602859 | Peroxisome biogenesis disorder 6A (Zellweger), 614870 (3), Autosomal recessive; Peroxisome biogenesis disorder 6B, 614871 (3), Autosomal recessive  |
| <i>PEX11B</i> | 603867 | ?Peroxisome biogenesis disorder 14B, 614920 (3), Autosomal recessive  |
| <i>PEX12</i>  | 601758 | Peroxisome biogenesis disorder 3A (Zellweger), 614859 (3), Autosomal recessive; Peroxisome biogenesis disorder 3B, 266510 (3), Autosomal recessive  |
| <i>PEX13</i>  | 601789 | Peroxisome biogenesis disorder 11A (Zellweger), 614883 (3), Autosomal recessive; Peroxisome biogenesis disorder 11B, 614885 (3), Autosomal recessive  |
| <i>PEX14</i>  | 601791 | Peroxisome biogenesis disorder 13A (Zellweger), 614887 (3), Autosomal recessive   |
| <i>PEX16</i>  | 603360 | Peroxisome biogenesis disorder 8A (Zellweger), 614876 (3), Autosomal recessive; Peroxisome biogenesis disorder 8B, 614877 (3), Autosomal recessive  |
| <i>PEX19</i>  | 600279 | Peroxisome biogenesis disorder 12A (Zellweger), 614886 (3), Autosomal recessive   |
| <i>PEX26</i>  | 608666 | Peroxisome biogenesis disorder 7A (Zellweger), 614872 (3), Autosomal recessive; Peroxisome biogenesis disorder 7B, 614873 (3), Autosomal recessive  |
| <i>PEX3</i>   | 603164 | Peroxisome biogenesis disorder 10A (Zellweger), 614882 (3), Autosomal recessive; ?Peroxisome biogenesis disorder 10B, 617370 (3), Autosomal recessive   |

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| <i>PEX6</i>   | 601498 | Heimler syndrome 2, 616617 (3), Autosomal recessive; Peroxisome biogenesis disorder 4A (Zellweger), 614862 (3), Autosomal recessive; Peroxisome biogenesis disorder 4B, 614863 (3), Autosomal recessive, Autosomal dominant |
| <i>PEX7</i>   | 601757 | Peroxisome biogenesis disorder 9B, 614879 (3); Rhizomelic chondrodyplasia punctata, type 1, 215100 (3), Autosomal recessive   |
| <i>PFKM</i>   | 610681 | Glycogen storage disease VII, 232800 (3), Autosomal recessive   |
| <i>PFN1</i>   | 176610 | Amyotrophic lateral sclerosis 18, 614808 (3)  |
| <i>PGA3</i>   | 169710 | No OMIM phenotype   |
| <i>PGAM2</i>  | 612931 | Glycogen storage disease X, 261670 (3), Autosomal recessive   |
| <i>PGAP1</i>  | 611655 | Mental retardation, autosomal recessive 42, 615802 (3), Autosomal recessive   |
| <i>PGAP3</i>  | 611801 | Hyperphosphatasia with mental retardation syndrome 4, 615716 (3), Autosomal recessive   |
| <i>PGK1</i>   | 311800 | Phosphoglycerate kinase 1 deficiency, 300653 (3), X-linked recessive  |
| <i>PGM3</i>   | 172100 | Immunodeficiency 23, 615816 (3), Autosomal recessive  |
| <i>PGR</i>    | 607311 | ?Progesterone resistance, 264080 (2), Autosomal recessive   |
| <i>PHB</i>    | 176705 | {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant  |
| <i>PHEX</i>   | 300550 | Hypophosphatemic rickets, X-linked dominant, 307800 (3), X-linked dominant  |
| <i>PHF11</i>  | 607796 | No OMIM phenotype   |
| <i>PHF6</i>   | 300414 | Borjeson-Forssman-Lehmann syndrome, 301900 (3), X-linked recessive  |
| <i>PHKA1</i>  | 311870 | Muscle glycogenosis, 300559 (3), X-linked recessive   |
| <i>PHKA2</i>  | 300798 | Glycogen storage disease, type IXa1, 306000 (3), X-linked recessive; Glycogen storage disease, type IXa2, 306000 (3), X-linked recessive  |
| <i>PHKB</i>   | 172490 | Phosphorylase kinase deficiency of liver and muscle, autosomal recessive, 261750 (3), Autosomal recessive   |
| <i>PHKG2</i>  | 172471 | Cirrhosis due to liver phosphorylase kinase deficiency (3); Glycogen storage disease IXc, 613027 (3), Autosomal recessive   |
| <i>PHOX2A</i> | 602753 | Fibrosis of extraocular muscles, congenital, 2, 602078 (3), Autosomal recessive   |
| <i>PHOX2B</i> | 603851 | Central hypoventilation syndrome, congenital, with or without Hirschsprung disease, 209880 (3), Autosomal dominant; Neuroblastoma with Hirschsprung disease, 613013 (3); {Neuroblastoma, susceptibility to, 2}, 613013 (3)  |
| <i>PHYH</i>   | 602026 | Refsum disease, 266500 (3), Autosomal recessive   |
| <i>PHYKPL</i> | 614683 | [?Phosphohydroxylysineuria], 615011 (3)   |
| <i>PI4KA</i>  | 600286 | Polymicrogyria, perisylvian, with cerebellar hypoplasia and arthrogryposis, 616531 (3), Autosomal recessive   |
| <i>PIEZ01</i> | 611184 | Dehydrated hereditary stomatocytosis with or without pseudohyperkalemia and/or perinatal edema, 194380 (3), Autosomal dominant; Lymphedema, hereditary, III, 616843 (3), Autosomal recessive                                |

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| <i>PIEZ2</i>   | 613629 | Arthrogryposis, distal, type 3, 114300 (3), Autosomal dominant; Arthrogryposis, distal, type 5, 108145 (3), Autosomal dominant; Arthrogryposis, distal, with impaired proprioception and touch, 617146 (3), Autosomal recessive; ?Marden-Walker syndrome, 248700 (3), Autosomal dominant  |
| <i>PIGA</i>    | 311770 | Multiple congenital anomalies-hypotonia-seizures syndrome 2, 300868 (3), X-linked recessive; Paroxysmal nocturnal hemoglobinuria, somatic, 300818 (3)   |
| <i>PIGG</i>    | 616918 | Mental retardation, autosomal recessive 53, 616917 (3), Autosomal recessive   |
| <i>PIGL</i>    | 605947 | CHIME syndrome, 280000 (3), Autosomal recessive   |
| <i>PIGM</i>    | 610273 | Glycosylphosphatidylinositol deficiency, 610293 (3), Autosomal recessive  |
| <i>PIGO</i>    | 614730 | Hyperphosphatasia with mental retardation syndrome 2, 614749 (3), Autosomal recessive   |
| <i>PIGT</i>    | 610272 | Multiple congenital anomalies-hypotonia-seizures syndrome 3, 615398 (3), Autosomal recessive; ?Paroxysmal nocturnal hemoglobinuria 2, 615399 (3), Autosomal dominant, Somatic mutation  |
| <i>PIGV</i>    | 610274 | Hyperphosphatasia with mental retardation syndrome 1, 239300 (3), Autosomal recessive   |
| <i>PIGW</i>    | 610275 | Glycosylphosphatidylinositol biosynthesis defect 11, 616025 (3), Autosomal recessive  |
| <i>PIH1D3</i>  | 300933 | Ciliary dyskinesia, primary, 36, X-linked, 300991 (3), X-linked recessive<br>Breast cancer, somatic, 114480 (3); CLOVE syndrome, somatic, 612918 (3); Colorectal cancer, somatic, 114500 (3); Cowden syndrome 5, 615108 (3); Gastric cancer, somatic, 613659 (3); Hepatocellular carcinoma, somatic, 114550 (3); Keratosis, seborrheic, somatic, 182000 (3); Megalencephaly-capillary malformation-polymicrogyria syndrome, somatic, 602501 (3); Nevus, epidermal, somatic, 162900 (3); Nonsmall cell lung cancer, somatic, 211980 (3); Ovarian cancer, somatic, 167000 (3) |
| <i>PIK3CA</i>  | 171834 | Immunodeficiency 14, 615513 (3), Autosomal dominant<br>?Agammaglobulinemia 7, autosomal recessive, 615214 (3), Autosomal recessive; Immunodeficiency 36, 616005 (3), Autosomal dominant; SHORT syndrome, 269880 (3), Autosomal dominant   |
| <i>PIK3R2</i>  | 603157 | Megalencephaly-polymicrogyria-polydactyly-hydrocephalus syndrome 1, 603387 (3), Autosomal dominant  |
| <i>PIK3R5</i>  | 611317 | Ataxia-oculomotor apraxia 3, 615217 (3), Autosomal recessive  |
| <i>PIKFYVE</i> | 609414 | Corneal fleck dystrophy, 121850 (3), Autosomal dominant   |
| <i>PINK1</i>   | 608309 | Parkinson disease 6, early onset, 605909 (3), Autosomal recessive   |
| <i>PITPNM3</i> | 608921 | Cone-rod dystrophy 5, 600977 (3), Autosomal dominant  |
| <i>PITX1</i>   | 602149 | Clubfoot, congenital, with or without deficiency of long bones and/or mirror-image polydactyly, 119800 (3), Autosomal dominant; Liebenberg syndrome, 186550 (4), Autosomal dominant   |

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| <i>PITX3</i>             | 602669 | Anterior segment dysgenesis 1, multiple subtypes, 107250 (3),<br>Autosomal dominant; Cataract 11, multiple types, 610623 (3),<br>Autosomal dominant; Cataract 11, syndromic, 610623 (3), Autosomal<br>dominant                              |
| <i>PJVK<br/>(DFNB59)</i> | 610219 | Deafness, autosomal recessive 59, 610220 (3), Autosomal recessive   |
| <i>PKD1</i>              | 601313 | Polycystic kidney disease 1, 173900 (3), Autosomal dominant   |
| <i>PKD1L1</i>            | 609721 | Heterotaxy, visceral, 8, autosomal, 617205 (3), Autosomal recessive   |
| <i>PKD2</i>              | 173910 | Polycystic kidney disease 2, 613095 (3), Autosomal dominant   |
| <i>PKHD1</i>             | 606702 | Polycystic kidney disease 4, with or without hepatic disease, 263200<br>(3), Autosomal recessive  |
| <i>PKLR</i>              | 609712 | Adenosine triphosphate, elevated, of erythrocytes, 102900 (3),<br>Autosomal dominant; Pyruvate kinase deficiency, 266200 (3),<br>Autosomal recessive  |
| <i>PKP1</i>              | 601975 | Ectodermal dysplasia/skin fragility syndrome, 604536 (3)  |
| <i>PKP2</i>              | 602861 | Arrhythmogenic right ventricular dysplasia 9, 609040 (3), Autosomal<br>dominant   |
| <i>PLA2G5</i>            | 601192 | [Fleck retina, familial benign], 228980 (3), Autosomal recessive  |
| <i>PLA2G6</i>            | 603604 | Infantile neuroaxonal dystrophy 1, 256600 (3), Autosomal recessive;<br>Neurodegeneration with brain iron accumulation 2B, 610217 (3),<br>Autosomal recessive; Parkinson disease 14, autosomal recessive,<br>612953 (3), Autosomal recessive |
| <i>PLA2G7</i>            | 601690 | {Asthma, susceptibility to}, 600807 (3), Autosomal dominant; {Atopy,<br>susceptibility to}, 147050 (3), Autosomal dominant; Platelet-activating<br>factor acetylhydrolase deficiency, 614278 (3), Autosomal recessive                       |
| <i>PLAG1</i>             | 603026 | Adenomas, salivary gland pleomorphic, somatic, 181030 (3)   |
| <i>PLAT</i>              | 173370 | Hyperfibrinolysis, familial, due to increased release of PLAT, 612348<br>(1); Thrombophilia, familial, due to decreased release of PLAT, 612348<br>(1)  |
| <i>PLAU</i>              | 191840 | {Alzheimer disease, late-onset, susceptibility to}, 104300 (3),<br>Autosomal dominant; Quebec platelet disorder, 601709 (3),<br>Autosomal dominant  |
| <i>PLCB4</i>             | 600810 | Auriculocondylar syndrome 2, 614669 (3), Autosomal recessive,<br>Autosomal dominant   |
| <i>PLCD1</i>             | 602142 | Nail disorder, nonsyndromic congenital, 3, (leukonychia), 151600 (3),<br>Autosomal recessive, Autosomal dominant  |
| <i>PLCE1</i>             | 608414 | Nephrotic syndrome, type 3, 610725 (3), Autosomal recessive   |
| <i>PLCG2</i>             | 600220 | Autoinflammation, antibody deficiency, and immune dysregulation<br>syndrome, 614878 (3), Autosomal dominant; Familial cold<br>autoinflammatory syndrome 3, 614468 (3), Autosomal dominant   |
| <i>PLCZ1</i>             | 608075 | ?Spermatogenic failure 17, 617214 (3), Autosomal recessive  |
| <i>PLD3</i>              | 615698 | ?Spinocerebellar ataxia 46, 617770 (3), Autosomal dominant  |

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| <i>PLEC</i>    | 601282 | Epidermolysis bullosa simplex with muscular dystrophy, 226670 (3),<br>Autosomal recessive; ?Epidermolysis bullosa simplex with nail<br>dystrophy, 616487 (3), Autosomal recessive; Epidermolysis bullosa<br>simplex with pyloric atresia, 612138 (3), Autosomal recessive;<br>Epidermolysis bullosa simplex, Ogna type, 131950 (3), Autosomal<br>dominant; Muscular dystrophy, limb-girdle, type 2Q, 613723 (3),<br>Autosomal recessive                  |
| <i>PLEKHA1</i> | 607772 | No OMIM phenotype  |
| <i>PLEKHG5</i> | 611101 | Charcot-Marie-Tooth disease, recessive intermediate C, 615376 (3),<br>Autosomal recessive; Spinal muscular atrophy, distal, autosomal<br>recessive, 4, 611067 (3), Autosomal recessive   |
| <i>PLEKHM1</i> | 611466 | Osteopetrosis, autosomal recessive 6, 611497 (3)   |
| <i>PLG</i>     | 173350 | Dysplasminogenemia, 217090 (3), Autosomal recessive; Plasminogen<br>deficiency, type I, 217090 (3), Autosomal recessive  |
| <i>PLIN1</i>   | 170290 | Lipodystrophy, familial partial, type 4, 613877 (3), Autosomal<br>dominant   |
| <i>PLK4</i>    | 605031 | Microcephaly and chorioretinopathy, autosomal recessive, 2, 616171<br>(3), Autosomal recessive   |
| <i>PLN</i>     | 172405 | Cardiomyopathy, dilated, 1P, 609909 (3); Cardiomyopathy,<br>hypertrophic, 18, 613874 (3), Autosomal dominant   |
| <i>PLOD1</i>   | 153454 | Ehlers-Danlos syndrome, kyphoscoliotic type, 1, 225400 (3),<br>Autosomal recessive   |
| <i>PLOD2</i>   | 601865 | Bruck syndrome 2, 609220 (3), Autosomal recessive  |
| <i>PLOD3</i>   | 603066 | Lysyl hydroxylase 3 deficiency, 612394 (3), Autosomal recessive  |
| <i>PLP1</i>    | 300401 | Pelizaeus-Merzbacher disease, 312080 (3), X-linked recessive; Spastic<br>paraparesis 2, X-linked, 312920 (3), X-linked recessive   |
| <i>PLPBP</i>   | 604436 | Epilepsy, early-onset, vitamin B6-dependent, 617290 (3), Autosomal<br>recessive  |
| <i>PLS3</i>    | 300131 | Bone mineral density QTL18, osteoporosis, 300910 (3), X-linked<br>dominant   |
| <i>PMM2</i>    | 601785 | Congenital disorder of glycosylation, type Ia, 212065 (3), Autosomal<br>recessive  |
| <i>PMP22</i>   | 601097 | Charcot-Marie-Tooth disease, type 1A, 118220 (3), Autosomal<br>dominant; Charcot-Marie-Tooth disease, type 1E, 118300 (3),<br>Autosomal dominant; Dejerine-Sottas disease, 145900 (3), Autosomal<br>recessive, Autosomal dominant; ?Neuropathy, inflammatory<br>demyelinating, 139393 (3), ?Autosomal dominant; Neuropathy,<br>recurrent, with pressure palsies, 162500 (3), Autosomal dominant;<br>Roussy-Levy syndrome, 180800 (3), Autosomal dominant |
| <i>PMPCA</i>   | 613036 | Spinocerebellar ataxia, autosomal recessive 2, 213200 (3), Autosomal<br>recessive  |
| <i>PMS1</i>    | 600258 | No OMIM phenotype  |
| <i>PMS2</i>    | 600259 | Colorectal cancer, hereditary nonpolyposis, type 4, 614337 (3);<br>Mismatch repair cancer syndrome, 276300 (3), Autosomal recessive  |
| <i>PMVK</i>    | 607622 | Porokeratosis 1, multiple types, 175800 (3), Autosomal dominant  |

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| <i>PNKD</i>    | 609023 | Paroxysmal nonkinesigenic dyskinesia 1, 118800 (3), Autosomal dominant  |
| <i>PNKP</i>    | 605610 | Ataxia-oculomotor apraxia 4, 616267 (3), Autosomal recessive; Microcephaly, seizures, and developmental delay, 613402 (3), Autosomal recessive  |
| <i>PNLIP</i>   | 246600 | ?Pancreatic lipase deficiency, 614338 (3), Autosomal recessive  |
| <i>PNP</i>     | 164050 | Immunodeficiency due to purine nucleoside phosphorylase deficiency, 613179 (3), Autosomal recessive   |
| <i>PNPLA1</i>  | 612121 | Ichthyosis, congenital, autosomal recessive 10, 615024 (3), Autosomal recessive   |
| <i>PNPLA2</i>  | 609059 | Neutral lipid storage disease with myopathy, 610717 (3), Autosomal recessive  |
| <i>PNPLA6</i>  | 603197 | Boucher-Neuhauser syndrome, 215470 (3), Autosomal recessive; ?Laurence-Moon syndrome, 245800 (3), Autosomal recessive; Oliver-McFarlane syndrome, 275400 (3), Autosomal recessive; Spastic paraplegia 39, autosomal recessive, 612020 (3), Autosomal recessive  |
| <i>PNPLA8</i>  | 612123 | ?Mitochondrial myopathy with lactic acidosis, 251950 (3), Autosomal recessive   |
| <i>PNPO</i>    | 603287 | Pyridoxamine 5'-phosphate oxidase deficiency, 610090 (3), Autosomal recessive   |
| <i>PNPT1</i>   | 610316 | Combined oxidative phosphorylation deficiency 13, 614932 (3), Autosomal recessive; Deafness, autosomal recessive 70, 614934 (3), Autosomal recessive  |
| <i>POC1A</i>   | 614783 | Short stature, onychodysplasia, facial dysmorphism, and hypotrichosis, 614813 (3), Autosomal recessive  |
| <i>POC1B</i>   | 614784 | Cone-rod dystrophy 20, 615973 (3), Autosomal recessive  |
| <i>POF1B</i>   | 300603 | ?Premature ovarian failure 2B, 300604 (3), X-linked recessive   |
| <i>POFUT1</i>  | 607491 | Dowling-Degos disease 2, 615327 (3), Autosomal dominant   |
| <i>POGLUT1</i> | 615618 | Dowling-Degos disease 4, 615696 (3), Autosomal dominant; ?Muscular dystrophy, limb-girdle, type 2Z, 617232 (3), Autosomal recessive   |
| <i>POLE</i>    | 174762 | {Colorectal cancer, susceptibility to, 12}, 615083 (3), Autosomal dominant; FILS syndrome, 615139 (3), Autosomal recessive  |
| <i>POLG</i>    | 174763 | Mitochondrial DNA depletion syndrome 4A (Alpers type), 203700 (3), Autosomal recessive; Mitochondrial DNA depletion syndrome 4B (MNGIE type), 613662 (3), Autosomal recessive; Mitochondrial recessive ataxia syndrome (includes SANDO and SCAE), 607459 (3), Autosomal recessive; Progressive external ophthalmoplegia, autosomal dominant 1, 157640 (3), Autosomal dominant; Progressive external ophthalmoplegia, autosomal recessive 1, 258450 (3), Autosomal recessive |
| <i>POLG2</i>   | 604983 | Progressive external ophthalmoplegia with mitochondrial DNA deletions, autosomal dominant 4, 610131 (3), Autosomal dominant   |
| <i>POLH</i>    | 603968 | Xeroderma pigmentosum, variant type, 278750 (3), Autosomal recessive  |

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| <i>POLR1C</i>  | 610060 | Leukodystrophy, hypomyelinating, 11, 616494 (3), Autosomal recessive; Treacher Collins syndrome 3, 248390 (3), Autosomal recessive   |
| <i>POLR1D</i>  | 613715 | Treacher Collins syndrome 2, 613717 (3), Autosomal recessive, Autosomal dominant   |
| <i>POLR3A</i>  | 614258 | Leukodystrophy, hypomyelinating, 7, with or without oligodontia and/or hypogonadotropic hypogonadism, 607694 (3), Autosomal recessive  |
| <i>POLR3B</i>  | 614366 | Leukodystrophy, hypomyelinating, 8, with or without oligodontia and/or hypogonadotropic hypogonadism, 614381 (3), Autosomal recessive  |
| <i>POMC</i>    | 176830 | Obesity, adrenal insufficiency, and red hair due to POMC deficiency, 609734 (3), Autosomal recessive; {Obesity, early-onset, susceptibility to}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>POMGNT1</i> | 606822 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 3, 253280 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (congenital with mental retardation), type B, 3, 613151 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (limb-girdle), type C, 3, 613157 (3), Autosomal recessive; Retinitis pigmentosa 76, 617123 (3), Autosomal recessive |
| <i>POMGNT2</i> | 614828 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies, type A, 8, 614830 (3), Autosomal recessive   |
| <i>POMK</i>    | 615247 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 12, 615249 (3), Autosomal recessive; ?Muscular dystrophy-dystroglycanopathy (limb-girdle), type C, 12, 616094 (3), Autosomal recessive  |
| <i>POMP</i>    | 613386 | Keratosis linearis with ichthyosis congenita and sclerosing keratoderma, 601952 (3), Autosomal recessive   |
| <i>POMT1</i>   | 607423 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 1, 236670 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (congenital with mental retardation), type B, 1, 613155 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (limb-girdle), type C, 1, 609308 (3), Autosomal recessive   |
| <i>POMT2</i>   | 607439 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 2, 613150 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (congenital with mental retardation), type B, 2, 613156 (3), Autosomal recessive; Muscular dystrophy-dystroglycanopathy (limb-girdle), type C, 2, 613158 (3), Autosomal recessive   |
| <i>PON1</i>    | 168820 | {Coronary artery disease, susceptibility to} (3); {Coronary artery spasm 2, susceptibility to} (3); {Microvascular complications of diabetes 5}, 612633 (3); {Organophosphate poisoning, sensitivity to} (3)   |
| <i>POP1</i>    | 602486 | Anauxetic dysplasia 2, 617396 (3), Autosomal recessive   |

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| <i>POR</i>      | 124015 | Antley-Bixler syndrome with genital anomalies and disordered steroidogenesis, 201750 (3), Autosomal recessive; Disordered steroidogenesis due to cytochrome P450 oxidoreductase, 613571 (3)  |
| <i>PORCN</i>    | 300651 | Focal dermal hypoplasia, 305600 (3), X-linked dominant<br>{Glioma susceptibility 9}, 616568 (3), Autosomal dominant;   |
| <i>POT1</i>     | 606478 | {Melanoma, cutaneous malignant, susceptibility to, 10}, 615848 (3), Autosomal dominant   |
| <i>POU1F1</i>   | 173110 | Pituitary hormone deficiency, combined, 1, 613038 (3), Autosomal recessive, Autosomal dominant   |
| <i>POU3F4</i>   | 300039 | Deafness, X-linked 2, 304400 (3), X-linked recessive   |
| <i>POU4F3</i>   | 602460 | Deafness, autosomal dominant 15, 602459 (3), Autosomal dominant<br>{Wilms tumor susceptibility-5}, 601583 (3), Autosomal dominant,   |
| <i>POU6F2</i>   | 609062 | Somatic mutation   |
| <i>PPA2</i>     | 609988 | ?Sudden cardiac failure, alcohol-induced, 617223 (3), Autosomal recessive; Sudden cardiac failure, infantile, 617222 (3), Autosomal recessive  |
| <i>PPARG</i>    | 601487 | Carotid intimal medial thickness 1, 609338 (3); {Diabetes, type 2}, 125853 (3), Autosomal dominant; Insulin resistance, severe, digenic, 604367 (3), Autosomal dominant; Lipodystrophy, familial partial, type 3, 604367 (3), Autosomal dominant; [Obesity, resistance to] (3); Obesity, severe, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial |
| <i>PPARGC1B</i> | 608886 | {Obesity, variation in}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>PPIB</i>     | 123841 | Osteogenesis imperfecta, type IX, 259440 (3), Autosomal recessive  |
| <i>PPM1D</i>    | 605100 | Breast cancer, somatic, 114480 (3); Intellectual developmental disorder with gastrointestinal difficulties and high pain threshold, 617450 (3), Autosomal dominant   |
| <i>PPM1K</i>    | 611065 | ?Maple syrup urine disease, mild variant, 615135 (3)   |
| <i>PPOX</i>     | 600923 | Porphyria variegata, 176200 (3), Autosomal dominant  |
| <i>PPP1R15B</i> | 613257 | Microcephaly, short stature, and impaired glucose metabolism 2, 616817 (3), Autosomal recessive  |
| <i>PPP1R17</i>  | 604088 | {Hypercholesterolemia, susceptibility to}, 143890 (3), Autosomal dominant  |
| <i>PPP1R3A</i>  | 600917 | Insulin resistance, severe, digenic, 125853 (3), Autosomal dominant  |
| <i>PPP2R1A</i>  | 605983 | Mental retardation, autosomal dominant 36, 616362 (3), Autosomal dominant  |
| <i>PPP2R1B</i>  | 603113 | Lung cancer, 211980 (3), Autosomal recessive   |
| <i>PPP2R2B</i>  | 604325 | Spinocerebellar ataxia 12, 604326 (3), Autosomal dominant  |
| <i>PPP2R5D</i>  | 601646 | Mental retardation, autosomal dominant 35, 616355 (3), Autosomal dominant  |
| <i>PPT1</i>     | 600722 | Ceroid lipofuscinosis, neuronal, 1, 256730 (3), Autosomal recessive  |
| <i>PQBP1</i>    | 300463 | Renpenning syndrome, 309500 (3), X-linked recessive  |
| <i>PRCC</i>     | 179755 | Renal cell carcinoma, papillary, 605074 (3)  |
| <i>PRCD</i>     | 610598 | Retinitis pigmentosa 36, 610599 (3)  |

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| <i>PRDM12</i>   | 616458 | Neuropathy, hereditary sensory and autonomic, type VIII, 616488 (3),<br>Autosomal recessive  |
| <i>PRDM16</i>   | 605557 | Cardiomyopathy, dilated, 1LL, 615373 (3), Autosomal dominant; Left ventricular noncompaction 8, 615373 (3), Autosomal dominant   |
| <i>PRDM5</i>    | 614161 | Brittle cornea syndrome 2, 614170 (3), Autosomal recessive   |
| <i>PRDM6</i>    | 616982 | Patent ductus arteriosus 3, 617039 (3), Autosomal dominant   |
| <i>PREPL</i>    | 609557 | ?Myasthenic syndrome, congenital, 22, 616224 (3), Autosomal recessive  |
| <i>PRF1</i>     | 170280 | Aplastic anemia, 609135 (3); Hemophagocytic lymphohistiocytosis, familial, 2, 603553 (3), Autosomal recessive; Lymphoma, non-Hodgkin, 605027 (3)   |
| <i>PRG4</i>     | 604283 | Camptodactyly-arthropathy-coxa vara-pericarditis syndrome, 208250 (3), Autosomal recessive   |
| <i>PRICKLE1</i> | 608500 | Epilepsy, progressive myoclonic 1B, 612437 (3), Autosomal recessive  |
| <i>PRIMPOL</i>  | 615421 | Myopia 22, autosomal dominant, 615420 (3), Autosomal dominant  |
| <i>PRKACA</i>   | 601639 | Cushing syndrome, ACTH-independent adrenal, somatic, 615830 (3)  |
| <i>PRKACG</i>   | 176893 | ?Bleeding disorder, platelet-type, 19, 616176 (3), Autosomal recessive<br>Cardiomyopathy, hypertrophic 6, 600858 (3), Autosomal dominant;<br>Glycogen storage disease of heart, lethal congenital, 261740 (3),<br>Autosomal dominant; Wolff-Parkinson-White syndrome, 194200 (3),<br>?Autosomal dominant                       |
| <i>PRKAR1A</i>  | 188830 | Acrodysostosis 1, with or without hormone resistance, 101800 (3),<br>Autosomal dominant; Adrenocortical tumor, somatic (3); Carney complex, type 1, 160980 (3), Autosomal dominant; Myxoma, intracardiac, 255960 (3), Autosomal dominant; Pigmented nodular adrenocortical disease, primary, 1, 610489 (3), Autosomal dominant |
| <i>PRKCG</i>    | 176980 | Spinocerebellar ataxia 14, 605361 (3), Autosomal dominant  |
| <i>PRKCH</i>    | 605437 | {Cerebral infarction, susceptibility to}, 601367 (3), Multifactorial   |
| <i>PRKCSH</i>   | 177060 | Polycystic liver disease 1, 174050 (3), Autosomal dominant   |
| <i>PRKD1</i>    | 605435 | Congenital heart defects and ectodermal dysplasia, 617364 (3),<br>Autosomal dominant   |
| <i>PRKDC</i>    | 600899 | Immunodeficiency 26, with or without neurologic abnormalities, 615966 (3), Autosomal recessive   |
| <i>PRKG1</i>    | 176894 | Aortic aneurysm, familial thoracic 8, 615436 (3), Autosomal dominant<br>Adenocarcinoma of lung, somatic, 211980 (3); Adenocarcinoma,   |
| <i>PRKN</i>     | 602544 | ovarian, somatic, 167000 (3); {Leprosy, susceptibility to}, 607572 (3);<br>Parkinson disease, juvenile, type 2, 600116 (3), Autosomal recessive  |
| <i>PRKRA</i>    | 603424 | Dystonia 16, 612067 (3), Autosomal recessive   |
| <i>PRLR</i>     | 176761 | ?Hyperprolactinemia, 615555 (3), Autosomal dominant; Multiple fibroadenomas of the breast, 615554 (3), Autosomal dominant  |

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| <i>PRNP</i>   | 176640 | Cerebral amyloid angiopathy, PRNP-related, 137440 (3), Autosomal dominant; Creutzfeldt-Jakob disease, 123400 (3), Autosomal dominant; Gerstmann-Straussler disease, 137440 (3), Autosomal dominant; Huntington disease-like 1, 603218 (3), Autosomal dominant; Insomnia, fatal familial, 600072 (3), Autosomal dominant; {Kuru, susceptibility to}, 245300 (3); Prion disease with protracted course, 606688 (3), Autosomal dominant                                       |
| <i>PROC</i>   | 612283 | Thrombophilia due to protein C deficiency, autosomal dominant, 176860 (3), Autosomal dominant; Thrombophilia due to protein C deficiency, autosomal recessive, 612304 (3), Autosomal recessive   |
| <i>PRODH</i>  | 606810 | Hyperprolinemia, type I, 239500 (3), Autosomal recessive; {Schizophrenia, susceptibility to}, 4, 600850 (3), Autosomal dominant  |
| <i>PROK2</i>  | 607002 | Hypogonadotropic hypogonadism 4 with or without anosmia, 610628 (3), Autosomal dominant  |
| <i>PROKR2</i> | 607123 | Hypogonadotropic hypogonadism 3 with or without anosmia, 244200 (3), Autosomal dominant  |
| <i>PROM1</i>  | 604365 | Cone-rod dystrophy 12, 612657 (3); Macular dystrophy, retinal, 2, 608051 (3), Autosomal dominant; Retinitis pigmentosa 41, 612095 (3), Autosomal recessive; Stargardt disease 4, 603786 (3)  |
| <i>PROP1</i>  | 601538 | Pituitary hormone deficiency, combined, 2, 262600 (3), Autosomal recessive   |
| <i>PROS1</i>  | 176880 | Thrombophilia due to protein S deficiency, autosomal dominant, 612336 (3), Autosomal dominant; Thrombophilia due to protein S deficiency, autosomal recessive, 614514 (3), Autosomal recessive   |
| <i>PROZ</i>   | 176895 | [Protein Z deficiency], 614024 (3)   |
| <i>PRPF3</i>  | 607301 | Retinitis pigmentosa 18, 601414 (3), Autosomal dominant  |
| <i>PRPF31</i> | 606419 | Retinitis pigmentosa 11, 600138 (3), Autosomal dominant  |
| <i>PRPF4</i>  | 607795 | Retinitis pigmentosa 70, 615922 (3), Autosomal dominant  |
| <i>PRPF6</i>  | 613979 | Retinitis pigmentosa 60, 613983 (3), Autosomal dominant  |
| <i>PRPF8</i>  | 607300 | Retinitis pigmentosa 13, 600059 (3), Autosomal dominant  |
| <i>PRPH</i>   | 170710 | {Amyotrophic lateral sclerosis, susceptibility to}, 105400 (3), Autosomal recessive, Autosomal dominant  |
| <i>PRPH2</i>  | 179605 | Choroidal dystrophy, central areolar 2, 613105 (3), Autosomal dominant; Leber congenital amaurosis 18, 608133 (3), Autosomal recessive, Autosomal dominant; Macular dystrophy, patterned, 1, 169150 (3), Autosomal dominant; Macular dystrophy, vitelliform, 3, 608161 (3), Autosomal dominant; Retinitis pigmentosa 7 and digenic, 608133 (3), Autosomal recessive, Autosomal dominant; Retinitis punctata albescens, 136880 (3), Autosomal recessive, Autosomal dominant |
| <i>PRPS1</i>  | 311850 | Arts syndrome, 301835 (3), X-linked recessive; Charcot-Marie-Tooth disease, X-linked recessive, 5, 311070 (3), X-linked recessive; Deafness, X-linked 1, 304500 (3), X-linked; Gout, PRPS-related, 300661 (3), X-linked recessive; Phosphoribosylpyrophosphate synthetase superactivity, 300661 (3), X-linked recessive  |

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| <i>PRRX1</i>   | 167420 | Agnathia-otocephaly complex, 202650 (3), Autosomal recessive, Autosomal dominant   |
| <i>PRSS1</i>   | 276000 | Pancreatitis, hereditary, 167800 (3), Autosomal dominant; Trypsinogen deficiency, 614044 (1), Autosomal recessive  |
| <i>PRSS12</i>  | 606709 | Mental retardation, autosomal recessive 1, 249500 (3), Autosomal recessive   |
| <i>PRSS2</i>   | 601564 | {Pancreatitis, chronic, protection against}, 167800 (3), Autosomal dominant  |
| <i>PRSS56</i>  | 613858 | Microphthalmia, isolated 6, 613517 (3), Autosomal recessive  |
| <i>PRX</i>     | 605725 | Charcot-Marie-Tooth disease, type 4F, 614895 (3), Autosomal recessive; Dejerine-Sottas disease, 145900 (3), Autosomal recessive, Autosomal dominant  |
| <i>PRY</i>     | 400019 | No OMIM phenotype  |
| <i>PRY2</i>    | 400041 | No OMIM phenotype  |
| <i>PSAP</i>    | 176801 | Combined SAP deficiency, 611721 (3), Autosomal recessive; Gaucher disease, atypical, 610539 (3); Krabbe disease, atypical, 611722 (3), Autosomal recessive; Metachromatic leukodystrophy due to SAP-b deficiency, 249900 (3), Autosomal recessive  |
| <i>PSAT1</i>   | 610936 | Neu-Laxova syndrome 2, 616038 (3), Autosomal recessive; ?Phosphoserine aminotransferase deficiency, 610992 (3), Autosomal recessive  |
| <i>PSEN1</i>   | 104311 | ?Acne inversa, familial, 3, 613737 (3), Autosomal dominant; Alzheimer disease, type 3, 607822 (3), Autosomal dominant; Alzheimer disease, type 3, with spastic paraparesis and apraxia, 607822 (3), Autosomal dominant; Alzheimer disease, type 3, with spastic paraparesis and unusual plaques, 607822 (3), Autosomal dominant; Cardiomyopathy, dilated, 1U, 613694 (3), Autosomal dominant; Dementia, frontotemporal, 600274 (3), Autosomal dominant; Pick disease, 172700 (3), Autosomal dominant, Isolated cases |
| <i>PSEN2</i>   | 600759 | Alzheimer disease-4, 606889 (3), Autosomal dominant; Cardiomyopathy, dilated, 1V, 613697 (3), Autosomal dominant   |
| <i>PSENEN</i>  | 607632 | Acne inversa, familial, 2, with or without Dowling-Degos disease, 613736 (3), Autosomal dominant   |
| <i>PSMB8</i>   | 177046 | Autoinflammation, lipodystrophy, and dermatosis syndrome, 256040 (3), Autosomal recessive  |
| <i>PSMC3IP</i> | 608665 | Ovarian dysgenesis 3, 614324 (3), Autosomal recessive  |
| <i>PSPH</i>    | 172480 | Phosphoserine phosphatase deficiency, 614023 (3), Autosomal recessive  |
| <i>PSTPIP1</i> | 606347 | Pyogenic sterile arthritis, pyoderma gangrenosum, and acne, 604416 (3), Autosomal dominant   |
| <i>PTCH1</i>   | 601309 | Basal cell carcinoma, somatic, 605462 (3); Basal cell nevus syndrome, 109400 (3), Autosomal dominant; Holoprosencephaly 7, 610828 (3), Autosomal dominant  |
| <i>PTCH2</i>   | 603673 | Basal cell carcinoma, somatic, 605462 (3); Basal cell nevus syndrome, 109400 (3), Autosomal dominant; Medulloblastoma, somatic, 155255 (3)   |

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| <i>PTCHD1</i> | 300828 | {Autism, susceptibility to, X-linked 4}, 300830 (3), X-linked recessive  |
| <i>PTDSS1</i> | 612792 | Lenz-Majewski hyperostotic dwarfism, 151050 (3), Autosomal dominant  |
| <i>PTEN</i>   | 601728 | Bannayan-Riley-Ruvalcaba syndrome, 153480 (3); Cowden syndrome 1, 158350 (3), Autosomal dominant; Endometrial carcinoma, somatic, 608089 (3); {Glioma susceptibility 2}, 613028 (3); Lhermitte-Duclos syndrome, 158350 (3), Autosomal dominant; Macrocephaly/autism syndrome, 605309 (3), Autosomal dominant; Malignant melanoma, somatic, 155600 (3); {Meningioma}, 607174 (3), Autosomal dominant; PTEN hamartoma tumor syndrome (3); {Prostate cancer, somatic}, 176807 (3); Squamous cell carcinoma, head and neck, somatic, 275355 (3); VATER association with macrocephaly and ventriculomegaly, 276950 (3), Autosomal recessive |
| <i>PTF1A</i>  | 607194 | Pancreatic agenesis 2, 615935 (3), Autosomal recessive; Pancreatic and cerebellar agenesis, 609069 (3), Autosomal recessive  |
| <i>PTGDR</i>  | 604687 | {Asthma, susceptibility to, 1}, 607277 (3)   |
| <i>PTGER2</i> | 176804 | {Asthma, aspirin-induced, susceptibility to}, 208550 (3), Autosomal recessive  |
| <i>PTGIS</i>  | 601699 | Hypertension, essential, 145500 (3), Multifactorial  |
| <i>PTH</i>    | 168450 | Hypoparathyroidism, autosomal dominant, 146200 (3), Autosomal dominant; Hypoparathyroidism, autosomal recessive, 146200 (3), Autosomal dominant  |
| <i>PTHLH</i>  | 168470 | Brachydactyly, type E2, 613382 (3), Autosomal dominant   |
| <i>PTPN1</i>  | 176885 | {Insulin resistance, susceptibility to}, 125853 (3), Autosomal dominant  |
| <i>PTPN11</i> | 176876 | LEOPARD syndrome 1, 151100 (3), Autosomal dominant; Leukemia, juvenile myelomonocytic, somatic, 607785 (3); Metachondromatosis, 156250 (3), Autosomal dominant; Noonan syndrome 1, 163950 (3), Autosomal dominant  |
| <i>PTPN14</i> | 603155 | ?Choanal atresia and lymphedema, 613611 (3), Autosomal recessive   |
| <i>PTPN22</i> | 600716 | {Diabetes, type 1, susceptibility to}, 222100 (3), Autosomal recessive; {Rheumatoid arthritis, susceptibility to}, 180300 (3); {Systemic lupus erythematosus susceptibility to}, 152700 (3), Autosomal dominant  |
| <i>PTPRC</i>  | 151460 | {Hepatitis C virus, susceptibility to}, 609532 (3); Severe combined immunodeficiency, T cell-negative, B-cell/natural killer-cell positive, 608971 (3), Autosomal recessive  |
| <i>PTPRF</i>  | 179590 | ?Breasts and/or nipples, aplasia or hypoplasia of, 2, 616001 (3), Autosomal recessive  |
| <i>PTPRO</i>  | 600579 | Nephrotic syndrome, type 6, 614196 (3), Autosomal recessive  |
| <i>PTRH2</i>  | 608625 | Infantile-onset multisystem neurologic, endocrine, and pancreatic disease, 616263 (3), Autosomal recessive   |
| <i>PTS</i>    | 612719 | Hyperphenylalaninemia, BH4-deficient, A, 261640 (3), Autosomal recessive   |
| <i>PUF60</i>  | 604819 | Verheij syndrome, 615583 (3), Autosomal dominant   |
| <i>PURA</i>   | 600473 | Mental retardation, autosomal dominant 31, 616158 (3), Autosomal dominant  |

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| <i>PUS1</i>     | 608109 | Myopathy, lactic acidosis, and sideroblastic anemia 1, 600462 (3),<br>Autosomal recessive  |
| <i>PUS3</i>     | 616283 | ?Mental retardation, autosomal recessive 55, 617051 (3), Autosomal<br>recessive  |
| <i>PXDN</i>     | 605158 | Anterior segment dysgenesis 7, with sclerocornea, 269400 (3),<br>Autosomal recessive   |
| <i>PYCR2</i>    | 616406 | Leukodystrophy, hypomyelinating, 10, 616420 (3), Autosomal<br>recessive  |
| <i>PYGL</i>     | 613741 | Glycogen storage disease VI, 232700 (3), Autosomal recessive   |
| <i>PYGM</i>     | 608455 | McArdle disease, 232600 (3), Autosomal recessive   |
| <i>PYROXD1</i>  | 617220 | Myopathy, myofibrillar, 8, 617258 (3), Autosomal recessive   |
| <i>QARS</i>     | 603727 | Microcephaly, progressive, seizures, and cerebral and cerebellar<br>atrophy, 615760 (3), Autosomal recessive   |
| <i>QDPR</i>     | 612676 | Hyperphenylalaninemia, BH4-deficient, C, 261630 (3), Autosomal<br>recessive  |
| <i>RAB18</i>    | 602207 | Warburg micro syndrome 3, 614222 (3), Autosomal recessive  |
| <i>RAB23</i>    | 606144 | Carpenter syndrome, 201000 (3), Autosomal recessive  |
| <i>RAB28</i>    | 612994 | Cone-rod dystrophy 18, 615374 (3), Autosomal recessive   |
| <i>RAB33B</i>   | 605950 | Smith-McCort dysplasia 2, 615222 (3), Autosomal recessive  |
| <i>RAB3GAP1</i> | 602536 | Warburg micro syndrome 1, 600118 (3), Autosomal recessive  |
| <i>RAB3GAP2</i> | 609275 | Martsolf syndrome, 212720 (3), Autosomal recessive; Warburg micro<br>syndrome 2, 614225 (3), Autosomal recessive   |
| <i>RAB7A</i>    | 602298 | Charcot-Marie-Tooth disease, type 2B, 600882 (3), Autosomal<br>dominant  |
| <i>RAC2</i>     | 602049 | Neutrophil immunodeficiency syndrome, 608203 (3)   |
| <i>RAD21</i>    | 606462 | Cornelia de Lange syndrome 4, 614701 (3), Autosomal dominant   |
| <i>RAD50</i>    | 604040 | Nijmegen breakage syndrome-like disorder, 613078 (3)   |
| <i>RAD51</i>    | 179617 | {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant;<br>?Fanconi anemia, complementation group R, 617244 (3), Autosomal<br>dominant; Mirror movements 2, 614508 (3), Autosomal dominant |
| <i>RAD51C</i>   | 602774 | {Breast-ovarian cancer, familial, susceptibility to, 3}, 613399 (3);<br>Fanconi anemia, complementation group O, 613390 (3), Autosomal<br>recessive  |
| <i>RAD51D</i>   | 602954 | {Breast-ovarian cancer, familial, susceptibility to, 4}, 614291 (3)  |
| <i>RAD54B</i>   | 604289 | Colon cancer, somatic, 114500 (3); Lymphoma, non-Hodgkin, somatic,<br>605027 (3)   |
| <i>RAD54L</i>   | 603615 | Adenocarcinoma, colonic, somatic (3); {Breast cancer, invasive ductal},<br>114480 (3), Autosomal dominant; Lymphoma, non-Hodgkin, somatic,<br>605027 (3)   |
| <i>RAF1</i>     | 164760 | Cardiomyopathy, dilated, 1NN, 615916 (3), Autosomal dominant;<br>LEOPARD syndrome 2, 611554 (3); Noonan syndrome 5, 611553 (3),<br>Autosomal dominant  |

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| <i>RAG1</i>   | 179615 | Alpha/beta T-cell lymphopenia with gamma/delta T-cell expansion, severe cytomegalovirus infection, and autoimmunity, 609889 (3); Combined cellular and humoral immune defects with granulomas, 233650 (3), Autosomal recessive; Omenn syndrome, 603554 (3), Autosomal recessive; Severe combined immunodeficiency, B cell-negative, 601457 (3), Autosomal recessive |
| <i>RAG2</i>   | 179616 | Combined cellular and humoral immune defects with granulomas, 233650 (3), Autosomal recessive; Omenn syndrome, 603554 (3), Autosomal recessive; Severe combined immunodeficiency, B cell-negative, 601457 (3), Autosomal recessive  |
| <i>RANBP2</i> | 601181 | {Encephalopathy, acute, infection-induced, 3, susceptibility to}, 608033 (3), Autosomal dominant  |
| <i>RAPSN</i>  | 601592 | Fetal akinesia deformation sequence, 208150 (3), Autosomal recessive; Myasthenic syndrome, congenital, 11, associated with acetylcholine receptor deficiency, 616326 (3), Autosomal recessive   |
| <i>RARA</i>   | 180240 | Leukemia, acute promyelocytic, 612376 (1)   |
| <i>RARB</i>   | 180220 | Microphthalmia, syndromic 12, 615524 (3), Autosomal recessive, Autosomal dominant   |
| <i>RARS</i>   | 107820 | Leukodystrophy, hypomyelinating, 9, 616140 (3), Autosomal recessive   |
| <i>RARS2</i>  | 611524 | Pontocerebellar hypoplasia, type 6, 611523 (3), Autosomal recessive   |
| <i>RASA1</i>  | 139150 | Basal cell carcinoma, somatic, 605462 (3); Capillary malformation-arteriovenous malformation, 608354 (3), Autosomal dominant; Parkes Weber syndrome, 608355 (3), Autosomal dominant   |
| <i>RASSF1</i> | 605082 | Lung cancer, 211980 (2), Autosomal recessive  |
| <i>RAX</i>    | 601881 | Microphthalmia, isolated 3, 611038 (3), Autosomal recessive   |
| <i>RAX2</i>   | 610362 | Cone-rod dystrophy 11, 610381 (3), Autosomal dominant; ?Macular degeneration, age-related, 6, 613757 (3)  |
| <i>RB1</i>    | 614041 | Bladder cancer, somatic, 109800 (3); Osteosarcoma, somatic, 259500 (3); Retinoblastoma, 180200 (3), Autosomal dominant, Somatic mutation; Retinoblastoma, trilateral, 180200 (3), Autosomal dominant, Somatic mutation; Small cell cancer of the lung, somatic, 182280 (3)  |
| <i>RB1CC1</i> | 606837 | Breast cancer, somatic, 114480 (3)  |
| <i>RBBP8</i>  | 604124 | Jawad syndrome, 251255 (3), Autosomal recessive; Pancreatic carcinoma, somatic (3); Seckel syndrome 2, 606744 (3), Autosomal recessive  |
| <i>RBCK1</i>  | 610924 | Polyglucosan body myopathy 1 with or without immunodeficiency, 615895 (3), Autosomal recessive  |
| <i>RBM10</i>  | 300080 | TARP syndrome, 311900 (3), X-linked recessive   |
| <i>RBM20</i>  | 613171 | Cardiomyopathy, dilated, 1DD, 613172 (3), Autosomal dominant  |
| <i>RBM28</i>  | 612074 | ?Alopecia, neurologic defects, and endocrinopathy syndrome, 612079 (3), Autosomal recessive   |
| <i>RBM8A</i>  | 605313 | Thrombocytopenia-absent radius syndrome, 274000 (3), Autosomal recessive  |

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| <i>RBMX</i>    | 300199 | ?Mental retardation, X-linked, syndromic 11, Shashi type, 300238 (3), X-linked recessive  |
| <i>RBMY1A1</i> | 400006 | No OMIM phenotype   |
| <i>RBP3</i>    | 180290 | ?Retinitis pigmentosa 66, 615233 (3), Autosomal recessive   |
| <i>RBP4</i>    | 180250 | Microphtalmia, isolated, with coloboma 10, 616428 (3), Autosomal dominant; Retinal dystrophy, iris coloboma, and comedogenic acne syndrome, 615147 (3), Autosomal recessive   |
| <i>RCBTB1</i>  | 607867 | Retinal dystrophy with or without extraocular anomalies, 617175 (3), Autosomal recessive  |
| <i>RD3</i>     | 180040 | Leber congenital amaurosis 12, 610612 (3), Autosomal recessive  |
| <i>RDH11</i>   | 607849 | ?Retinal dystrophy, juvenile cataracts, and short stature syndrome, 616108 (3), Autosomal recessive   |
| <i>RDH12</i>   | 608830 | Leber congenital amaurosis 13, 612712 (3), Autosomal recessive  |
| <i>RDH5</i>    | 601617 | Fundus albipunctatus, 136880 (3), Autosomal recessive, Autosomal dominant   |
| <i>RDX</i>     | 179410 | Deafness, autosomal recessive 24, 611022 (3), Autosomal recessive<br>Baller-Gerold syndrome, 218600 (3), Autosomal recessive;   |
| <i>RECQL4</i>  | 603780 | RAPADILINO syndrome, 266280 (3), Autosomal recessive; Rothmund-Thomson syndrome, 268400 (3), Autosomal recessive  |
| <i>REEP2</i>   | 609347 | ?Spastic paraparesis 72, autosomal dominant, 615625 (3), Autosomal recessive, Autosomal dominant; ?Spastic paraparesis 72, autosomal recessive, 615625 (3), Autosomal recessive, Autosomal dominant   |
| <i>REEP6</i>   | 609346 | Retinitis pigmentosa 77, 617304 (3), Autosomal recessive  |
| <i>RELN</i>    | 600514 | {Epilepsy, familial temporal lobe, 7}, 616436 (3), Autosomal dominant; Lissencephaly 2 (Norman-Roberts type), 257320 (3), Autosomal recessive   |
| <i>REN</i>     | 179820 | [Hyperproreninemia] (3); Hyperuricemic nephropathy, familial juvenile 2, 613092 (3), Autosomal dominant; Renal tubular dysgenesis, 267430 (3), Autosomal recessive  |
| <i>RERE</i>    | 605226 | Neurodevelopmental disorder with or without anomalies of the brain, eye, or heart, 616975 (3), Autosomal dominant   |
| <i>REST</i>    | 600571 | Fibromatosis, gingival, 5, 617626 (3), Autosomal dominant; {Wilms tumor 6, susceptibility to}, 616806 (3)   |
| <i>RET</i>     | 164761 | Central hypoventilation syndrome, congenital, 209880 (3), Autosomal dominant; {Hirschsprung disease, protection against}, 142623 (3), Autosomal dominant; {Hirschsprung disease, susceptibility to, 1}, 142623 (3), Autosomal dominant; Medullary thyroid carcinoma, 155240 (3), Autosomal dominant; Multiple endocrine neoplasia IIA, 171400 (3), Autosomal dominant; Multiple endocrine neoplasia IIB, 162300 (3), Autosomal dominant; Pheochromocytoma, 171300 (3), Autosomal dominant |
| <i>RETN</i>    | 605565 | {Diabetes mellitus, noninsulin-dependent, susceptibility to}, 125853 (3), Autosomal dominant; {Hypertension, insulin resistance-related, susceptibility to}, 125853 (3), Autosomal dominant   |

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| <i>RETREG1</i>  | 613114 | Neuropathy, hereditary sensory and autonomic, type IIB, 613115 (3),<br>Autosomal recessive   |
| <i>RFT1</i>     | 611908 | Congenital disorder of glycosylation, type In, 612015 (3), Autosomal<br>recessive  |
| <i>RFX5</i>     | 601863 | Bare lymphocyte syndrome, type II, complementation group C, 209920<br>(3), Autosomal recessive; Bare lymphocyte syndrome, type II,<br>complementation group E, 209920 (3), Autosomal recessive   |
| <i>RFX6</i>     | 612659 | Mitchell-Riley syndrome, 615710 (3), Autosomal recessive   |
| <i>RFXAP</i>    | 601861 | Bare lymphocyte syndrome, type II, complementation group D,<br>209920 (3), Autosomal recessive   |
| <i>RGR</i>      | 600342 | Retinitis pigmentosa 44, 613769 (3)  |
| <i>RGS5</i>     | 603276 | [Blood pressure regulation QTL], 145500 (2), Multifactorial  |
| <i>RGS9</i>     | 604067 | Bradyopsia, 608415 (3)   |
| <i>RGS9BP</i>   | 607814 | Bradyopsia, 608415 (3)   |
| <i>RHAG</i>     | 180297 | Anemia, hemolytic, Rh-null, regulator type, 268150 (3), Autosomal<br>dominant; Overhydrated hereditary stomatocytosis, 185000 (3),<br>Autosomal dominant   |
| <i>RHBDF2</i>   | 614404 | Tylosis with esophageal cancer, 148500 (3), Autosomal dominant   |
| <i>RHCE</i>     | 111700 | [Blood group, Rhesus] (3); Rh-null disease, amorph type, 617970 (3)  |
| <i>RHO</i>      | 180380 | Night blindness, congenital stationary, autosomal dominant 1, 610445<br>(3); Retinitis pigmentosa 4, autosomal dominant or recessive, 613731<br>(3), Autosomal recessive, Autosomal dominant; Retinitis punctata<br>albescens, 136880 (3), Autosomal recessive, Autosomal dominant |
| <i>RIMS1</i>    | 606629 | Cone-rod dystrophy 7, 603649 (3)   |
| <i>RIN2</i>     | 610222 | Macrocephaly, alopecia, cutis laxa, and scoliosis, 613075 (3),<br>Autosomal recessive  |
| <i>RIPK4</i>    | 605706 | Popliteal pterygium syndrome, Bartsocas-Papas type, 263650 (3),<br>Autosomal recessive   |
| <i>RIPOR2</i>   | 611410 | ?Deafness, autosomal recessive 104, 616515 (3), Autosomal recessive  |
| <i>RIPPLY2</i>  | 609891 | ?Spondylocostal dysostosis 6, 616566 (3), Autosomal recessive  |
| <i>RIT1</i>     | 609591 | Noonan syndrome 8, 615355 (3), Autosomal dominant  |
| <i>RLBP1</i>    | 180090 | Bothnia retinal dystrophy, 607475 (3), Autosomal recessive; Fundus<br>albipunctatus, 136880 (3), Autosomal recessive, Autosomal dominant;<br>Newfoundland rod-cone dystrophy, 607476 (3); Retinitis punctata<br>albescens, 136880 (3), Autosomal recessive, Autosomal dominant     |
| <i>RLIM</i>     | 300379 | Mental retardation, X-linked 61, 300978 (3), X-linked recessive  |
| <i>RMND1</i>    | 614917 | Combined oxidative phosphorylation deficiency 11, 614922 (3),<br>Autosomal recessive   |
| <i>RMRP</i>     | 157660 | Anauxetic dysplasia 1, 607095 (3), Autosomal recessive; Cartilage-hair<br>hypoplasia, 250250 (3), Autosomal recessive; Metaphyseal dysplasia<br>without hypotrichosis, 250460 (3), Autosomal recessive   |
| <i>RNASEH1</i>  | 604123 | Progressive external ophthalmoplegia with mitochondrial DNA<br>deletions, autosomal recessive 2, 616479 (3), Autosomal recessive   |
| <i>RNASEH2A</i> | 606034 | Aicardi-Goutieres syndrome 4, 610333 (3), Autosomal recessive  |
| <i>RNASEH2B</i> | 610326 | Aicardi-Goutieres syndrome 2, 610181 (3), Autosomal recessive  |

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| <i>RNASEH2C</i> | 610330 | Aicardi-Goutieres syndrome 3, 610329 (3), Autosomal recessive   |
| <i>RNASEL</i>   | 180435 | Prostate cancer 1, 601518 (3), Autosomal dominant   |
| <i>RNASET2</i>  | 612944 | Leukoencephalopathy, cystic, without megalencephaly, 612951 (3),<br>Autosomal recessive   |
| <i>RNF113A</i>  | 300951 | ?Trichothiodystrophy 5, nonphotosensitive, 300953 (3), X-linked<br>dominant   |
| <i>RNF125</i>   | 610432 | Tenorio syndrome, 616260 (3), Autosomal dominant  |
| <i>RNF135</i>   | 611358 | Macrocephaly, macrosomia, facial dysmorphism syndrome, 614192 (3)   |
| <i>RNF139</i>   | 603046 | Renal cell carcinoma, 144700 (3)  |
| <i>RNF168</i>   | 612688 | RIDDLE syndrome, 611943 (3), Autosomal recessive  |
| <i>RNF170</i>   | 614649 | Ataxia, sensory, 1, autosomal dominant, 608984 (3), Autosomal<br>dominant   |
| <i>RNF212</i>   | 612041 | Recombination rate QTL 1, 612042 (3)  |
| <i>RNF216</i>   | 609948 | Cerebellar ataxia and hypogonadotropic hypogonadism, 212840 (3),<br>Autosomal recessive   |
| <i>RNF43</i>    | 612482 | Sessile serrated polyposis cancer syndrome, 617108 (3), Autosomal<br>dominant   |
| <i>RNF6</i>     | 604242 | Esophageal carcinoma, somatic, 133239 (3)   |
| <i>ROBO3</i>    | 608630 | Gaze palsy, familial horizontal, with progressive scoliosis, 1, 607313<br>(3), Autosomal recessive  |
| <i>ROGDI</i>    | 614574 | Kohlschutter-Tonz syndrome, 226750 (3), Autosomal recessive   |
| <i>ROM1</i>     | 180721 | Retinitis pigmentosa 7, digenic, 608133 (3), Autosomal recessive,<br>Autosomal dominant   |
| <i>ROR2</i>     | 602337 | Brachydactyly, type B1, 113000 (3), Autosomal dominant; Robinow<br>syndrome, autosomal recessive, 268310 (3), Autosomal recessive   |
| <i>RORC</i>     | 602943 | Immunodeficiency 42, 616622 (3), Autosomal recessive  |
| <i>RP1</i>      | 603937 | Retinitis pigmentosa 1, 180100 (3), Autosomal recessive, Autosomal<br>dominant  |
| <i>RP1L1</i>    | 608581 | Occult macular dystrophy, 613587 (3), Autosomal dominant  |
| <i>RP2</i>      | 300757 | Retinitis pigmentosa 2, 312600 (3), X-linked  |
| <i>RP9</i>      | 607331 | ?Retinitis pigmentosa 9, 180104 (3), Autosomal dominant   |
| <i>RPE65</i>    | 180069 | Leber congenital amaurosis 2, 204100 (3), Autosomal recessive;<br>Retinitis pigmentosa 20, 613794 (3), Autosomal recessive  |
| <i>RPGR</i>     | 312610 | Cone-rod dystrophy, X-linked, 1, 304020 (3), X-linked; Macular<br>degeneration, X-linked atrophic, 300834 (3), X-linked recessive;<br>Retinitis pigmentosa 3, 300029 (3); Retinitis pigmentosa, X-linked, and<br>sinorespiratory infections, with or without deafness, 300455 (3) |
| <i>RPGRIP1</i>  | 605446 | Cone-rod dystrophy 13, 608194 (3); Leber congenital amaurosis 6,<br>613826 (3)  |
| <i>RPGRIP1L</i> | 610937 | COACH syndrome, 216360 (3), Autosomal recessive; Joubert syndrome<br>7, 611560 (3), Autosomal recessive; Meckel syndrome 5, 611561 (3),<br>Autosomal recessive  |
| <i>RPIA</i>     | 180430 | ?Ribose 5-phosphate isomerase deficiency, 608611 (3), Autosomal<br>recessive  |

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| <i>RPL10</i>   | 312173 | {Autism, susceptibility to, X-linked 5}, 300847 (3); Mental retardation, X-linked, syndromic, 35, 300998 (3), X-linked recessive  |
| <i>RPL11</i>   | 604175 | Diamond-Blackfan anemia 7, 612562 (3), Autosomal dominant   |
| <i>RPL15</i>   | 604174 | ?Diamond-Blackfan anemia 12, 615550 (3), Autosomal dominant   |
| <i>RPL21</i>   | 603636 | Hypotrichosis 12, 615885 (3), Autosomal dominant  |
| <i>RPL26</i>   | 603704 | ?Diamond-Blackfan anemia 11, 614900 (3), Autosomal dominant   |
| <i>RPL35A</i>  | 180468 | Diamond-Blackfan anemia 5, 612528 (3), Autosomal dominant   |
| <i>RPL5</i>    | 603634 | Diamond-Blackfan anemia 6, 612561 (3), Autosomal dominant   |
| <i>RPS10</i>   | 603632 | Diamond-Blackfan anemia 9, 613308 (3), Autosomal dominant   |
| <i>RPS14</i>   | 130620 | Macrocytic anemia, refractory, due to 5q deletion, somatic, 153550 (3)  |
| <i>RPS17</i>   | 180472 | Diamond-Blackfan anemia 4, 612527 (3), Autosomal dominant   |
| <i>RPS19</i>   | 603474 | Diamond-Blackfan anemia 1, 105650 (3), Autosomal dominant   |
| <i>RPS24</i>   | 602412 | Diamond-blackfan anemia 3, 610629 (3), Autosomal dominant   |
| <i>RPS26</i>   | 603701 | Diamond-Blackfan anemia 10, 613309 (3), Autosomal dominant  |
| <i>RPS27</i>   | 603702 | ?Diamond-Blackfan anemia 17, 617409 (3), Autosomal dominant   |
| <i>RPS28</i>   | 603685 | Diamond Blackfan anemia 15 with mandibulofacial dysostosis, 606164 (3), Autosomal dominant  |
| <i>RPS29</i>   | 603633 | Diamond-Blackfan anemia 13, 615909 (3), Autosomal dominant  |
| <i>RPS4Y2</i>  | 400030 | No OMIM phenotype   |
| <i>RPS6KA3</i> | 300075 | Coffin-Lowry syndrome, 303600 (3), X-linked dominant, Isolated cases; Mental retardation, X-linked 19, 300844 (3), X-linked dominant  |
| <i>RPS7</i>    | 603658 | Diamond-Blackfan anemia 8, 612563 (3), Autosomal dominant   |
| <i>RPSA</i>    | 150370 | Asplenia, isolated congenital, 271400 (3), Autosomal dominant   |
| <i>RRM2B</i>   | 604712 | Mitochondrial DNA depletion syndrome 8A (encephalomyopathic type with renal tubulopathy), 612075 (3), Autosomal recessive;  |
|                |        | Mitochondrial DNA depletion syndrome 8B (MNGIE type), 612075 (3), Autosomal recessive; Progressive external ophthalmoplegia with mitochondrial DNA deletions, autosomal dominant 5, 613077 (3), Autosomal dominant  |
| <i>RS1</i>     | 300839 | Retinoschisis, 312700 (3), X-linked recessive   |
| <i>RSPH1</i>   | 609314 | Ciliary dyskinesia, primary, 24, 615481 (3), Autosomal recessive  |
| <i>RSPH3</i>   | 615876 | Ciliary dyskinesia, primary, 32, 616481 (3), Autosomal recessive  |
| <i>RSPH4A</i>  | 612647 | Ciliary dyskinesia, primary, 11, 612649 (3)   |
| <i>RSPH9</i>   | 612648 | Ciliary dyskinesia, primary, 12, 612650 (3)   |
| <i>RSPO1</i>   | 609595 | Palmoplantar hyperkeratosis and true hermaphroditism, 610644 (3), Autosomal recessive; Palmoplantar hyperkeratosis with squamous cell carcinoma of skin and sex reversal, 610644 (3), Autosomal recessive   |
| <i>RSPO4</i>   | 610573 | Anonychia congenita, 206800 (3), Autosomal recessive  |
| <i>RSPRY1</i>  | 616585 | Spondyloepimetaphyseal dysplasia, Faden-Alkuraya type, 616723 (3), Autosomal recessive  |
| <i>RTEL1</i>   | 608833 | Dyskeratosis congenita, autosomal dominant 4, 615190 (3), Autosomal recessive, Autosomal dominant; Dyskeratosis congenita, autosomal recessive 5, 615190 (3), Autosomal recessive, Autosomal dominant; Pulmonary fibrosis and/or bone marrow failure, telomere-related, 3, 616373 (3), Autosomal dominant |

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| <i>RTN2</i>               | 603183 | Spastic paraparesis 12, autosomal dominant, 604805 (3), Autosomal dominant  |
| <i>RTN4IP1</i>            | 610502 | Optic atrophy 10 with or without ataxia, mental retardation, and seizures, 616732 (3), Autosomal recessive  |
| <i>RTN4R</i>              | 605566 | {Schizophrenia, susceptibility to}, 181500 (3), Autosomal dominant  |
| <i>RTTN</i>               | 610436 | Microcephaly, short stature, and polymicrogyria with seizures, 614833 (3), Autosomal recessive  |
| <i>RUBCN</i>              | 613516 | ?Spinocerebellar atrophy, autosomal recessive 15, 615705 (3), Autosomal recessive   |
| <i>RUNX2</i>              | 600211 | Cleidocranial dysplasia, 119600 (3), Autosomal dominant; Cleidocranial dysplasia, forme fruste, dental anomalies only, 119600 (3), Autosomal dominant; Cleidocranial dysplasia, forme fruste, with brachydactyly, 119600 (3), Autosomal dominant; Metaphyseal dysplasia with maxillary hypoplasia with or without brachydactyly, 156510 (3), Autosomal dominant   |
| <i>RXFP2</i>              | 606655 | No OMIM phenotype   |
| <i>RXYLT1<br/>(TMEM5)</i> | 605862 | Muscular dystrophy-dystroglycanopathy (congenital with brain and eye anomalies), type A, 10, 615041 (3), Autosomal recessive  |
| <i>RYR1</i>               | 180901 | Central core disease, 117000 (3), Autosomal recessive, Autosomal dominant; King-Denborough syndrome, 145600 (3), Autosomal dominant; {Malignant hyperthermia susceptibility 1}, 145600 (3), Autosomal dominant; Minicore myopathy with external ophthalmoplegia, 255320 (3), Autosomal recessive; Neuromuscular disease, congenital, with uniform type 1 fiber, 117000 (3), Autosomal recessive, Autosomal dominant |
| <i>RYR2</i>               | 180902 | Arrhythmogenic right ventricular dysplasia 2, 600996 (3), Autosomal dominant; Ventricular tachycardia, catecholaminergic polymorphic, 1, 604772 (3), Autosomal dominant   |
| <i>S1PR2</i>              | 605111 | Deafness, autosomal recessive 68, 610419 (3), Autosomal recessive   |
| <i>SAG</i>                | 181031 | Oguchi disease-1, 258100 (3), Autosomal recessive; Retinitis pigmentosa 47, 613758 (3)  |
| <i>SALL1</i>              | 602218 | Townes-Brocks branchiootorenal-like syndrome, 107480 (3), Autosomal dominant; Townes-Brocks syndrome 1, 107480 (3), Autosomal dominant  |
| <i>SALL2</i>              | 602219 | ?Coloboma, ocular, autosomal recessive, 216820 (3), Autosomal recessive   |
| <i>SALL4</i>              | 607343 | Duane-radial ray syndrome, 607323 (3), Autosomal dominant; IVIC syndrome, 147750 (3), Autosomal dominant  |
| <i>SAMD9</i>              | 610456 | MIRAGE syndrome, 617053 (3), Autosomal dominant; Tumoral calcinosis, familial, normophosphatemic, 610455 (3), Autosomal recessive   |
| <i>SAMHD1</i>             | 606754 | Aicardi-Goutieres syndrome 5, 612952 (3), Autosomal recessive; ?Chilblain lupus 2, 614415 (3), Autosomal dominant   |
| <i>SAR1B</i>              | 607690 | Chylomicron retention disease, 246700 (3), Autosomal recessive  |
| <i>SARS2</i>              | 612804 | Hyperuricemia, pulmonary hypertension, renal failure, and alkalosis, 613845 (3), Autosomal recessive  |

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| <i>SASS6</i>   | 609321 | ?Microcephaly 14, primary, autosomal recessive, 616402 (3),<br>Autosomal recessive   |
| <i>SAT1</i>    | 313020 | No OMIM phenotype  |
| <i>SBDS</i>    | 607444 | {Aplastic anemia, susceptibility to}, 609135 (3); Shwachman-Diamond<br>syndrome, 260400 (3), Autosomal recessive   |
| <i>SBF1</i>    | 603560 | Charcot-Marie-Tooth disease, type 4B3, 615284 (3), Autosomal<br>recessive  |
| <i>SBF2</i>    | 607697 | Charcot-Marie-Tooth disease, type 4B2, 604563 (3), Autosomal<br>recessive  |
| <i>SCARB1</i>  | 601040 | [High density lipoprotein cholesterol level QTL6], 610762 (3)  |
| <i>SCARB2</i>  | 602257 | Epilepsy, progressive myoclonic 4, with or without renal failure,<br>254900 (3), Autosomal recessive   |
| <i>SCARF2</i>  | 613619 | Van den Ende-Gupta syndrome, 600920 (3), Autosomal recessive   |
| <i>SCGB3A2</i> | 606531 | {Asthma, susceptibility to}, 600807 (3), Autosomal dominant  |
| <i>SCN10A</i>  | 604427 | Episodic pain syndrome, familial, 2, 615551 (3), Autosomal dominant  |
| <i>SCN11A</i>  | 604385 | Episodic pain syndrome, familial, 3, 615552 (3), Autosomal dominant;<br>Neuropathy, hereditary sensory and autonomic, type VII, 615548 (3),<br>Autosomal dominant  |
| <i>SCN1B</i>   | 600235 | Atrial fibrillation, familial, 13, 615377 (3), Autosomal dominant;<br>Brugada syndrome 5, 612838 (3); Cardiac conduction defect,<br>nonspecific, 612838 (3); Epilepsy, generalized, with febrile seizures<br>plus, type 1, 604233 (3), Autosomal dominant; Epileptic<br>encephalopathy, early infantile, 52, 617350 (3), Autosomal recessive   |
| <i>SCN2A</i>   | 182390 | Epileptic encephalopathy, early infantile, 11, 613721 (3), Autosomal<br>dominant; Seizures, benign familial infantile, 3, 607745 (3), Autosomal<br>dominant  |
| <i>SCN2B</i>   | 601327 | Atrial fibrillation, familial, 14, 615378 (3), Autosomal dominant  |
| <i>SCN3B</i>   | 608214 | Atrial fibrillation, familial, 16, 613120 (3), Autosomal dominant;<br>Brugada syndrome 7, 613120 (3), Autosomal dominant   |
| <i>SCN4A</i>   | 603967 | Hyperkalemic periodic paralysis, type 2, 170500 (3), Autosomal<br>dominant; Hypokalemic periodic paralysis, type 2, 613345 (3),<br>Autosomal dominant; Myasthenic syndrome, congenital, 16, 614198<br>(3), Autosomal recessive; Myotonia congenita, atypical,<br>acetazolamide-responsive, 608390 (3), Autosomal dominant;<br>Paramyotonia congenita, 168300 (3), Autosomal dominant |
| <i>SCN4B</i>   | 608256 | Atrial fibrillation, familial, 17, 611819 (3), Autosomal dominant; Long<br>QT syndrome-10, 611819 (3), Autosomal dominant  |

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| <i>SCN5A</i>   | 600163 | Atrial fibrillation, familial, 10, 614022 (3), Autosomal dominant; Brugada syndrome 1, 601144 (3), Autosomal dominant; Cardiomyopathy, dilated, 1E, 601154 (3), Autosomal dominant; Heart block, nonprogressive, 113900 (3), Autosomal dominant; Heart block, progressive, type IA, 113900 (3), Autosomal dominant; Long QT syndrome-3, 603830 (3), Autosomal dominant; Sick sinus syndrome 1, 608567 (3), Autosomal recessive; {Sudden infant death syndrome, susceptibility to}, 272120 (3), Autosomal recessive; Ventricular fibrillation, familial, 1, 603829 (3) |
| <i>SCN8A</i>   | 600702 | ?Cognitive impairment with or without cerebellar ataxia, 614306 (3), Autosomal dominant; Epileptic encephalopathy, early infantile, 13, 614558 (3), Autosomal dominant; Seizures, benign familial infantile, 5, 617080 (3), Autosomal dominant  |
| <i>SCNN1A</i>  | 600228 | Bronchiectasis with or without elevated sweat chloride 2, 613021 (3), Autosomal dominant; Pseudohypoaldosteronism, type I, 264350 (3), Autosomal recessive  |
| <i>SCNN1B</i>  | 600760 | Bronchiectasis with or without elevated sweat chloride 1, 211400 (3), Autosomal dominant; Liddle syndrome, 177200 (3), Autosomal dominant; Pseudohypoaldosteronism, type I, 264350 (3), Autosomal recessive   |
| <i>SCNN1G</i>  | 600761 | Bronchiectasis with or without elevated sweat chloride 3, 613071 (3), Autosomal dominant; Liddle syndrome, 177200 (3), Autosomal dominant; Pseudohypoaldosteronism, type I, 264350 (3), Autosomal recessive   |
| <i>SCO1</i>    | 603644 | Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial   |
| <i>SCO2</i>    | 604272 | Cardioencephalomyopathy, fatal infantile, due to cytochrome c oxidase deficiency 1, 604377 (3), Autosomal recessive; Myopia 6, 608908 (3), Autosomal dominant   |
| <i>SCP2</i>    | 184755 | ?Leukoencephalopathy with dystonia and motor neuropathy, 613724 (3), Autosomal recessive  |
| <i>SCYL1</i>   | 607982 | Spinocerebellar ataxia, autosomal recessive 21, 616719 (3), Autosomal recessive   |
| <i>SDCCAG8</i> | 613524 | Bardet-Biedl syndrome 16, 615993 (3), Autosomal recessive; Senior-Loken syndrome 7, 613615 (3)  |
| <i>SDHA</i>    | 600857 | Cardiomyopathy, dilated, 1GG, 613642 (3); Leigh syndrome, 256000 (3), Autosomal recessive, Mitochondrial; Mitochondrial respiratory chain complex II deficiency, 252011 (3), Autosomal recessive; Paragangliomas 5, 614165 (3), Autosomal dominant  |
| <i>SDHAF1</i>  | 612848 | Mitochondrial complex II deficiency, 252011 (3), Autosomal recessive  |
| <i>SDHAF2</i>  | 613019 | Paragangliomas 2, 601650 (3), Autosomal dominant  |

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| <i>SDHB</i>     | 185470 | Cowden syndrome 2, 612359 (3), Autosomal dominant;<br>Gastrointestinal stromal tumor, 606764 (3), Autosomal dominant,<br>Isolated cases; Paraganglioma and gastric stromal sarcoma, 606864<br>(3); Paragangliomas 4, 115310 (3), Autosomal dominant;<br>Pheochromocytoma, 171300 (3), Autosomal dominant  |
| <i>SDHC</i>     | 602413 | Gastrointestinal stromal tumor, 606764 (3), Autosomal dominant,<br>Isolated cases; Paraganglioma and gastric stromal sarcoma, 606864<br>(3); Paragangliomas 3, 605373 (3), Autosomal dominant   |
| <i>SDHD</i>     | 602690 | Carcinoid tumors, intestinal, 114900 (3), Autosomal dominant;<br>Cowden syndrome 3, 615106 (3); Merkel cell carcinoma, somatic (3);<br>Mitochondrial complex II deficiency, 252011 (3), Autosomal recessive;<br>Paraganglioma and gastric stromal sarcoma, 606864 (3);<br>Paragangliomas 1, with or without deafness, 168000 (3), Autosomal<br>dominant; Pheochromocytoma, 171300 (3), Autosomal dominant |
| <i>SEC23A</i>   | 610511 | Craniolenticulosutural dysplasia, 607812 (3), Autosomal recessive   |
| <i>SEC24D</i>   | 607186 | Cole-Carpenter syndrome 2, 616294 (3), Autosomal recessive  |
| <i>SEC61A1</i>  | 609213 | Hyperuricemic nephropathy, familial juvenile, 4, 617056 (3),<br>Autosomal dominant  |
| <i>SEC63</i>    | 608648 | Polycystic liver disease 2, 617004 (3), Autosomal dominant  |
| <i>SECISBP2</i> | 607693 | Thyroid hormone metabolism, abnormal, 609698 (3)  |
| <i>SELE</i>     | 131210 | No OMIM phenotype   |
| <i>SELENON</i>  | 606210 | Muscular dystrophy, rigid spine, 1, 602771 (3), Autosomal recessive;<br>Myopathy, congenital, with fiber-type disproportion, 255310 (3),<br>Autosomal recessive, Autosomal dominant   |
| <i>SELP</i>     | 173610 | No OMIM phenotype   |
| <i>SEMA3A</i>   | 603961 | {Hypogonadotropic hypogonadism 16 with or without anosmia},<br>614897 (3), Autosomal dominant   |
| <i>SEMA3E</i>   | 608166 | ?CHARGE syndrome, 214800 (3), Autosomal dominant  |
| <i>SEMA7A</i>   | 607961 | [Blood group, John-Milton-Hagen system], 614745 (3)   |
| <i>SEPSECS</i>  | 613009 | Pontocerebellar hypoplasia type 2D, 613811 (3), Autosomal recessive   |
| <i>SEPT12</i>   | 611562 | Spermatogenic failure 10, 614822 (3), Autosomal dominant  |
| <i>SEPT9</i>    | 604061 | Amyotrophy, hereditary neuralgic, 162100 (3), Autosomal dominant;<br>Leukemia, acute myeloid, therapy-related (1); Ovarian carcinoma (1)  |
| <i>SERAC1</i>   | 614725 | 3-methylglutaconic aciduria with deafness, encephalopathy, and<br>Leigh-like syndrome, 614739 (3), Autosomal recessive  |
| <i>SERPINA1</i> | 107400 | Emphysema due to AAT deficiency, 613490 (3), Autosomal recessive;<br>Emphysema-cirrhosis, due to AAT deficiency, 613490 (3), Autosomal<br>recessive; Hemorrhagic diathesis due to antithrombin Pittsburgh,<br>613490 (3), Autosomal recessive; {Pulmonary disease, chronic<br>obstructive, susceptibility to}, 606963 (1)   |
| <i>SERPINA6</i> | 122500 | Corticosteroid-binding globulin deficiency, 611489 (3), Autosomal<br>recessive, Autosomal dominant  |
| <i>SERPINA7</i> | 314200 | [Thyroxine-binding globulin QTL], 300932 (3)  |

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| <i>SERPINB7</i> | 603357 | Palmoplantar keratoderma, Nagashima type, 615598 (3), Autosomal recessive   |
| <i>SERPINB8</i> | 601697 | Peeling skin syndrome 5, 617115 (3), Autosomal recessive  |
| <i>SERPINC1</i> | 107300 | Thrombophilia due to antithrombin III deficiency, 613118 (3), Autosomal recessive, Autosomal dominant   |
| <i>SERPIND1</i> | 142360 | Thrombophilia due to heparin cofactor II deficiency, 612356 (3), Autosomal dominant   |
| <i>SERPINE1</i> | 173360 | Plasminogen activator inhibitor-1 deficiency, 613329 (3), Autosomal recessive, Autosomal dominant; {Transcription of plasminogen activator inhibitor, modulator of} (3) |
| <i>SERPINF1</i> | 172860 | Osteogenesis imperfecta, type VI, 613982 (3)  |
| <i>SERPINI1</i> | 602445 | Encephalopathy, familial, with neuroserpin inclusion bodies, 604218 (3), Autosomal dominant   |
| <i>SETBP1</i>   | 611060 | Mental retardation, autosomal dominant 29, 616078 (3), Autosomal dominant; Schinzel-Giedion midface retraction syndrome, 269150 (3), Autosomal dominant                 |
| <i>SETD2</i>    | 612778 | Luscan-Lumish syndrome, 616831 (3), Autosomal dominant  |
| <i>SETX</i>     | 608465 | Amyotrophic lateral sclerosis 4, juvenile, 602433 (3), Autosomal dominant; Spinocerebellar ataxia, autosomal recessive 1, 606002 (3), Autosomal recessive               |
| <i>SF3B1</i>    | 605590 | Myelodysplastic syndrome, somatic, 614286 (3)   |
| <i>SF3B4</i>    | 605593 | Acrofacial dysostosis 1, Nager type, 154400 (3), Autosomal dominant   |
| <i>SFRP4</i>    | 606570 | Pyle disease, 265900 (3), Autosomal recessive   |
| <i>SFTPA1</i>   | 178630 | No OMIM phenotype   |
| <i>SFTPA2</i>   | 178642 | Pulmonary fibrosis, idiopathic, 178500 (3), Autosomal dominant  |
| <i>SFTPC</i>    | 178620 | Surfactant metabolism dysfunction, pulmonary, 2, 610913 (3), Autosomal dominant   |
| <i>SFXN4</i>    | 615564 | Combined oxidative phosphorylation deficiency 18, 615578 (3), Autosomal recessive   |
| <i>SGCA</i>     | 600119 | Muscular dystrophy, limb-girdle, type 2D, 608099 (3), Autosomal recessive   |
| <i>SGCB</i>     | 600900 | Muscular dystrophy, limb-girdle, type 2E, 604286 (3), Autosomal recessive   |
| <i>SGCD</i>     | 601411 | Cardiomyopathy, dilated, 1L, 606685 (3); Muscular dystrophy, limb-girdle, type 2F, 601287 (3), Autosomal recessive  |
| <i>SGCE</i>     | 604149 | Dystonia-11, myoclonic, 159900 (3), Autosomal dominant  |
| <i>SGCG</i>     | 608896 | Muscular dystrophy, limb-girdle, type 2C, 253700 (3), Autosomal recessive   |
| <i>SGO1</i>     | 609168 | Chronic atrial and intestinal dysrhythmia, 616201 (3), Autosomal recessive  |
| <i>SGSH</i>     | 605270 | Mucopolysaccharidosis type IIIA (Sanfilippo A), 252900 (3), Autosomal recessive   |
| <i>SH2B3</i>    | 605093 | Erythrocytosis, somatic, 133100 (3); Myelofibrosis, somatic, 254450 (3); Thrombocythemia, somatic, 187950 (3)   |

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| <i>SH2D1A</i>   | 300490 | Lymphoproliferative syndrome, X-linked, 1, 308240 (3), X-linked recessive  |
| <i>SH3BP2</i>   | 602104 | Cherubism, 118400 (3), Autosomal dominant  |
| <i>SH3PXD2B</i> | 613293 | Frank-ter Haar syndrome, 249420 (3), Autosomal recessive   |
| <i>SH3TC2</i>   | 608206 | Charcot-Marie-Tooth disease, type 4C, 601596 (3), Autosomal recessive; Mononeuropathy of the median nerve, mild, 613353 (3), Autosomal dominant  |
| <i>SHANK2</i>   | 603290 | {Autism susceptibility 17}, 613436 (3)   |
| <i>SHANK3</i>   | 606230 | Phelan-McDermid syndrome, 606232 (3), Autosomal dominant; {Schizophrenia 15}, 613950 (3)   |
| <i>SHH</i>      | 600725 | Holoprosencephaly 3, 142945 (3), Autosomal dominant; Microphthalmia with coloboma 5, 611638 (3), Autosomal dominant; Schizencephaly, 269160 (3); Single median maxillary central incisor, 147250 (3), Autosomal dominant |
| <i>SHOC2</i>    | 602775 | Noonan-like syndrome with loose anagen hair, 607721 (3), Autosomal dominant  |
| <i>SHPK</i>     | 605060 | [Sedoheptulokinase deficiency], 617213 (3), Autosomal recessive  |
| <i>SHROOM4</i>  | 300579 | Stocco dos Santos X-linked mental retardation syndrome, 300434 (3), X-linked   |
| <i>SI</i>       | 609845 | Sucrase-isomaltase deficiency, congenital, 222900 (3), Autosomal recessive   |
| <i>SIAE</i>     | 610079 | {Autoimmune disease, susceptibility to, 6}, 613551 (3)   |
| <i>SIGMAR1</i>  | 601978 | ?Amyotrophic lateral sclerosis 16, juvenile, 614373 (3), Autosomal recessive; ?Spinal muscular atrophy, distal, autosomal recessive, 2, 605726 (3), Autosomal recessive  |
| <i>SIK1</i>     | 605705 | Epileptic encephalopathy, early infantile, 30, 616341 (3), Autosomal dominant  |
| <i>SIL1</i>     | 608005 | Marinesco-Sjogren syndrome, 248800 (3), Autosomal recessive  |
| <i>SIM1</i>     | 603128 | Obesity, severe, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>SIN3A</i>    | 607776 | Witteveen-Kolk syndrome, 613406 (3), Autosomal dominant  |
| <i>SIPA1L3</i>  | 616655 | ?Cataract 45, 616851 (3), Autosomal recessive  |
| <i>SIX1</i>     | 601205 | Branchioototic syndrome 3, 608389 (3), Autosomal dominant; Deafness, autosomal dominant 23, 605192 (3), Autosomal dominant   |
| <i>SIX3</i>     | 603714 | Holoprosencephaly 2, 157170 (3), Autosomal dominant; Schizencephaly, 269160 (3)  |
| <i>SIX5</i>     | 600963 | Branchiootorenal syndrome 2, 610896 (3)  |
| <i>SIX6</i>     | 606326 | Optic disc anomalies with retinal and/or macular dystrophy, 212550 (3), Autosomal recessive  |
| <i>SKI</i>      | 164780 | Shprintzen-Goldberg syndrome, 182212 (3), Autosomal dominant   |
| <i>SKIV2L</i>   | 600478 | Trichohepatoenteric syndrome 2, 614602 (3), Autosomal recessive  |
| <i>SLC10A2</i>  | 601295 | Bile acid malabsorption, primary, 613291 (3), Autosomal recessive  |
| <i>SLC11A1</i>  | 600266 | {Buruli ulcer, susceptibility to}, 610446 (3); {Mycobacterium tuberculosis, susceptibility to infection by}, 607948 (3)  |
| <i>SLC12A1</i>  | 600839 | Bartter syndrome, type 1, 601678 (3), Autosomal recessive  |

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| <i>SLC12A3</i>  | 600968 | Gitelman syndrome, 263800 (3), Autosomal recessive<br>{Epilepsy, idiopathic generalized, susceptibility to, 14}, 616685 (3),  |
| <i>SLC12A5</i>  | 606726 | Autosomal dominant; Epileptic encephalopathy, early infantile, 34, 616645 (3), Autosomal recessive  |
| <i>SLC12A6</i>  | 604878 | Agenesis of the corpus callosum with peripheral neuropathy, 218000 (3), Autosomal recessive   |
| <i>SLC13A5</i>  | 608305 | Epileptic encephalopathy, early infantile, 25, 615905 (3), Autosomal recessive  |
| <i>SLC14A1</i>  | 613868 | [Blood group, Kidd], 111000 (3)   |
| <i>SLC16A1</i>  | 600682 | Erythrocyte lactate transporter defect, 245340 (3), Autosomal dominant; Hyperinsulinemic hypoglycemia, familial, 7, 610021 (3), Autosomal dominant; Monocarboxylate transporter 1 deficiency, 616095 (3), Autosomal recessive, Autosomal dominant |
| <i>SLC16A2</i>  | 611910 | Cataract 47, juvenile, with microcornea, 612018 (3), Autosomal dominant   |
| <i>SLC16A2</i>  | 300095 | Allan-Herndon-Dudley syndrome, 300523 (3), X-linked   |
| <i>SLC17A3</i>  | 611034 | {Gout susceptibility 4}, 612671 (3), Autosomal dominant; [Uric acid concentration, serum, QTL4], 612671 (3), Autosomal dominant   |
| <i>SLC17A5</i>  | 604322 | Salla disease, 604369 (3), Autosomal recessive; Sialic acid storage disorder, infantile, 269920 (3), Autosomal recessive  |
| <i>SLC17A8</i>  | 607557 | Deafness, autosomal dominant 25, 605583 (3), Autosomal dominant   |
| <i>SLC17A9</i>  | 612107 | Porokeratosis 8, disseminated superficial actinic type, 616063 (3), Autosomal dominant  |
| <i>SLC18A3</i>  | 600336 | Myasthenic syndrome, congenital, 21, presynaptic, 617239 (3), Autosomal recessive   |
| <i>SLC19A2</i>  | 603941 | Thiamine-responsive megaloblastic anemia syndrome, 249270 (3), Autosomal recessive  |
| <i>SLC19A3</i>  | 606152 | Thiamine metabolism dysfunction syndrome 2 (biotin- or thiamine-responsive encephalopathy type 2), 607483 (3), Autosomal recessive  |
| <i>SLC1A1</i>   | 133550 | Dicarboxylic aminoaciduria, 222730 (3), Autosomal recessive;<br>{?Schizophrenia susceptibility 18}, 615232 (3)  |
| <i>SLC1A2</i>   | 600300 | Epileptic encephalopathy, early infantile, 41, 617105 (3), Autosomal dominant   |
| <i>SLC1A3</i>   | 600111 | Episodic ataxia, type 6, 612656 (3), Autosomal dominant   |
| <i>SLC1A4</i>   | 600229 | Spastic tetraplegia, thin corpus callosum, and progressive microcephaly, 616657 (3), Autosomal recessive  |
| <i>SLC22A12</i> | 607096 | Hypouricemia, renal, 220150 (3), Autosomal recessive  |
| <i>SLC22A18</i> | 602631 | Breast cancer, somatic, 114480 (3); Lung cancer, somatic, 211980 (3); Rhabdomyosarcoma, somatic, 268210 (3)   |
| <i>SLC22A4</i>  | 604190 | {Rheumatoid arthritis, susceptibility to}, 180300 (3)   |
| <i>SLC22A5</i>  | 603377 | Carnitine deficiency, systemic primary, 212140 (3), Autosomal recessive   |

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| <i>SLC24A4</i>  | 609840 | Amelogenesis imperfecta, type IIA5, 615887 (3), Autosomal recessive; [Skin/hair/eye pigmentation 6, blond/brown hair], 210750 (3), Autosomal recessive; [Skin/hair/eye pigmentation 6, blue/green eyes], 210750 (3), Autosomal recessive  |
| <i>SLC24A5</i>  | 609802 | Albinism, oculocutaneous, type VI, 113750 (3), Autosomal recessive; [Skin/hair/eye pigmentation 4, fair/dark skin], 113750 (3), Autosomal recessive   |
| <i>SLC25A1</i>  | 190315 | Combined D-2- and L-2-hydroxyglutaric aciduria, 615182 (3), Autosomal recessive   |
| <i>SLC25A12</i> | 603667 | Epileptic encephalopathy, early infantile, 39, 612949 (3), Autosomal recessive  |
| <i>SLC25A13</i> | 603859 | Citrullinemia, adult-onset type II, 603471 (3), Autosomal recessive; Citrullinemia, type II, neonatal-onset, 605814 (3), Autosomal recessive  |
| <i>SLC25A15</i> | 603861 | Hyperornithinemia-hyperammonemia-homocitrullinemia syndrome, 238970 (3), Autosomal recessive  |
| <i>SLC25A19</i> | 606521 | Microcephaly, Amish type, 607196 (3), Autosomal recessive; Thiamine metabolism dysfunction syndrome 4 (progressive polyneuropathy type), 613710 (3), Autosomal recessive  |
| <i>SLC25A20</i> | 613698 | Carnitine-acylcarnitine translocase deficiency, 212138 (3), Autosomal recessive   |
| <i>SLC25A22</i> | 609302 | Epileptic encephalopathy, early infantile, 3, 609304 (3), Autosomal recessive   |
| <i>SLC25A26</i> | 611037 | Combined oxidative phosphorylation deficiency 28, 616794 (3), Autosomal recessive   |
| <i>SLC25A3</i>  | 600370 | Mitochondrial phosphate carrier deficiency, 610773 (3)  |
| <i>SLC25A32</i> | 610815 | ?Exercise intolerance, riboflavin-responsive, 616839 (3), Autosomal recessive   |
| <i>SLC25A38</i> | 610819 | Anemia, sideroblastic, 2, pyridoxine-refractory, 205950 (3), Autosomal recessive  |
| <i>SLC25A4</i>  | 103220 | Mitochondrial DNA depletion syndrome 12A (cardiomyopathic type) AD, 617184 (3), Autosomal dominant; Mitochondrial DNA depletion syndrome 12B (cardiomyopathic type) AR, 615418 (3), Autosomal recessive; Progressive external ophthalmoplegia with mitochondrial DNA deletions, autosomal dominant 2, 609283 (3), Autosomal dominant  |
| <i>SLC25A46</i> | 610826 | Neuropathy, hereditary motor and sensory, type VIB, 616505 (3), Autosomal recessive   |
| <i>SLC26A1</i>  | 610130 | ?Nephrolithiasis, calcium oxalate, 167030 (3), Autosomal recessive  |
| <i>SLC26A2</i>  | 606718 | Achondrogenesis Ib, 600972 (3), Autosomal recessive; Atelosteogenesis, type II, 256050 (3), Autosomal recessive; De la Chapelle dysplasia, 256050 (3), Autosomal recessive; Diastrophic dysplasia, 222600 (3), Autosomal recessive; Diastrophic dysplasia, broad bone-platyspondylic variant, 222600 (3), Autosomal recessive; Epiphyseal dysplasia, multiple, 4, 226900 (3), Autosomal recessive |

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| <i>SLC26A3</i>  | 126650 | Diarrhea 1, secretory chloride, congenital, 214700 (3), Autosomal recessive   |
| <i>SLC26A4</i>  | 605646 | Deafness, autosomal recessive 4, with enlarged vestibular aqueduct, 600791 (3), Autosomal recessive; Pendred syndrome, 274600 (3), Autosomal recessive  |
| <i>SLC26A5</i>  | 604943 | ?Deafness, autosomal recessive 61, 613865 (3), Autosomal recessive  |
| <i>SLC26A8</i>  | 608480 | Spermatogenic failure 3, 606766 (3), Autosomal dominant   |
| <i>SLC27A4</i>  | 604194 | Ichthyosis prematurity syndrome, 608649 (3)   |
| <i>SLC29A3</i>  | 612373 | Histiocytosis-lymphadenopathy plus syndrome, 602782 (3), Autosomal recessive  |
| <i>SLC2A1</i>   | 138140 | Dystonia 9, 601042 (3), Autosomal dominant; {Epilepsy, idiopathic generalized, susceptibility to, 12}, 614847 (3), Autosomal dominant; GLUT1 deficiency syndrome 1, infantile onset, severe, 606777 (3), Autosomal recessive, Autosomal dominant; GLUT1 deficiency syndrome 2, childhood onset, 612126 (3), Autosomal dominant; Stomatin-deficient cryohydrocytosis with neurologic defects, 608885 (3), Autosomal dominant |
| <i>SLC2A10</i>  | 606145 | Arterial tortuosity syndrome, 208050 (3), Autosomal recessive   |
| <i>SLC2A2</i>   | 138160 | {Diabetes mellitus, noninsulin-dependent}, 125853 (3), Autosomal dominant; Fanconi-Bickel syndrome, 227810 (3), Autosomal recessive   |
| <i>SLC2A9</i>   | 606142 | Hypouricemia, renal, 2, 612076 (3), Autosomal recessive, Autosomal dominant; {Uric acid concentration, serum, QTL 2}, 612076 (3), Autosomal recessive, Autosomal dominant   |
| <i>SLC30A10</i> | 611146 | Hypermanganesemia with dystonia 1, 613280 (3), Autosomal recessive  |
| <i>SLC30A2</i>  | 609617 | Zinc deficiency, transient neonatal, 608118 (3), Autosomal dominant   |
| <i>SLC30A8</i>  | 611145 | {Diabetes mellitus, noninsulin-dependent, susceptibility to}, 125853 (3), Autosomal dominant  |
| <i>SLC33A1</i>  | 603690 | Congenital cataracts, hearing loss, and neurodegeneration, 614482 (3), Autosomal recessive; Spastic paraparesis 42, autosomal dominant, 612539 (3), Autosomal dominant  |
| <i>SLC34A1</i>  | 182309 | ?Fanconi renotubular syndrome 2, 613388 (3), Autosomal recessive; Hypercalcemia, infantile, 2, 616963 (3), Autosomal recessive; Nephrolithiasis/osteoporosis, hypophosphatemic, 1, 612286 (3), Autosomal dominant   |
| <i>SLC34A3</i>  | 609826 | Hypophosphatemic rickets with hypercalciuria, 241530 (3), Autosomal recessive   |
| <i>SLC35A1</i>  | 605634 | Congenital disorder of glycosylation, type II $\alpha$ , 603585 (3), Autosomal recessive  |
| <i>SLC35A2</i>  | 314375 | Congenital disorder of glycosylation, type II $\beta$ , 300896 (3), X-linked dominant, Somatic mosaicism  |
| <i>SLC35A3</i>  | 605632 | ?Arthrogryposis, mental retardation, and seizures, 615553 (3), Autosomal recessive  |
| <i>SLC35C1</i>  | 605881 | Congenital disorder of glycosylation, type II $\gamma$ , 266265 (3), Autosomal recessive  |
| <i>SLC35D1</i>  | 610804 | Schneckenbecken dysplasia, 269250 (3), Autosomal recessive  |

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| <i>SLC36A2</i>  | 608331 | Hyperglycinuria, 138500 (3), Autosomal dominant; Iminoglycinuria, digenic, 242600 (3), Autosomal recessive, Digenic recessive   |
| <i>SLC38A8</i>  | 615585 | Foveal hypoplasia 2, with or without optic nerve misrouting and/or anterior segment dysgenesis, 609218 (3), Autosomal recessive   |
| <i>SLC39A13</i> | 608735 | Ehlers-Danlos syndrome, spondylodysplastic type, 3, 612350 (3), Autosomal recessive   |
| <i>SLC39A14</i> | 608736 | Hypermanganesemia with dystonia 2, 617013 (3), Autosomal recessive; ?Hyperostosis cranialis interna, 144755 (3), Autosomal dominant   |
| <i>SLC39A4</i>  | 607059 | Acrodermatitis enteropathica, 201100 (3), Autosomal recessive   |
| <i>SLC39A5</i>  | 608730 | Myopia 24, autosomal dominant, 615946 (3), Autosomal dominant   |
| <i>SLC39A8</i>  | 608732 | Congenital disorder of glycosylation, type IIIn, 616721 (3), Autosomal recessive  |
| <i>SLC3A1</i>   | 104614 | Cystinuria, 220100 (3), Autosomal recessive, Autosomal dominant   |
| <i>SLC40A1</i>  | 604653 | Hemochromatosis, type 4, 606069 (3), Autosomal dominant   |
| <i>SLC45A2</i>  | 606202 | Albinism, oculocutaneous, type IV, 606574 (3); [Skin/hair/eye pigmentation 5, black/nonblack hair], 227240 (3), Autosomal recessive; [Skin/hair/eye pigmentation 5, dark/fair skin], 227240 (3), Autosomal recessive; [Skin/hair/eye pigmentation 5, dark/light eyes], 227240 (3), Autosomal recessive  |
| <i>SLC46A1</i>  | 611672 | Folate malabsorption, hereditary, 229050 (3), Autosomal recessive<br>[Blood group, Diego], 110500 (3); [Blood group, Froese], 601551 (3);<br>[Blood group, Swann], 601550 (3); [Blood group, Waldner], 112010 (3);<br>[Blood group, Wright], 112050 (3); Cryohydrocytosis, 185020 (3),<br>Autosomal dominant; [Malaria, resistance to], 611162 (3); |
| <i>SLC4A1</i>   | 109270 | Ovalocytosis, SA type, 166900 (3), Autosomal dominant; Renal tubular acidosis, distal, AD, 179800 (3), Autosomal dominant; Renal tubular acidosis, distal, AR, 611590 (3), Autosomal recessive; Spherocytosis, type 4, 612653 (3), Autosomal dominant   |
| <i>SLC52A1</i>  | 607883 | Riboflavin deficiency, 615026 (3), Autosomal dominant   |
| <i>SLC52A2</i>  | 607882 | Brown-Vialetto-Van Laere syndrome 2, 614707 (3), Autosomal recessive  |
| <i>SLC52A3</i>  | 613350 | Brown-Vialetto-Van Laere syndrome 1, 211530 (3), Autosomal recessive; ?Fazio-Londe disease, 211500 (3), Autosomal recessive   |
| <i>SLC5A1</i>   | 182380 | Glucose/galactose malabsorption, 606824 (3), Autosomal recessive  |
| <i>SLC5A2</i>   | 182381 | Renal glucosuria, 233100 (3), Autosomal recessive, Autosomal dominant   |
| <i>SLC5A5</i>   | 601843 | Thyroid dyshormonogenesis 1, 274400 (3), Autosomal recessive  |
| <i>SLC5A7</i>   | 608761 | Myasthenic syndrome, congenital, 20, presynaptic, 617143 (3),<br>Autosomal recessive; Neuropathy, distal hereditary motor, type VIIA, 158580 (3), Autosomal dominant  |
| <i>SLC6A1</i>   | 137165 | Myoclonic-atonic epilepsy, 616421 (3), Autosomal dominant   |
| <i>SLC6A14</i>  | 300444 | {Obesity, susceptibility to, BMIQ11}, 300306 (3)  |
| <i>SLC6A17</i>  | 610299 | Mental retardation, autosomal recessive 48, 616269 (3), Autosomal recessive   |

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| <i>SLC6A19</i>  | 608893 | Hartnup disorder, 234500 (3), Autosomal recessive; Hyperglycinuria, 138500 (3), Autosomal dominant; Iminoglycinuria, digenic, 242600 (3), Autosomal recessive, Digenic recessive  |
| <i>SLC6A2</i>   | 163970 | Orthostatic intolerance, 604715 (3)   |
| <i>SLC6A20</i>  | 605616 | Hyperglycinuria, 138500 (3), Autosomal dominant; Iminoglycinuria, digenic, 242600 (3), Autosomal recessive, Digenic recessive   |
| <i>SLC6A3</i>   | 126455 | {Nicotine dependence, protection against}, 188890 (3); Parkinsonism-dystonia, infantile, 613135 (3), Autosomal recessive  |
| <i>SLC6A4</i>   | 182138 | {Anxiety-related personality traits}, 607834 (3); {Obsessive-compulsive disorder}, 164230 (3), Autosomal dominant   |
| <i>SLC6A5</i>   | 604159 | Hyperekplexia 3, 614618 (3), Autosomal recessive, Autosomal dominant  |
| <i>SLC6A8</i>   | 300036 | Cerebral creatine deficiency syndrome 1, 300352 (3), X-linked recessive   |
| <i>SLC7A14</i>  | 615720 | Retinitis pigmentosa 68, 615725 (3), Autosomal recessive  |
| <i>SLC7A7</i>   | 603593 | Lysinuric protein intolerance, 222700 (3), Autosomal recessive  |
| <i>SLC7A9</i>   | 604144 | Cystinuria, 220100 (3), Autosomal recessive, Autosomal dominant   |
| <i>SLC9A1</i>   | 107310 | ?Lichtenstein-Knorr syndrome, 616291 (3), Autosomal recessive   |
| <i>SLC9A3</i>   | 182307 | Diarrhea 8, secretory sodium, congenital, 616868 (3), Autosomal recessive   |
| <i>SLC9A3R1</i> | 604990 | Nephrolithiasis/osteoporosis, hypophosphatemic, 2, 612287 (3), Autosomal dominant   |
| <i>SLC9A9</i>   | 608396 | {?Autism susceptibility 16}, 613410 (3)   |
| <i>SLCO1B1</i>  | 604843 | Hyperbilirubinemia, Rotor type, digenic, 237450 (3), Digenic recessive  |
| <i>SLCO2A1</i>  | 601460 | Hypertrophic osteoarthropathy, primary, autosomal recessive 2, 614441 (3), Autosomal recessive  |
| <i>SLFN14</i>   | 614958 | Bleeding disorder, platelet-type, 20, 616913 (3), Autosomal dominant  |
| <i>SLTRK1</i>   | 609678 | Tourette syndrome, 137580 (3), Autosomal dominant; ?Trichotillomania, 613229 (3), Autosomal dominant, Multifactorial  |
| <i>SLTRK6</i>   | 609681 | Deafness and myopia, 221200 (3), Autosomal recessive  |
| <i>SLURP1</i>   | 606119 | Meleda disease, 248300 (3), Autosomal recessive   |
| <i>SLX4</i>     | 613278 | Fanconi anemia, complementation group P, 613951 (3), Autosomal recessive  |
| <i>SMAD3</i>    | 603109 | Loeys-Dietz syndrome 3, 613795 (3), Autosomal dominant  |
| <i>SMAD4</i>    | 600993 | Juvenile polyposis/hereditary hemorrhagic telangiectasia syndrome, 175050 (3), Autosomal dominant; Myhre syndrome, 139210 (3), Autosomal dominant; Pancreatic cancer, somatic, 260350 (3); Polyposis, juvenile intestinal, 174900 (3), Autosomal dominant |
| <i>SMAD6</i>    | 602931 | Aortic valve disease 2, 614823 (3), Autosomal dominant; {Craniosynostosis 7, susceptibility to}, 617439 (3), Autosomal dominant   |
| <i>SMAD7</i>    | 602932 | {Colorectal cancer, susceptibility to}, 3, 612229 (3)   |
| <i>SMAD9</i>    | 603295 | Pulmonary hypertension, primary, 2, 615342 (3), Autosomal dominant  |
| <i>SMARCA2</i>  | 600014 | Nicolaides-Baraitser syndrome, 601358 (3), Autosomal dominant   |

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| <i>SMARCA4</i>  | 603254 | Coffin-Siris syndrome 4, 614609 (3), Autosomal dominant; {Rhabdoid tumor predisposition syndrome 2}, 613325 (3), Autosomal dominant   |
| <i>SMARCAD1</i> | 612761 | Adermatoglyphia, 136000 (3), Autosomal dominant; Basan syndrome, 129200 (3), Autosomal dominant   |
| <i>SMARCAL1</i> | 606622 | Schimke immunoosseous dysplasia, 242900 (3), Autosomal recessive  |
| <i>SMARCB1</i>  | 601607 | Coffin-Siris syndrome 3, 614608 (3), Autosomal dominant; {Rhabdoid tumor predisposition syndrome 1}, 609322 (3), Autosomal dominant; Rhabdoid tumors, somatic, 609322 (3); {Schwannomatosis-1, susceptibility to}, 162091 (3), Autosomal dominant |
| <i>SMARCE1</i>  | 603111 | Coffin-Siris syndrome 5, 616938 (3), Autosomal dominant; {Meningioma, familial, susceptibility to}, 607174 (3), Autosomal dominant  |
| <i>SMC1A</i>    | 300040 | Cornelia de Lange syndrome 2, 300590 (3), X-linked dominant   |
| <i>SMC3</i>     | 606062 | Cornelia de Lange syndrome 3, 610759 (3), Autosomal dominant  |
| <i>SMCHD1</i>   | 614982 | Bosma arhinia microphthalmia syndrome, 603457 (3), Autosomal dominant; Fascioscapulohumeral muscular dystrophy 2, digenic, 158901 (3)   |
| <i>SMG9</i>     | 613176 | Heart and brain malformation syndrome, 616920 (3), Autosomal recessive  |
| <i>SMIM1</i>    | 615242 | [Blood group, Vel system], 615264 (3), Autosomal recessive  |
| <i>SMN1</i>     | 600354 | Spinal muscular atrophy-1, 253300 (3), Autosomal recessive; Spinal muscular atrophy-2, 253550 (3), Autosomal recessive; Spinal muscular atrophy-3, 253400 (3), Autosomal recessive; Spinal muscular atrophy-4, 271150 (3), Autosomal recessive    |
| <i>SMN2</i>     | 601627 | {Spinal muscular atrophy, type III, modifier of}, 253400 (3), Autosomal recessive   |
| <i>SMO</i>      | 601500 | Basal cell carcinoma, somatic, 605462 (3); Curry-Jones syndrome, somatic mosaic, 601707 (3)   |
| <i>SMOC1</i>    | 608488 | Microphthalmia with limb anomalies, 206920 (3), Autosomal recessive   |
| <i>SMOC2</i>    | 607223 | Dentin dysplasia, type I, with microdontia and misshapen teeth, 125400 (3), Autosomal recessive   |
| <i>SMPD1</i>    | 607608 | Niemann-Pick disease, type A, 257200 (3), Autosomal recessive; Niemann-Pick disease, type B, 607616 (3), Autosomal recessive  |
| <i>SMPX</i>     | 300226 | Deafness, X-linked 4, 300066 (3), X-linked dominant   |
| <i>SMS</i>      | 300105 | Mental retardation, X-linked, Snyder-Robinson type, 309583 (3), X-linked recessive  |
| <i>SNAI2</i>    | 602150 | Piebaldism, 172800 (3), Autosomal dominant; Waardenburg syndrome, type 2D, 608890 (3), Autosomal recessive  |
| <i>SNAP25</i>   | 600322 | ?Myasthenic syndrome, congenital, 18, 616330 (3), Autosomal dominant  |
| <i>SNAP29</i>   | 604202 | Cerebral dysgenesis, neuropathy, ichthyosis, and palmoplantar keratoderma syndrome, 609528 (3), Autosomal recessive   |
| <i>SNCB</i>     | 602569 | Dementia, Lewy body, 127750 (3), Autosomal dominant   |
| <i>SNIP1</i>    | 608241 | Psychomotor retardation, epilepsy, and craniofacial dysmorphism, 614501 (3), Autosomal recessive  |

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| <i>SNRNP200</i> | 601664 | Retinitis pigmentosa 33, 610359 (3), Autosomal dominant   |
| <i>SNRPB</i>    | 182282 | Cerebrocostomandibular syndrome, 117650 (3), Autosomal dominant   |
| <i>SNRPE</i>    | 128260 | Hypotrichosis 11, 615059 (3), Autosomal dominant  |
| <i>SNRPN</i>    | 182279 | Prader-Willi syndrome, 176270 (3), Isolated cases   |
| <i>SNTA1</i>    | 601017 | Long QT syndrome 12, 612955 (3), Autosomal dominant   |
| <i>SNX10</i>    | 614780 | Osteopetrosis, autosomal recessive 8, 615085 (3), Autosomal recessive   |
| <i>SNX14</i>    | 616105 | Spinocerebellar ataxia, autosomal recessive 20, 616354 (3), Autosomal recessive   |
| <i>SOBP</i>     | 613667 | Mental retardation, anterior maxillary protrusion, and strabismus, 613671 (3), Autosomal recessive  |
| <i>SOD1</i>     | 147450 | Amyotrophic lateral sclerosis 1, 105400 (3), Autosomal recessive, Autosomal dominant  |
| <i>SOD2</i>     | 147460 | {Microvascular complications of diabetes 6}, 612634 (3)   |
| <i>SON</i>      | 182465 | ZTTK syndrome, 617140 (3), Autosomal dominant   |
| <i>SORL1</i>    | 602005 | No OMIM phenotype   |
| <i>SORT1</i>    | 602458 | [Low density lipoprotein cholesterol level QTL6], 613589 (3), Autosomal dominant  |
| <i>SOS1</i>     | 182530 | ?Fibromatosis, gingival, 1, 135300 (3), Autosomal dominant; Noonan syndrome 4, 610733 (3), Autosomal dominant   |
| <i>SOS2</i>     | 601247 | Noonan syndrome 9, 616559 (3), Autosomal dominant   |
| <i>SOST</i>     | 605740 | Craniodiaphyseal dysplasia, autosomal dominant, 122860 (3), Autosomal dominant; Sclerosteosis 1, 269500 (3), Autosomal recessive; Van Buchem disease, 239100 (3), Autosomal recessive                               |
| <i>SOX10</i>    | 602229 | PCWH syndrome, 609136 (3), Autosomal dominant; Waardenburg syndrome, type 2E, with or without neurologic involvement, 611584 (3), Autosomal dominant; Waardenburg syndrome, type 4C, 613266 (3), Autosomal dominant |
| <i>SOX11</i>    | 600898 | Mental retardation, autosomal dominant 27, 615866 (3), Autosomal dominant   |
| <i>SOX17</i>    | 610928 | Vesicoureteral reflux 3, 613674 (3), Autosomal dominant   |
| <i>SOX18</i>    | 601618 | Hypotrichosis-lymphedema-telangiectasia syndrome, 607823 (3), Autosomal recessive; Hypotrichosis-lymphedema-telangiectasia-renal defect syndrome, 137940 (3), Autosomal dominant                                    |
| <i>SOX2</i>     | 184429 | Microphthalmia, syndromic 3, 206900 (3), Autosomal dominant; Optic nerve hypoplasia and abnormalities of the central nervous system, 206900 (3), Autosomal dominant   |
| <i>SOX3</i>     | 313430 | Mental retardation, X-linked, with isolated growth hormone deficiency, 300123 (3); Panhypopituitarism, X-linked, 312000 (3), X-linked   |
| <i>SOX5</i>     | 604975 | Lamb-Shaffer syndrome, 616803 (3), Autosomal dominant   |
| <i>SOX9</i>     | 608160 | Acampomelic campomelic dysplasia, 114290 (3), Autosomal dominant; Campomelic dysplasia, 114290 (3), Autosomal dominant; Campomelic dysplasia with autosomal sex reversal, 114290 (3), Autosomal dominant            |

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| <i>SP110</i>   | 604457 | Hepatic venoocclusive disease with immunodeficiency, 235550 (3),<br>Autosomal recessive; {Mycobacterium tuberculosis, susceptibility to},<br>607948 (3)   |
| <i>SP7</i>     | 606633 | ?Osteogenesis imperfecta, type XII, 613849 (3), Autosomal recessive   |
| <i>SPAG1</i>   | 603395 | Ciliary dyskinesia, primary, 28, 615505 (3), Autosomal recessive  |
| <i>SPARC</i>   | 182120 | Osteogenesis imperfecta, type XVII, 616507 (3), Autosomal recessive   |
| <i>SPART</i>   | 607111 | Troyer syndrome, 275900 (3), Autosomal recessive  |
| <i>SPATA16</i> | 609856 | ?Spermatogenic failure 6, 102530 (3), Autosomal recessive   |
| <i>SPATA5</i>  | 613940 | Epilepsy, hearing loss, and mental retardation syndrome, 616577 (3),<br>Autosomal recessive   |
| <i>SPECC1L</i> | 614140 | ?Facial clefting, oblique, 1, 600251 (3), Autosomal dominant; Opitz<br>GBBB syndrome, type II, 145410 (3), Autosomal dominant   |
| <i>SPEG</i>    | 615950 | Centronuclear myopathy 5, 615959 (3), Autosomal recessive   |
| <i>SPG11</i>   | 610844 | Amyotrophic lateral sclerosis 5, juvenile, 602099 (3), Autosomal<br>recessive; Charcot-Marie-Tooth disease, axonal, type 2X, 616668 (3),<br>Autosomal recessive; Spastic paraparesis 11, autosomal recessive,<br>604360 (3), Autosomal recessive                    |
| <i>SPG21</i>   | 608181 | Mast syndrome, 248900 (3), Autosomal recessive  |
| <i>SPG7</i>    | 602783 | Spastic paraparesis 7, autosomal recessive, 607259 (3), Autosomal<br>recessive, Autosomal dominant  |
| <i>SPINK1</i>  | 167790 | {Fibrocalculus pancreatic diabetes, susceptibility to}, 608189 (3),<br>Autosomal recessive, Autosomal dominant; Pancreatitis, hereditary,<br>167800 (3), Autosomal dominant; Tropical calcific pancreatitis, 608189<br>(3), Autosomal recessive, Autosomal dominant |
| <i>SPINK5</i>  | 605010 | Netherton syndrome, 256500 (3), Autosomal recessive   |
| <i>SPINT2</i>  | 605124 | Diarrhea 3, secretory sodium, congenital, syndromic, 270420 (3),<br>Autosomal recessive   |
| <i>SPR</i>     | 182125 | Dystonia, dopa-responsive, due to sepiapterin reductase deficiency,<br>612716 (3), ?Autosomal dominant, Autosomal recessive   |
| <i>SPRED1</i>  | 609291 | Legius syndrome, 611431 (3), Autosomal dominant   |
| <i>SPRTN</i>   | 616086 | Ruijs-Aalfs syndrome, 616200 (3), Autosomal recessive   |
| <i>SPRY2</i>   | 602466 | {?IgA nephropathy, susceptibility to}, 616818 (3), Autosomal<br>dominant  |
| <i>SPRY4</i>   | 607984 | Hypogonadotropic hypogonadism 17 with or without anosmia, 615266<br>(3), Autosomal dominant   |
| <i>SPTA1</i>   | 182860 | Elliptocytosis-2, 130600 (3), Autosomal dominant; Pyropoikilocytosis,<br>266140 (3), Autosomal recessive; Spherocytosis, type 3, 270970 (3),<br>Autosomal recessive   |
| <i>SPTAN1</i>  | 182810 | Epileptic encephalopathy, early infantile, 5, 613477 (3), Autosomal<br>dominant   |
| <i>SPTB</i>    | 182870 | Anemia, neonatal hemolytic, fatal or near-fatal, 617948 (3);<br>Elliptocytosis-3, 617948 (3); Spherocytosis, type 2, 616649 (3),<br>Autosomal dominant  |
| <i>SPTLC1</i>  | 605712 | Neuropathy, hereditary sensory and autonomic, type IA, 162400 (3),<br>Autosomal dominant  |

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| <i>SPTLC2</i> | 605713 | Neuropathy, hereditary sensory and autonomic, type IC, 613640 (3), Autosomal dominant   |
| <i>SRA1</i>   | 603819 | No OMIM phenotype   |
| <i>SRC</i>    | 190090 | Colon cancer, advanced, somatic, 114500 (3); ?Thrombocytopenia 6, 616937 (3), Autosomal dominant  |
| <i>SRCAP</i>  | 611421 | Floating-Harbor syndrome, 136140 (3), Autosomal dominant  |
| <i>SRD5A2</i> | 607306 | Pseudovaginal perineoscrotal hypospadias, 264600 (3), Autosomal recessive   |
| <i>SRD5A3</i> | 611715 | Congenital disorder of glycosylation, type Iq, 612379 (3), Autosomal recessive; Kahrizi syndrome, 612713 (3), Autosomal recessive   |
| <i>SRGAP1</i> | 606523 | {Thyroid cancer, nonmedullary, 2}, 188470 (3), Autosomal dominant   |
| <i>SRP72</i>  | 602122 | Bone marrow failure syndrome 1, 614675 (3), Autosomal dominant  |
| <i>SRPX2</i>  | 300642 | ?Rolandic epilepsy, mental retardation, and speech dyspraxia, 300643 (3)  |
| <i>SRY</i>    | 480000 | 46XX sex reversal 1, 400045 (3); 46XY sex reversal 1, 400044 (3)  |
| <i>SSX1</i>   | 312820 | ?Sarcoma, synovial, 300813 (3)  |
| <i>SSX2</i>   | 300192 | ?Sarcoma, synovial, 300813 (3)  |
| <i>STAC3</i>  | 615521 | Native American myopathy, 255995 (3), Autosomal recessive   |
| <i>STAR</i>   | 600617 | Lipoid adrenal hyperplasia, 201710 (3), Autosomal recessive   |
|               |        | Immunodeficiency 31A, mycobacteriosis, autosomal dominant, 614892 (3), Autosomal dominant; Immunodeficiency 31B, mycobacterial and viral infections, autosomal recessive, 613796 (3), Autosomal recessive; Immunodeficiency 31C, autosomal dominant, 614162 (3), Autosomal dominant |
| <i>STAT1</i>  | 600555 |   |
| <i>STAT2</i>  | 600556 | Immunodeficiency 44, 616636 (3), Autosomal recessive  |
| <i>STAT4</i>  | 600558 | {Systemic lupus erythematosus, susceptibility to, 11}, 612253 (3)   |
| <i>STAT5B</i> | 604260 | Growth hormone insensitivity with immunodeficiency, 245590 (3); Leukemia, acute promyelocytic, somatic, 102578 (3)  |
| <i>STIL</i>   | 181590 | Microcephaly 7, primary, autosomal recessive, 612703 (3), Autosomal recessive   |
| <i>STIM1</i>  | 605921 | Immunodeficiency 10, 612783 (3), Autosomal recessive; Myopathy, tubular aggregate, 1, 160565 (3), Autosomal dominant; Stormorken syndrome, 185070 (3), Autosomal dominant   |
| <i>STK11</i>  | 602216 | Melanoma, malignant, somatic (3); Pancreatic cancer, 260350 (3), Autosomal dominant, Somatic mutation, Multifactorial; Peutz-Jeghers syndrome, 175200 (3), Autosomal dominant; Testicular tumor, somatic, 273300 (3)  |
| <i>STK4</i>   | 604965 | T-cell immunodeficiency, recurrent infections, autoimmunity, and cardiac malformations, 614868 (3)  |
| <i>STN1</i>   | 613128 | Cerebroretinal microangiopathy with calcifications and cysts 2, 617341 (3), Autosomal recessive   |
| <i>STOM</i>   | 133090 | No OMIM phenotype   |
| <i>STOX1</i>  | 609397 | Preeclampsia/eclampsia 4, 609404 (3)  |

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| <i>STRA6</i>  | 610745 | Microphthalmia, isolated, with coloboma 8, 601186 (3), Autosomal recessive; Microphthalmia, syndromic 9, 601186 (3), Autosomal recessive   |
| <i>STRC</i>   | 606440 | Deafness, autosomal recessive 16, 603720 (3), Autosomal recessive  |
| <i>STS</i>    | 300747 | Ichthyosis, X-linked, 308100 (3), X-linked recessive   |
| <i>STT3A</i>  | 601134 | ?Congenital disorder of glycosylation, type Iw, 615596 (3), Autosomal recessive  |
| <i>STT3B</i>  | 608605 | ?Congenital disorder of glycosylation, type Ix, 615597 (3), Autosomal recessive  |
| <i>STUB1</i>  | 607207 | Spinocerebellar ataxia, autosomal recessive 16, 615768 (3), Autosomal recessive  |
| <i>STX11</i>  | 605014 | Hemophagocytic lymphohistiocytosis, familial, 4, 603552 (3), Autosomal recessive   |
| <i>STX16</i>  | 603666 | Pseudohypoparathyroidism, type IB, 603233 (3), Autosomal dominant  |
| <i>STX1B</i>  | 601485 | Generalized epilepsy with febrile seizures plus, type 9, 616172 (3), Autosomal dominant  |
| <i>STXBP1</i> | 602926 | Epileptic encephalopathy, early infantile, 4, 612164 (3), Autosomal dominant   |
| <i>STXBP2</i> | 601717 | Hemophagocytic lymphohistiocytosis, familial, 5, 613101 (3)  |
| <i>SUCLA2</i> | 603921 | Mitochondrial DNA depletion syndrome 5 (encephalomyopathic with or without methylmalonic aciduria), 612073 (3), Autosomal recessive  |
| <i>SUCLG1</i> | 611224 | Mitochondrial DNA depletion syndrome 9 (encephalomyopathic type with methylmalonic aciduria), 245400 (3), Autosomal recessive  |
| <i>SUFU</i>   | 607035 | Basal cell nevus syndrome, 109400 (3), Autosomal dominant; Joubert syndrome 32, 617757 (3), Autosomal recessive; Medulloblastoma, desmoplastic, 155255 (3), Autosomal recessive, Autosomal dominant; {Meningioma, familial, susceptibility to}, 607174 (3), Autosomal dominant |
| <i>SUGCT</i>  | 609187 | Glutaric aciduria III, 231690 (3), Autosomal recessive   |
| <i>SUMF1</i>  | 607939 | Multiple sulfatase deficiency, 272200 (3), Autosomal recessive   |
| <i>SUMO1</i>  | 601912 | ?Orofacial cleft 10, 613705 (3), Isolated cases  |
| <i>SUMO4</i>  | 608829 | {Diabetes mellitus, insulin-dependent, 5}, 600320 (3)  |
| <i>SUN5</i>   | 613942 | Spermatogenic failure 16, 617187 (3), Autosomal recessive  |
| <i>SURF1</i>  | 185620 | Charcot-Marie-Tooth disease, type 4K, 616684 (3), Autosomal recessive; Leigh syndrome, due to COX IV deficiency, 256000 (3), Autosomal recessive, Mitochondrial  |
| <i>SYCE1</i>  | 611486 | ?Premature ovarian failure 12, 616947 (3), Autosomal recessive; ?Spermatogenic failure 15, 616950 (3), Autosomal recessive   |
| <i>SYN1</i>   | 313440 | Epilepsy, X-linked, with variable learning disabilities and behavior disorders, 300491 (3), X-linked recessive, X-linked dominant  |
| <i>SYN2</i>   | 600755 | {Schizophrenia, susceptibility to}, 181500 (3), Autosomal dominant   |
| <i>SYNE1</i>  | 608441 | Emery-Dreifuss muscular dystrophy 4, autosomal dominant, 612998 (3), Autosomal dominant; Spinocerebellar ataxia, autosomal recessive 8, 610743 (3), Autosomal recessive  |

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| <i>SYNE2</i>   | 608442 | Emery-Dreifuss muscular dystrophy 5, autosomal dominant, 612999 (3), Autosomal dominant  |
| <i>SYNE4</i>   | 615535 | Deafness, autosomal recessive 76, 615540 (3), Autosomal recessive  |
| <i>SYNGAP1</i> | 603384 | Mental retardation, autosomal dominant 5, 612621 (3), Autosomal dominant   |
| <i>SYNJ1</i>   | 604297 | Epileptic encephalopathy, early infantile, 53, 617389 (3), Autosomal recessive; Parkinson disease 20, early-onset, 615530 (3), Autosomal recessive                       |
| <i>SYP</i>     | 313475 | Mental retardation, X-linked 96, 300802 (3), X-linked dominant   |
| <i>SZT2</i>    | 615463 | Epileptic encephalopathy, early infantile, 18, 615476 (3), Autosomal recessive   |
| <i>TAC3</i>    | 162330 | Hypogonadotropic hypogonadism 10 with or without anosmia, 614839 (3), Autosomal recessive  |
| <i>TACO1</i>   | 612958 | Mitochondrial complex IV deficiency, 220110 (3), Autosomal recessive, Mitochondrial  |
| <i>TACR3</i>   | 162332 | Hypogonadotropic hypogonadism 11 with or without anosmia, 614840 (3), Autosomal recessive  |
| <i>TACSTD2</i> | 137290 | Corneal dystrophy, gelatinous drop-like, 204870 (3), Autosomal recessive   |
| <i>TAF1</i>    | 313650 | Dystonia-Parkinsonism, X-linked, 314250 (3), X-linked recessive; Mental retardation, X-linked, syndromic 33, 300966 (3), X-linked recessive                              |
| <i>TAF15</i>   | 601574 | Chondrosarcoma, extraskeletal myxoid, 612237 (1)   |
| <i>TAF2</i>    | 604912 | Mental retardation, autosomal recessive 40, 615599 (3), Autosomal recessive  |
| <i>TAF4B</i>   | 601689 | ?Spermatogenic failure 13, 615841 (3), Autosomal recessive   |
| <i>TAL1</i>    | 187040 | Leukemia, T-cell acute lymphocytic, somatic, 613065 (3)  |
| <i>TAL2</i>    | 186855 | Leukemia, T-cell acute lymphocytic, somatic, 613065 (3)  |
| <i>TALDO1</i>  | 602063 | Transaldolase deficiency, 606003 (3), Autosomal recessive  |
| <i>TANGO2</i>  | 616830 | Metabolic encephalomyopathic crises, recurrent, with rhabdomyolysis, cardiac arrhythmias, and neurodegeneration, 616878 (3), Autosomal recessive                         |
| <i>TAP1</i>    | 170260 | Bare lymphocyte syndrome, type I, 604571 (3), Autosomal recessive  |
| <i>TAP2</i>    | 170261 | Bare lymphocyte syndrome, type I, due to TAP2 deficiency, 604571 (3), Autosomal recessive; Wegener-like granulomatosis (3)   |
| <i>TAPBP</i>   | 601962 | Bare lymphocyte syndrome, type I, 604571 (3), Autosomal recessive  |
| <i>TAPT1</i>   | 612758 | Osteochondrodysplasia, complex lethal, Symoens-Barnes-Gistelinck type, 616897 (3), Autosomal recessive   |
| <i>TARDBP</i>  | 605078 | Amyotrophic lateral sclerosis 10, with or without FTD, 612069 (3), Autosomal dominant; Frontotemporal lobar degeneration, TARDBP-related, 612069 (3), Autosomal dominant |
| <i>TARS2</i>   | 612805 | ?Combined oxidative phosphorylation deficiency 21, 615918 (3), Autosomal recessive   |
| <i>TAS2R16</i> | 604867 | [Beta-glycopyranoside tasting], (3) {Alcohol dependence, susceptibility to}, 617956 (3)  |

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| <i>TAS2R38</i> | 607751 | [Phenylthiocarbamide tasting], 171200 (3), Autosomal dominant   |
| <i>TAT</i>     | 613018 | Tyrosinemia, type II, 276600 (3), Autosomal recessive   |
| <i>TAZ</i>     | 300394 | Barth syndrome, 302060 (3), X-linked recessive  |
| <i>TBC1D20</i> | 611663 | Warburg micro syndrome 4, 615663 (3), Autosomal recessive<br>DOORS syndrome, 220500 (3), Autosomal recessive; Deafness ,<br>autosomal recessive 86, 614617 (3), Autosomal recessive; Deafness,<br>autosomal dominant 65, 616044 (3), Autosomal dominant; Epileptic<br>encephalopathy, early infantile, 16, 615338 (3), Autosomal recessive;<br>Myoclonic epilepsy, infantile, familial, 605021 (3), Autosomal recessive |
| <i>TBC1D4</i>  | 612465 | {Diabetes mellitus, noninsulin-dependent, 5}, 616087 (3)  |
| <i>TBCD</i>    | 604649 | Encephalopathy, progressive, early-onset, with brain atrophy and thin<br>corpus callosum, 617193 (3), Autosomal recessive   |
| <i>TBCE</i>    | 604934 | Encephalopathy, progressive, with amyotrophy and optic atrophy,<br>617207 (3), Autosomal recessive; Hypoparathyroidism-retardation-<br>dysmorphism syndrome, 241410 (3), Autosomal recessive; Kenny-<br>Caffey syndrome, type 1, 244460 (3), Autosomal recessive  |
| <i>TBCK</i>    | 616899 | Hypotonia, infantile, with psychomotor retardation and characteristic<br>facies 3, 616900 (3), Autosomal recessive  |
| <i>TBK1</i>    | 604834 | {Encephalopathy, acute, infection-induced (herpes-specific),<br>susceptibility to, 8}, 617900 (3), Autosomal dominant; Frontotemporal<br>dementia and/or amyotrophic lateral sclerosis 4, 616439 (3),<br>Autosomal dominant   |
| <i>TBL1XR1</i> | 608628 | Mental retardation, autosomal dominant 41, 616944 (3), Autosomal<br>dominant; Pierpont syndrome, 602342 (3), Autosomal dominant   |
| <i>TBP</i>     | 600075 | {Parkinson disease, susceptibility to}, 168600 (3), Isolated cases,<br>Multifactorial; Spinocerebellar ataxia 17, 607136 (3), Autosomal<br>dominant   |
| <i>TBX1</i>    | 602054 | Conotruncal anomaly face syndrome, 217095 (3); DiGeorge syndrome,<br>188400 (3), Autosomal dominant; Tetralogy of Fallot, 187500 (3),<br>Autosomal dominant; Velocardiofacial syndrome, 192430 (3),<br>Autosomal dominant   |
| <i>TBX18</i>   | 604613 | Congenital anomalies of kidney and urinary tract 2, 143400 (3),<br>Autosomal dominant   |
| <i>TBX19</i>   | 604614 | Adrenocorticotropic hormone deficiency, 201400 (3), Autosomal<br>recessive  |
| <i>TBX20</i>   | 606061 | Atrial septal defect 4, 611363 (3)  |
| <i>TBX21</i>   | 604895 | Asthma and nasal polyps, 208550 (3), Autosomal recessive; {Asthma,<br>aspirin-induced, susceptibility to}, 208550 (3), Autosomal recessive  |
| <i>TBX22</i>   | 300307 | ?Abruzzo-Erickson syndrome, 302905 (3), X-linked; Cleft palate with<br>ankyloglossia, 303400 (3), X-linked  |
| <i>TBX3</i>    | 601621 | Ulnar-mammary syndrome, 181450 (3), Autosomal dominant  |
| <i>TBX4</i>    | 601719 | Ischiocoxopodopatellar syndrome, 147891 (3), Autosomal dominant   |
| <i>TBX5</i>    | 601620 | Holt-Oram syndrome, 142900 (3), Autosomal dominant  |
| <i>TBX6</i>    | 602427 | Spondylocostal dysostosis 5, 122600 (3), Autosomal recessive,<br>Autosomal dominant   |

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| <i>TBXA2R</i>   | 188070 | {Bleeding disorder, platelet-type, 13, susceptibility to}, 614009 (3), Autosomal dominant   |
| <i>TBXAS1</i>   | 274180 | Ghosal hematodiaphyseal syndrome, 231095 (3), Autosomal recessive; ?Thromboxane synthase deficiency, 614158 (1), Autosomal dominant                     |
| <i>TBXT (T)</i> | 601397 | {Neural tube defects, susceptibility to}, 182940 (3), Autosomal dominant; Sacral agenesis with vertebral anomalies, 615709 (3), Autosomal recessive     |
| <i>TCAP</i>     | 604488 | Cardiomyopathy, hypertrophic, 25, 607487 (3), Autosomal dominant; Muscular dystrophy, limb-girdle, type 2G, 601954 (3), Autosomal recessive             |
| <i>TCHH</i>     | 190370 | ?Uncombable hair syndrome 3, 617252 (3), Autosomal recessive  |
| <i>TCIRG1</i>   | 604592 | Osteopetrosis, autosomal recessive 1, 259700 (3), Autosomal recessive   |
| <i>TCN2</i>     | 613441 | Transcobalamin II deficiency, 275350 (3), Autosomal recessive   |
| <i>TCOF1</i>    | 606847 | Treacher Collins syndrome 1, 154500 (3), Autosomal dominant   |
| <i>TCTEX1D2</i> | 617353 | Short-rib thoracic dysplasia 17 with or without polydactyly, 617405 (3), Autosomal recessive  |
| <i>TCTN1</i>    | 609863 | Joubert syndrome 13, 614173 (3), Autosomal recessive  |
| <i>TCTN2</i>    | 613846 | Joubert syndrome 24, 616654 (3), Autosomal recessive; ?Meckel syndrome 8, 613885 (3), Autosomal recessive   |
| <i>TCTN3</i>    | 613847 | Joubert syndrome 18, 614815 (3), Autosomal recessive; Orofaciodigital syndrome IV, 258860 (3), Autosomal recessive                                      |
| <i>TDP1</i>     | 607198 | Spinocerebellar ataxia, autosomal recessive with axonal neuropathy, 607250 (3)  |
| <i>TDP2</i>     | 605764 | Spinocerebellar ataxia, autosomal recessive 23, 616949 (3), Autosomal recessive   |
| <i>TDRD7</i>    | 611258 | Cataract 36, 613887 (3), Autosomal recessive  |
| <i>TEAD1</i>    | 189967 | Sveinsson chorioretinal atrophy, 108985 (3), Autosomal dominant   |
| <i>TEC</i>      | 600583 | No OMIM phenotype   |
| <i>TECPR2</i>   | 615000 | Spastic paraparesis 49, autosomal recessive, 615031 (3), Autosomal recessive  |
| <i>TECR</i>     | 610057 | Mental retardation, autosomal recessive 14, 614020 (3), Autosomal recessive   |
| <i>TECTA</i>    | 602574 | Deafness, autosomal dominant 8/12, 601543 (3), Autosomal dominant; Deafness, autosomal recessive 21, 603629 (3), Autosomal recessive                    |
| <i>TEK</i>      | 600221 | Glaucoma 3, primary congenital, E, 617272 (3), Autosomal dominant; Venous malformations, multiple cutaneous and mucosal, 600195 (3), Autosomal dominant |
| <i>TELO2</i>    | 611140 | You-Hoover-Fong syndrome, 616954 (3), Autosomal recessive   |
| <i>TENM3</i>    | 610083 | Microphthalmia, isolated, with coloboma 9, 615145 (3), Autosomal recessive  |
| <i>TENM4</i>    | 610084 | Essential tremor, hereditary, 5, 616736 (3), Autosomal dominant   |

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| <i>TERT</i>   | 187270 | {Dyskeratosis congenita, autosomal dominant 2}, 613989 (3), Autosomal recessive, Autosomal dominant; {Dyskeratosis congenita, autosomal recessive 4}, 613989 (3), Autosomal recessive, Autosomal dominant; {Leukemia, acute myeloid}, 601626 (3), Autosomal dominant; {Melanoma, cutaneous malignant, 9}, 615134 (3); {Pulmonary fibrosis and/or bone marrow failure, telomere-related, 1}, 614742 (3), Autosomal dominant  |
| <i>TET2</i>   | 612839 | Myelodysplastic syndrome, somatic, 614286 (3)   |
| <i>TEX11</i>  | 300311 | Spermatogenic failure, X-linked, 2, 309120 (3), X-linked recessive  |
| <i>TF</i>     | 190000 | Atransferrinemia, 209300 (3), Autosomal recessive   |
| <i>TFAM</i>   | 600438 | ?Mitochondrial DNA depletion syndrome 15 (hepatocerebral type), 617156 (3), Autosomal recessive   |
| <i>TFAP2A</i> | 107580 | Branchiooculofacial syndrome, 113620 (3), Autosomal dominant  |
| <i>TFAP2B</i> | 601601 | Char syndrome, 169100 (3), Autosomal dominant; Patent ductus arteriosus 2, 617035 (3), Autosomal dominant   |
| <i>TFE3</i>   | 314310 | Renal cell carcinoma, papillary, 1, 300854 (3)  |
| <i>TFG</i>    | 602498 | Hereditary motor and sensory neuropathy, Okinawa type, 604484 (3), Autosomal dominant; ?Spastic paraplegia 57, autosomal recessive, 615658 (3), Autosomal recessive   |
| <i>TFR2</i>   | 604720 | Hemochromatosis, type 3, 604250 (3), Autosomal recessive  |
| <i>TFRC</i>   | 190010 | Immunodeficiency 46, 616740 (3), Autosomal recessive  |
| <i>TG</i>     | 188450 | {Autoimmune thyroid disease, susceptibility to, 3}, 608175 (3); Thyroid dyshormonogenesis 3, 274700 (3), Autosomal recessive  |
| <i>TGDS</i>   | 616146 | Catel-Manzke syndrome, 616145 (3), Autosomal recessive  |
| <i>TGFB1</i>  | 190180 | Camurati-Engelmann disease, 131300 (3), Autosomal dominant; {Cystic fibrosis lung disease, modifier of}, 219700 (3), Autosomal recessive  |
| <i>TGFB2</i>  | 190220 | Loeys-Dietz syndrome 4, 614816 (3), Autosomal dominant  |
| <i>TGFB3</i>  | 190230 | Arrhythmogenic right ventricular dysplasia 1, 107970 (3), Autosomal dominant; Loeys-Dietz syndrome 5, 615582 (3), Autosomal dominant  |
| <i>TGFBI</i>  | 601692 | Corneal dystrophy, Avellino type, 607541 (3), Autosomal dominant; Corneal dystrophy, Groenouw type I, 121900 (3), Autosomal dominant; Corneal dystrophy, Reis-Bucklers type, 608470 (3); Corneal dystrophy, Thiel-Behnke type, 602082 (3), Autosomal dominant; Corneal dystrophy, epithelial basement membrane, 121820 (3), Autosomal dominant; Corneal dystrophy, lattice type I, 122200 (3), Autosomal dominant; Corneal dystrophy, lattice type IIIA, 608471 (3), Autosomal dominant |
| <i>TGFBR1</i> | 190181 | Loeys-Dietz syndrome 1, 609192 (3), Autosomal dominant; {Multiple self-healing squamous epithelioma, susceptibility to}, 132800 (3), Autosomal dominant   |
| <i>TGFBR2</i> | 190182 | Colorectal cancer, hereditary nonpolyposis, type 6, 614331 (3); Esophageal cancer, somatic, 133239 (3); Loeys-Dietz syndrome 2, 610168 (3), Autosomal dominant  |
| <i>TGM1</i>   | 190195 | Ichthyosis, congenital, autosomal recessive 1, 242300 (3), Autosomal recessive  |

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| <i>TGM3</i>   | 600238 | ?Uncombable hair syndrome 2, 617251 (3), Autosomal recessive   |
| <i>TGM5</i>   | 603805 | Peeling skin syndrome 2, 609796 (3), Autosomal recessive   |
| <i>TGM6</i>   | 613900 | Spinocerebellar ataxia 35, 613908 (3), Autosomal dominant  |
| <i>TH</i>     | 191290 | Segawa syndrome, recessive, 605407 (3), Autosomal recessive  |
| <i>THAP1</i>  | 609520 | Dystonia 6, torsion, 602629 (3), Autosomal dominant  |
| <i>THBD</i>   | 188040 | {Hemolytic uremic syndrome, atypical, susceptibility to, 6}, 612926 (3),<br>Autosomal dominant; Thrombophilia due to thrombomodulin defect,<br>614486 (3)  |
| <i>THBS2</i>  | 188061 | {Lumbar disc herniation, susceptibility to}, 603932 (3)  |
| <i>THOC2</i>  | 300395 | Mental retardation, X-linked 12/35, 300957 (3), X-linked recessive   |
| <i>THOC6</i>  | 615403 | Beaulieu-Boycott-Innes syndrome, 613680 (3), Autosomal recessive   |
| <i>THPO</i>   | 600044 | Thrombocythemia 1, 187950 (3), Autosomal dominant  |
| <i>THRA</i>   | 190120 | Hypothyroidism, congenital, nongoitrous, 6, 614450 (3), Autosomal<br>dominant  |
| <i>TIA1</i>   | 603518 | Welander distal myopathy, 604454 (3), Autosomal recessive,<br>Autosomal dominant   |
| <i>TICAM1</i> | 607601 | {Encephalopathy, acute, infection-induced (herpes-specific),<br>susceptibility to, 6}, 614850 (3), Autosomal recessive, Autosomal<br>dominant  |
| <i>TIMM8A</i> | 300356 | Mohr-Tranebjærg syndrome, 304700 (3), X-linked recessive   |
| <i>TIMP3</i>  | 188826 | Sorsby fundus dystrophy, 136900 (3), Autosomal dominant  |
| <i>TINF2</i>  | 604319 | Dyskeratosis congenita, autosomal dominant 3, 613990 (3), Autosomal<br>dominant; Revesz syndrome, 268130 (3), Autosomal dominant   |
| <i>TIRAP</i>  | 606252 | {Bacteremia, protection against}, 614382 (3); {Malaria, protection<br>against}, 611162 (3); {Pneumococcal disease, invasive, protection<br>against}, 610799 (3); {Tuberculosis, protection against}, 607948 (3)                          |
| <i>TJP2</i>   | 607709 | Cholestasis, progressive familial intrahepatic 4, 615878 (3), Autosomal<br>recessive; Hypercholanemia, familial, 607748 (3)  |
| <i>TKT</i>    | 606781 | Short stature, developmental delay, and congenital heart defects,<br>617044 (3), Autosomal recessive   |
| <i>TLE6</i>   | 612399 | Preimplantation embryonic lethality, 616814 (3), Autosomal recessive   |
| <i>TLL1</i>   | 606742 | Atrial septal defect 6, 613087 (3), Autosomal dominant   |
| <i>TLR1</i>   | 601194 | {Leprosy, protection against}, 613223 (3); {Leprosy, susceptibility to,<br>5}, 613223 (3)  |
| <i>TLR2</i>   | 603028 | {Colorectal cancer, susceptibility to}, 114500 (3), Autosomal dominant;<br>{Leprosy, susceptibility to}, 246300 (3), Autosomal dominant;<br>{Mycobacterium tuberculosis, susceptibility to}, 607948 (3)                                  |
| <i>TLR3</i>   | 603029 | {Encephalopathy, acute, infection-induced (herpes-specific),<br>susceptibility to, 2}, 613002 (3), Autosomal recessive, Autosomal<br>dominant; {HIV1 infection, resistance to}, 609423 (3)   |
| <i>TLR4</i>   | 603030 | No OMIM phenotype  |
| <i>TLR5</i>   | 603031 | {Legionnaire disease, susceptibility to}, 608556 (3); {Melioidosis,<br>susceptibility to}, 615557 (3); {Systemic lupus erythematosus,<br>resistance to}, 601744 (3); {Systemic lupus erythematosus,<br>susceptibility to, 1}, 601744 (3) |

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| <i>TM4SF20</i>   | 615404 | {Specific language impairment 5}, 615432 (3), Autosomal dominant   |
| <i>TMC6</i>      | 605828 | Epidermodyplasia verruciformis, 226400 (3), Autosomal recessive  |
| <i>TMC8</i>      | 605829 | Epidermodyplasia verruciformis, 226400 (3), Autosomal recessive  |
| <i>TMEM126A</i>  | 612988 | Optic atrophy 7, 612989 (3), Autosomal recessive   |
| <i>TMEM138</i>   | 614459 | Joubert syndrome 16, 614465 (3), Autosomal recessive   |
| <i>TMEM165</i>   | 614726 | Congenital disorder of glycosylation, type IIk, 614727 (3), Autosomal recessive  |
| <i>TMEM173</i>   | 612374 | STING-associated vasculopathy, infantile-onset, 615934 (3), Autosomal dominant   |
| <i>TMEM199</i>   | 616815 | Congenital disorder of glycosylation, type IIP, 616829 (3), Autosomal recessive  |
| <i>TMEM216</i>   | 613277 | Joubert syndrome 2, 608091 (3), Autosomal recessive; Meckel syndrome 2, 603194 (3), Autosomal recessive  |
| <i>TMEM231</i>   | 614949 | Joubert syndrome 20, 614970 (3), Autosomal recessive; Meckel syndrome 11, 615397 (3), Autosomal recessive  |
| <i>TMEM237</i>   | 614423 | Joubert syndrome 14, 614424 (3), Autosomal recessive   |
| <i>TMEM240</i>   | 616101 | Spinocerebellar ataxia 21, 607454 (3), Autosomal dominant  |
| <i>TMEM38B</i>   | 611236 | Osteogenesis imperfecta, type XIV, 615066 (3)  |
| <i>TMEM43</i>    | 612048 | Arrhythmogenic right ventricular dysplasia 5, 604400 (3), Autosomal dominant; Emery-Dreifuss muscular dystrophy 7, AD, 614302 (3), Autosomal dominant  |
| <i>TMEM67</i>    | 609884 | {Bardet-Biedl syndrome 14, modifier of}, 615991 (3), Autosomal recessive; COACH syndrome, 216360 (3), Autosomal recessive; Joubert syndrome 6, 610688 (3), Autosomal recessive; Meckel syndrome 3, 607361 (3), Autosomal recessive; Nephronophthisis 11, 613550 (3), Autosomal recessive   |
| <i>TMEM70</i>    | 612418 | Mitochondrial complex V (ATP synthase) deficiency, nuclear type 2, 614052 (3), Autosomal recessive   |
| <i>TMIE</i>      | 607237 | Deafness, autosomal recessive 6, 600971 (3), Autosomal recessive   |
| <i>TMLHE</i>     | 300777 | {Autism, susceptibility to, X-linked 6}, 300872 (3), X-linked recessive  |
| <i>TMPRSS15</i>  | 606635 | Enterokinase deficiency, 226200 (3), Autosomal recessive   |
| <i>TMPRSS6</i>   | 609862 | Iron-refractory iron deficiency anemia, 206200 (3), Autosomal recessive  |
| <i>TMTC3</i>     | 617218 | Lissencephaly 8, 617255 (3), Autosomal recessive   |
| <i>TNC</i>       | 187380 | Deafness, autosomal dominant 56, 615629 (3), Autosomal dominant<br>{Asthma, susceptibility to}, 600807 (3), Autosomal dominant;<br>{Dementia, vascular, susceptibility to} (3); {Malaria, cerebral,<br>susceptibility to}, 611162 (3); {Migraine without aura, susceptibility<br>to}, 157300 (3), Autosomal dominant; {Septic shock, susceptibility to}<br>(3) |
| <i>TNF</i>       | 191160 |  |
| <i>TNFAIP3</i>   | 191163 | Autoinflammatory syndrome, familial, Behcet-like, 616744 (3),<br>Autosomal dominant  |
| <i>TNFRSF10B</i> | 603612 | Squamous cell carcinoma, head and neck, 275355 (3), Autosomal recessive  |

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| <i>TNFRSF11A</i> | 603499 | Osteolysis, familial expansile, 174810 (3), Autosomal dominant; Osteopetrosis, autosomal recessive 7, 612301 (3); {Paget disease of bone 2, early-onset}, 602080 (3), Autosomal dominant  |
| <i>TNFRSF11B</i> | 602643 | Paget disease of bone 5, juvenile-onset, 239000 (3), Autosomal recessive  |
| <i>TNFRSF13B</i> | 604907 | Immunodeficiency, common variable, 2, 240500 (3), Autosomal recessive, Autosomal dominant; Immunoglobulin A deficiency 2, 609529 (3)  |
| <i>TNFRSF13C</i> | 606269 | Immunodeficiency, common variable, 4, 613494 (3), Autosomal recessive   |
| <i>TNFRSF1A</i>  | 191190 | {Multiple sclerosis, susceptibility to, 5}, 614810 (3); Periodic fever, familial, 142680 (3), Autosomal dominant  |
| <i>TNFRSF4</i>   | 600315 | ?Immunodeficiency 16, 615593 (3), Autosomal recessive   |
| <i>TNFSF11</i>   | 602642 | Osteopetrosis, autosomal recessive 2, 259710 (3), Autosomal recessive   |
| <i>TNFSF4</i>    | 603594 | {Myocardial infarction, susceptibility to}, 608446 (3)  |
| <i>TNIK</i>      | 610005 | Mental retardation, autosomal recessive 54, 617028 (3), Autosomal recessive   |
| <i>TNNC1</i>     | 191040 | Cardiomyopathy, dilated, 1Z, 611879 (3); Cardiomyopathy, hypertrophic, 13, 613243 (3), Autosomal dominant   |
| <i>TNNI2</i>     | 191043 | Arthrogryposis multiplex congenita, distal, type 2B, 601680 (3), Autosomal dominant   |
| <i>TNNI3</i>     | 191044 | Cardiomyopathy, dilated, 1FF, 613286 (3); ?Cardiomyopathy, dilated, 2A, 611880 (3), Autosomal recessive; Cardiomyopathy, familial restrictive, 1, 115210 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 7, 613690 (3), Autosomal dominant                       |
| <i>TNNI3K</i>    | 613932 | ?Cardiac conduction disease with or without dilated cardiomyopathy, 616117 (3), Autosomal dominant  |
| <i>TNNT1</i>     | 191041 | Nemaline myopathy 5, Amish type, 605355 (3), Autosomal recessive  |
| <i>TNNT2</i>     | 191045 | Cardiomyopathy, dilated, 1D, 601494 (3), Autosomal dominant; Cardiomyopathy, familial restrictive, 3, 612422 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 2, 115195 (3), Autosomal dominant; Left ventricular noncompaction 6, 601494 (3), Autosomal dominant |
| <i>TNXB</i>      | 600985 | Ehlers-Danlos syndrome, classic-like, 1, 606408 (3), Autosomal recessive; Vesicoureteral reflux 8, 615963 (3), Autosomal dominant   |
| <i>TOPORS</i>    | 609507 | Retinitis pigmentosa 31, 609923 (3)   |
| <i>TOR1A</i>     | 605204 | {Dystonia-1, modifier of} (3); Dystonia-1, torsion, 128100 (3), Autosomal dominant  |
| <i>TOR1AIP1</i>  | 614512 | ?Muscular dystrophy, limb-girdle, type 2Y, 617072 (3), Autosomal recessive  |

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| <i>TP53</i>     | 191170 | Adrenal cortical carcinoma, 202300 (3), Autosomal recessive; {Basal cell carcinoma 7}, 614740 (3); Breast cancer, 114480 (3), Autosomal dominant; Choroid plexus papilloma, 260500 (3), Autosomal dominant; Colorectal cancer, 114500 (3), Autosomal dominant; {Glioma susceptibility 1}, 137800 (3), Autosomal dominant, Somatic mutation; Hepatocellular carcinoma, 114550 (3), Somatic mutation; Li-Fraumeni syndrome, 151623 (3), Autosomal dominant; Nasopharyngeal carcinoma, 607107 (3); Osteosarcoma, 259500 (3), Autosomal recessive; Pancreatic cancer, 260350 (3), Autosomal dominant, Somatic mutation, Multifactorial |
| <i>TP63</i>     | 603273 | ADULT syndrome, 103285 (3), Autosomal dominant; Ectrodactyly, ectodermal dysplasia, and cleft lip/palate syndrome 3, 604292 (3), Autosomal dominant; Hay-Wells syndrome, 106260 (3), Autosomal dominant; Limb-mammary syndrome, 603543 (3), Autosomal dominant; Orofacial cleft 8, 129400 (3), Autosomal dominant; Rapp-Hodgkin syndrome, 129400 (3), Autosomal dominant; Split-hand/foot malformation 4, 605289 (3), Autosomal dominant   |
| <i>TPCN2</i>    | 612163 | [Skin/hair/eye pigmentation 10, blond/brown hair], 612267 (3)  |
| <i>TPH2</i>     | 607478 | {Attention deficit-hyperactivity disorder, susceptibility to, 7}, 613003 (3); {Unipolar depression, susceptibility to}, 608516 (3)   |
| <i>TPI1</i>     | 190450 | Hemolytic anemia due to triosephosphate isomerase deficiency, 615512 (3), Autosomal recessive  |
| <i>TPK1</i>     | 606370 | Thiamine metabolism dysfunction syndrome 5 (episodic encephalopathy type), 614458 (3), Autosomal recessive   |
| <i>TPM1</i>     | 191010 | Cardiomyopathy, dilated, 1Y, 611878 (3), Autosomal dominant; Cardiomyopathy, hypertrophic, 3, 115196 (3), Autosomal dominant; Left ventricular noncompaction 9, 611878 (3), Autosomal dominant   |
| <i>TPM2</i>     | 190990 | Arthrogryposis multiplex congenita, distal, type 1, 108120 (3), Autosomal dominant; Arthrogryposis, distal, type 2B, 601680 (3), Autosomal dominant; CAP myopathy 2, 609285 (3), Autosomal dominant; Nemaline myopathy 4, autosomal dominant, 609285 (3), Autosomal dominant   |
| <i>TPM3</i>     | 191030 | CAP myopathy 1, 609284 (3), Autosomal recessive, Autosomal dominant; Myopathy, congenital, with fiber-type disproportion, 255310 (3), Autosomal recessive, Autosomal dominant; Nemaline myopathy 1, autosomal dominant or recessive, 609284 (3), Autosomal recessive, Autosomal dominant   |
| <i>TPMT</i>     | 187680 | {Thiopurines, poor metabolism of, 1}, 610460 (3), Autosomal recessive  |
| <i>TPP1</i>     | 607998 | Ceroid lipofuscinosis, neuronal, 2, 204500 (3), Autosomal recessive; Spinocerebellar ataxia, autosomal recessive 7, 609270 (3), Autosomal recessive  |
| <i>TPRN</i>     | 613354 | Deafness, autosomal recessive 79, 613307 (3), Autosomal recessive  |
| <i>TRAF3IP1</i> | 607380 | Senior-Loken syndrome 9, 616629 (3), Autosomal recessive   |
| <i>TRAF3IP2</i> | 607043 | ?Candidiasis, familial, 8, 615527 (3), Autosomal recessive; {Psoriasis susceptibility 13}, 614070 (3)  |
| <i>TRAIP</i>    | 605958 | Seckel syndrome 9, 616777 (3), Autosomal recessive   |

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| <i>TRAPP11</i> | 614138 | Muscular dystrophy, limb-girdle, type 2S, 615356 (3), Autosomal recessive  |
| <i>TRAPP2</i>  | 300202 | Spondyloepiphyseal dysplasia tarda, 313400 (3), X-linked recessive   |
| <i>TRAPP9</i>  | 611966 | Mental retardation, autosomal recessive 13, 613192 (3), Autosomal recessive  |
| <i>TRDN</i>    | 603283 | Ventricular tachycardia, catecholaminergic polymorphic, 5, with or without muscle weakness, 615441 (3), Autosomal recessive  |
| <i>TREH</i>    | 275360 | Trehalase deficiency, 612119 (3), Autosomal recessive  |
| <i>TREM2</i>   | 605086 | Nasu-Hakola disease, 221770 (3), Autosomal recessive   |
|                |        | Aicardi-Goutieres syndrome 1, dominant and recessive, 225750 (3), Autosomal recessive, Autosomal dominant; Chilblain lupus, 610448 (3), Autosomal dominant; {Systemic lupus erythematosus, susceptibility to}, 152700 (3), Autosomal dominant; Vasculopathy, retinal, with cerebral leukodystrophy, 192315 (3), Autosomal dominant |
| <i>TRH</i>     | 613879 | Thyrotropin-releasing hormone deficiency, 275120 (1), Autosomal recessive  |
| <i>TRIM2</i>   | 614141 | Charcot-Marie-Tooth disease, type 2R, 615490 (3), Autosomal recessive  |
| <i>TRIM24</i>  | 603406 | No OMIM phenotype  |
|                |        | ?Bardet-Biedl syndrome 11, 615988 (3), Autosomal recessive;  |
| <i>TRIM32</i>  | 602290 | Muscular dystrophy, limb-girdle, type 2H, 254110 (3), Autosomal recessive  |
| <i>TRIM33</i>  | 605769 | No OMIM phenotype  |
| <i>TRIM44</i>  | 612298 | ?Aniridia 3, 617142 (3), Autosomal dominant  |
| <i>TRIO</i>    | 601893 | Mental retardation, autosomal dominant 44, 617061 (3), Autosomal dominant  |
| <i>TRIOBP</i>  | 609761 | Deafness, autosomal recessive 28, 609823 (3), Autosomal recessive  |
| <i>TRIP11</i>  | 604505 | Achondrogenesis, type IA, 200600 (3), Autosomal recessive  |
|                |        | ?Muscular dystrophy, congenital, Davignon-Chauveau type, 617066 (3), Autosomal recessive; Spinal muscular atrophy with congenital bone fractures 1, 616866 (3), Autosomal recessive  |
| <i>TRMT10A</i> | 616013 | Microcephaly, short stature, and impaired glucose metabolism 1, 616033 (3), Autosomal recessive  |
| <i>TRMT10C</i> | 615423 | Combined oxidative phosphorylation deficiency 30, 616974 (3), Autosomal recessive  |
| <i>TRMT5</i>   | 611023 | Combined oxidative phosphorylation deficiency 26, 616539 (3), Autosomal recessive  |
|                |        | {Deafness, mitochondrial, modifier of}, 580000 (3), Mitochondrial; Liver failure, transient infantile, 613070 (3), Autosomal recessive   |
|                |        | Retinitis pigmentosa and erythrocytic microcytosis, 616959 (3), Autosomal recessive; Sideroblastic anemia with B-cell immunodeficiency, periodic fevers, and developmental delay, 616084 (3), Autosomal recessive  |
| <i>TRPA1</i>   | 604775 | ?Episodic pain syndrome, familial, 1, 615040 (3), Autosomal dominant   |
| <i>TRPC3</i>   | 602345 | ?Spinocerebellar ataxia 41, 616410 (3), Autosomal dominant   |

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| <i>TRPC6</i>   | 603652 | Glomerulosclerosis, focal segmental, 2, 603965 (3)  |
| <i>TRPM1</i>   | 603576 | Night blindness, congenital stationary (complete), 1C, autosomal recessive, 613216 (3)  |
| <i>TRPM4</i>   | 606936 | Progressive familial heart block, type IB, 604559 (3), Autosomal dominant   |
| <i>TRPM6</i>   | 607009 | Hypomagnesemia 1, intestinal, 602014 (3), Autosomal recessive   |
| <i>TRPM7</i>   | 605692 | {Amyotrophic lateral sclerosis-parkinsonism/dementia complex, susceptibility to}, 105500 (3), Autosomal dominant  |
| <i>TRPV3</i>   | 607066 | Olmsted syndrome, 614594 (3), Autosomal dominant; ?Palmoplantar keratoderma, nonepidermolytic, focal 2, 616400 (3), Autosomal dominant<br>?Avascular necrosis of femoral head, primary, 2, 617383 (3), Autosomal dominant; Brachyolmia type 3, 113500 (3), Autosomal dominant; Digital arthropathy-brachydactyly, familial, 606835 (3), Autosomal dominant; Hereditary motor and sensory neuropathy, type IIc, 606071 (3), Autosomal dominant; Metatropic dysplasia, 156530 (3), Autosomal dominant; Parastremmatic dwarfism, 168400 (3), Autosomal dominant; SED, Maroteaux type, 184095 (3), Autosomal dominant; Scapuloperoneal spinal muscular atrophy, 181405 (3), Autosomal dominant; [Sodium serum level QTL 1], 613508 (3); Spinal muscular atrophy, distal, congenital nonprogressive, 600175 (3), Autosomal dominant; Spondylometaphyseal dysplasia, Kozlowski type, 184252 (3), Autosomal dominant |
| <i>TRPV4</i>   | 605427 | Focal cortical dysplasia, type II, somatic, 607341 (3); Lymphangioleiomyomatosis, 606690 (3); Tuberous sclerosis-1, 191100 (3), Autosomal dominant<br>?Focal cortical dysplasia, type II, somatic, 607341 (3); Lymphangioleiomyomatosis, somatic, 606690 (3); Tuberous sclerosis-2, 613254 (3), Autosomal dominant  |
| <i>TSEN15</i>  | 608756 | Pontocerebellar hypoplasia, type 2F, 617026 (3), Autosomal recessive  |
| <i>TSEN54</i>  | 608755 | Pontocerebellar hypoplasia type 2A, 277470 (3), Autosomal recessive; Pontocerebellar hypoplasia type 4, 225753 (3), Autosomal recessive; ?Pontocerebellar hypoplasia type 5, 610204 (3), Autosomal recessive  |
| <i>TSFM</i>    | 604723 | Combined oxidative phosphorylation deficiency 3, 610505 (3), Autosomal recessive  |
| <i>TSG101</i>  | 601387 | Breast cancer, somatic, 114480 (3)  |
| <i>TSHB</i>    | 188540 | Hypothyroidism, congenital, nongoitrous 4, 275100 (3), Autosomal recessive  |
| <i>TSHR</i>    | 603372 | Hyperthyroidism, familial gestational, 603373 (3); Hyperthyroidism, nonautoimmune, 609152 (3), Autosomal dominant, Isolated cases; Hypothyroidism, congenital, nongoitrous, 1, 275200 (3), Autosomal recessive; Thyroid adenoma, hyperfunctioning, somatic (3); Thyroid carcinoma with thyrotoxicosis (3)   |
| <i>TSHZ1</i>   | 614427 | Aural atresia, congenital, 607842 (3), Autosomal dominant   |
| <i>TSPAN12</i> | 613138 | Exudative vitreoretinopathy 5, 613310 (3), Autosomal dominant   |
| <i>TSPAN7</i>  | 300096 | Mental retardation, X-linked 58, 300210 (3), X-linked recessive   |

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| <i>TSPEAR</i> | 612920 | ?Deafness, autosomal recessive 98, 614861 (3), Autosomal recessive   |
| <i>TSPYL1</i> | 604714 | Sudden infant death with dysgenesis of the testes syndrome, 608800 (3), Autosomal recessive  |
| <i>TSR2</i>   | 300945 | ?Diamond-Blackfan anemia 14 with mandibulofacial dysostosis, 300946 (3), X-linked recessive  |
| <i>TTBK2</i>  | 611695 | Spinocerebellar ataxia 11, 604432 (3), Autosomal dominant  |
| <i>TTC19</i>  | 613814 | Mitochondrial complex III deficiency, nuclear type 2, 615157 (3), Autosomal recessive  |
| <i>TTC21B</i> | 612014 | Nephronophthisis 12, 613820 (3), Autosomal recessive, Autosomal dominant; Short-rib thoracic dysplasia 4 with or without polydactyly, 613819 (3), Autosomal recessive  |
| <i>TTC25</i>  | 617095 | Ciliary dyskinesia, primary, 35, 617092 (3), Autosomal recessive   |
| <i>TTC37</i>  | 614589 | Trichohepatoenteric syndrome 1, 222470 (3), Autosomal recessive  |
| <i>TTC7A</i>  | 609332 | Gastrointestinal defects and immunodeficiency syndrome, 243150 (3), Autosomal recessive  |
| <i>TTI2</i>   | 614426 | Mental retardation, autosomal recessive 39, 615541 (3), Autosomal recessive  |
| <i>TTLL5</i>  | 612268 | Cone-rod dystrophy 19, 615860 (3), Autosomal recessive   |
| <i>TTN</i>    | 188840 | Cardiomyopathy, dilated, 1G, 604145 (3); Cardiomyopathy, familial hypertrophic, 9, 613765 (3), Autosomal dominant; Muscular dystrophy, limb-girdle, type 2J, 608807 (3), Autosomal recessive; Myopathy, proximal, with early respiratory muscle involvement, 603689 (3); Salih myopathy, 611705 (3), Autosomal recessive; Tibial muscular dystrophy, tardive, 600334 (3), Autosomal dominant |
| <i>TTPA</i>   | 600415 | Ataxia with isolated vitamin E deficiency, 277460 (3), Autosomal recessive   |
| <i>TTR</i>    | 176300 | Amyloidosis, hereditary, transthyretin-related, 105210 (3), Autosomal dominant; Carpal tunnel syndrome, familial, 115430 (3), Autosomal dominant; [Dysttransthyretinemic hyperthyroxinemia], 145680 (3), Autosomal dominant  |
| <i>TUB</i>    | 601197 | ?Retinal dystrophy and obesity, 616188 (3), Autosomal recessive  |
| <i>TUBA1A</i> | 602529 | Lissencephaly 3, 611603 (3), Autosomal dominant  |
| <i>TUBA4A</i> | 191110 | Amyotrophic lateral sclerosis 22 with or without frontotemporal dementia, 616208 (3), Autosomal dominant   |
| <i>TUBA8</i>  | 605742 | Cortical dysplasia, complex, with other brain malformations 8, 613180 (3), Autosomal recessive   |
| <i>TUBB</i>   | 191130 | Cortical dysplasia, complex, with other brain malformations 6, 615771 (3), Autosomal dominant; Symmetric circumferential skin creases, congenital, 1, 156610 (3), Autosomal dominant   |
| <i>TUBB1</i>  | 612901 | Macrothrombocytopenia, autosomal dominant, TUBB1-related, 613112 (3), Autosomal dominant   |
| <i>TUBB2A</i> | 615101 | Cortical dysplasia, complex, with other brain malformations 5, 615763 (3), Autosomal dominant  |

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| <i>TUBB2B</i>  | 612850 | Cortical dysplasia, complex, with other brain malformations 7, 610031 (3), Autosomal dominant  |
| <i>TUBB3</i>   | 602661 | Cortical dysplasia, complex, with other brain malformations 1, 614039 (3), Autosomal dominant; Fibrosis of extraocular muscles, congenital, 3A, 600638 (3), Autosomal dominant   |
| <i>TUBB8</i>   | 616768 | Oocyte maturation defect 2, 616780 (3), Autosomal recessive, Autosomal dominant  |
| <i>TUBG1</i>   | 191135 | Cortical dysplasia, complex, with other brain malformations 4, 615412 (3), Autosomal dominant  |
| <i>TUBGCP4</i> | 609610 | Microcephaly and chorioretinopathy, autosomal recessive, 3, 616335 (3), Autosomal recessive  |
| <i>TUBGCP6</i> | 610053 | Microcephaly and chorioretinopathy, autosomal recessive, 1, 251270 (3), Autosomal recessive  |
| <i>TUFM</i>    | 602389 | Combined oxidative phosphorylation deficiency 4, 610678 (3), Autosomal recessive   |
| <i>TULP1</i>   | 602280 | Leber congenital amaurosis 15, 613843 (3), Autosomal recessive; Retinitis pigmentosa 14, 600132 (3), Autosomal recessive   |
| <i>TUSC3</i>   | 601385 | Mental retardation, autosomal recessive 7, 611093 (3), Autosomal recessive   |
| <i>TWIST1</i>  | 601622 | Craniosynostosis 1, 123100 (3), Autosomal dominant; Robinow-Sorauf syndrome, 180750 (3), Autosomal dominant; Saethre-Chotzen syndrome with or without eyelid anomalies, 101400 (3), Autosomal dominant; Sweeney-Cox syndrome, 617746 (3), Autosomal dominant   |
| <i>TWIST2</i>  | 607556 | Ablepharon-macrostomia syndrome, 200110 (3), Autosomal dominant; Barber-Say syndrome, 209885 (3), Autosomal dominant; Focal facial dermal dysplasia 3, Setleis type, 227260 (3), Autosomal recessive   |
| <i>TWNK</i>    | 606075 | Mitochondrial DNA depletion syndrome 7 (hepatocerebral type), 271245 (3), Autosomal recessive; Perrault syndrome 5, 616138 (3), Autosomal recessive; Progressive external ophthalmoplegia with mitochondrial DNA deletions, autosomal dominant 3, 609286 (3), Autosomal dominant   |
| <i>TXN2</i>    | 609063 | ?Combined oxidative phosphorylation deficiency 29, 616811 (3), Autosomal recessive   |
| <i>TXNL4A</i>  | 611595 | Burn-McKeown syndrome, 608572 (3), Autosomal recessive   |
| <i>TYMP</i>    | 131222 | Mitochondrial DNA depletion syndrome 1 (MNGIE type), 603041 (3), Autosomal recessive   |
| <i>TYR</i>     | 606933 | Albinism, oculocutaneous, type IA, 203100 (3), Autosomal recessive; Albinism, oculocutaneous, type IB, 606952 (3); {Melanoma, cutaneous malignant, susceptibility to, 8}, 601800 (3); [Skin/hair/eye pigmentation 3, blue/green eyes], 601800 (3); [Skin/hair/eye pigmentation 3, light/dark/freckling skin], 601800 (3); Waardenburg syndrome/albinism, digenic, 103470 (3), Autosomal dominant |
| <i>TYROBP</i>  | 604142 | Nasu-Hakola disease, 221770 (3), Autosomal recessive   |

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| <i>TYRP1</i>   | 115501 | Albinism, oculocutaneous, type III, 203290 (3), Autosomal recessive; [Skin/hair/eye pigmentation, variation in, 11 (Melanesian blond hair)], 612271 (3)   |
| <i>UBA1</i>    | 314370 | Spinal muscular atrophy, X-linked 2, infantile, 301830 (3), X-linked recessive  |
| <i>UBA5</i>    | 610552 | Epileptic encephalopathy, early infantile, 44, 617132 (3), Autosomal recessive; ?Spinocerebellar ataxia, autosomal recessive 24, 617133 (3), Autosomal recessive  |
| <i>UBB</i>     | 191339 | Cleft palate, isolated, 119540 (2), Autosomal dominant  |
| <i>UBE2A</i>   | 312180 | Mental retardation, X-linked syndromic, Nascimento-type, 300860 (3), X-linked recessive   |
| <i>UBE2T</i>   | 610538 | Fanconi anemia, complementation group T, 616435 (3), Autosomal recessive  |
| <i>UBQLN2</i>  | 300264 | Amyotrophic lateral sclerosis 15, with or without frontotemporal dementia, 300857 (3), X-linked dominant  |
| <i>UBR1</i>    | 605981 | Johanson-Blizzard syndrome, 243800 (3), Autosomal recessive   |
| <i>UCHL1</i>   | 191342 | {?Parkinson disease 5, susceptibility to}, 613643 (3); Spastic paraplegia 79, autosomal recessive, 615491 (3), Autosomal recessive  |
| <i>UCP1</i>    | 113730 | {Obesity, susceptibility to}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial   |
| <i>UCP2</i>    | 601693 | {Obesity, susceptibility to, BMIQ4}, 607447 (3)   |
| <i>UCP3</i>    | 602044 | {Obesity, severe, and type II diabetes}, 601665 (3), Autosomal recessive, Autosomal dominant, Multifactorial  |
| <i>UFSP2</i>   | 611482 | ?Hip dysplasia, Beukes type, 142669 (3), Autosomal dominant; ?Spondyloepimetaphyseal dysplasia, Di Rocco type, 617974 (3), Autosomal dominant   |
| <i>UGT1A1</i>  | 191740 | [Bilirubin, serum level of, QTL1], 601816 (3); Crigler-Najjar syndrome, type I, 218800 (3), Autosomal recessive; Crigler-Najjar syndrome, type II, 606785 (3), Autosomal recessive; [Gilbert syndrome], 143500 (3), Autosomal recessive; Hyperbilirubinemia, familial transient neonatal, 237900 (3), Autosomal recessive |
| <i>UGT2B17</i> | 601903 | {Bone mineral density QTL 12, osteoporosis}, 612560 (3)   |
| <i>UMOD</i>    | 191845 | Glomerulocystic kidney disease with hyperuricemia and isosthenuria, 609886 (3); Hyperuricemic nephropathy, familial juvenile 1, 162000 (3), Autosomal dominant; Medullary cystic kidney disease 2, 603860 (3)   |
| <i>UMPS</i>    | 613891 | Orotic aciduria, 258900 (3), Autosomal recessive  |
| <i>UNC119</i>  | 604011 | ?Cone-rod dystrophy (3); ?Immunodeficiency 13, 615518 (3), Autosomal dominant   |
| <i>UNC45B</i>  | 611220 | ?Cataract 43, 616279 (3), Autosomal dominant  |
| <i>UNC80</i>   | 612636 | Hypotonia, infantile, with psychomotor retardation and characteristic facies 2, 616801 (3), Autosomal recessive   |
| <i>UNC93B1</i> | 608204 | {Encephalopathy, acute, infection-induced (herpes-specific), susceptibility to, 1}, 610551 (3)  |

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| <i>UNG</i>    | 191525 | Immunodeficiency with hyper IgM, type 5, 608106 (3), Autosomal recessive   |
| <i>UPB1</i>   | 606673 | Beta-ureidopropionase deficiency, 613161 (3), Autosomal recessive  |
| <i>UPF3B</i>  | 300298 | Mental retardation, X-linked, syndromic 14, 300676 (3), X-linked recessive   |
| <i>UQCC2</i>  | 614461 | ?Mitochondrial complex III deficiency, nuclear type 7, 615824 (3), Autosomal recessive   |
| <i>UQCC3</i>  | 616097 | ?Mitochondrial complex III deficiency, nuclear type 9, 616111 (3), Autosomal recessive   |
| <i>UQCRB</i>  | 191330 | Mitochondrial complex III deficiency, nuclear type 3, 615158 (3), Autosomal recessive  |
| <i>UQCRC2</i> | 191329 | Mitochondrial complex III deficiency, nuclear type 5, 615160 (3), Autosomal recessive  |
| <i>UQCRCQ</i> | 612080 | Mitochondrial complex III deficiency, nuclear type 4, 615159 (3), Autosomal recessive  |
| <i>UROC1</i>  | 613012 | ?Urocanase deficiency, 276880 (3), Autosomal recessive   |
| <i>UROD</i>   | 613521 | Porphyria cutanea tarda, 176100 (3), Autosomal recessive, Autosomal dominant; Porphyria, hepatoerythropoietic, 176100 (3), Autosomal recessive, Autosomal dominant |
| <i>UROS</i>   | 606938 | Porphyria, congenital erythropoietic, 263700 (3), Autosomal recessive  |
| <i>USB1</i>   | 613276 | Poikiloderma with neutropenia, 604173 (3), Autosomal recessive   |
| <i>USF1</i>   | 191523 | {Hyperlipidemia, familial combined, susceptibility to}, 602491 (3)   |
| <i>USH1C</i>  | 605242 | Deafness, autosomal recessive 18A, 602092 (3), Autosomal recessive; Usher syndrome, type 1C, 276904 (3), Autosomal recessive                                       |
| <i>USH1G</i>  | 607696 | Usher syndrome, type 1G, 606943 (3), Autosomal recessive   |
| <i>USH2A</i>  | 608400 | Retinitis pigmentosa 39, 613809 (3); Usher syndrome, type 2A, 276901 (3), Autosomal recessive  |
| <i>USP18</i>  | 607057 | Pseudo-TORCH syndrome 2, 617397 (3), Autosomal recessive   |
| <i>USP27X</i> | 300975 | Mental retardation, X-linked 105, 300984 (3), X-linked recessive   |
| <i>USP9X</i>  | 300072 | Mental retardation, X-linked 99, 300919 (3), X-linked recessive; Mental retardation, X-linked 99, syndromic, female-restricted, 300968 (3), X-linked dominant      |
| <i>USP9Y</i>  | 400005 | Spermatogenic failure, Y-linked, 2, 415000 (3), Y-linked   |
| <i>UTP4</i>   | 607456 | No OMIM phenotype  |
| <i>UVSSA</i>  | 614632 | UV-sensitive syndrome 3, 614640 (3), Autosomal recessive   |
| <i>VAC14</i>  | 604632 | Striatonigral degeneration, childhood-onset, 617054 (3), Autosomal recessive   |
| <i>VAMP1</i>  | 185880 | Spastic ataxia 1, autosomal dominant, 108600 (3), Autosomal dominant   |
| <i>VANGL1</i> | 610132 | Caudal regression syndrome, 600145 (3), Autosomal dominant; {Neural tube defects, susceptibility to}, 182940 (3), Autosomal dominant                               |
| <i>VANGL2</i> | 600533 | Neural tube defects, 182940 (3), Autosomal dominant  |

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| <i>VAPB</i>    | 605704 | Amyotrophic lateral sclerosis 8, 608627 (3), Autosomal dominant;<br>Spinal muscular atrophy, late-onset, Finkel type, 182980 (3),<br>Autosomal dominant  |
| <i>VARS2</i>   | 612802 | Combined oxidative phosphorylation deficiency 20, 615917 (3),<br>Autosomal recessive   |
| <i>VAX1</i>    | 604294 | ?Microphthalmia, syndromic 11, 614402 (3), Autosomal recessive   |
| <i>VCAN</i>    | 118661 | Wagner syndrome 1, 143200 (3), Autosomal dominant  |
| <i>VCL</i>     | 193065 | Cardiomyopathy, dilated, 1W, 611407 (3); Cardiomyopathy,<br>hypertrophic, 15, 613255 (3), Autosomal dominant   |
| <i>VCP</i>     | 601023 | Amyotrophic lateral sclerosis 14, with or without frontotemporal<br>dementia, 613954 (3); Charcot-Marie-Tooth disease, type 2Y, 616687<br>(3), Autosomal dominant; Inclusion body myopathy with early-onset<br>Paget disease and frontotemporal dementia 1, 167320 (3), Autosomal<br>dominant  |
| <i>VCY</i>     | 400012 | No OMIM phenotype  |
| <i>VDR</i>     | 601769 | ?Osteoporosis, involutional, 166710 (1), Autosomal dominant; Rickets,<br>vitamin D-resistant, type IIA, 277440 (3), Autosomal recessive  |
| <i>VEGFA</i>   | 192240 | {Microvascular complications of diabetes 1}, 603933 (3)  |
| <i>VEGFC</i>   | 601528 | Lymphedema, hereditary, ID, 615907 (3), Autosomal dominant<br>Erythrocytosis, familial, 2, 263400 (3), Autosomal recessive;<br>Hemangioblastoma, cerebellar, somatic (3); Pheochromocytoma,<br>171300 (3), Autosomal dominant; Renal cell carcinoma, somatic,<br>144700 (3); von Hippel-Lindau syndrome, 193300 (3), Autosomal<br>dominant |
| <i>VHL</i>     | 608537 | Cataract 30, pulverulent, 116300 (3), Autosomal dominant   |
| <i>VIM</i>     | 193060 | Arthrogryposis, renal dysfunction, and cholestasis 2, 613404 (3),<br>Autosomal recessive   |
| <i>VIPAS39</i> | 613401 | Vitamin K-dependent clotting factors, combined deficiency of, 2,<br>607473 (3); Warfarin resistance, 122700 (3), Autosomal dominant  |
| <i>VKORC1</i>  | 608547 | Cerebellar hypoplasia and mental retardation with or without<br>quadrupedal locomotion 1, 224050 (3), Autosomal recessive  |
| <i>VLDLR</i>   | 192977 | Myopathy, X-linked, with excessive autophagy, 310440 (3), X-linked<br>recessive  |
| <i>VMA21</i>   | 300913 | Leukodystrophy, hypomyelinating, 12, 616683 (3), Autosomal<br>recessive  |
| <i>VPS11</i>   | 608549 | Choreoacanthocytosis, 200150 (3), Autosomal recessive  |
| <i>VPS13A</i>  | 605978 | Cohen syndrome, 216550 (3), Autosomal recessive  |
| <i>VPS13B</i>  | 607817 | Parkinson disease 23, autosomal recessive, early onset, 616840 (3),<br>Autosomal recessive   |
| <i>VPS33A</i>  | 610034 | Mucopolysaccharidosis-plus syndrome, 617303 (3), Autosomal<br>recessive  |
| <i>VPS33B</i>  | 608552 | Arthrogryposis, renal dysfunction, and cholestasis 1, 208085 (3),<br>Autosomal recessive   |
| <i>VPS35</i>   | 601501 | {Parkinson disease 17}, 614203 (3), Autosomal dominant   |
| <i>VPS37A</i>  | 609927 | Spastic paraparesis 53, autosomal recessive, 614898 (3), Autosomal<br>recessive  |

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| <i>VPS45</i>  | 610035 | Neutropenia, severe congenital, 5, autosomal recessive, 615285 (3),<br>Autosomal recessive   |
| <i>VPS53</i>  | 615850 | Pontocerebellar hypoplasia, type 2E, 615851 (3), Autosomal recessive   |
| <i>VRK1</i>   | 602168 | Pontocerebellar hypoplasia type 1A, 607596 (3), Autosomal recessive  |
| <i>VSX1</i>   | 605020 | ?Craniofacial anomalies and anterior segment dysgenesis syndrome,<br>614195 (3); Keratoconus 1, 148300 (3), Autosomal dominant   |
| <i>VSX2</i>   | 142993 | Microphthalmia with coloboma 3, 610092 (3); Microphthalmia,<br>isolated 2, 610093 (3)  |
| <i>VWA3B</i>  | 614884 | ?Spinocerebellar ataxia, autosomal recessive 22, 616948 (3),<br>Autosomal recessive  |
| <i>VWF</i>    | 613160 | von Willebrand disease, type 1, 193400 (3), Autosomal dominant; von<br>Willebrand disease, types 2A, 2B, 2M, and 2N, 613554 (3), Autosomal<br>recessive, Autosomal dominant; von Willibrand disease, type 3,<br>277480 (3), Autosomal recessive  |
| <i>WAC</i>    | 615049 | Desanto-Shinawi syndrome, 616708 (3), Autosomal dominant   |
| <i>WAS</i>    | 300392 | Neutropenia, severe congenital, X-linked, 300299 (3), X-linked<br>recessive; Thrombocytopenia, X-linked, 313900 (3), X-linked recessive;<br>Thrombocytopenia, X-linked, intermittent, 313900 (3), X-linked<br>recessive; Wiskott-Aldrich syndrome, 301000 (3), X-linked recessive        |
| <i>WASHC4</i> | 615748 | ?Mental retardation, autosomal recessive 43, 615817 (3), Autosomal<br>recessive  |
| <i>WASHC5</i> | 610657 | Ritscher-Schinzel syndrome 1, 220210 (3), Autosomal recessive;<br>Spastic paraplegia 8, autosomal dominant, 603563 (3), Autosomal<br>dominant  |
| <i>WDPCP</i>  | 613580 | ?Bardet-Biedl syndrome 15, 615992 (3), Autosomal recessive;<br>?Congenital heart defects, hamartomas of tongue, and polysyndactyly,<br>217085 (3), Autosomal recessive   |
| <i>WDR11</i>  | 606417 | Hypogonadotropic hypogonadism 14 with or without anosmia, 614858<br>(3), Autosomal dominant  |
| <i>WDR19</i>  | 608151 | ?Cranioectodermal dysplasia 4, 614378 (3), Autosomal recessive;<br>Nephronophthisis 13, 614377 (3), Autosomal recessive; Senior-Loken<br>syndrome 8, 616307 (3), Autosomal recessive; ?Short-rib thoracic<br>dysplasia 5 with or without polydactyly, 614376 (3), Autosomal<br>recessive |
| <i>WDR34</i>  | 613363 | Short-rib thoracic dysplasia 11 with or without polydactyly, 615633 (3),<br>Autosomal recessive  |
| <i>WDR35</i>  | 613602 | Cranioectodermal dysplasia 2, 613610 (3), Autosomal recessive; Short-<br>rib thoracic dysplasia 7 with or without polydactyly, 614091 (3),<br>Autosomal recessive  |
| <i>WDR36</i>  | 609669 | Glaucoma 1, open angle, G, 609887 (3)  |
| <i>WDR45</i>  | 300526 | Neurodegeneration with brain iron accumulation 5, 300894 (3), X-<br>linked dominant  |
| <i>WDR60</i>  | 615462 | Short-rib thoracic dysplasia 8 with or without polydactyly, 615503 (3),<br>Autosomal recessive   |

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| <i>WDR62</i>  | 613583 | Microcephaly 2, primary, autosomal recessive, with or without cortical malformations, 604317 (3), Autosomal recessive   |
| <i>WDR72</i>  | 613214 | Amelogenesis imperfecta, type IIA3, 613211 (3), Autosomal recessive   |
| <i>WDR73</i>  | 616144 | Galloway-Mowat syndrome 1, 251300 (3), Autosomal recessive  |
| <i>WDR81</i>  | 614218 | Cerebellar ataxia, mental retardation, and dysequilibrium syndrome 2, 610185 (3), Autosomal recessive; Hydrocephalus, nonsyndromic, autosomal recessive 3, 617967 (3)   |
| <i>WFS1</i>   | 606201 | ?Cataract 41, 116400 (3), Autosomal dominant; Deafness, autosomal dominant 6/14/38, 600965 (3), Autosomal dominant; {Diabetes mellitus, noninsulin-dependent, association with}, 125853 (3), Autosomal dominant; Wolfram syndrome 1, 222300 (3), Autosomal recessive; Wolfram-like syndrome, autosomal dominant, 614296 (3), Autosomal dominant |
| <i>WHRN</i>   | 607928 | Deafness, autosomal recessive 31, 607084 (3), Autosomal recessive; Usher syndrome, type 2D, 611383 (3), Autosomal recessive   |
| <i>WISP3</i>  | 603400 | Arthropathy, progressive pseudorheumatoid, of childhood, 208230 (3), Autosomal recessive; Spondyloepiphyseal dysplasia tarda with progressive arthropathy, 208230 (3), Autosomal recessive  |
| <i>WNK1</i>   | 605232 | Neuropathy, hereditary sensory and autonomic, type II, 201300 (3), Autosomal recessive; Pseudohypoaldosteronism, type IIC, 614492 (3), Autosomal dominant   |
| <i>WNK4</i>   | 601844 | Pseudohypoaldosteronism, type IIB, 614491 (3), Autosomal dominant   |
| <i>WNT1</i>   | 164820 | Osteogenesis imperfecta, type XV, 615220 (3), Autosomal recessive; {Osteoporosis, early-onset, susceptibility to, autosomal dominant}, 615221 (3)   |
| <i>WNT10A</i> | 606268 | Odontoonychodermal dysplasia, 257980 (3), Autosomal recessive; Schopf-Schulz-Passarge syndrome, 224750 (3), Autosomal recessive; Tooth agenesis, selective, 4, 150400 (3), Autosomal recessive, Autosomal dominant  |
| <i>WNT10B</i> | 601906 | Split-hand/foot malformation 6, 225300 (3), Autosomal recessive; Tooth agenesis, selective, 8, 617073 (3), Autosomal dominant   |
| <i>WNT3</i>   | 165330 | ?Tetra-amelia syndrome 1, 273395 (3), Autosomal recessive   |
| <i>WNT4</i>   | 603490 | Mullerian aplasia and hyperandrogenism, 158330 (3), Autosomal dominant; ?SERKAL syndrome, 611812 (3), Autosomal recessive   |
| <i>WNT5A</i>  | 164975 | Robinow syndrome, autosomal dominant 1, 180700 (3), Autosomal dominant  |
| <i>WNT7A</i>  | 601570 | Fuhrmann syndrome, 228930 (3), Autosomal recessive; Ulna and fibula, absence of, with severe limb deficiency, 276820 (3), Autosomal recessive   |
| <i>WRAP53</i> | 612661 | Dyskeratosis congenita, autosomal recessive 3, 613988 (3), Autosomal recessive  |
| <i>WRN</i>    | 604611 | Werner syndrome, 277700 (3), Autosomal recessive  |

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| <i>WT1</i>     | 607102 | Denys-Drash syndrome, 194080 (3), Autosomal dominant, Somatic mutation; Frasier syndrome, 136680 (3), Autosomal dominant, Somatic mutation; Meacham syndrome, 608978 (3); Mesothelioma, somatic, 156240 (3); Nephrotic syndrome, type 4, 256370 (3), Autosomal dominant; Wilms tumor, type 1, 194070 (3), Autosomal dominant, Somatic mutation |
| <i>WWC1</i>    | 610533 | [Memory, enhanced, QTL], 615602 (3)  |
| <i>WWOX</i>    | 605131 | Epileptic encephalopathy, early infantile, 28, 616211 (3), Autosomal recessive; Esophageal squamous cell carcinoma, somatic, 133239 (3); Spinocerebellar ataxia, autosomal recessive 12, 614322 (3), Autosomal recessive   |
| <i>XBP1</i>    | 194355 | {Major affective disorder-7, susceptibility to}, 612371 (3)  |
| <i>XDH</i>     | 607633 | Xanthinuria, type I, 278300 (3), Autosomal recessive   |
| <i>XIAP</i>    | 300079 | Lymphoproliferative syndrome, X-linked, 2, 300635 (3), X-linked recessive  |
| <i>XK</i>      | 314850 | McLeod syndrome with or without chronic granulomatous disease, 300842 (3), X-linked  |
| <i>XPA</i>     | 611153 | Xeroderma pigmentosum, group A, 278700 (3), Autosomal recessive  |
| <i>XPC</i>     | 613208 | Xeroderma pigmentosum, group C, 278720 (3), Autosomal recessive  |
| <i>XPNPEP2</i> | 300145 | {Angioedema induced by ACE inhibitors, susceptibility to}, 300909 (3)  |
| <i>XPNPEP3</i> | 613553 | Nephronophthisis-like nephropathy 1, 613159 (3), Autosomal recessive   |
| <i>XPR1</i>    | 605237 | Basal ganglia calcification, idiopathic, 6, 616413 (3), Autosomal dominant   |
| <i>XRCC2</i>   | 600375 | ?Fanconi anemia, complementation group U, 617247 (3), Autosomal recessive  |
| <i>XRCC3</i>   | 600675 | {Breast cancer, susceptibility to}, 114480 (3), Autosomal dominant; {Melanoma, cutaneous malignant, 6}, 613972 (3)   |
| <i>XRCC4</i>   | 194363 | Short stature, microcephaly, and endocrine dysfunction, 616541 (3), Autosomal recessive  |
| <i>XYLT1</i>   | 608124 | Desbuquois dysplasia 2, 615777 (3), Autosomal recessive; {Pseudoxanthoma elasticum, modifier of severity of}, 264800 (3), Autosomal recessive  |
| <i>XYLT2</i>   | 608125 | {Pseudoxanthoma elasticum, modifier of severity of}, 264800 (3), Autosomal recessive; Spondyloocular syndrome, 605822 (3), Autosomal recessive   |
| <i>YAP1</i>    | 606608 | Coloboma, ocular, with or without hearing impairment, cleft lip/palate, and/or mental retardation, 120433 (3), Autosomal dominant  |
| <i>YARS</i>    | 603623 | Charcot-Marie-Tooth disease, dominant intermediate C, 608323 (3), Autosomal dominant   |
| <i>YARS2</i>   | 610957 | Myopathy, lactic acidosis, and sideroblastic anemia 2, 613561 (3), Autosomal recessive   |
| <i>YME1L1</i>  | 607472 | ?Optic atrophy 11, 617302 (3), Autosomal recessive   |

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| ZAP70    | 176947 | Autoimmune disease, multisystem, infantile-onset, 2, 617006 (3), Autosomal recessive; Immunodeficiency 48, 269840 (3), Autosomal recessive  |
| ZBTB16   | 176797 | Leukemia, acute promyelocytic, PLZF/RARA type (3); Skeletal defects, genital hypoplasia, and mental retardation, 612447 (3), Autosomal recessive  |
| ZBTB18   | 608433 | Mental retardation, autosomal dominant 22, 612337 (3), Autosomal dominant   |
| ZBTB24   | 614064 | Immunodeficiency-centromeric instability-facial anomalies syndrome 2, 614069 (3), Autosomal recessive   |
| ZBTB42   | 613915 | ?Lethal congenital contracture syndrome 6, 616248 (3), Autosomal recessive  |
| ZC3H14   | 613279 | Mental retardation, autosomal recessive 56, 617125 (3), Autosomal recessive   |
| ZDHHC15  | 300576 | ?Mental retardation, X-linked 91, 300577 (3), X-linked dominant   |
| ZDHHC9   | 300646 | Mental retardation, X-linked syndromic, Raymond type, 300799 (3)  |
| ZFAT     | 610931 | {Autoimmune thyroid disease, susceptibility to, 3}, 608175 (3)  |
| ZFHX3    | 104155 | {Prostate cancer, susceptibility to, somatic}, 176807 (3)   |
| ZFHX4    | 606940 | ?Ptosis, congenital, 178300 (2), Autosomal dominant   |
| ZFP57    | 612192 | Diabetes mellitus, transient neonatal, 1, 601410 (3)  |
| ZFPM2    | 603693 | Diaphragmatic hernia 3, 610187 (3); Tetralogy of Fallot, 187500 (3), Autosomal dominant; 46XY sex reversal 9, 616067 (3), Autosomal dominant  |
| ZFYVE26  | 612012 | Spastic paraplegia 15, autosomal recessive, 270700 (3), Autosomal recessive   |
| ZIC1     | 600470 | Craniosynostosis 6, 616602 (3), Autosomal dominant  |
| ZIC2     | 603073 | Holoprosencephaly 5, 609637 (3), Autosomal dominant   |
| ZIC3     | 300265 | Congenital heart defects, nonsyndromic, 1, X-linked, 306955 (3), X-linked recessive; Heterotaxy, visceral, 1, X-linked, 306955 (3), X-linked recessive; VACTERL association, X-linked, 314390 (3), X-linked recessive |
| ZMPSTE24 | 606480 | Mandibuloacral dysplasia with type B lipodystrophy, 608612 (3), Autosomal recessive; Restrictive dermopathy, lethal, 275210 (3), Autosomal recessive  |
| ZMYND10  | 607070 | Ciliary dyskinesia, primary, 22, 615444 (3), Autosomal recessive  |
| ZMYND15  | 614312 | ?Spermatogenic failure 14, 615842 (3), Autosomal recessive  |
| ZNF141   | 194648 | ?Polydactyly, postaxial, type A6, 615226 (3), Autosomal recessive   |
| ZNF148   | 601897 | Global developmental delay, absent or hypoplastic corpus callosum, and dysmorphic facies, 617260 (3), Autosomal dominant  |
| ZNF335   | 610827 | ?Microcephaly 10, primary, autosomal recessive, 615095 (3), Autosomal recessive   |
| ZNF365   | 607818 | {Nephrolithiasis, uric acid, susceptibility to}, 605990 (3)   |
| ZNF408   | 616454 | ?Exudative vitreoretinopathy 6, 616468 (3), Autosomal dominant; Retinitis pigmentosa 72, 616469 (3), Autosomal recessive  |
| ZNF469   | 612078 | Brittle cornea syndrome 1, 229200 (3), Autosomal recessive  |
| ZNF513   | 613598 | ?Retinitis pigmentosa 58, 613617 (3), Autosomal recessive   |

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| ZNF592 | 613624 | No OMIM phenotype   |
| ZNF644 | 614159 | Myopia 21, autosomal dominant, 614167 (3), Autosomal dominant   |
| ZNF750 | 610226 | Seborrhea-like dermatitis with psoriasiform elements, 610227 (3)  |
| ZNF81  | 314998 | No OMIM phenotype   |
| ZP1    | 195000 | Oocyte maturation defect 1, 615774 (3), Autosomal recessive   |
| ZSWIM6 | 615951 | Acromelic frontonasal dysostosis, 603671 (3), Autosomal dominant;<br>Neurodevelopmental disorder with movement abnormalities,<br>abnormal gait, and autistic features, 617865 (3), Autosomal dominant |

Gene symbols used are according to the HGNC guidelines. For some genes a previously HGNC-approved symbol is in brackets.

Each Phenotype is followed by its MIM number, phenotype mapping key and inheritance pattern.  
OMIM release used for OMIM disease identifiers and descriptions: July 04, 2018

#### Possible phenotype mapping keys

- (1) the disorder is placed on the map based on its association with a gene, but the underlying defect is not known
- (2) the disorder has been placed on the map by linkage; no mutation has been found
- (3) the molecular basis for the disorder is known; a mutation has been found in the gene
- (4) a contiguous gene deletion or duplication syndrome, multiple genes are deleted or duplicated causing the phenotype

Brackets, "[ ]", indicate "nondiseases," mainly genetic variations that lead to apparently abnormal laboratory test values (e.g., dysalbuminemic euthyroidal hyperthyroxinemia).

Braces, "{ }", indicate mutations that contribute to susceptibility to multifactorial disorders (e.g., diabetes, asthma) or to susceptibility to infection (e.g., malaria).

A question mark, "?", before the phenotype name indicates that the relationship between the phenotype and gene is provisional. More details about this relationship are provided in the comment field of the map and in the gene and phenotype OMIM entries.