

GeDiPNet Shared-Gene Disease Pairs

Similarity: Jaccard index on shared curated genes (disease_gdp). Significance: upper-tail hypergeometric test ($P(X \geq k)$), Benjamini-Hochberg FDR-corrected across all tested pairs. Corroborated Shared Genes: count of shared genes backed by ≥ 2 distinct disease_gdp.main_source values combined across both diseases (e.g. GWAS-backed for one, ClinVar-backed for the other still counts); Shared Gene Names lists each gene's own source count in parentheses. Overlap Coefficient: shared genes / MIN(each disease's own total gene count) -- complements the Jaccard-based Similarity Score by showing how much of the SMALLER disease's entire known gene-set is covered by this pair, which Jaccard (dividing by the union) can understate. Shared Cluster: cluster id if both diseases fall in the same label-propagation cluster (scripts/build_disease_clusters.php), blank otherwise. See scripts/build_related.php on gedipnet.bicnirrh.res.in. Data as of: 2026-10-07 03:00:13. · Rows: 500 · Generated: 2026-10-06 23:53:50

Note: PDF export is limited to the first 500 rows. Use TSV or CSV format for the complete export.

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Central nervous system cancer	Glioma	643	8	AKR1C2 (1), PAFAH1B1 (1), HIRA (1), RREB1 (1), HIBCH (1), ABCA4 (1), ACTB (1), PIK3R1 (1), RTEL1 (2), TERT (2), DOCK6 (1), ADNP (1)	0.83290	0.98018	<1e-300	<1e-300	291
Central nervous system cancer	Glioblastoma	535	7	AKR1C2 (1), PAFAH1B1 (1), HIRA (1), RREB1 (1), HIBCH (1), ABCA4 (1), ACTB (1), PIK3R1 (1), RTEL1 (1), TERT (1), DOCK6 (1), TP53 (1)	0.73388	0.88138	<1e-300	<1e-300	291
Glioblastoma	Glioma	543	13	AKR1C2 (1), PAFAH1B1 (1), NF1 (1), HIRA (1), RREB1 (1), HIBCH (1), ABCA4 (1), ACTB (1), PIK3R1 (1), RTEL1 (2), TERT (2), DOCK6 (1)	0.65978	0.89456	<1e-300	<1e-300	291
Crohn disease	Inflammatory bowel disease	538	60	SOX5 (1), WWOX (1), GLI3 (1), ATP2A2 (1), NOTCH2 (1), PIK3R1 (1), SH2B3 (1), CEBPA (1), NOTCH1 (1), RBPJ (1), IMPG2 (1), PER3 (1)	0.63820	0.77971	<1e-300	<1e-300	14
Crohn disease	Ulcerative colitis	496	64	SOX5 (1), WWOX (1), GLI3 (1), ATP2A2 (1), NOTCH2 (1), SH2B3 (1), CEBPA (1), NOTCH1 (1), RBPJ (1), IMPG2 (1), IFIH1 (1), ALG11 (1)	0.61538	0.81178	<1e-300	<1e-300	14
Cancer	Ovarian serous carcinoma	196	0	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.58333	0.75096	<1e-300	<1e-300	21
Inflammatory bowel disease	Ulcerative colitis	453	57	SOX5 (1), WWOX (1), GLI3 (1), ATP2A2 (1), NOTCH2 (1), SH2B3 (1), CEBPA (1), RTEL1 (1), NOTCH1 (1), RBPJ (1), IMPG2 (1), IFIH1 (1)	0.53357	0.74141	<1e-300	<1e-300	14
Ovarian cancer	Ovarian serous carcinoma	244	0	USP7 (1), ANKRD11 (1), HNF1B (1), KANSL1 (1), PRDM16 (1), RREB1 (1), MAP3K1 (1), PDE4D (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1)	0.49493	0.90370	<1e-300	<1e-300	21
Lung cancer	Squamous cell carcinoma	433	22	ANKRD11 (1), HNF1B (1), KANSL1 (1), BPTF (1), RREB1 (1), MAP3K1 (1), COL2A1 (1), TGM5 (1), SH2B3 (1), CHEK2 (1), RTEL1 (1), TERT (1)	0.43042	0.66718	<1e-300	<1e-300	21
Diabetes mellitus type 2	Metabolic syndrome	1222	84	SOX5 (1), ANKRD11 (1), BPTF (1), DPYD (1), HSPG2 (1), RERE (1), SKI (1), KIF15 (1), COMT (1), JMJD1C (1), RREB1 (1), SEC24C (1)	0.38646	0.93784	<1e-300	<1e-300	2
Attention deficit hyperactivity disorder	Substance abuse	445	16	SOX5 (1), BPTF (1), NFIA (1), BNC1 (1), ACTN2 (1), GBE1 (1), BRWD1 (1), BLNK (1), TEAD1 (1), CACNA1D (1), ALMS1 (1), ADCYAP1R1 (1)	0.37808	0.86240	<1e-300	<1e-300	2
Neurodevelopmental disorder	Non-specific syndromic intellectual disability	333	332	CHD8 (3), SUPT16H (4), CHRNA7 (2), YWHAE (2), PSMD12 (2), GABRD (3), SPEN (2), HNRNPU (4), JMJD1C (2), RREB1 (2), VCP (2), CACNA1D (2)	0.34189	0.90489	<1e-300	<1e-300	6
Bipolar disorder	Major depressive disorder	720	162	SOX5 (1), HNF1B (1), PRKCZ (1), RERE (1), KIF15 (1), COMT (2), SEC24C (1), HDAC4 (2), WWOX (1), ZFPM2 (1), APP (1), SMARCAD1 (1)	0.29256	0.59016	<1e-300	<1e-300	2
Ankylosing spondylitis	Sclerosing cholangitis	195	19	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ANKRD55 (1), BANK1 (1), BSN (1), CDKAL1 (1), EMSY (1), ERN1 (1), ETS1 (1), FAM177A1 (1), FIBP (1)	0.55874	0.84783	2.964e-323	4.666e-320	14
Juvenile idiopathic arthritis	Oligoarticular juvenile idiopathic arthritis	168	16	RERE (1), GP1BB (1), WWOX (2), SLC26A2 (1), ETV6 (1), RUNX1 (1), ANKRD55 (2), ASAP1 (1), AVL9 (1), CAMSAP1 (1), CLIC4 (1), CLU (1)	0.62454	0.98824	1.532e-322	2.250e-319	320
Breast cancer	Estrogen-receptor negative breast cancer	282	5	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (2), ZFPM2 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (4), ARHGEF10L (1), ARL17B (1)	0.26087	0.95270	3.162e-321	4.355e-318	21
Cancer	Estrogen-receptor negative breast cancer	197	0	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.54571	0.75479	8.860e-315	1.149e-311	21
Bipolar disorder	Schizophrenia	751	232	SOX5 (2), CHRNA7 (1), YWHAE (2), HNF1B (1), NFIX (2), RERE (1), COMT (3), HDAC4 (2), WWOX (2), ZFPM2 (1), SMARCAD1 (1), COL2A1 (1)	0.24942	0.61557	1.236e-309	1.514e-306	2

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Estrogen-receptor negative breast cancer	Ovarian serous carcinoma	196	0	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTE11 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.52830	0.72593	6.324e-307	7.335e-304	21
Biliary cholangitis	Biliary cirrhosis	128	16	SH2B3 (1), POU2AF1 (3), DDX6 (1), DEAF1 (1), DGKQ (1), ELMO1 (1), ETS1 (1), HLA-DQA1 (1), HLA-DRA (1), ITGB8 (1), MACIR (1), RARB (1)	0.86486	1.00000	2.436e-297	2.684e-294	288
Ischemic heart disease	Myocardial ischemia	170	44	PRDM16 (1), APOA1 (1), ACAT2 (1), SH2B3 (2), TERT (1), ARHGAP31 (1), AMPD1 (1), TP53 (1), AHSB (1), ABCA1 (1), ABCG8 (2), ACE (1)	0.43367	1.00000	1.828e-290	1.918e-287	73
Juvenile arthritis	Oligoarticular juvenile idiopathic arthritis	126	126	RERE (2), GP1BB (2), WWOX (2), ETV6 (2), ASAP1 (2), AVL9 (2), CAMSAP1 (2), CLU (2), FOXP1 (2), GMPR (2), HBEGF (2), HSPA6 (2)	0.72000	0.96923	1.227e-268	1.229e-265	320
Congestive heart failure	Heart failure	173	137	INS (2), HMGCS2 (2), EDNRB (2), CAT (2), ACACA (2), ATP2A2 (2), AMPD1 (1), TP53 (1), SCD (1), GATM (2), ATP1A3 (2), ACE (2)	0.36268	0.96648	1.014e-267	9.712e-265	34
Ankylosing spondylitis	Ulcerative colitis	228	41	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (1), BSN (1), CDKAL1 (1), DAG1 (1), EMSY (1), ERN1 (1)	0.32712	0.72843	1.729e-263	1.587e-260	14
Estrogen-receptor negative breast cancer	Ovarian cancer	207	0	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTE11 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.37230	0.69932	1.234e-261	1.088e-258	21
Cancer	Ovarian cancer	198	0	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTE11 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.37358	0.75862	1.631e-261	1.382e-258	21
Psoriasis	Sclerosing cholangitis	206	21	SH2B3 (1), NOTCH1 (1), IFIH1 (3), ANKRD55 (1), BANK1 (2), BSN (1), CDKAL1 (1), EMSY (1), ERN1 (1), ETS1 (1), FAM177A1 (1), FIBP (1)	0.27249	0.89565	1.027e-254	8.383e-252	14
Sclerosing cholangitis	Ulcerative colitis	198	24	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ANKRD55 (1), BANK1 (1), BSN (1), CDKAL1 (1), EMSY (1), ERN1 (1), ETS1 (1), FAM177A1 (1), FIBP (1)	0.30745	0.86087	1.601e-254	1.260e-251	14
Ankylosing spondylitis	Psoriasis	232	35	SH2B3 (1), NOTCH1 (1), IFIH1 (3), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (2), BSN (1), CDKAL1 (1), DAG1 (1), EMSY (1), ERN1 (1)	0.28536	0.74121	1.064e-249	8.088e-247	14
Ankylosing spondylitis	Crohn disease	228	44	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (1), BSN (1), CDKAL1 (1), DAG1 (1), EMSY (1), ERN1 (1)	0.29381	0.72843	7.264e-249	5.336e-246	14
Major depressive disorder	Schizophrenia	905	308	SOX5 (2), PAFAH1B1 (2), HNF1B (1), KANSL1 (1), RERE (1), COMT (3), HDAC4 (2), WWOX (2), ZFPM2 (1), SMARCA1 (1), COL2A1 (1), PDE4D (1)	0.25160	0.46173	1.917e-248	1.363e-245	2
Crohn disease	Sclerosing cholangitis	200	29	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ANKRD55 (1), BANK1 (1), BSN (1), CDKAL1 (1), EMSY (1), ERN1 (1), ETS1 (1), FAM177A1 (1), FIBP (1)	0.27739	0.86957	1.097e-246	7.552e-244	14
Attention deficit hyperactivity disorder	Autism	499	130	SOX5 (3), RAI1 (3), NFIX (1), NFIA (1), RERE (2), FGF8 (1), COMT (2), JMJD1C (3), HDAC4 (1), ZFPM2 (1), ATP2A2 (1), BRWD1 (2)	0.24106	0.45158	1.995e-238	1.333e-235	2
Deafness	Isolated sensorineural deafness	114	110	CEACAM16 (3), CLIC5 (3), COL11A1 (2), ESRRB (3), EYA4 (3), GIPC3 (3), GRAP (2), LMX1A (3), MYO15A (3), NARS2 (2), OTOF (3), OTOGL (3)	0.64045	0.95798	1.054e-236	6.830e-234	31
Biliary tract cancer	Non-hodgkins lymphoma	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.73973	0.91525	1.955e-236	1.231e-233	72
Juvenile arthritis	Juvenile idiopathic arthritis	127	127	RERE (2), GP1BB (2), JMJD1C (2), WWOX (3), ETV6 (2), ASAP1 (2), AVL9 (2), CAMSAP1 (2), CLU (2), FOXP1 (3), GMPR (2), HBEGF (2)	0.47037	0.97692	1.216e-234	7.444e-232	320
Intellectual developmental disorder	Neurodevelopmental disorder	354	263	CHD8 (5), FOXG1 (2), UBE3A (1), CHRNA7 (2), SIN3A (2), USP7 (1), ANKRD11 (2), RAI1 (2), BPTF (4), PSMD12 (1), NFIX (1), SKI (1)	0.25395	0.43758	2.715e-231	1.617e-228	6
Cancer	Lung cancer	199	1	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTE11 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.27949	0.76245	1.615e-228	9.364e-226	21
Biliary tract cancer	Esophageal cancer	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.64286	0.91525	1.504e-223	8.501e-221	72

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Coronary artery disease	Myocardial infarction	325	92	CYP17A1 (1), RAI1 (1), PRDM16 (3), SKI (1), ZFPM2 (1), APOA1 (2), SH2B3 (3), TP53 (1), SERPINA1 (1), COL4A4 (1), ABCG8 (3), ACE (2)	0.23231	0.56034	1.904e-223	1.049e-220	34
Lung cancer	Ovarian serous carcinoma	199	1	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), PDE4D (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1)	0.27601	0.73704	3.039e-223	1.633e-220	21
Isolated sensorineural deafness	Nonsyndromic hearing loss	101	75	CEACAM16 (3), CLIC5 (3), COL11A1 (3), ESRRB (3), EYA4 (3), GIPC3 (2), LMX1A (4), MACF1 (2), MYO15A (3), MYO1C (2), OTOF (1), OTOGL (1)	0.73723	0.85593	1.929e-222	1.012e-219	31
Estrogen-receptor negative breast cancer	Lung cancer	205	2	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.27665	0.69257	5.941e-221	3.045e-218	21
Esophageal cancer	Gastric cancer	126	1	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), CHEK2 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1)	0.50400	0.80255	7.613e-221	3.813e-218	72
Biliary tract cancer	Endometrial cancer	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.58378	0.91525	9.108e-216	4.460e-213	72
Crohn disease	Psoriasis	289	54	SH2B3 (1), NOTCH1 (1), IFIH1 (3), BLTP1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (2), BSN (1), BTNL2 (1), CDKAL1 (1), CSMD1 (3)	0.25508	0.41884	7.249e-214	3.473e-211	14
Deafness	Nonsyndromic hearing loss	107	106	CEACAM16 (5), CLIC5 (5), COL11A1 (4), ESRRB (5), EYA4 (4), GIPC3 (4), LMX1A (6), MYO15A (4), OTOF (3), OTOGL (3), PCDH15 (5), THOC1 (3)	0.58152	0.90678	2.987e-213	1.401e-210	31
Fatty liver	Fatty liver, alcoholic	84	75	INS (2), MTPP (2), CAT (2), PTEN (2), SCD (1), APOB (2), APOE (2), ATP7B (2), CYCS (2), F2R (2), FGF21 (2), GPX4 (2)	0.87500	0.97674	2.614e-210	1.200e-207	
Esophageal cancer	Non-hodgkins lymphoma	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.58378	0.80000	2.728e-209	1.227e-206	72
Estrogen-receptor negative breast cancer	Squamous cell carcinoma	209	8	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (2), ARHGEF10L (1), ASIP (1), BAD (1)	0.23831	0.70608	6.798e-208	2.996e-205	21
Optic atrophy	Retinitis pigmentosa	142	140	OPA3 (7), ABCA4 (6), ITM2B (2), COL2A1 (2), CNGA3 (2), CNGB3 (2), PDE6C (2), PHYH (2), PRPH2 (7), CACNA1F (2), ALMS1 (2), ABHD12 (2)	0.35859	0.78453	1.969e-207	8.507e-205	7
Psoriasis	Ulcerative colitis	271	57	SH2B3 (1), NOTCH1 (1), IFIH1 (3), BLTP1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (2), BSN (1), BTNL2 (2), CDKAL1 (1), DAG1 (1)	0.25280	0.44354	2.801e-207	1.187e-204	14
Cancer	Squamous cell carcinoma	198	7	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (2), ARHGEF10L (1), ASIP (1), BAD (1)	0.23212	0.75862	4.134e-207	1.719e-204	21
Cancer	Prostate cancer	208	16	ANKRD11 (1), HNF1B (2), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.20472	0.79693	2.704e-206	1.104e-203	21
Endometrial cancer	Non-hodgkins lymphoma	109	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.54229	0.80741	1.743e-204	6.985e-202	72
Ovarian serous carcinoma	Squamous cell carcinoma	198	7	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (2), ARHGEF10L (1), ASIP (1), BAD (1)	0.22970	0.73333	6.245e-202	2.457e-199	21
Biliary tract cancer	Cervical cancer	109	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.45992	0.92373	6.220e-201	2.405e-198	72
Biliary tract cancer	Gastric cancer	108	1	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.47162	0.91525	2.238e-200	8.503e-198	72
Coronary artery disease	Ischemic heart disease	170	101	PRDM16 (3), APOA1 (2), ACAT2 (1), SH2B3 (3), TERT (3), ARHGAP31 (1), AMPD1 (1), TP53 (1), AHSG (1), ABCA1 (2), ABCG8 (3), ACE (2)	0.14860	1.00000	4.526e-198	1.690e-195	
Breast cancer	Ovarian cancer	270	12	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (2), ABCA4 (1), PDE4D (1), SH2B3 (1), CHEK2 (2), RTEL1 (1), TERT (1), TP53 (4)	0.21378	0.57940	2.280e-197	8.374e-195	21

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Ovarian serous carcinoma	Prostate cancer	205	14	ANKRD11 (1), HNF1B (2), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.19942	0.75926	3.606e-195	1.303e-192	21
Estrogen-receptor negative breast cancer	Prostate cancer	212	15	ANKRD11 (1), HNF1B (2), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1)	0.20248	0.71622	8.709e-193	3.096e-190	21
Biliary tract cancer	Cancer	109	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.40221	0.92373	3.370e-192	1.179e-189	
Breast cancer	Ovarian serous carcinoma	209	5	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (2), PDE4D (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (4), ARHGEF10L (1), ASIP (1)	0.18528	0.77407	4.187e-192	1.442e-189	21
Cancer	Colorectal cancer	201	3	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (3), ARHGEF10L (1), ASIP (1), BAD (1)	0.19383	0.77011	4.572e-192	1.550e-189	21
Cervical cancer	Non-hodgkins lymphoma	111	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.44048	0.82222	9.034e-192	3.017e-189	72
Biliary tract cancer	Pancreatic cancer	108	3	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.41221	0.91525	1.545e-191	5.081e-189	72
Gastric cancer	Non-hodgkins lymphoma	109	1	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.44490	0.80741	6.818e-189	2.210e-186	72
Endometrial cancer	Esophageal cancer	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.48214	0.68790	1.151e-188	3.675e-186	72
Colorectal cancer	Ovarian serous carcinoma	202	3	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (3), ARHGEF10L (1), ASIP (1), BAD (1)	0.19330	0.74815	1.706e-188	5.371e-186	21
Cancer	Non-hodgkins lymphoma	113	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.39789	0.83704	3.357e-188	1.042e-185	
Biliary tract cancer	Ovarian serous carcinoma	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.38434	0.91525	3.926e-187	1.202e-184	
Non-hodgkins lymphoma	Ovarian serous carcinoma	113	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.38567	0.83704	4.813e-186	1.453e-183	
Colorectal cancer	Estrogen-receptor negative breast cancer	208	4	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), RTEL1 (1), TERT (1), TP53 (3), ARHGEF10L (1), ASIP (1), BAD (1)	0.19531	0.70270	1.093e-184	3.254e-182	21
Depression	Major depressive disorder	245	66	APRT (1), COMT (1), SEC24C (1), SOX9 (1), APP (1), CAT (3), TERT (1), GFAP (1), ACE (1), ADRA1A (1), ARSA (1), ATP7B (1)	0.12281	0.87814	4.042e-184	1.188e-181	2
Deafness	Hearing loss	132	124	EDNRB (1), CACNA1D (2), CEACAM16 (5), CLIC5 (3), COL11A1 (4), ESRRB (4), EYA4 (4), GIPC3 (4), GRAP (5), LMX1A (5), MYO15A (4), NARS2 (5)	0.30841	0.76744	1.311e-183	3.802e-181	31
Ovarian cancer	Ovarian epithelial cancer	115	0	HNF1B (1), GLI3 (1), TERT (1), AMPD1 (1), POU2AF1 (1), ADARB2 (1), BCL11A (1), BNC2 (1), CARD11 (1), CDCP1 (1), CTNND1 (1), DMD (1)	0.24625	1.00000	6.451e-182	1.846e-179	21
Biliary tract cancer	Estrogen-receptor negative breast cancer	108	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.35179	0.91525	1.019e-181	2.879e-179	
Lung cancer	Ovarian cancer	217	5	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), PDE4D (1), SH2B3 (1), CHEK2 (2), RTEL1 (1), TERT (1), TP53 (1), ADARB2 (1)	0.24138	0.46567	4.859e-181	1.356e-178	21
Anorexia nervosa	Obsessive-compulsive disorder	129	1	SOX5 (1), RERE (1), ATP2A2 (1), ABT1 (1), AKAP6 (2), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (1), CSMD1 (1), CTNND1 (1), DCC (1)	0.36134	0.55128	1.682e-180	4.634e-178	75
Estrogen-receptor negative breast cancer	Non-hodgkins lymphoma	113	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.35423	0.83704	2.598e-180	7.069e-178	

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Skin cancer	Skin neoplasms	83	3	TERT (1), TP53 (2), TPCN2 (1), ATP8B4 (1), BNC2 (1), CTNNA2 (1), CUX1 (1), EMSY (1), FADS1 (1), FADS2 (1), FAM76B (1), FOXP1 (1)	0.56463	0.98810	7.361e-180	1.978e-177	16
Non-hodgkins lymphoma	Pancreatic cancer	108	3	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.38710	0.80000	2.523e-177	6.700e-175	72
Obsessive-compulsive disorder	Tourette syndrome	128	1	SOX5 (2), RERE (1), ATP2A2 (1), AKAP6 (1), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (1), CAMTA1 (1), CSMD1 (1), CTNND1 (1), CYLC2 (1)	0.35068	0.54701	3.139e-176	8.236e-174	75
Cholecystolithiasis	Gallstones	92	5	HNF1B (1), JMJD1C (1), GATA4 (1), ADAR (1), SERPINA1 (1), ABCG8 (3), ANO1 (1), APOE (1), CPS1 (1), FADS1 (1), FADS2 (1), FARP2 (1)	0.52571	0.74194	2.735e-175	7.092e-173	239
Isolated sensorineural deafness	nonsyndromic genetic hearing loss	78	78	CEACAM16 (2), ESRRB (2), EYA4 (2), GIPC3 (2), GRAP (2), MYO15A (2), NARS2 (2), OTOF (2), OTOGL (2), PCDH15 (2), MCM2 (2), OTOG (2)	0.62903	0.95122	8.368e-174	2.144e-171	31
Cervical cancer	Esophageal cancer	109	1	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.39493	0.69427	3.373e-173	8.543e-171	72
Ovarian cancer	Squamous cell carcinoma	226	15	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), GLI3 (1), SH2B3 (1), CHEK2 (2), RTEL1 (1), TERT (1), TP53 (2), TPCN2 (1)	0.21942	0.48498	2.164e-172	5.420e-170	21
Endometrial cancer	Gastric cancer	110	1	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.38869	0.63218	2.571e-170	6.365e-168	72
Esophageal cancer	Pancreatic cancer	110	3	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.36789	0.70064	2.801e-169	6.859e-167	72
Coronary artery disease	Myocardial ischemia	235	124	PRDM16 (3), APOA1 (2), ACAT2 (1), SH2B3 (3), TERT (3), ARHGAP31 (1), AMPD1 (1), TP53 (1), AHSG (1), SERPINA1 (1), ABCA1 (2), ABCG8 (3)	0.18077	0.60102	5.773e-168	1.398e-165	
Colorectal cancer	Ovarian cancer	240	13	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), CHEK2 (2), RTEL1 (1), TERT (1), TP53 (3), POU2AF1 (1), TPCN2 (1)	0.19950	0.51502	1.543e-167	3.696e-165	21
Ovarian cancer	Prostate cancer	238	18	ANKRD11 (1), HNF1B (2), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), CHEK2 (6), RTEL1 (1), TERT (1), TP53 (1), TPCN2 (1), ADARB2 (1)	0.19983	0.51073	1.534e-166	3.636e-164	21
Cervical cancer	Endometrial cancer	109	0	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.37201	0.62644	2.439e-165	5.719e-163	72
Major depressive disorder	Mood disorder	241	62	PAFAH1B1 (1), KANSL1 (1), RERE (1), COMT (1), HDAC4 (2), ATP2A2 (2), BLTP1 (1), SERPINA1 (2), ADCY8 (2), ANK3 (2), ARFGAP2 (1), ARHGAP15 (1)	0.11943	0.80872	2.232e-163	5.178e-161	2
Anorexia nervosa	Tourette syndrome	124	4	SOX5 (2), RERE (1), ATP2A2 (1), AKAP6 (2), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (1), CSMD1 (1), CTNND1 (1), DCC (1), DGKI (1)	0.32124	0.49402	1.563e-162	3.588e-160	75
Inflammatory bowel disease	Sclerosing cholangitis	158	15	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ANKRD55 (1), BANK1 (1), BSN (1), CDKAL1 (1), EMSY (1), ETS1 (1), FIBP (1), FOXP1 (1), FUT2 (1)	0.20708	0.68696	3.302e-162	7.503e-160	14
Mitochondrial complex deficiency	Mitochondrial disease	97	84	COA8 (5), COX5A (5), NDUFA10 (6), NDUFA12 (4), NDUFA9 (4), NDUFAF2 (5), NDUFAF6 (6), SDHB (6), UQCRRS1 (6), UQCRH (5), ATP5F1A (5), ND1 (1)	0.36604	0.81513	1.095e-161	2.462e-159	62
Attention deficit hyperactivity disorder	Schizophrenia	553	175	SOX5 (2), HMGA2 (1), RAI1 (2), NFIX (1), RERE (1), COMT (3), HDAC4 (2), ZFPM2 (1), ATP2A2 (2), BMPR1B (1), TEAD1 (1), CDK10 (1)	0.17873	0.50045	2.308e-161	5.138e-159	2
Endometrial cancer	Pancreatic cancer	110	3	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.34810	0.63218	2.674e-161	5.893e-159	72
complex neurodevelopmental disorder	Non-specific syndromic intellectual disability	105	105	CHD8 (2), GABRD (2), HNRNPU (2), CACNA1D (2), CHD2 (2), CNTNAP2 (2), CUL3 (3), DLGAP2 (2), EPB41L1 (2), GIGYF1 (2), GNB2 (3), GRIA1 (2)	0.27487	0.88983	2.962e-161	6.463e-159	6
Inflammatory bowel disease	Psoriasis	248	39	SH2B3 (1), NOTCH1 (1), IFIH1 (3), BLTP1 (1), ABT1 (1), ANKRD55 (1), ATXN2L (1), BANK1 (2), BSN (1), BTNL2 (1), CDKAL1 (1), ELL (1)	0.21124	0.35942	7.219e-161	1.560e-158	14

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Autism	Schizophrenia	652	347	SOX5 (3), CHRNA7 (2), RAI1 (3), KANSL1 (1), NFIX (1), DPYD (3), RERE (2), COMT (3), SHANK3 (4), HDAC4 (2), SRD5A2 (1), WWOX (2)	0.19445	0.44566	2.317e-159	4.957e-157	2
Deafness	nonsyndromic genetic hearing loss	79	79	CEACAM16 (4), ESRRB (4), EYA4 (4), GIPC3 (4), GRAP (3), MYO15A (4), NARS2 (3), OTOF (4), OTOGL (4), PCDH15 (4), MCM2 (4), OTOG (4)	0.44886	0.96341	3.040e-159	6.441e-157	31
Hearing loss	Isolated sensorineural deafness	105	88	CEACAM16 (3), CLIC5 (2), COL11A1 (3), ESRRB (2), EYA4 (2), GIPC3 (2), GRAP (4), LMX1A (4), MYO15A (2), NARS2 (4), OTOF (2), OTOGL (2)	0.26119	0.88235	1.180e-157	2.477e-155	31
Anorexia nervosa	Attention deficit hyperactivity disorder	183	3	SOX5 (1), HMGA2 (1), RERE (1), ATP2A2 (1), ALMS1 (1), AKAP6 (2), BANK1 (1), BCL11A (1), BRAF (1), BSN (1), C8orf90 (1), CACNB2 (1)	0.15588	0.72908	5.679e-156	1.181e-153	
Non-organic psychosis	Psychotic disorders	69	0	TBX1 (1), ANK3 (1), CD34 (1), GCH1 (1), NPAS3 (1), PCNT (1), PDE10A (1), SOBP (1), TCF4 (1), WWC1 (1), GSTP1 (1), LEP (1)	0.54762	1.00000	3.582e-155	7.378e-153	
Breast cancer	Prostate cancer	330	31	ANKRD11 (1), HNF1B (2), KANSL1 (1), RREB1 (1), TBX1 (1), MAP3K1 (2), SH2B3 (1), CHEK2 (5), RTEL1 (1), TERT (1), TP53 (4), TPCN2 (1)	0.19423	0.34304	1.234e-153	2.519e-151	21
nonsyndromic genetic hearing loss	Nonsyndromic hearing loss	72	72	CEACAM16 (4), ESRRB (4), EYA4 (4), GIPC3 (3), MYO15A (4), OTOF (2), OTOGL (2), PCDH15 (4), MCM2 (4), OTOG (4), TMC1 (5), HGF (4)	0.55814	0.87805	6.641e-153	1.343e-150	31
Attention deficit hyperactivity disorder	Major depressive disorder	474	83	SOX5 (1), BPTF (1), RERE (1), COMT (2), HDAC4 (2), MCM9 (1), ZFPM2 (1), ATP2A2 (2), CDK10 (1), ADAMTS2 (1), ADARB1 (1), ADCYAP1R1 (1)	0.18287	0.42896	3.771e-152	7.554e-150	2
Cervical cancer	Gastric cancer	110	1	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (1), ARHGEF10L (1), ASIP (1), ATXN7L1 (1), BAD (1), BNC2 (1), CELF2 (1)	0.32738	0.50459	5.680e-152	1.128e-149	72
Gastric cancer	Pancreatic cancer	113	5	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (1), TP53 (4), ARHGEF10L (1), ASB3 (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1)	0.31653	0.51835	8.845e-152	1.740e-149	72
Breast cancer	Lung cancer	273	12	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (2), PDE4D (1), SH2B3 (1), CHEK2 (1), RTEL1 (1), TERT (1), TP53 (4), TP63 (1)	0.18919	0.42065	1.884e-151	3.675e-149	21
Ankylosing spondylitis	Inflammatory bowel disease	171	26	SH2B3 (1), NOTCH1 (1), IFIH1 (1), ANKRD55 (1), ATXN2L (1), BANK1 (1), BSN (1), CDKAL1 (1), EMSY (1), ETS1 (1), FIBP (1), FUT2 (1)	0.20528	0.54633	8.801e-151	1.701e-148	14
Asthma	Respiratory system disease	174	22	RERE (1), CEBPA (1), RTEL1 (1), RUNX1 (1), ARHGAP15 (1), BCL3 (1), CARD11 (2), CCR7 (1), DOCK3 (1), EMSY (1), ETS1 (1), FADS1 (1)	0.15317	0.72199	1.460e-149	2.797e-147	14
Global developmental delay	Intellectual developmental disorder	191	64	FOXG1 (2), UBE3A (1), ANKRD11 (1), KANSL1 (2), BPTF (1), NFIX (1), SHANK3 (2), WWOX (1), PTEN (2), ACTL6A (1), ADNP (1), VCP (1)	0.19312	0.51622	1.597e-148	3.034e-146	6
Biliary tract cancer	Hepatocellular carcinoma	111	8	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (2), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.16895	0.94068	6.282e-147	1.183e-144	72
Non-neoplastic peripheral nervous system disease	Peripheral nervous system disease	52	52	DPYD (2), SLC12A6 (2), GFAP (2), ABCA1 (2), CACNA1H (2), ERCC1 (2), MMP3 (2), TCF4 (2), GSTP1 (2), ICAM1 (2), IGF1 (2), IGF1R (2)	0.92857	0.98113	1.191e-145	2.224e-143	304
Bone fragility with contractures, arterial rupture, and deafness	Osteoporosis-pseudoglioma syndrome	49	2	ALPL (1), BMP1 (1), CCDC134 (1), GORAB (1), NBAS (1), SERPINF1 (1), TENT5A (1), XYLT1 (1), AMBN (1), SEC16B (1), COL1A1 (1), SLC10A7 (1)	0.98000	1.00000	4.281e-143	7.928e-141	127
Intellectual developmental disorder, x-linked	X-linked intellectual disability	63	62	SOX3 (6), FGD1 (2), ATRX (1), DMD (3), FRMPD4 (6), SLC9A7 (5), GDI1 (7), GRIA3 (5), OPHN1 (7), CASK (6), MECP2 (7), MED12 (4)	0.62376	0.85135	2.952e-142	5.422e-140	129
Ankylosing spondylitis	Autoimmune disease	112	52	SH2B3 (1), ADGRL2 (1), AICDA (2), ANKRD55 (1), ATXN2L (1), C1S (2), CRYBB2 (2), DAG1 (1), FUT2 (1), IGF2 (1), IKZF1 (3), LRRK2 (1)	0.27723	0.55446	2.097e-141	3.820e-139	
Colorectal cancer	Lung cancer	254	10	ANKRD11 (1), HNF1B (1), KANSL1 (1), RREB1 (1), MAP3K1 (1), SH2B3 (1), CHEK2 (2), RTEL1 (1), TERT (1), ADAR (1), TP53 (3), ADCY8 (1)	0.18513	0.39137	3.988e-141	7.205e-139	21
Rheumatoid arthritis	Systemic lupus erythematosus	216	84	CAT (2), SH2B3 (3), TP63 (1), TPCN2 (1), BLTP1 (1), AFF3 (3), ANKRD55 (3), BTNL2 (2), DDX6 (3), DGKQ (1), ESR2 (1), ETS1 (4)	0.19619	0.33028	1.664e-139	2.981e-137	47

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Dermatologic disorder	Skin disease	68	66	PTEN (2), SCD (1), CCRL2 (2), ERCC2 (2), INPP5A (3), PDE4B (2), GSTO1 (2), HSPA1B (2), IL10 (1), IL1A (2), IL1B (2), MTHFR (2)	0.38202	1.00000	5.031e-139	8.942e-137	16
Hearing loss	Nonsyndromic hearing loss	97	95	CEACAM16 (3), CLIC5 (4), COL11A1 (4), ESRRB (3), EYA4 (4), GIPC3 (3), LMX1A (6), MYO15A (4), OTOF (2), OTOGL (2), PCDH15 (5), THOC1 (3)	0.23716	0.82203	1.093e-138	1.927e-136	31
Diabetes mellitus type 1	Rheumatoid arthritis	188	72	CAT (2), CP (2), SH2B3 (3), BLTP1 (1), AFF3 (3), ANKRD55 (3), BTNL2 (2), CCRL2 (1), DGKQ (1), EMSY (1), ERBB3 (1), ETS1 (2)	0.19748	0.39413	1.833e-136	3.206e-134	47
Testicular carcinoma	Testicular germ cell tumor	53	6	HNF1B (1), DMRT1 (1), GATA4 (1), PIK3CD (1), TERT (1), ATF7IP (1), CENPE (1), GAB2 (1), HEATR3 (1), LIPG (1), MAD1L1 (2), PDE8A (1)	0.77941	0.88333	8.063e-136	1.399e-133	
Cardiovascular disease	Hypertension	220	46	CYP11B2 (2), CASZ1 (1), PRDM16 (1), RERE (1), ZFPM2 (1), POLR1A (1), PIK3R1 (1), SH2B3 (1), ADK (1), CACNA1D (1), ALG9 (1), ACE (3)	0.16153	0.50926	5.382e-135	9.267e-133	34
Autoimmune disease	Autoimmune thyroid disease	87	7	SH2B3 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), C12orf42 (1), CAMK4 (1), DAG1 (1), ELMO1 (1), ERBB3 (1), FAM76B (1), FUT2 (1), GIGYF1 (1)	0.33462	0.60417	2.908e-133	4.967e-131	47
complex neurodevelopmental disorder	Neurodevelopmental disorder	113	112	CHD8 (3), GABRD (2), HNRNPU (4), CACNA1D (2), CHD2 (4), CNTNAP2 (2), CUL3 (6), DLGAP2 (2), EPB41L1 (2), GIGYF1 (4), GNB2 (5), GRIA1 (2)	0.11970	0.95763	8.382e-133	1.421e-130	6
Glaucoma	Open angle glaucoma	118	25	PRDM16 (1), LTBP3 (1), CHEK2 (1), RUNX1 (1), ABCA1 (1), ANKH (1), ANTXR1 (1), APOE (2), BCAS3 (1), BNC2 (1), CADM2 (1), CDKN2B (4)	0.24280	0.50427	1.412e-132	2.375e-130	
Major depressive disorder	Neurotic disorder	268	20	SOX5 (1), CYP17A1 (1), PAFAH1B1 (1), KANSL1 (1), RERE (1), PDE4D (2), ARHGAP15 (1), ARHGEF10L (1), ARL17B (1), AS3MT (1), BNC2 (1), CACNA1E (1)	0.12594	0.61609	3.729e-132	6.226e-130	2
Alzheimer disease	Dementia	333	27	HNF1B (1), NFIX (1), ZFPM2 (1), APP (7), PSEN1 (6), PRRX1 (1), AIPL1 (1), TPCN2 (1), ABCA1 (2), ABCA7 (4), ABI3 (2), ACE (2)	0.13449	0.56441	8.537e-132	1.415e-129	2
Attention deficit hyperactivity disorder	Bipolar disorder	350	85	SOX5 (1), NFIX (2), NFIA (1), RERE (1), COMT (2), HDAC4 (1), DHH (1), ZFPM2 (1), ATP2A2 (1), CDK10 (1), CACNA1D (3), ALMS1 (1)	0.17713	0.31674	1.737e-130	2.856e-128	2
Hepatocellular carcinoma	Non-hodgkins lymphoma	110	6	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (2), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.16296	0.81481	1.944e-129	3.173e-127	72
Eczema	Inflammatory skin disease	76	0	IFIH1 (1), BLTP1 (1), ANO3 (1), CSMD1 (1), EBF1 (1), ELMO1 (1), EMSY (1), MGMT (1), PTPRN2 (1), RAP1GAP2 (1), RASIP1 (1), SMARCA4 (1)	0.20765	1.00000	8.221e-128	1.332e-125	14
Cardiomyopathy	Dilated cardiomyopathy	107	74	PRDM16 (4), COMT (1), PSEN1 (6), ABCC9 (7), ACTN2 (7), CTNNA3 (1), DMD (6), DSG2 (7), EYA4 (5), FHOD3 (4), JUP (1), KCNE2 (1)	0.26034	0.43852	9.722e-128	1.564e-125	3
Hereditary spastic paraplegia	Spastic paraplegia	67	58	NIPA1 (4), ABCD1 (1), ALDH18A1 (4), SLC16A2 (1), ALS2 (2), AP4M1 (2), ARSI (3), MTRFR (3), SETX (1), SPG11 (4), USP8 (3), UCHL1 (5)	0.43226	0.66337	3.878e-125	6.193e-123	242
Charcot-marie-tooth disease	Hereditary motor and sensory neuropathies	60	51	DHTKD1 (5), AARS1 (7), VCP (5), SLC12A6 (4), EGR2 (8), KIF1B (6), MME (8), RAB7A (7), SETX (2), TRPV4 (6), PLD3 (1), DCTN1 (2)	0.43165	0.90909	1.023e-123	1.622e-121	13
Psoriasis	Rheumatoid arthritis	212	69	CAT (2), CP (2), SH2B3 (1), RUNX1 (3), TP63 (1), BLTP1 (1), ABT1 (1), ANKRD55 (3), BSN (1), BTNL2 (2), ELMO1 (1), EMSY (1)	0.17936	0.32024	1.521e-123	2.394e-121	
Basal cell carcinoma	Keratinocyte carcinoma	74	9	ANKRD11 (1), COLEC10 (1), PIK3R1 (1), TERT (2), TP53 (3), BNC2 (2), CTSH (1), CUX1 (1), EPB41L1 (1), EXO1 (1), FOXP1 (1), GPX4 (1)	0.22356	0.96104	1.707e-123	2.668e-121	16
Cardiomyopathy	Hypertrophic cardiomyopathy	101	65	INS (2), ABCC9 (1), ACTN2 (3), TP53 (2), AGT (2), DMD (2), DSG2 (1), FHOD3 (5), JUP (1), KAT8 (2), MYOZ2 (6), MYPN (2)	0.25250	0.41393	2.635e-120	4.089e-118	3
Degenerative disorder	Neurodegenerative disorder	40	38	APP (2), PSEN1 (2), SERPINA1 (2), MAPT (2), EPO (2), GSTO1 (2), HMOX1 (2), NGFR (2), SNCA (2), SOD2 (2), IL6 (2), NGF (2)	0.95238	1.00000	1.117e-118	1.721e-116	
Autism	Major depressive disorder	507	241	SOX5 (3), KANSL1 (1), PRKCZ (2), RERE (2), COMT (2), HDAC4 (2), MCCC2 (2), SOX9 (2), WWOX (2), ZFPM2 (1), CAT (3), ATP2A2 (2)	0.17381	0.34655	7.076e-118	1.083e-115	2

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Autism	Bipolar disorder	388	181	SOX5 (3), CHRNA7 (2), ANKRD11 (3), AKR1C4 (2), NFIX (2), NFIA (1), PRKCZ (2), RERE (2), COMT (2), HDAC4 (1), WWOX (2), ZFPM2 (1)	0.16899	0.31803	1.309e-117	1.990e-115	2
Cardiac embolism	Cardioembolic stroke	50	0	PRRX1 (1), C16orf95 (1), DOCK10 (1), EPHA4 (1), GLIS3 (1), GORAB (1), HNF4G (1), HTR1E (1), KCNN3 (1), RBFOX1 (1), RBMS3 (1), RGS4 (1)	0.49020	1.00000	2.786e-116	4.206e-114	
Dejerine-sottas disease	Hypertrophic neuropathy	38	4	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (4), KIF1B (1), MME (1), TRPV4 (1), DYNC1H1 (1), FIG4 (1), MFN2 (1), NEFL (1)	0.97436	1.00000	4.118e-115	6.091e-113	13
Dejerine-sottas disease	Roussy-levy syndrome	38	4	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (3), KIF1B (1), MME (1), TRPV4 (1), DYNC1H1 (1), FIG4 (1), MFN2 (1), NEFL (1)	0.97436	1.00000	4.118e-115	6.091e-113	13
Hypertrophic neuropathy	Roussy-levy syndrome	38	4	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (2), KIF1B (1), MME (1), TRPV4 (1), DYNC1H1 (1), FIG4 (1), MFN2 (1), NEFL (1)	0.97436	1.00000	4.118e-115	6.091e-113	13
Esophageal cancer	Hepatocellular carcinoma	109	7	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (2), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.15616	0.69427	1.448e-114	2.128e-112	72
Hypertrophic neuropathy	Peroneal muscle atrophy	38	4	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (2), KIF1B (1), MME (1), TRPV4 (1), DYNC1H1 (1), FIG4 (1), MFN2 (1), NEFL (1)	0.95000	1.00000	1.606e-113	2.313e-111	13
Peroneal muscle atrophy	Roussy-levy syndrome	38	2	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (1), KIF1B (1), MME (1), TRPV4 (1), DYNC1H1 (1), FIG4 (1), MFN2 (1), NEFL (1)	0.95000	1.00000	1.606e-113	2.313e-111	13
Dejerine-sottas disease	Peroneal muscle atrophy	38	4	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (3), KIF1B (1), MME (1), TRPV4 (1), DYNC1H1 (1), FIG4 (1), MFN2 (1), NEFL (1)	0.95000	1.00000	1.606e-113	2.313e-111	13
Diabetes mellitus type 1	Psoriasis	176	54	BPTF (1), RERE (1), COLEC10 (1), CAT (2), CP (2), SH2B3 (3), IFIH1 (3), BLTP1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (2)	0.17038	0.36897	4.022e-113	5.756e-111	
Attention deficit hyperactivity disorder	Obsessive-compulsive disorder	148	6	SOX5 (1), RAI1 (1), RERE (1), COMT (2), ATP2A2 (1), AKAP6 (1), BANK1 (1), BRAF (1), C6orf118 (1), C8orf90 (1), CACNA2D3 (1), CACNB2 (1)	0.12416	0.63248	4.513e-111	6.417e-109	
Endometrial cancer	Hepatocellular carcinoma	111	8	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (2), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CELF2 (1), DCAF4 (1)	0.15568	0.63793	2.987e-110	4.219e-108	72
Bipolar depression	Bipolar disorder	102	72	COMT (2), INS (2), PER3 (1), CACNA1D (2), SERPINA1 (2), ATP1A3 (1), ANK3 (3), BRD1 (1), DISC1 (1), FADS2 (3), FSTL5 (3), GCH1 (1)	0.08333	0.97143	1.322e-109	1.856e-107	2
Autoimmune thyroid disease	Hypothyroidism	89	9	RERE (1), SH2B3 (1), IFIH1 (1), BTNL2 (1), C12orf42 (1), CAMK4 (1), ELMO1 (1), ERBB3 (1), FAM76B (1), GIGYF1 (1), HLA-DQA1 (2), HLA-DRA (2)	0.20698	0.61806	2.721e-109	3.795e-107	47
Aortic stenosis	Aortic valve disease	49	0	HMG2A (1), ACAN (1), ALPL (1), PRRX1 (1), ALDH1A2 (1), ARHGAP24 (1), ASCC2 (1), FADS1 (1), FADS2 (1), FLNB (1), HCN1 (1), LDLR (1)	0.52688	0.81667	5.196e-109	7.201e-107	
Cognition disorder	Delirium, dementia, and cognitive disorders	44	44	COMT (2), APP (2), PSEN1 (2), AGT (2), APOE (3), IGF2 (2), LAMB2 (2), MAPT (2), SETD7 (2), BCHE (2), CDK5R1 (2), CRH (2)	0.65672	0.81481	2.116e-108	2.914e-106	366
Cleft lip	Complete unilateral cleft lip	36	25	FGF8 (2), ABCA4 (2), FGFR3 (2), KIF7 (1), TP63 (2), FGF10 (2), IRF6 (2), SPRY2 (2), TCN2 (2), NOS3 (2), MTHFR (2), BMP4 (1)	0.94737	1.00000	2.557e-108	3.501e-106	136
Leigh syndrome	Mitochondrial disease	72	67	HIBCH (3), TRMU (3), IARS2 (4), MTRFR (3), NARS2 (3), NDUFA10 (5), NDUFA12 (2), NDUFA9 (3), NDUFAF2 (4), NDUFAF6 (4), ND2 (1), NDUFS3 (4)	0.25899	0.67290	1.619e-107	2.202e-105	62
Non-neoplastic peripheral nervous system disease	Peripheral neuropathy	54	0	DPYD (1), SLC12A6 (1), GFAP (1), ABCA1 (1), CACNA1H (1), ERCC1 (1), MMP3 (1), TCF4 (1), GSTP1 (1), GSTT1 (1), ICAM1 (1), IGF1 (1)	0.27979	1.00000	4.242e-107	5.736e-105	304
Myocardial infarction	Myocardial ischemia	144	84	PRDM16 (2), APOA1 (1), SH2B3 (3), TP53 (1), SERPINA1 (1), ABCG8 (2), ACE (2), AGT (2), APOB (2), APOC1 (1), APOE (3), CDH13 (1)	0.17391	0.36829	1.097e-106	1.474e-104	
Hearing loss	nonsyndromic genetic hearing loss	72	72	CEACAM16 (4), ESRRB (3), EYA4 (3), GIPC3 (3), GRAP (4), MYO15A (3), NARS2 (5), OTOF (3), OTOGL (3), PCDH15 (4), OTOG (3), TMCM1 (2)	0.18090	0.87805	1.169e-106	1.562e-104	31

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Autoimmune thyroid disease	Diabetes mellitus type 1	93	20	RERE (1), SH2B3 (3), IFIH1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (1), BTNL2 (1), CAMK4 (1), DAG1 (1), ERBB3 (1), FAM76B (1)	0.17580	0.64583	3.526e-106	4.681e-104	47
Hypothyroidism	Rheumatoid arthritis	148	30	SH2B3 (1), RBPJ (3), BTNL2 (2), ELMO1 (1), ERBB3 (1), ETS1 (1), FADS1 (1), FADS2 (1), FAM76B (1), FKBPL (1), GABBR1 (1), GLIS3 (1)	0.16648	0.39572	3.983e-106	5.256e-104	47
Inflammatory bowel disease	Rheumatoid arthritis	191	61	SH2B3 (1), RBPJ (3), BLTP1 (1), ABT1 (1), AFF3 (3), ANKRD55 (3), BSN (1), BTNL2 (2), CCRL2 (1), DLGAP2 (1), ELMO1 (1), EMSY (1)	0.16437	0.28852	4.556e-106	5.977e-104	
Anorexia nervosa	Bipolar disorder	154	35	SOX5 (1), RERE (1), WWOX (1), ATP2A2 (1), ZSWIM6 (1), ALMS1 (1), AKAP6 (2), BANK1 (1), BRAF (1), BSN (1), C8orf90 (1), CACNB2 (2)	0.11684	0.61355	5.956e-106	7.766e-104	
Pituitary short stature	Sheehan syndrome	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.97143	1.00000	1.295e-104	1.659e-102	58
Growth hormone deficiency	Sheehan syndrome	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.97143	1.00000	1.295e-104	1.659e-102	58
Growth hormone deficiency	Pituitary short stature	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.97143	1.00000	1.295e-104	1.659e-102	58
Atrial fibrillation	Atrial flutter	81	52	UBE4B (3), JMJD1C (1), OPLAH (1), BRWD1 (1), PRRX1 (3), AKAP6 (3), ESR2 (3), FBXO11 (1), GORAB (1), KCNN3 (3), KDM1B (3), MAPT (3)	0.09375	1.00000	1.097e-103	1.397e-101	
Aplasia of the vermis	Joubert syndrome	43	40	KIF7 (1), CPLANE1 (6), CC2D2A (5), HYLS1 (3), RPGRIPL1 (5), NPHP3 (1), TMEM67 (6), ARL3 (5), NPHP1 (6), SUFU (5), CEP290 (6), TMEM138 (6)	0.61429	0.79630	1.569e-103	1.987e-101	8
Inflammatory skin disease	Psoriasis	76	13	IFIH1 (3), BLTP1 (1), ANO3 (1), CSMD1 (3), EBF1 (1), ELMO1 (1), EMSY (1), MGMT (1), PTPRN2 (1), RAP1GAP2 (1), RASIP1 (1), SMARCA4 (1)	0.10383	1.00000	5.448e-103	6.861e-101	14
Dilated cardiomyopathy	Hypertrophic cardiomyopathy	94	53	ABCC9 (7), ACTN2 (7), BRAF (1), CACNB2 (1), DMD (6), DSG2 (7), FERMT2 (1), FHOD3 (3), GNPAT1 (1), JUP (1), MYPN (7), PKP2 (2)	0.21560	0.36719	3.677e-102	4.604e-100	3
Autoimmune disease	Celiac disease	79	11	SH2B3 (1), ARHGAP31 (1), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), CTSH (1), DAG1 (1), ELMO1 (1), FUT2 (1), ICOS (2), IGF2 (1)	0.24921	0.40933	6.047e-102	7.529e-100	47
Arthrogryposis multiplex congenita	Pena-shokeir syndrome	44	2	SCN4A (1), GBE1 (1), BLTP1 (1), ACTA1 (1), NAGA (1), ASCC1 (1), PRICKLE1 (1), RAPSN (1), ROR2 (1), SCN8A (1), SPAG16 (1), DYNC1H1 (1)	0.54321	0.84615	8.942e-102	1.107e-99	
Diabetes mellitus type 1	Systemic lupus erythematosus	159	46	RERE (1), GATA4 (1), CAT (2), NOTCH2 (1), SH2B3 (3), IFIH1 (3), BLTP1 (1), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), BANK1 (4)	0.16341	0.33333	9.619e-102	1.184e-99	47
Cardiovascular disease	Coronary artery disease	190	57	CASZ1 (1), PRDM16 (3), ZFPM2 (1), SH2B3 (3), ABCG8 (3), ACE (3), AGT (3), ALDH1A2 (1), APOB (3), APOE (3), BCAS3 (1), C1GALT1 (1)	0.13709	0.43981	1.368e-101	1.675e-99	34
Age-related macular degeneration	Atrophic macular degeneration	46	10	CFHR1 (3), CFI (4), COL4A3 (1), ABCA1 (1), ALDH1A2 (1), APOE (3), CNN2 (1), EXOC3L2 (1), LIPC (1), MARK4 (1), PILRA (1), TRPM1 (1)	0.48936	0.82143	2.538e-101	3.090e-99	238
Peripheral nervous system disease	Peripheral neuropathy	52	52	DPYD (2), SLC12A6 (2), GFAP (2), ABCA1 (2), CACNA1H (2), ERCC1 (2), MMP3 (2), TCF4 (2), GSTP1 (2), ICAM1 (2), IGF1 (2), IGF1R (2)	0.26804	0.98113	2.696e-101	3.265e-99	304
Intellectual developmental disorder	Non-specific syndromic intellectual disability	154	97	CHD8 (3), CHRNA7 (1), PSMD12 (2), HNRNPU (1), JMJD1C (1), ACTL6A (2), VCP (1), CACNA1D (1), ACTL6B (2), ANK3 (5), CAMK4 (1), CAPZA2 (1)	0.15039	0.41848	5.100e-101	6.141e-99	6
Bladder calculus	Urolithiasis	40	0	KANSL1 (1), ALPL (1), BCAS3 (1), GIPR (1), PRKAG2 (1), STC1 (1), VEGFA (1), SLC30A10 (1), HBB (1), PDILT (1), AP1S3 (1), AHR (1)	0.57143	1.00000	6.460e-101	7.737e-99	180
Astrocytoma	Glioma	138	4	NF1 (1), ADNP (1), HMCN1 (1), TEAD1 (1), AGBL1 (1), ARHGEF28 (1), BRAF (1), C6orf118 (1), CARD11 (1), CTNNA3 (1), DSCAM (1), EFL1 (2)	0.14967	0.45847	8.078e-101	9.623e-99	291
Gastric cancer	Hepatocellular carcinoma	115	14	ANKRD11 (1), HNF1B (1), MAP3K1 (1), SH2B3 (1), TERT (2), TP53 (4), ARHGEF10L (1), ASIP (1), BAD (1), BNC2 (1), CDH13 (2), CELF2 (1)	0.15272	0.52752	9.931e-101	1.177e-98	72

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Hereditary hearing loss	Nonsyndromic hearing loss	47	47	ESRRB (3), EYA4 (3), MYO15A (3), OTOF (2), PCDH15 (3), TMC1 (4), HGF (3), RDX (2), GSDME (3), DIAPH1 (3), MYO1A (2), GJB6 (4)	0.38525	0.94000	1.766e-100	2.081e-98	31
Growth hormone deficiency	Kallmann syndrome	34	21	FGF8 (3), DUSP6 (3), IL17RD (3), PROK2 (4), TACR3 (2), PROKR2 (3), TCF12 (2), GH1 (1), CHD7 (4), FGFR1 (4), WDR11 (3), SEMA3E (2)	0.87179	1.00000	9.558e-100	1.109e-97	58
Kallmann syndrome	Sheehan syndrome	34	21	FGF8 (3), DUSP6 (3), IL17RD (3), PROK2 (4), TACR3 (2), PROKR2 (3), TCF12 (2), GH1 (1), CHD7 (4), FGFR1 (4), WDR11 (3), SEMA3E (2)	0.87179	1.00000	9.558e-100	1.109e-97	58
Kallmann syndrome	Pituitary short stature	34	21	FGF8 (3), DUSP6 (3), IL17RD (3), PROK2 (4), TACR3 (2), PROKR2 (3), TCF12 (2), GH1 (1), CHD7 (4), FGFR1 (4), WDR11 (3), SEMA3E (2)	0.87179	1.00000	9.558e-100	1.109e-97	58
Genetic steroid-resistant nephrotic syndrome	Hereditary steroid-resistant nephrotic syndrome	33	33	WT1 (2), NUP107 (2), COL4A3 (2), ACTN4 (2), ARHGAP24 (2), CD2AP (2), MYO1E (2), NUP160 (2), NUP85 (2), PAX2 (2), PTPRO (2), TRPC6 (2)	0.91667	0.97059	6.764e-99	7.804e-97	20
Leber congenital amaurosis	Retinitis pigmentosa	64	60	ABCA4 (6), CNGB3 (2), PRPH2 (7), AIPL1 (6), ALMS1 (2), ADAMTS18 (2), LRAT (6), NBAS (2), NPHP4 (2), PDE6B (6), RIMS1 (2), TTC8 (6)	0.17534	0.88889	5.547e-98	6.367e-96	7
Autism	Obsessive-compulsive disorder	152	35	SOX5 (3), RAI1 (3), RERE (2), COMT (2), ATP2A2 (1), AKAP6 (1), ASAP1 (1), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (2), COA8 (1)	0.09832	0.64957	6.150e-98	7.023e-96	
Autoimmune disease	Diabetes mellitus type 1	100	23	SH2B3 (3), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), CAMK4 (1), CTSH (3), DAG1 (1), ERBB3 (1), FAM76B (1), FUT2 (1), HLA-DQB3 (1)	0.17241	0.49505	6.957e-98	7.903e-96	47
Adenoid cystic carcinoma	Salivary gland neoplasms	43	0	JAG1 (1), BCL11A (1), FAT1 (1), MARCKS (1), MARK2 (1), RBFOX2 (1), SERPINF1 (1), KRT5 (1), ST3GAL4 (1), GAS6 (1), DAPK1 (1), VEGFA (1), ITGB4 (1)	0.42157	0.97727	9.304e-98	1.051e-95	
Nephrolithiasis	Urolithiasis	51	4	KANSL1 (1), HIBADH (1), ALPL (1), BCAS3 (1), GIPR (1), NBPFF3 (1), PRKAG2 (1), SHROOM3 (1), SLC26A1 (5), STC1 (1), VEGFA (1), WDR72 (1)	0.36691	0.73913	1.859e-97	2.090e-95	180
Psoriasis	Systemic lupus erythematosus	186	50	RERE (1), CAT (2), SH2B3 (3), TP63 (1), IFIH1 (3), BLTP1 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BANK1 (4), BTNL2 (1), DAG1 (1)	0.15500	0.28440	5.288e-97	5.915e-95	
Hereditary motor and sensory neuropathies	Roussy-levy syndrome	38	4	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (1), KIF1B (1), MME (1), TRPV4 (3), DYNC1H1 (1), FIG4 (1), MFN2 (4), NEFL (1)	0.56716	1.00000	1.406e-96	1.549e-94	13
Hereditary motor and sensory neuropathies	Hypertrophic neuropathy	38	6	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (2), KIF1B (1), MME (1), TRPV4 (3), DYNC1H1 (1), FIG4 (1), MFN2 (4), NEFL (1)	0.56716	1.00000	1.406e-96	1.549e-94	13
Dejerine-sottas disease	Hereditary motor and sensory neuropathies	38	6	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (3), KIF1B (1), MME (1), TRPV4 (3), DYNC1H1 (1), FIG4 (1), MFN2 (4), NEFL (1)	0.56716	1.00000	1.406e-96	1.549e-94	13
Cone-rod dystrophy	Retinitis pigmentosa	64	62	ABCA4 (7), ATF6 (4), CNGA3 (4), CNGB3 (2), PDE6C (2), ACBD5 (2), ADAM9 (5), IMPG1 (4), IMPG2 (5), PRPH2 (7), AIPL1 (5), CACNA1F (3)	0.17439	0.86486	3.206e-96	3.515e-94	7
Global developmental delay	Neurodevelopmental disorder	159	100	FOXG1 (2), UBE3A (1), ANKRD11 (2), BPTF (4), NFIX (1), SHANK3 (1), PTEN (2), ADNP (2), VCP (2), ATRX (1), ATP1A3 (2), ARID1B (2)	0.13826	0.42973	3.592e-96	3.919e-94	6
Growth hormone deficiency	Panhypopituitarism	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.77273	1.00000	7.302e-96	7.850e-94	58
Panhypopituitarism	Pituitary short stature	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.77273	1.00000	7.302e-96	7.850e-94	58
Panhypopituitarism	Sheehan syndrome	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.77273	1.00000	7.302e-96	7.850e-94	58
Growth hormone deficiency	Pituitary dwarfism	34	1	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (2), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.75556	1.00000	3.213e-95	3.404e-93	58
Pituitary dwarfism	Pituitary short stature	34	1	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (2), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.75556	1.00000	3.213e-95	3.404e-93	58

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Pituitary dwarfism	Sheehan syndrome	34	1	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (2), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.75556	1.00000	3.213e-95	3.404e-93	58
Eczema	Psoriasis	143	21	RERE (1), IFIH1 (3), BLTP1 (1), ANKRD55 (1), ANO3 (1), CSMD1 (3), EBF1 (1), ELMO1 (1), EMSY (1), ERBB3 (1), ETS1 (1), FAM177A1 (1)	0.14990	0.39178	3.367e-95	3.550e-93	14
Kallmann syndrome	Panhypopituitarism	35	22	FGF8 (3), DUSP6 (3), HESX1 (2), IL17RD (3), PROK2 (4), TACR3 (2), PROKR2 (3), TCF12 (2), GH1 (1), CHD7 (4), FGFR1 (4), WDR11 (3)	0.74468	0.92105	3.603e-95	3.781e-93	58
Hereditary motor and sensory neuropathies	Peroneal muscle atrophy	38	2	DHTKD1 (1), AARS1 (1), VCP (1), SLC12A6 (1), EGR2 (1), KIF1B (1), MME (1), TRPV4 (3), DYNC1H1 (1), FIG4 (1), MFN2 (4), NEFL (1)	0.55882	0.97436	5.473e-95	5.716e-93	13
Asthma	Eczema	165	28	RERE (1), CEBPA (1), RTE1 (1), BLTP1 (1), CARD11 (2), CCR7 (1), CSMD1 (1), EMSY (1), ERBB3 (1), ETS1 (1), FADS1 (1), FADS2 (1)	0.13002	0.45205	6.556e-95	6.815e-93	14
Attention deficit hyperactivity disorder	Tourette syndrome	142	9	SOX5 (2), RERE (1), ATP2A2 (1), AKAP6 (1), ANK3 (2), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (1), CAMTA1 (1), CSMD1 (1), CTNND1 (1)	0.11620	0.55039	1.687e-94	1.746e-92	
Panhypopituitarism	Pituitary dwarfism	36	2	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (2), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.69231	0.83721	3.934e-94	4.051e-92	58
Hypopituitarism	Sheehan syndrome	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.72340	1.00000	5.038e-94	5.117e-92	58
Hypopituitarism	Pituitary short stature	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.72340	1.00000	5.038e-94	5.117e-92	58
Growth hormone deficiency	Hypopituitarism	34	0	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.72340	1.00000	5.038e-94	5.117e-92	58
Bipolar disorder	Obsessive-compulsive disorder	140	30	SOX5 (1), RERE (1), COMT (2), ATP2A2 (1), AKAP6 (1), BANK1 (1), BRAF (1), C6orf118 (1), C8orf90 (1), CACNA2D3 (1), CACNB2 (2), COA8 (1)	0.10646	0.59829	5.285e-94	5.343e-92	
Alzheimer disease	Gastroesophageal reflux disease	189	12	WT1 (2), APP (6), ABAT (3), ABCG8 (1), ABI3 (2), ACE (2), ADAMTS18 (1), ADARB1 (1), ADGRB3 (1), ADGRL2 (1), AFF3 (1), AKAP6 (1)	0.08185	0.67742	1.565e-93	1.575e-91	2
Hypogonadotropic hypogonadism	Sheehan syndrome	34	30	FGF8 (5), DUSP6 (5), IL17RD (4), PROK2 (6), TACR3 (6), PROKR2 (7), TCF12 (4), GH1 (1), CHD7 (5), FGFR1 (5), WDR11 (5), SEMA3E (4)	0.70833	1.00000	1.822e-93	1.808e-91	58
Hypogonadotropic hypogonadism	Pituitary short stature	34	30	FGF8 (5), DUSP6 (5), IL17RD (4), PROK2 (6), TACR3 (6), PROKR2 (7), TCF12 (4), GH1 (1), CHD7 (5), FGFR1 (5), WDR11 (5), SEMA3E (4)	0.70833	1.00000	1.822e-93	1.808e-91	58
Growth hormone deficiency	Hypogonadotropic hypogonadism	34	30	FGF8 (5), DUSP6 (5), IL17RD (4), PROK2 (6), TACR3 (6), PROKR2 (7), TCF12 (4), GH1 (1), CHD7 (5), FGFR1 (5), WDR11 (5), SEMA3E (4)	0.70833	1.00000	1.822e-93	1.808e-91	58
Amyotrophic lateral sclerosis	Motor neuron disease	61	55	CST3 (2), GFAP (2), ALS2 (7), BCL2L1 (2), CLU (2), LAT (2), LDLR (2), OPTN (7), SETX (6), TIAM1 (3), CTSD (2), PON1 (4)	0.17784	0.85915	2.753e-93	2.721e-91	13
Clear cell renal cell carcinoma	Kidney cancer	43	0	TERT (1), CDKAL1 (1), COL25A1 (1), FANCD2 (1), MAD1L1 (1), SCARB1 (1), TLN2 (1), INSR (1), AKT1 (1), AP3D1 (1), MYEOV (1), SSPN (1)	0.45745	0.78182	4.353e-93	4.283e-91	
Kidney disease	Kidney failure	101	43	INS (2), A4GALT (1), CST3 (3), GATM (3), COL4A3 (1), COL4A4 (1), ACE (2), AGT (2), CHRM3 (1), CLU (2), COL6A3 (2), CPS1 (1)	0.17535	0.40239	6.973e-93	6.830e-91	73
Hypogonadotropic hypogonadism	Kallmann syndrome	35	30	FGF8 (6), DUSP6 (6), IL17RD (5), PROK2 (8), TACR3 (7), PROKR2 (8), PNPLA6 (1), TCF12 (4), GH1 (1), CHD7 (6), FGFR1 (6), WDR11 (6)	0.68627	0.92105	1.297e-92	1.265e-90	58
Celiac disease	Diabetes mellitus type 1	95	33	SH2B3 (3), BLTP1 (1), ACE (2), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), BTNL2 (1), CTSH (3), DAG1 (1), ETS1 (3), FUT2 (1)	0.16493	0.49223	1.556e-92	1.510e-90	47
Basal cell carcinoma	Non-melanoma skin carcinoma	81	11	ANKRD11 (1), TP53 (3), ASIP (2), ATP8B4 (1), BNC2 (2), CUX1 (1), EPB41L1 (1), FADS2 (1), FARP1 (2), FOXP1 (1), GABBR1 (1), GPX4 (1)	0.19471	0.47929	7.310e-92	7.065e-90	16

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Deafness	Hereditary hearing loss	47	47	ESRRB (4), EYA4 (4), MYO15A (4), OTOF (4), PCDH15 (4), TMC1 (4), HGF (4), RDX (4), GSDME (4), DIAPH1 (4), MYO1A (3), GJB6 (5)	0.26705	0.94000	3.598e-91	3.463e-89	31
Hereditary hearing loss	Isolated sensorineural deafness	44	44	ESRRB (2), EYA4 (2), MYO15A (2), OTOF (2), PCDH15 (2), TMC1 (2), HGF (2), RDX (2), GSDME (2), GJB6 (2), SLC26A4 (2), COL11A2 (2)	0.34921	0.88000	2.082e-90	1.995e-88	31
Kallmann syndrome	Pituitary dwarfism	34	22	FGF8 (3), DUSP6 (3), IL17RD (3), PROK2 (4), TACR3 (2), PROKR2 (3), TCF12 (2), GH1 (2), CHD7 (4), FGFR1 (4), WDR11 (3), SEMA3E (2)	0.69388	0.89474	2.366e-90	2.257e-88	58
Congenital cartilage disorder	Osteochondrodysplasias	30	16	HSPG2 (2), SLC26A2 (1), COL2A1 (2), BMPR1B (1), COL11A1 (2), DYM (1), FLNB (1), TRPS1 (1), TRPV4 (2), VEGFA (2), BCL2 (2), FLNA (2)	0.88235	1.00000	3.539e-90	3.362e-88	44
Stevens-johnson syndrome	Toxic epidermal necrolysis	37	3	LTBP3 (1), HLA-C (2), IKZF1 (3), SMC2 (1), SPMIP7 (1), UBE2K (1), UMAD1 (1), ZBTB20 (1), TAP2 (1), POU5F1 (1), ZNF423 (1), HLA-B (3)	0.46835	1.00000	4.095e-90	3.873e-88	
Keratinocyte carcinoma	Skin cancer	46	0	TERT (1), TP53 (1), BNC2 (1), CUX1 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DRB1 (1), MYL10 (1), RHOU (1), SMC2 (1), TRPS1 (1)	0.39655	0.59740	4.801e-90	4.522e-88	16
Basal cell carcinoma	Skin cancer	63	8	TERT (2), TP53 (3), TPCN2 (1), ATP8B4 (1), BNC2 (2), CUX1 (1), EMSY (1), FADS2 (1), FAM76B (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1)	0.18052	0.75000	1.751e-89	1.642e-87	16
Chronic obstructive pulmonary disease	Obstructive airway disease	40	39	TP53 (2), SERPINA1 (2), CYP1A2 (2), TRPV4 (2), NOS3 (2), HMOX1 (2), ICAM1 (2), TLR4 (1), TNF (2), IL6 (2), EPHX1 (2), DSP (2)	0.38835	0.95238	3.199e-89	2.987e-87	133
Hypopituitarism	Kallmann syndrome	34	21	FGF8 (3), DUSP6 (3), IL17RD (3), PROK2 (4), TACR3 (2), PROKR2 (3), TCF12 (2), GH1 (1), CHD7 (4), FGFR1 (4), WDR11 (3), SEMA3E (2)	0.66667	0.89474	3.708e-89	3.448e-87	58
Hypopituitarism	Panhypopituitarism	35	1	FGF8 (1), DUSP6 (1), IL17RD (1), PROK2 (1), TACR3 (1), PROKR2 (1), TCF12 (1), GH1 (1), CHD7 (1), FGFR1 (1), WDR11 (1), SEMA3E (1)	0.63636	0.81395	5.675e-89	5.254e-87	58
Diabetic angiopathies	Diabetic peripheral angiopathy	28	16	ASS1 (2), ADCY8 (2), GCH1 (1), HLA-DRB1 (1), SERPINE1 (1), SERPINF1 (2), VEGFA (1), NOS3 (2), AGER (2), CASP3 (2), EPO (1), HMOX1 (2)	0.96552	1.00000	1.761e-88	1.624e-86	63
Cerebrovascular disorder	Stroke	62	56	CASZ1 (3), APOA1 (2), SH2B3 (3), FGA (3), ACE (2), HDAC9 (3), ITGB3 (2), MMP12 (2), SMARCA4 (1), SMOX (2), PLAU (2), F2 (3)	0.17919	0.73810	1.231e-87	1.130e-85	
Bipolar disorder	Tourette syndrome	141	33	SOX5 (2), RERE (1), ATP2A2 (1), AKAP6 (1), ANK3 (3), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (2), CSMD1 (2), CTNND1 (1), DCC (1)	0.10538	0.54651	3.398e-87	3.107e-85	
Bipolar disorder	Mood disorder	151	49	RERE (1), COMT (2), HDAC4 (2), ATP2A2 (2), CACNA1D (2), BLTP1 (1), SERPINA1 (2), ADCY8 (2), ANK3 (3), ARHGAP15 (1), CACNA1E (1), DAO (1)	0.11038	0.50671	3.754e-87	3.418e-85	2
Basal cell carcinoma	Skin neoplasms	74	12	TERT (2), TP53 (3), TPCN2 (1), ASIP (2), ATP8B4 (1), BNC2 (2), CUX1 (1), EMSY (1), FADS2 (1), FAM76B (1), FOXP1 (1), GLI2 (1)	0.18546	0.51034	2.180e-86	1.977e-84	16
Astrocytoma	Central nervous system cancer	119	2	ADNP (1), HMCN1 (1), TEAD1 (1), AGBL1 (1), ARHGEF28 (1), C6orf118 (1), CARD11 (1), CTNNA3 (1), DSCAM (1), EPHA4 (1), FAM163A (1), G3BP1 (2)	0.14184	0.39535	5.280e-85	4.769e-83	291
Autoimmune disease	Systemic lupus erythematosus	101	26	SH2B3 (3), ARHGAP31 (1), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), C12orf42 (1), DAG1 (1), FUT2 (1), HLA-DQB3 (1), ICOS (1), IGF2 (1)	0.13360	0.50000	9.890e-85	8.896e-83	47
Hypogonadotropic hypogonadism	Panhypopituitarism	34	30	FGF8 (5), DUSP6 (5), IL17RD (4), PROK2 (6), TACR3 (6), PROKR2 (7), TCF12 (4), GH1 (1), CHD7 (5), FGFR1 (5), WDR11 (5), SEMA3E (4)	0.59649	0.79070	1.020e-84	9.134e-83	58
Celiac disease	Systemic lupus erythematosus	99	22	SH2B3 (3), ARHGAP31 (1), BLTP1 (1), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), BTNL2 (1), CSK (3), DAG1 (1), DDX6 (1), ETS1 (4)	0.13218	0.51295	1.802e-84	1.608e-82	47
Autoimmune thyroid disease	Celiac disease	63	11	SH2B3 (1), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), BTNL2 (1), DAG1 (1), ELMO1 (1), FUT2 (1), HLA-DQA1 (4), HLA-DRA (2), HLA-DRB1 (2), ICOS (2)	0.22909	0.43750	4.553e-84	4.046e-82	47
Keratinocyte carcinoma	Non-melanoma skin carcinoma	51	0	ANKRD11 (1), TP53 (1), BNC2 (1), CUX1 (1), EPB41L1 (1), FOXP1 (1), GPX4 (1), HERC2 (1), HLA-DQA1 (1), HLA-DRB1 (1), MYL10 (1), RHOU (1)	0.26020	0.66234	5.189e-84	4.593e-82	16

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Neural tube defect	Neural tube defects, x-linked	31	29	SKI (2), INS (2), GLI3 (2), CYP1A2 (2), MTHFD1L (1), PAX3 (2), ZIC5 (2), MTHFR (2), PYY (2), CSF2 (2), NPY1R (2), IFNG (2)	0.63265	1.00000	5.554e-84	4.896e-82	
Hereditary hearing loss	nonsyndromic genetic hearing loss	39	39	ESRRB (2), EYA4 (2), MYO15A (2), OTOF (2), PCDH15 (2), TMC1 (2), HGF (2), RDX (2), GSDME (2), COL11A2 (2), MYO6 (2), CDH23 (2)	0.41489	0.78000	1.462e-83	1.284e-81	31
Coronary artery disease	Hypertension	285	92	CYP17A1 (1), CASZ1 (1), PRDM16 (3), MAP3K1 (1), ZFPM2 (1), APOA1 (2), CELA2A (2), BMPR1B (1), SH2B3 (3), TERT (3), ARHGAP31 (2), TP53 (2)	0.14193	0.24934	7.573e-83	6.623e-81	34
Ankylosing spondylitis	Celiac disease	78	21	SH2B3 (1), ACE (2), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), ETS1 (3), FUT2 (1), HLA-DQA1 (4), HLA-DRB1 (2), IGF2 (1), LRRK2 (1)	0.18182	0.40415	1.273e-82	1.109e-80	
Hereditary steroid-resistant nephrotic syndrome	Idiopathic steroid-resistant nephrotic syndrome	28	26	WT1 (2), NUP107 (2), ACTN4 (2), ARHGAP24 (2), CD2AP (2), MYO1E (2), NUP160 (2), NUP85 (2), PAX2 (2), PTPRO (2), TRPC6 (2), PLCE1 (2)	0.80000	1.00000	2.369e-82	2.047e-80	20
Genetic steroid-resistant nephrotic syndrome	Idiopathic steroid-resistant nephrotic syndrome	28	22	WT1 (2), NUP107 (2), ACTN4 (2), ARHGAP24 (2), CD2AP (2), MYO1E (2), NUP160 (2), NUP85 (2), PAX2 (2), PTPRO (1), TRPC6 (2), PLCE1 (1)	0.80000	1.00000	2.369e-82	2.047e-80	20
Attention deficit hyperactivity disorder	Metabolic syndrome	299	12	SOX5 (1), BPTF (1), RERE (1), COMT (3), JMJD1C (1), ZFPM2 (1), ATP2A2 (1), BMPR1B (1), GBE1 (1), BRWD1 (1), CACNA1D (1), ADARB1 (1)	0.14171	0.27059	2.425e-82	2.088e-80	2
Diabetes mellitus type 2	Schizophrenia	882	346	SOX5 (2), HMGA2 (1), RAI1 (2), HNF1B (6), KANSL1 (1), NFIX (1), DPYD (3), HSPG2 (2), RERE (1), ARVCF (2), COMT (3), HDAC4 (2)	0.18608	0.34711	2.653e-82	2.275e-80	2
Charcot-marie-tooth disease	Dejerine-sottas disease	38	36	DHTKD1 (5), AARS1 (7), VCP (5), SLC12A6 (4), EGR2 (8), KIF1B (6), MME (8), TRPV4 (5), DYNC1H1 (5), FIG4 (7), MFN2 (7), NEFL (7)	0.28571	1.00000	8.098e-82	6.864e-80	13
Charcot-marie-tooth disease	Hypertrophic neuropathy	38	36	DHTKD1 (5), AARS1 (7), VCP (5), SLC12A6 (4), EGR2 (8), KIF1B (6), MME (8), TRPV4 (5), DYNC1H1 (5), FIG4 (7), MFN2 (7), NEFL (7)	0.28571	1.00000	8.098e-82	6.864e-80	13
Charcot-marie-tooth disease	Roussy-levy syndrome	38	36	DHTKD1 (5), AARS1 (7), VCP (5), SLC12A6 (4), EGR2 (8), KIF1B (6), MME (8), TRPV4 (5), DYNC1H1 (5), FIG4 (7), MFN2 (7), NEFL (7)	0.28571	1.00000	8.098e-82	6.864e-80	13
Multiple sclerosis	Rheumatoid arthritis	154	62	SH2B3 (1), RBPJ (3), ABT1 (1), ANKRD55 (3), BTNL2 (2), ELMO1 (1), ETS1 (1), FAM76B (1), GPC5 (1), HLA-DQA1 (2), HLA-DQB3 (1), HLA-DRA (3)	0.14194	0.26736	1.073e-81	9.060e-80	
Heart valve disease	Heart valve prolapse	29	27	NOTCH1 (2), ACE (1), COL18A1 (2), SPP1 (2), CASP3 (2), IL1B (2), PCDHA9 (2), JAK2 (2), CCL2 (2), COL1A1 (2), TIMP1 (2), FGFR1 (2)	0.69048	1.00000	2.625e-81	2.208e-79	391
Charcot-marie-tooth disease	Peroneal muscle atrophy	38	36	DHTKD1 (5), AARS1 (7), VCP (5), SLC12A6 (4), EGR2 (8), KIF1B (6), MME (8), TRPV4 (5), DYNC1H1 (5), FIG4 (7), MFN2 (7), NEFL (7)	0.28358	0.97436	3.139e-80	2.631e-78	13
Intellectual developmental disorder	Nonsyndromic intellectual disability	90	88	CDH15 (7), CLIP1 (4), CRADD (6), CRBN (6), CUX1 (3), DEAF1 (4), EPB41L1 (4), FMN2 (6), GABBR1 (2), GRIA1 (6), GRIK2 (6), GRIN2B (5)	0.10453	0.63830	3.832e-80	3.199e-78	6
Coronary artery disease	Diabetes mellitus type 2	498	116	WT1 (1), SOX5 (1), CYP17A1 (1), RAI1 (1), DPYD (1), CASZ1 (1), SKI (1), ARVCF (1), JMJD1C (1), COLEC11 (1), MAP3K1 (1), ZFPM2 (1)	0.13366	0.43570	7.272e-80	6.048e-78	
Autoimmune thyroid disease	Common variable immunodeficiency	47	2	ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), ICOS (4), IGF2 (1), LRRK2 (1), TENM3 (1), TTC33 (1), IL10 (1), MBL2 (1)	0.27168	0.62667	2.530e-79	2.096e-77	47
Arrhythmogenic right ventricular cardiomyopathy	Dilated cardiomyopathy	47	36	ABCC9 (7), ACTN2 (7), CDH2 (5), CACNB2 (1), CTNNA3 (7), DMD (6), DSG2 (8), JUP (5), PKP2 (7), PLEC (1), PRKAG2 (1), RBM20 (8)	0.16846	0.90385	1.888e-78	1.558e-76	3
Keratinocyte carcinoma	Skin neoplasms	47	3	TERT (1), TP53 (2), BNC2 (1), CUX1 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DRB1 (1), MYL10 (1), RHOU (1), SMC2 (1), TRPS1 (1)	0.26705	0.61039	2.482e-78	2.041e-76	16
Diabetes mellitus	Diabetic eye disease	46	5	RREB1 (1), APOE (2), AUTS2 (1), CDKAL1 (2), HLA-DQB3 (1), HMG20A (1), JAZF1 (1), KLHL42 (1), MACF1 (1), MACIR (1), NRXN3 (1), NYAP2 (1)	0.15385	0.95833	3.316e-78	2.717e-76	182
Autism	Intellectual developmental disorder	261	185	SOX5 (3), CHD8 (3), FOXG1 (2), UBE3A (2), CHRNA7 (2), SIN3A (2), ANKRD11 (2), RAI1 (2), NF1 (2), KANSL1 (3), NFIX (2), JMJD1C (3)	0.12972	0.32262	7.315e-78	5.971e-76	

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Congenital myasthenic syndrome	Myasthenic syndrome	28	28	CHD8 (2), SCN4A (5), ALG2 (7), AGRN (6), CHRNE (6), COLQ (4), GFPT1 (7), GMPPB (5), PLEC (2), RAPSN (5), RPH3A (2), CHAT (6)	0.66667	0.96552	2.851e-77	2.319e-75	5
Leigh syndrome	Mitochondrial complex deficiency	48	45	NDUFA10 (6), NDUFA12 (5), NDUFA9 (5), NDUFAF2 (5), NDUFAF6 (6), ND2 (1), NDUFS3 (6), NDUFS2 (6), TTC19 (7), LRPPRC (5), NDUFA2 (6), TIMMDC1 (5)	0.26816	0.44860	3.857e-76	3.125e-74	62
Autoimmune disease	Hypothyroidism	79	7	SH2B3 (1), C12orf42 (1), CAMK4 (1), ELMO1 (1), ERBB3 (1), FAM76B (1), GIGYF1 (1), HLA-DQB3 (1), ICOS (1), ITGB3 (1), MACIR (1), MB21D2 (1)	0.15863	0.39109	1.306e-75	1.054e-73	47
Insomnia	Major depressive disorder	360	56	SOX5 (1), PAFAH1B1 (1), BPTF (1), WWOX (1), PER2 (2), BLTP1 (1), ADARB1 (1), ADCK1 (1), AKAP6 (1), APOE (1), ARHGAP15 (1), ARHGEF10L (1)	0.13433	0.33364	1.383e-75	1.113e-73	2
Diabetes mellitus type 1	Hypothyroidism	107	25	RERE (1), SH2B3 (3), IFIH1 (1), BTNL2 (1), CAMK4 (1), ERBB3 (1), ETS1 (2), FADS1 (1), FADS2 (1), FAM76B (1), GLIS3 (3), HLA-C (1)	0.14362	0.28610	1.441e-74	1.155e-72	47
Atrial fibrillation	Heart failure	150	49	YWHAE (1), CASZ1 (3), ZFPM2 (1), ATP2A2 (3), ANKRD26 (1), BRWD1 (1), CACNA1D (1), ACE (2), AGT (3), AKAP6 (3), ALDH1A2 (1), ANKRD31 (1)	0.12669	0.31915	2.290e-74	1.828e-72	34
Ischemic heart disease	Myocardial infarction	84	59	PRDM16 (2), APOA1 (1), SH2B3 (3), TP53 (1), ABCG8 (2), ACE (2), APOB (2), APOE (3), ICA1L (2), JCAD (2), KALRN (2), KCNE2 (2)	0.12594	0.49412	2.965e-74	2.359e-72	
Bladder calculus	Nephrolithiasis	36	3	KANSL1 (1), ALPL (1), BCAS3 (1), GIPR (1), PRKAG2 (1), STC1 (1), VEGFA (1), SLC30A10 (1), PDILT (1), AP1S3 (1), TFAP2B (1), ABCG2 (1)	0.28800	0.90000	3.355e-74	2.660e-72	180
Attention deficit hyperactivity disorder	Insomnia	258	12	SOX5 (1), HMG2 (1), BPTF (1), JMJD1C (1), CACNA1D (1), ALMS1 (1), ABCB9 (1), ADARB1 (1), AFF3 (1), AKAP6 (1), ARHGAP15 (1), AS3MT (3)	0.13389	0.23911	5.862e-74	4.631e-72	2
Celiac disease	Juvenile idiopathic arthritis	69	13	RUNX1 (1), ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), HLA-DQA1 (4), HLA-DRA (1), HLA-DRB1 (3), IGF2 (1), LRRK2 (1)	0.17647	0.35751	9.422e-74	7.416e-72	
Autoimmune disease	Common variable immunodeficiency	48	4	ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), ICOS (4), IGF2 (1), IKZF1 (4), LRRK2 (1), TENM3 (1), TTC33 (1), IL10 (1)	0.20870	0.64000	1.574e-73	1.234e-71	47
complex neurodevelopmental disorder	Intellectual developmental disorder	79	79	CHD8 (4), HNRNPU (2), CACNA1D (2), CHD2 (2), CNTNAP2 (2), CUL3 (2), EPB41L1 (4), GRIA1 (6), GRIK2 (6), GRIN2B (5), KCNQ2 (2), KMT5B (5)	0.09305	0.66949	7.713e-73	6.028e-71	6
Celiac disease	Common variable immunodeficiency	47	5	ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), ICOS (4), IGF2 (1), LRRK2 (1), TENM3 (1), TTC33 (1), IL10 (1), CRB1 (1)	0.21171	0.62667	2.341e-72	1.823e-70	47
Limb girdle muscular dystrophy	Muscular dystrophy	30	28	DAG1 (2), GMPPB (3), PLEC (2), SGCA (5), HMGCR (4), CRPPA (3), TRAPPC11 (6), ANO5 (4), TNPO3 (3), SGCD (6), LMNA (1), TTN (3)	0.50000	0.78947	3.592e-72	2.788e-70	131
Coronary artery disease	Stroke	139	51	SOX5 (1), CASZ1 (2), PRDM16 (3), APOA1 (2), SH2B3 (3), ANKRD26 (1), ACE (2), ALDH1A2 (1), ANKRD31 (1), APOB (3), APOC1 (1), BAZ1B (1)	0.10467	0.43034	3.708e-72	2.867e-70	34
Non-melanoma skin carcinoma	Skin cancer	47	0	TP53 (1), ATP8B4 (1), BNC2 (1), CUX1 (1), FADS2 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DQB3 (1), HLA-DRB1 (1), ICOS (1), MYL10 (1)	0.22705	0.55952	4.998e-72	3.851e-70	16
Metabolic syndrome	Schizophrenia	466	162	SOX5 (2), DPYD (3), HSPG2 (2), RERE (1), COMT (3), ZFPM2 (1), PDE4D (2), ATP2A2 (2), BMPR1B (1), SH2B3 (2), DOCK6 (1), RBPJ (1)	0.13791	0.35764	1.270e-70	9.720e-69	2
Multiple sclerosis	Systemic lupus erythematosus	142	45	RREB1 (1), SH2B3 (3), TERT (3), AFF1 (1), ANKRD55 (1), BTNL2 (1), DOCK10 (1), ETS1 (4), FUT2 (1), HLA-DQA1 (3), HLA-DQB3 (1), HLA-DRA (3)	0.13039	0.24653	1.268e-70	9.720e-69	
Colorectal adenoma	Colorectal cancer	88	1	BMP2 (1), RTEL1 (1), TERT (1), FAM193A (1), FMN1 (1), HLA-DQA1 (1), HLA-DRB1 (1), MAP2K5 (1), NALF1 (1), NXN (1), PLCL1 (1), PREX1 (1)	0.08560	0.63309	1.381e-70	1.053e-68	21
Autoimmune thyroid disease	Juvenile idiopathic arthritis	61	11	RERE (2), ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), HLA-DQA1 (2), HLA-DRA (2), HLA-DRB1 (2), IGF2 (1), LRRK2 (1), RHOH (1)	0.17429	0.42361	1.796e-70	1.365e-68	
Hearing loss	Hereditary hearing loss	46	46	ESRRB (3), EYA4 (3), MYO15A (3), OTOF (3), PCDH15 (4), TMC1 (2), HGF (2), RDX (3), GSDME (3), DIAPH1 (2), MYO1A (2), GJB6 (4)	0.11735	0.92000	3.587e-70	2.717e-68	31

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Ciliary dyskinesia	Congenital nasopharyngeal atresia	30	28	DNAI2 (6), HYDIN (7), NME8 (8), DNAH5 (7), DNAAF2 (7), RSPH3 (6), CCDC39 (7), CCDC40 (6), DNAAF1 (6), DNAH11 (7), DNAI1 (5), ODAD1 (7)	0.32967	1.00000	4.366e-70	3.295e-68	9
Liver cirrhosis	Nonalcoholic fatty liver disease	78	37	CAT (2), PTEN (2), CDH2 (1), SERPINA1 (3), ACE (2), APOC1 (1), APOE (1), COMMD1 (3), CYP1A2 (2), FARP1 (1), HLA-DQA1 (2), HLA-DRB1 (2)	0.15507	0.29545	9.775e-70	7.352e-68	288
Ankylosing spondylitis	Common variable immunodeficiency	51	7	ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), IGF2 (1), IKZF1 (4), LRRK2 (1), TENM3 (1), TTC33 (1), IL10 (1), CRB1 (1)	0.15089	0.68000	1.290e-69	9.667e-68	
Lissencephaly	Macrogyria	27	6	PAFAH1B1 (5), CTNNA2 (2), DYNC1H1 (1), CASK (1), ARL3 (1), NDE1 (5), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1)	0.50943	0.93103	4.229e-69	3.159e-67	124
Developmental and epileptic encephalopathy	genetic developmental and epileptic encephalopathy	36	36	WWOX (6), ABAT (3), CACNA1E (6), CUX2 (6), PACS2 (6), SIK1 (6), SYNJ1 (6), SZT2 (7), GLUL (6), RYR3 (3), ITPA (6), GABRB3 (6)	0.16290	1.00000	1.904e-68	1.418e-66	
Combined oxidative phosphorylation deficiency	Mitochondrial disease	46	45	MICOS13 (5), MRPS22 (5), AARS2 (7), MRPL39 (4), MTRFR (7), NARS2 (6), ATP5F1A (5), TRIT1 (5), MRPS23 (4), SLC25A26 (6), EARS2 (4), FARS2 (7)	0.17358	0.67647	3.615e-68	2.682e-66	62
Diabetic eye disease	Diabetic retinopathy	38	4	APOE (2), CDKAL1 (2), HMG20A (1), JAZF1 (1), KLHL42 (1), MACF1 (1), MACIR (1), NRXN3 (1), NYAP2 (1), TCF7L2 (1), TRPS1 (1), PPARG (1)	0.21714	0.79167	6.586e-68	4.871e-66	182
Asthma	Psoriasis	197	54	RERE (1), COLEC10 (1), CAT (2), RUNX1 (1), BLTP1 (1), APOE (3), BTNL2 (1), CSMD1 (3), CTNND2 (1), EMSY (1), ERBB3 (1), ETS1 (1)	0.12289	0.26949	3.425e-67	2.525e-65	14
Marfan syndrome	Thoracic aortic aneurysm and aortic dissection	28	27	FBN1 (8), NOTCH1 (2), JAG1 (2), COL5A1 (2), FBN2 (4), PRKG1 (5), SLC2A10 (2), TGFB2 (5), THSD4 (3), FLNA (3), BGN (5), SMAD3 (6)	0.49123	0.68293	4.645e-67	3.412e-65	50
Cardiomyopathy	Left ventricular noncompaction cardiomyopathy	37	15	PRDM16 (1), ACTN2 (1), CTNNA3 (1), DMD (2), DSG2 (1), EYA4 (1), JUP (1), MYPN (1), PKP2 (1), RBM20 (1), DSP (1), MYH6 (3)	0.15041	0.97368	5.504e-67	4.030e-65	3
Hypertension	Myocardial infarction	180	78	CYP17A1 (1), PRDM16 (1), GATA4 (3), ZFPM2 (1), APOA1 (2), CAT (2), ATP2A2 (2), SH2B3 (3), RUNX1 (1), TP53 (2), SPI1 (1), COL4A4 (2)	0.11613	0.31034	1.553e-66	1.134e-64	34
Coronary artery disease	Heart failure	161	57	NFIA (1), CASZ1 (1), ZFPM2 (1), SH2B3 (3), ANKRD26 (1), AMPD1 (1), TP53 (1), ACE (2), AGT (3), ALDH1A2 (1), ANKRD31 (1), APOB (3)	0.11081	0.34255	1.562e-66	1.136e-64	34
Diabetes mellitus	Diabetic retinopathy	63	14	INS (2), APOB (2), APOE (2), BMP8A (1), CDKAL1 (2), GIPR (2), HMG20A (1), JAZF1 (1), KLHL42 (1), MACF1 (1), MACIR (1), MAU2 (1)	0.15829	0.38415	2.673e-66	1.938e-64	182
Epilepsy	Generalized epilepsy	44	7	CHRNA7 (3), AUTS2 (3), CHRM3 (1), CUX2 (1), GABRA2 (1), GRM3 (1), HTR1A (1), OGA (1), PCDH7 (1), RBFOX1 (3), RPH3A (1), TRIM36 (1)	0.17255	0.67692	5.374e-66	3.883e-64	223
Osteogenesis imperfecta	Osteoporosis-pseudoglioma syndrome	28	28	ALPL (2), BMP1 (6), CCDC134 (5), SERPINF1 (6), TENT5A (6), COL1A1 (7), PLOD2 (2), FKBP10 (6), COL1A2 (7), CRTAP (7), KDELRL2 (5), WNT1 (7)	0.45902	0.71795	1.136e-65	8.155e-64	127
Bone fragility with contractures, arterial rupture, and deafness	Osteogenesis imperfecta	28	28	ALPL (2), BMP1 (6), CCDC134 (5), SERPINF1 (6), TENT5A (6), COL1A1 (7), PLOD2 (2), FKBP10 (6), COL1A2 (7), CRTAP (7), KDELRL2 (5), WNT1 (7)	0.45902	0.71795	1.136e-65	8.155e-64	127
Autism	Tourette syndrome	131	29	SOX5 (3), RERE (2), ATP2A2 (1), AKAP6 (1), ANK3 (2), BANK1 (1), BRAF (1), C8orf90 (1), CACNB2 (2), CSMD1 (3), CSMD3 (3), CTNND1 (1)	0.08234	0.50775	1.140e-65	8.156e-64	
Crohn disease	Multiple sclerosis	140	48	WWOX (1), GLI3 (1), SH2B3 (1), CEBPA (1), RBPJ (3), ANKRD55 (1), BTNL2 (1), CDHR3 (1), CSMD1 (1), ELMO1 (1), ERN1 (3), ETS1 (1)	0.12422	0.24306	1.594e-65	1.137e-63	14
Heart disease	Myocardial ischemia	65	39	ABCG8 (2), AGT (2), APOC1 (1), APOE (2), CDH13 (1), ELL (1), ENSA (3), HDAC9 (1), ICA1L (2), IL6R (1), JCAD (2), KCNE2 (2)	0.13742	0.44521	3.634e-65	2.583e-63	73
Multiple sclerosis	Ulcerative colitis	132	50	WWOX (1), GLI3 (1), SH2B3 (1), CEBPA (1), RBPJ (3), ANKRD55 (1), BTNL2 (2), ELMO1 (1), ERN1 (3), ETS1 (1), FOXP1 (1), FUT2 (1)	0.12500	0.22917	4.717e-65	3.342e-63	14
Barrett esophagus	Esophageal adenocarcinoma	29	1	ALDH1A2 (1), APOB (1), BCL3 (1), CRTC1 (1), FOXP1 (2), KHDRBS2 (1), MSRA (1), OR5V1 (1), PLCL1 (1), TMOD1 (1), DPYSL2 (1), DPP6 (1)	0.36709	0.82857	6.083e-65	4.297e-63	

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Endometrial cancer	Endometrial neoplasms	50	8	NF1 (1), HNF1B (2), BPTF (1), SH2B3 (1), BCL11A (1), CACNA2D3 (1), H4C8 (1), LINGO2 (1), MSH6 (2), NTM (1), TAF4A (1), CYP19A1 (1)	0.19455	0.37879	7.869e-65	5.541e-63	72
Oligoarticular juvenile idiopathic arthritis	Polyarticular juvenile idiopathic arthritis	32	8	RUNX1 (1), ANKRD55 (2), CLIC4 (1), IL6R (1), JAZF1 (1), UBE2L3 (1), FAS (1), IL2 (1), RUNX3 (1), ATXN2 (1), HLA-DQB1 (2), IRF1 (1)	0.18713	1.00000	1.086e-64	7.624e-63	320
Insomnia	Metabolic syndrome	268	2	SOX5 (1), BPTF (1), DPYD (1), JMJD1C (1), RREB1 (1), CACNA1D (1), ADAMTS18 (1), ADARB1 (1), ADGRB3 (1), AFF3 (1), AGAP1 (1), AGBL1 (1)	0.12671	0.24838	2.019e-64	1.413e-62	2
Autoimmune disease	Juvenile idiopathic arthritis	64	11	ADGRL2 (1), AFF3 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), IGF2 (1), LRRK2 (1), RHOH (1), TENM3 (1), TTC33 (1), UBE2L3 (1)	0.15802	0.31683	2.741e-64	1.912e-62	
Diabetes mellitus type 2	Obesity	482	157	SOX5 (1), RAI1 (3), DPYD (3), RERE (1), COMT (2), INS (3), GNAT2 (1), PDE4D (1), PRKAR1A (2), RBPJ (2), ABCA1 (2), ADGRL2 (1)	0.12708	0.40369	4.610e-64	3.205e-62	2
Cleft palate	Complete unilateral cleft lip	28	24	FGF8 (2), FGFR3 (2), KIF7 (2), TP63 (2), FGF10 (2), IRF6 (2), SPRY2 (2), NOS3 (2), TYMS (2), FGFR2 (2), MSX1 (2), PTCH1 (2)	0.40580	0.77778	5.439e-64	3.770e-62	136
Systemic lupus erythematosus	Systemic sclerosis	71	24	ARHGAP31 (1), AHNAK2 (1), BANK1 (4), CSK (3), DDX6 (1), DGKQ (1), HLA-DQA1 (3), HLA-DRA (1), HLA-DRB1 (4), JAZF1 (4), TNIP1 (5), IL1B (1)	0.09972	0.55469	1.133e-63	7.826e-62	
Coronary artery disease	Metabolic syndrome	276	53	SOX5 (1), DPYD (1), SKI (1), JMJD1C (1), COLEC11 (1), MAP3K1 (1), ZFPM2 (1), APOA1 (3), CELA2A (3), BMPR1B (1), SH2B3 (3), DOCK6 (1)	0.12713	0.24147	1.167e-63	8.040e-62	
Cleft lip	Cleft palate	28	24	FGF8 (2), FGFR3 (2), KIF7 (2), TP63 (2), FGF10 (2), IRF6 (2), SPRY2 (2), NOS3 (2), TYMS (2), FGFR2 (2), MSX1 (2), PTCH1 (2)	0.40000	0.75676	2.232e-63	1.532e-61	136
Asthma	Rheumatoid arthritis	182	82	PRDM16 (1), CAT (2), RUNX1 (3), BLTP1 (1), AFF3 (3), BTNL2 (2), CEP170B (1), DDX6 (3), DPP4 (1), EMSY (1), EPHA4 (1), ERBB3 (1)	0.11750	0.27492	2.633e-63	1.802e-61	
Lipidoses	Lipoidosis	19	19	SCD (2), LSS (2), FADS2 (2), SLC2A3 (2), PPARG (2), SERPINA3 (2), ASAH1 (2), HPN (2), AP1S1 (2), ASNS (2), FABP1 (2), INHBE (2)	0.95000	1.00000	3.374e-63	2.302e-61	
Common variable immunodeficiency	Juvenile idiopathic arthritis	46	4	ADGRL2 (1), ANKRD55 (1), ATXN2L (1), DAG1 (1), FUT2 (1), IGF2 (1), LRRK2 (1), TENM3 (1), TTC33 (1), IL10 (1), CRB1 (1), HLA-DQB1 (2)	0.15541	0.61333	4.836e-63	3.290e-61	
Diabetes mellitus type 2	Hypertension	467	154	HMGA2 (1), CYP17A1 (1), BPTF (1), CYP11B2 (2), CASZ1 (1), RERE (1), COMT (2), INS (3), MAP3K1 (1), GATA4 (1), ZFPM2 (1), APOA1 (3)	0.12410	0.40644	5.122e-63	3.473e-61	
Arrhythmogenic right ventricular cardiomyopathy	Cardiomyopathy	40	27	ABCC9 (1), ACTN2 (1), CTNNA3 (7), DMD (2), DSG2 (6), JUP (5), PKP2 (7), PRKAG2 (3), RBM20 (1), TRPM4 (1), DSP (4), MYH6 (3)	0.15564	0.76923	6.248e-63	4.224e-61	3
Cataract	Congenital cataract	40	38	LSS (6), BFSP2 (5), CRYBB2 (6), IARS2 (1), MAF (4), PITX3 (5), PGRMC1 (2), VIM (4), CRYAA (6), EPHA2 (6), PAX6 (2), CRYBA4 (5)	0.18018	0.66667	2.379e-62	1.603e-60	51
Insomnia	Schizophrenia	395	122	SOX5 (2), HMGA2 (1), PAFAH1B1 (2), DPYD (3), CUL9 (1), WWOX (2), PRKG2 (1), SPI1 (1), CACNA1D (1), ALMS1 (1), ADARB1 (2), ADGRB3 (1)	0.12244	0.36608	2.682e-62	1.802e-60	2
Developmental disability	Neurodevelopmental disorder	82	47	CHD8 (3), UBE3A (1), ANKRD11 (2), RAI1 (1), SHANK3 (2), PTEN (2), ADNP (2), CTSF (1), ATRX (1), ARID1B (2), CELF4 (2), DEAF1 (4)	0.08200	0.57343	3.584e-62	2.400e-60	6
Major depressive disorder	Obesity	359	116	SOX5 (1), RERE (1), COMT (1), DMRT1 (1), WWOX (1), PDE4D (2), ABT1 (1), AGT (1), AKAP6 (1), APOE (3), ARHGEF10L (1), AS3MT (1)	0.12840	0.30067	6.213e-62	4.149e-60	2
Bipolar disorder	Depression	123	39	COMT (2), SEC24C (1), INS (2), APP (1), GFAP (1), ACE (1), ADRA1A (1), CNTNAP2 (2), CTNND2 (2), DAO (1), DISC1 (1), DLG2 (1)	0.08932	0.44086	6.307e-62	4.199e-60	2
Hypertrophy	Left ventricular disease	30	30	ACTA1 (2), ACE (2), AGT (2), CKM (2), HBEGF (2), PTPRF (2), REN (2), ADRB3 (2), PPP3R1 (2), CTNNB1 (2), GDF15 (2), AHR (2)	0.34884	0.61224	6.461e-62	4.289e-60	3
Asthma	Crohn disease	184	58	GLI3 (1), CEBPA (1), BLTP1 (1), BTNL2 (1), CCR7 (3), CDHR3 (3), CNTNAP2 (1), CSMD1 (1), EMSY (1), ERBB3 (1), ETS1 (1), FADS1 (1)	0.11683	0.26667	9.502e-62	6.288e-60	14

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Hypothyroidism	Systemic lupus erythematosus	109	21	RERE (1), SH2B3 (3), TERT (3), IFIH1 (3), AFF1 (1), BTNL2 (1), C12orf42 (1), ETS1 (4), FAM171A1 (1), FKBPL (1), GABBR1 (1), HLA-DQA1 (3)	0.11848	0.29144	9.631e-62	6.354e-60	47
Eczema	Respiratory system disease	73	2	RERE (1), CEBPA (1), RTEL1 (1), CARD11 (1), CCR7 (1), EMSY (1), ETS1 (1), FADS1 (1), FADS2 (1), HINT1 (1), HLA-DQA1 (1), HLA-DRB1 (1)	0.13670	0.30290	4.231e-61	2.783e-59	14
Jeune thoracic dystrophy	Short rib dysplasia-polydactyly syndrome	22	15	EVC2 (1), IFT81 (1), NEK1 (3), IFT43 (1), IFT80 (2), CEP120 (2), DYNC2H1 (4), DYNC2I1 (4), DYNC2I2 (4), DYNC2LI1 (2), DYNLT2B (2), IFT140 (2)	0.61111	0.91667	4.572e-61	2.999e-59	19
Inflammatory bowel disease	Multiple sclerosis	135	35	WWOX (1), GLI3 (1), SH2B3 (1), CEBPA (1), RBPJ (3), ABT1 (1), ANKRD55 (1), BTNL2 (1), ELMO1 (1), ETS1 (1), FOXP1 (1), FUT2 (1)	0.11926	0.23438	5.642e-61	3.689e-59	14
Cannabis abuse	Substance abuse	62	8	MCCC2 (1), BNC1 (1), BARHL2 (1), CACNA1A (1), CADM2 (1), CTTNBP2 (1), ERC2 (1), FOXP1 (1), FOXP2 (1), GABRA2 (2), H4C8 (1), IGSF11 (1)	0.10858	0.53448	8.531e-61	5.562e-59	2
Cone dystrophy	Retinitis pigmentosa	37	36	ABCA4 (6), CNGA3 (2), CNGB3 (4), GNAT2 (4), PDE6C (7), PDE6H (2), PRPH2 (7), CACNA1F (2), ABHD12 (2), MKKS (2), PCDH15 (2), PDE6B (6)	0.10335	0.97368	1.642e-60	1.068e-58	7
Diabetes mellitus type 2	Major depressive disorder	678	180	SOX5 (1), CYP17A1 (1), HNF1B (6), KANSL1 (1), BPTF (1), CASZ1 (1), RERE (1), KIF15 (1), COMT (2), SEC24C (2), HDAC4 (2), ZFPM2 (1)	0.15540	0.34592	7.589e-60	4.919e-58	2
Diabetes mellitus	Heart failure	85	21	INS (2), CAT (2), ANKRD26 (1), AKAP6 (1), ALDH1A2 (1), ANKRD31 (1), APOB (1), APOC1 (3), APOE (2), BAZ1B (1), BCL3 (1), CRTCL1 (1)	0.12463	0.28716	1.757e-59	1.135e-57	
Non-melanoma skin carcinoma	Skin neoplasms	48	4	TP53 (2), ASIP (2), ATP8B4 (1), BNC2 (1), CUX1 (1), FADS2 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DQB3 (1), HLA-DRB1 (1), ICOS (1)	0.17978	0.33103	1.806e-59	1.164e-57	16
Macular dystrophy	Retinitis pigmentosa	39	34	ABCA4 (6), ATF6 (2), CNGA3 (2), CNGB3 (2), BEST1 (6), IMPG1 (4), IMPG2 (5), PRPH2 (7), CACNA1F (2), COL18A1 (1), CTNNA1 (3), PDE6B (6)	0.10773	0.88636	1.860e-59	1.195e-57	7
Congenital heart disease	Tetralogy of fallot	45	43	ANKRD11 (2), TBX1 (5), NR2F2 (4), GATA4 (6), NOTCH1 (2), HAND1 (4), MCTP2 (2), NKX2-6 (5), NRP1 (3), RBFOX2 (5), ROBO1 (3), TBX5 (2)	0.18595	0.39474	1.962e-59	1.257e-57	41
Anorexia nervosa	Eating disorder	43	1	WWOX (1), AKAP6 (2), ALDH4A1 (1), ASB3 (1), BLTP3A (1), CAMK1D (1), CSMD1 (1), ERBB3 (1), FOXP1 (1), MGMT (1), NALF1 (1), NCKIPSD (1)	0.15302	0.59722	2.415e-59	1.543e-57	75
Dilated cardiomyopathy	Left ventricular noncompaction cardiomyopathy	35	28	PRDM16 (4), ACTN2 (7), CTNNA3 (1), DMD (6), DSG2 (7), EYA4 (5), JUP (1), MYPN (7), PKP2 (2), RBM20 (8), DSP (7), MYH6 (7)	0.12635	0.92105	4.350e-59	2.770e-57	3
Major depressive disorder	Substance abuse	209	58	SOX5 (1), BPTF (1), MCCC2 (1), PER2 (2), PER3 (2), ADCY8 (2), ADCYAP1R1 (1), AKAP6 (1), ALCAM (1), ANO4 (1), ARHGAP15 (1), AUTS2 (1)	0.09215	0.40504	8.411e-59	5.342e-57	2
Diabetes mellitus type 2	Insomnia	438	25	SOX5 (1), HMGA2 (1), NF1 (1), BPTF (1), DPYD (1), JMJ1D1C (1), RREB1 (1), CACNA1D (2), BLTP1 (1), ALMS1 (1), ABCB9 (1), ADAMTS18 (1)	0.11768	0.40593	1.095e-58	6.932e-57	2
Melanoma	Squamous cell carcinoma	123	38	ANKRD11 (1), NF1 (2), RREB1 (1), MAP3K1 (1), COL2A1 (2), NOTCH2 (2), PTEN (2), RTEL1 (1), TERT (5), TP53 (2), TPCN2 (1), ASIP (2)	0.11162	0.28276	1.653e-58	1.044e-56	
Diabetic neuropathy	Diabetic retinopathy	54	22	INS (2), ACE (2), AGT (2), CDKAL1 (2), FSTL5 (1), HLA-DRB1 (2), HMG20A (1), JAZF1 (1), MACF1 (1), MACIR (1), NRXN3 (1), NYAP2 (1)	0.15652	0.32927	2.329e-58	1.466e-56	182
Heart failure	Stroke	87	26	CASZ1 (2), SH2B3 (2), ANKRD26 (1), ACE (2), ALDH1A2 (1), ANKRD31 (1), APOB (1), APOC1 (3), BAZ1B (1), BCL3 (1), FADS1 (1), FADS2 (1)	0.12306	0.26935	2.621e-58	1.645e-56	34
Juvenile idiopathic arthritis	Polyarticular juvenile idiopathic arthritis	32	8	RUNX1 (1), ANKRD55 (2), CLIC4 (1), IL6R (1), JAZF1 (1), UBE2L3 (1), FAS (1), IL2 (1), RUNX3 (1), ATXN2 (1), HLA-DQB1 (2), IRF1 (1)	0.11985	1.00000	5.855e-58	3.666e-56	320
Erythematousquamous dermatosis	Seborrheic dermatitis	21	0	FOXP1 (1), HERC2 (1), KLK6 (1), TAP2 (1), RALY (1), IRF4 (1), IL23R (1), IL2RA (1), TYK2 (1), ZMIZ1 (1), POLI (1), TYR (1)	0.53846	0.95455	1.695e-57	1.058e-55	263
Arrhythmogenic right ventricular cardiomyopathy	Hypertrophic cardiomyopathy	38	31	ABCC9 (1), ACTN2 (3), CACNB2 (1), DMD (1), DSG2 (6), JUP (5), PKP2 (7), PRKAG2 (2), RBM20 (3), TRPM4 (1), DSP (5), MYH6 (4)	0.14022	0.73077	2.074e-57	1.291e-55	3

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Congenital brain malformation	Congenital hypoplasia of part of brain	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.94444	1.00000	2.334e-57	1.441e-55	124
Congenital brain malformation	Microgyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.94444	1.00000	2.334e-57	1.441e-55	124
Congenital hypoplasia of part of brain	Microgyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.94444	1.00000	2.334e-57	1.441e-55	124
Intellectual developmental disorder	Intellectual disability	57	35	FOXP1 (2), HDAC4 (2), ANK3 (5), AP4M1 (3), CACNA1G (3), CRBN (5), GPT2 (1), GRIN2B (4), HERC2 (3), KCNN2 (1), KDM5B (5), NOVA2 (1)	0.06876	0.75000	2.572e-57	1.583e-55	6
Aneurysm	Aortic aneurysm	24	5	FBN1 (3), APOE (1), CSMD1 (1), KCNH5 (1), NCKAP5 (1), LRP1 (1), ZNF335 (1), SMAD3 (5), ADAMTS8 (1), CAST (1), CDKN1A (1), CELSR2 (1)	0.36364	0.88889	5.637e-57	3.460e-55	50
Crohn disease	Eczema	105	15	CEBPA (1), IFIH1 (1), BLTP1 (1), ANKRD55 (1), CCR7 (3), CDC42SE2 (1), CDH13 (1), CSMD1 (1), ELMO1 (1), EMSY (1), ERBB3 (1), ETS1 (1)	0.11041	0.28767	2.044e-56	1.251e-54	14
Cerebellar ataxia	Spinocerebellar ataxia	38	32	WWOX (5), CACNA1A (6), CACNA1G (5), PEX6 (2), PRDX3 (4), SETX (6), ESR1 (1), PDYN (6), ITPR1 (7), SYT14 (5), SYNE1 (3), VPS13D (5)	0.20994	0.36538	2.791e-56	1.704e-54	92
Insomnia	Neurotic disorder	139	0	SOX5 (1), PAFAH1B1 (1), SPI1 (1), AGBL1 (1), ARHGAP15 (1), ARHGEF10L (1), AS3MT (1), B3GALT1 (1), BNC2 (1), CADM2 (1), CAMTA1 (1), CSMD1 (1)	0.10102	0.31954	3.555e-56	2.164e-54	2
Microcephaly	Primary microcephaly	28	27	LMNB1 (5), CENPE (7), ZNF335 (3), DPP6 (2), CDK6 (6), ASPM (7), CDK5RAP2 (7), MCPH1 (8), CIT (6), WDR62 (8), CEP135 (6), ANGPT2 (1)	0.24561	0.80000	3.799e-56	2.306e-54	137
Congenital neurologic anomalies	Intellectual developmental disorder	67	21	FOXP1 (2), ANKRD11 (1), WWOX (1), FGD1 (1), ACTB (1), PTEN (2), ABCD1 (1), ALDH18A1 (1), ATRX (1), ANK3 (5), AP4M1 (2), ARSA (1)	0.07809	0.58261	8.025e-56	4.859e-54	6
Arrhythmogenic right ventricular cardiomyopathy	Left ventricular noncompaction cardiomyopathy	25	12	ACTN2 (1), CTNNA3 (7), DMD (1), DSG2 (6), JUP (5), PKP2 (7), RBM20 (1), DSP (4), MYH6 (1), RYR2 (3), SCN5A (3), LDB3 (2)	0.37879	0.65789	8.233e-56	4.971e-54	3
Male infertility single gene azoospermia	Spermatogenic failure	38	38	NR5A1 (6), DMRT1 (2), KLHL10 (6), STAG3 (5), XRCC2 (6), SPAG17 (6), C14orf39 (5), RPL10L (5), MSH5 (5), FANCM (5), TDRD9 (5), DNHD1 (5)	0.20652	0.35514	1.042e-55	6.275e-54	11
Diabetes mellitus	Diabetic neuropathy	63	17	INS (2), CAT (2), NOTCH2 (1), ANKH (1), ASIP (1), CDKAL1 (2), HLA-DQA1 (1), HMG20A (1), JAZF1 (1), MACF1 (1), MACIR (1), NRXN3 (1)	0.13462	0.26923	4.833e-55	2.902e-53	182
Developmental and epileptic encephalopathy	Epilepsy	57	54	FOXP1 (3), UBE3A (2), GABRD (3), HNRNP4 (4), WWOX (6), ATP1A2 (6), ATP1A3 (5), CELSR1 (2), CHD2 (5), CNTNAP2 (3), CUX2 (6), GABRA2 (6)	0.14358	0.25909	4.917e-55	2.944e-53	
Cone-rod dystrophy	Optic atrophy	38	18	ABCA4 (7), CNGA3 (3), CNGB3 (1), PDE6C (1), PRPH2 (4), CACNA1F (2), ALMS1 (1), USH2A (1), CRB1 (1), GUCY2D (5), PROM1 (6), RPGRIP1 (6)	0.17431	0.51351	9.094e-55	5.432e-53	7
Metabolic syndrome	Obesity	268	73	SOX5 (1), DPYD (3), RERE (1), COMT (2), INS (2), GNAT2 (1), PDE4D (1), RBPJ (1), ABCA1 (2), ABCG8 (2), ADGRL2 (1), AGAP1 (1)	0.12018	0.22446	1.008e-54	6.003e-53	2
Short rib dysplasia-polydactyly syndrome	Short-rib thoracic dysplasia	19	19	IFT81 (5), NEK1 (6), IFT43 (3), IFT80 (3), CEP120 (4), DYNC2H1 (5), DYNC2I1 (7), DYNC2I2 (7), DYNC2LI1 (5), DYNLT2B (4), IFT140 (4), IFT172 (4)	0.65517	0.82609	1.268e-54	7.533e-53	19
Cardiovascular disease	Myocardial infarction	103	32	PRDM16 (1), ZFPM2 (1), SH2B3 (3), ABCG8 (1), ACE (3), AGT (3), APOB (3), APOE (3), BCAS3 (1), C1GALT1 (1), CDH13 (1), CSK (1)	0.11319	0.23843	2.870e-54	1.700e-52	34
Myositis	Systemic sclerosis	33	7	DGKQ (1), HLA-DQA1 (2), HLA-DRA (1), HLA-DRB1 (2), TNIP1 (2), NCF2 (1), DRD4 (1), HLA-DQB1 (2), ATG5 (1), IL12RB2 (1), IRF5 (2), PHTF1 (1)	0.21019	0.54098	4.074e-54	2.407e-52	22
Jeune thoracic dystrophy	Short-rib thoracic dysplasia	20	19	IFT81 (5), NEK1 (4), IFT43 (3), IFT80 (2), CEP120 (3), DYNC2H1 (2), DYNC2I1 (4), DYNC2I2 (5), DYNC2LI1 (4), DYNLT2B (4), IFT140 (3), IFT172 (4)	0.54054	0.86957	4.443e-54	2.618e-52	19
Depression	Mood disorder	66	9	COMT (1), DAO (1), DISC1 (1), FOXP2 (2), HTR1A (1), HTR3A (1), LSAMP (2), NTF3 (1), NTRK2 (1), NTRK3 (1), PROK2 (1), RELN (2)	0.12891	0.23656	1.745e-53	1.025e-51	2

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Genetic steroid-resistant nephrotic syndrome	Nephrotic syndrome	29	20	WT1 (4), NUP107 (4), COL4A3 (1), ACTN4 (1), ARHGAP24 (1), FAT1 (1), MYO1E (1), NUP160 (5), NUP85 (3), PAX2 (1), PTPRO (4), TRPC6 (1)	0.16860	0.85294	1.799e-53	1.054e-51	20
Melanoma	Skin neoplasms	59	15	NOTCH2 (2), TERT (5), TP53 (2), TPCN2 (1), ASIP (2), BNC2 (1), ERBB4 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DRB1 (1), ICOS (1)	0.11303	0.40690	2.159e-53	1.262e-51	16
Cancer	Diabetes mellitus	64	5	HNF1B (2), RREB1 (1), ANKRD26 (1), ALDH1A2 (1), ANKRD31 (1), APOB (1), APOC1 (1), ASIP (2), BAZ1B (1), BCL3 (1), EBF1 (1), FADS1 (1)	0.12955	0.24521	4.272e-53	2.491e-51	
Congenital brain malformation	Hydranencephaly	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.73913	1.00000	6.145e-53	3.554e-51	124
Congenital hypoplasia of part of brain	Hydranencephaly	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.73913	1.00000	6.145e-53	3.554e-51	124
Hydranencephaly	Microgyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.73913	1.00000	6.145e-53	3.554e-51	124
Intellectual developmental disorder, x-linked	X-linked complex neurodevelopmental disorder	26	26	FRMPD4 (6), NLGN4X (2), GRIA3 (5), ARX (6), THOC2 (4), PTCHD1 (2), CNKSR2 (6), AP1S2 (3), IL1RAPL1 (5), SYN1 (5), FTSJ1 (6), IQSEC2 (6)	0.26263	0.74286	7.744e-53	4.467e-51	129
Developmental disability	Intellectual developmental disorder	71	37	CHD8 (3), UBE3A (1), ANKRD11 (1), RAI1 (2), SHANK3 (2), PTEN (2), ADNP (1), ATRX (1), ARID1B (1), AUTS2 (3), DEAF1 (3), FBXO11 (1)	0.08050	0.49650	1.567e-52	9.019e-51	6
Non-hodgkins lymphoma	Non-melanoma skin carcinoma	43	0	ANKRD11 (1), TP53 (1), ASIP (1), BNC2 (1), EPB41L1 (1), FARP1 (1), FOXP1 (1), HLA-DQA1 (1), HLA-DQB3 (1), HLA-DRB1 (1), OR5V1 (1), RHOU (1)	0.16412	0.31852	2.825e-52	1.621e-50	
Obesity	Schizophrenia	402	185	SOX5 (2), RAI1 (3), DPYD (3), RERE (1), COMT (3), CUL9 (1), WWOX (2), PDE4D (2), RBPJ (1), ABCA1 (1), ABT1 (1), ADGRL2 (1)	0.12058	0.33668	3.189e-52	1.826e-50	2
Breast neoplasms	Prostatic neoplasms	113	2	CYP17A1 (1), COMT (1), MAP3K1 (1), PTEN (1), CHEK2 (2), TERT (1), TP53 (1), AKT2 (1), ARID1A (1), ATP7B (1), CST6 (1), EGFR (1)	0.10950	0.21857	8.250e-52	4.710e-50	4
Septopreoptic holoprosencephaly	Syntelencephaly	15	15	FGF8 (2), CDON (2), GLI2 (2), SHH (2), PTCH1 (2), SIX3 (2), GAS1 (2), ZIC2 (2), DLL1 (2), STIL (2), DISP1 (2), CRIPTO (2)	0.93750	1.00000	2.030e-51	1.156e-49	110
Leber congenital amaurosis	Optic atrophy	36	11	ABCA4 (1), CNGB3 (1), PRPH2 (2), ALMS1 (1), NBAS (1), NPHP4 (1), USH2A (1), CRB1 (6), GUCY2D (6), LCA5 (7), PROM1 (1), RP1 (1)	0.16514	0.50000	2.664e-51	1.513e-49	7
Cone-rod dystrophy	Macular dystrophy	26	15	ABCA4 (7), ATF6 (3), CNGA3 (3), CNGB3 (1), IMPG1 (3), IMPG2 (2), PRPH2 (5), CACNA1F (2), PDE6B (1), USH2A (1), CRB1 (1), CRX (8)	0.27957	0.59091	3.547e-51	2.009e-49	7
Alzheimer disease	Schizophrenia	624	235	HMGA2 (1), CHRNA7 (1), HNF1B (1), KANSL1 (1), NFIX (1), HSPG2 (2), RERE (1), ARVCF (2), WWOX (2), ZFPM2 (1), NCSTN (1), PDE4D (2)	0.15087	0.28133	4.237e-51	2.394e-49	2
Atrial flutter	Cardiac arrhythmia	32	5	PRRX1 (1), AKAP6 (1), ESR2 (3), GORAB (1), KCNN3 (1), MAPT (1), TBX5 (1), CAV1 (1), AOPEP (1), FAM13B (1), FGF5 (1), LRMDA (1)	0.21622	0.39506	5.292e-51	2.983e-49	3
Cone dystrophy	Cone-rod dystrophy	25	17	ABCA4 (7), CNGA3 (3), CNGB3 (3), PDE6C (7), PRPH2 (4), CACNA1F (2), PDE6B (1), USH2A (1), CRB1 (1), GUCY2D (5), RPGRIP1 (6), NMNAT1 (2)	0.28409	0.65789	5.937e-51	3.338e-49	7
Insomnia	Substance abuse	145	7	SOX5 (1), BPTF (1), PER2 (2), CACNA1D (1), ALMS1 (1), AFF3 (1), AKAP6 (1), ARHGAP15 (1), AUTS2 (1), BNC2 (1), CADM2 (1), CAMTA1 (1)	0.09993	0.28101	8.924e-51	5.004e-49	2
Attention deficit hyperactivity disorder	Neurotic disorder	134	10	SOX5 (1), RERE (1), GBE1 (1), ARHGAP15 (1), AS3MT (3), BNC2 (1), CADM2 (1), CAMTA1 (1), CELF2 (1), CELF4 (1), CSMD1 (1), CTNNA3 (1)	0.09524	0.30805	9.152e-51	5.119e-49	2
Hereditary steroid-resistant nephrotic syndrome	Nephrotic syndrome	28	28	WT1 (5), NUP107 (5), COL4A3 (2), ACTN4 (2), ARHGAP24 (2), MYO1E (2), NUP160 (6), NUP85 (4), PAX2 (2), PTPRO (5), TRPC6 (2), PLCE1 (7)	0.16185	0.82353	9.597e-51	5.354e-49	20
Autism	Neurodevelopmental disorder	241	206	CHD8 (4), FOXG1 (2), UBE3A (2), CHRNA7 (3), SIN3A (2), ANKRD11 (2), RAI1 (2), NFIX (2), NFIA (2), RERE (6), SPEN (2), JMJD1C (3)	0.11152	0.25693	1.064e-50	5.923e-49	

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Atrial flutter	Cardioembolic stroke	32	0	PRRX1 (1), ESR2 (1), GORAB (1), KCNN3 (1), TBX5 (1), TNFSF12-TNFSF13 (1), CAV1 (1), KCNJ5 (1), AOEPE (1), FAM13B (1), FGF5 (1), LRMDA (1)	0.21192	0.39506	1.668e-50	9.257e-49	
Cardiovascular disease	Myocardial ischemia	83	59	PRDM16 (2), SH2B3 (2), ABCG8 (2), ACE (3), AGT (3), APOB (3), APOE (3), CDH13 (1), DDAH1 (1), HDAC9 (1), KCNE2 (2), LDLR (2)	0.11201	0.21228	1.048e-49	5.806e-48	
Congenital hypoplasia of part of brain	Macrogyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.56667	1.00000	1.211e-49	6.655e-48	124
Congenital brain malformation	Macrogyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.56667	1.00000	1.211e-49	6.655e-48	124
Macrogyria	Microgyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.56667	1.00000	1.211e-49	6.655e-48	124
Calcinosis	Heart valve prolapse	21	21	NOTCH1 (2), COL18A1 (2), SPP1 (2), CASP3 (2), IL1B (2), JAK2 (2), CCL2 (2), COL1A1 (2), TIMP1 (2), FCGR1A (2), IL18 (2), LCN2 (2)	0.38182	0.72414	1.764e-49	9.668e-48	391
Basal cell carcinoma	Melanoma	77	21	ANKRD11 (1), RAI1 (2), TERT (5), TP53 (3), TPCN2 (1), ASIP (2), BNC2 (2), EPB41L1 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DRB1 (1)	0.11224	0.23547	2.381e-49	1.302e-47	16
Hyperlipidemia	Hyperlipoproteinemia	28	24	ABCA1 (3), ABCG8 (2), APOB (3), APOC2 (2), APOE (6), LDLR (3), LIPC (6), NOS3 (2), ADRB3 (2), GCG (2), HMGCR (2), HSPA1B (1)	0.18182	0.70000	2.521e-49	1.375e-47	57
Cutaneous squamous cell carcinoma	Skin cancer	25	0	BNC2 (1), FOXP1 (1), HLA-DQA1 (1), ICOS (1), TRPS1 (1), WEE1 (1), ZNF143 (1), OCA2 (1), RALY (1), IRF4 (1), KRT5 (1), AHR (1)	0.25510	0.65789	2.588e-49	1.408e-47	16
Focal glomerulosclerosis	Nephrotic syndrome	32	14	WT1 (4), COL4A5 (1), COL4A4 (1), ACTN4 (1), AGT (2), ARHGAP24 (1), LAMB2 (3), MYO1E (1), PAX2 (1), PTPRO (4), SERPINE1 (2), TRPC6 (1)	0.16667	0.56140	3.756e-49	2.039e-47	20
Biliary cirrhosis	Liver cirrhosis	46	43	HLA-DQA1 (1), NOS3 (2), NFE2L2 (2), RELA (2), HLA-DQB1 (2), VDR (1), ALB (2), HIF1A (2), ATG5 (3), TGFB1 (2), HLA-DPB1 (1), CLEC16A (3)	0.13256	0.35938	4.558e-49	2.468e-47	288
Metabolic syndrome	Substance abuse	157	8	SOX5 (1), BPTF (1), GBE1 (1), BRWD1 (1), CACNA1D (1), ADGRL2 (1), AFF3 (1), AHCYL1 (1), AKAP6 (1), ALCAM (1), ARHGAP15 (1), AUTS2 (1)	0.09441	0.30426	5.384e-49	2.908e-47	2
Hydranencephaly	Macrogyria	18	1	CASK (1), ARL3 (1), NDE1 (3), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1)	0.52941	0.81818	6.893e-49	3.714e-47	124
Microphthalmia	Microphthalmos	21	21	RARB (7), TENM3 (4), SHH (5), PRSS56 (3), PAX6 (2), SOX2 (3), STRA6 (3), OTX2 (3), PORCN (2), RAX (3), VAX1 (4), VSX2 (6)	0.38889	0.58333	9.450e-49	5.080e-47	52
Melanoma	Non-melanoma skin carcinoma	59	10	ANKRD11 (1), TP53 (2), ASIP (2), BNC2 (1), CDH15 (1), EPB41L1 (1), FOXP1 (1), HERC2 (1), HLA-DQA1 (1), HLA-DRB1 (1), ICOS (1), RHOU (1)	0.10806	0.34911	9.693e-49	5.198e-47	16
Atherosclerosis	Myocardial ischemia	50	39	APOA1 (2), ABCA1 (2), AGT (2), APOB (2), APOC1 (1), APOE (3), HDAC9 (3), LDLR (3), SERPINE1 (2), SMARCA4 (1), TCF7L2 (3), VEGFA (2)	0.10846	0.42017	1.648e-48	8.813e-47	73
Semilobar holoprosencephaly	Syntelencephaly	15	15	FGF8 (2), CDON (2), GLI2 (2), SHH (2), PTCH1 (2), SIX3 (2), GAS1 (2), ZIC2 (2), DLL1 (2), STIL (2), DISP1 (2), CRIPTO (2)	0.78947	1.00000	1.656e-48	8.818e-47	110
Semilobar holoprosencephaly	Septopreoptic holoprosencephaly	15	15	FGF8 (2), CDON (2), GLI2 (2), SHH (2), PTCH1 (2), SIX3 (2), GAS1 (2), ZIC2 (2), DLL1 (2), STIL (2), DISP1 (2), CRIPTO (2)	0.78947	1.00000	1.656e-48	8.818e-47	110
Hypertrophic cardiomyopathy	Long qt syndrome	42	27	BRAF (1), CACNB2 (1), DSG2 (1), JUP (1), PKP2 (1), RBM20 (3), TRPM4 (1), POMC (2), DSP (2), KCNJ2 (2), KCNJ5 (7), CACNA1C (6)	0.13249	0.41176	2.030e-48	1.078e-46	3
Avascular necrosis of bone	Osteonecrosis of medial femoral condyle	14	0	CAT (1), COL2A1 (1), TRPV4 (1), NOS3 (1), F2 (1), GSTT1 (1), GSTM1 (1), PLAT (1), F5 (1), IL23R (1), ABCB1 (1), MMP2 (1)	0.93333	1.00000	2.082e-48	1.103e-46	23
Holoprosencephaly	Semilobar holoprosencephaly	17	17	FGF8 (3), CDON (6), GLI2 (6), SHH (5), PTCH1 (7), SIX3 (6), FGFR1 (3), GAS1 (5), ZIC2 (6), DLL1 (3), STIL (3), STAG2 (4)	0.54839	0.94444	2.178e-48	1.151e-46	110

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Distal hereditary motor neuropathy	Distal spinal muscular atrophy	20	18	SETX (3), TRPV4 (3), VRK1 (3), SIGMAR1 (4), DCTN1 (7), DYNC1H1 (2), NEFL (1), BSCL2 (6), HSPB1 (6), BAG3 (4), PLEKHG5 (3), GARS1 (6)	0.41667	0.64516	2.685e-48	1.416e-46	13
Transitional cell carcinoma	Urinary bladder neoplasms	26	0	FGFR3 (1), TP53 (1), ARID1A (1), ESR2 (1), KMT2C (1), TACC3 (1), IGFBP3 (1), TNF (1), PTGS2 (1), CREBBP (1), CSF3 (1), GPX1 (1)	0.17333	0.78788	4.401e-48	2.315e-46	4
Cardiovascular disease	Heart failure	88	34	CASZ1 (1), ZFPM2 (1), SH2B3 (1), CACNA1D (1), ACE (3), ADRA1D (3), AGT (3), ALDH1A2 (1), APOB (3), APOE (3), CACNB2 (1), CRTCT1 (1)	0.10798	0.20370	5.250e-48	2.755e-46	34
Long qt syndrome	Ventricular fibrillation	25	10	CACNB2 (1), DSG2 (1), JUP (1), KCNE2 (7), PKP2 (1), RBM20 (1), TRPM4 (1), DSP (1), DPP6 (3), KCNJ2 (2), CACNA1C (6), MYH6 (1)	0.21930	0.69444	7.916e-48	4.144e-46	3
Joubert syndrome	Meckel-gruber syndrome	22	21	RPGRIP1 (2), CC2D2A (5), RPGRIP1L (5), NPHP3 (2), TMEM67 (6), CEP290 (6), TMEM138 (6), TMEM216 (6), TMEM231 (5), TMEM237 (6), KIAA0586 (5), TCTN1 (7)	0.31429	0.66667	9.099e-48	4.752e-46	8
Combined immunodeficiency disease	Immunodeficiency	28	28	CARD11 (7), ORAI1 (4), RELB (6), ZAP70 (7), IRF4 (5), MSN (7), TFRC (4), MST1 (2), TNFRSF4 (7), BCL11B (4), IL6ST (4), STIM1 (5)	0.17949	0.63636	1.174e-47	6.116e-46	10
Microform holoprosencephaly	Semilobar holoprosencephaly	15	15	FGF8 (2), CDON (2), GLI2 (2), SHH (2), PTCH1 (2), SIX3 (2), FGFR1 (2), GAS1 (2), ZIC2 (2), DLL1 (2), DISP1 (2), CRIPTO (2)	0.75000	0.93750	2.650e-47	1.377e-45	110
Charcot-marie-tooth disease	Distal hereditary motor neuropathy	26	25	SETX (4), SORD (7), TRPV4 (6), SIGMAR1 (3), BICD2 (1), DCTN1 (7), DYNC1H1 (6), FIG4 (7), NEFL (7), ATP7A (3), LMNA (5), BSCL2 (6)	0.18182	0.72222	3.166e-47	1.642e-45	13
Hypertension	Major depressive disorder	321	117	CYP17A1 (1), BPTF (1), CASZ1 (1), RERE (1), COMT (1), ZFPM2 (1), CAT (3), ATP2A2 (2), SH2B3 (1), TERT (2), AMPD3 (1), ACE (2)	0.11510	0.27937	3.889e-47	2.012e-45	
Congenital ear anomaly	Deafness	26	22	CEACAM16 (3), MYO15A (3), OTOF (3), PCDH15 (3), USH2A (1), TMC1 (3), ADGRV1 (1), SLC26A4 (3), COL11A2 (3), MYO6 (3), CDH23 (3), MYO7A (3)	0.14607	0.83871	4.024e-47	2.077e-45	31
Mood disorder	Neurotic disorder	72	9	PAFAH1B1 (1), KANSL1 (1), RERE (1), ARHGAP15 (1), CACNA1E (1), CAMTA1 (1), CELF4 (1), DCC (1), EMB (1), ERBB4 (1), FOXP2 (1), GABBR1 (1)	0.10876	0.24161	6.271e-47	3.229e-45	2
Aortic aneurysm	Thoracic aortic aneurysm and aortic dissection	23	19	SKI (2), FBN1 (7), FBN2 (3), PRKG1 (8), SLC2A10 (1), TGFB2 (6), THSD4 (5), FLNA (3), ELN (3), SMAD3 (6), ACTA2 (6), FOXE3 (7)	0.28395	0.56098	1.480e-46	7.604e-45	50
Basal cell carcinoma	Cancer	61	14	ANKRD11 (1), TERT (2), TP53 (3), ARHGEF10L (1), ASIP (2), BNC2 (2), EPB41L1 (1), FADS2 (1), FAM76B (1), FARP1 (2), FOXP1 (1), HLA-C (1)	0.11553	0.23372	2.001e-46	1.026e-44	
Autoimmune thyroid disease	Thyroid disease	29	5	SH2B3 (1), FAM76B (1), HLA-DQA1 (2), ICOS (1), INPP5B (1), PDE10A (1), SAMD5 (1), SASH1 (1), SPATA13 (1), ATXN2 (1), HLA-DQB1 (2), BACH2 (1)	0.17160	0.54717	4.668e-46	2.387e-44	
Biliary cholangitis	Liver cirrhosis	46	43	HLA-DQA1 (1), NOS3 (2), NFE2L2 (2), RELA (2), HLA-DQB1 (2), VDR (1), ALB (2), HIF1A (2), ATG5 (3), TGFB1 (2), HLA-DPB1 (1), CLEC16A (3)	0.12568	0.31293	7.881e-46	4.020e-44	288
Connective tissue disease	Mixed connective tissue disease	22	0	HDAC4 (1), FBN1 (1), CDH4 (1), MYRIP (1), PTPRN2 (1), HHEX (1), PCLO (1), KCNMB2 (1), SLC4A10 (1), PTGIS (1), BASP1 (1), SPOP (1)	0.18333	0.91667	7.994e-46	4.068e-44	44
Aplasia of the vermis	Meckel-gruber syndrome	21	15	ATP6V0A2 (1), CC2D2A (5), RPGRIP1L (5), NPHP3 (2), TMEM67 (6), CEP290 (5), TMEM138 (1), TMEM216 (6), TMEM231 (5), TMEM237 (2), KIAA0586 (1), TCTN1 (3)	0.31343	0.63636	1.079e-45	5.480e-44	8
Desbuquois syndrome	Osteoporosis-pseudoglioma syndrome	38	2	ALPL (1), BMP1 (1), CCDC134 (1), GORAB (1), NBAS (1), SERPINF1 (1), TENT5A (1), XYLT1 (3), COL1A1 (1), SLC10A7 (1), PLOD2 (1), FKBP10 (1)	0.06563	0.77551	1.918e-45	9.697e-44	127
Bone fragility with contractures, arterial rupture, and deafness	Desbuquois syndrome	38	1	ALPL (1), BMP1 (1), CCDC134 (1), GORAB (1), NBAS (1), SERPINF1 (1), TENT5A (1), XYLT1 (3), COL1A1 (1), SLC10A7 (1), PLOD2 (1), FKBP10 (1)	0.06563	0.77551	1.918e-45	9.697e-44	127
Congestive ophthalmopathy	Myopathic ophthalmopathy	13	0	SCD (1), ICAM1 (1), IL10 (1), IL2 (1), TNF (1), PTGS2 (1), IL3 (1), CTLA4 (1), IL23R (1), PTPN22 (1), IL1RN (1), TSHR (1)	0.92857	1.00000	2.288e-45	1.154e-43	153
Congenital cataract	Nuclear cataract	18	18	CRYBB2 (3), CRYAA (4), EPHA2 (3), NHS (3), GJA8 (4), CRYGC (4), WFS1 (3), CRYBB1 (4), CRYAB (3), UNC45B (3), CRYBB3 (4), CRYGD (3)	0.29508	1.00000	2.526e-45	1.271e-43	51

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Epilepsy	Partial epilepsy	30	7	CACNA1H (1), CUX2 (1), GABRA2 (1), GRM3 (1), OGA (1), PCDH7 (1), PTPRD (1), RPH3A (1), SCN8A (2), TRIM36 (1), ALDH2 (1), CDKL5 (2)	0.12097	0.68182	3.499e-45	1.756e-43	223
Epilepsy	Intellectual developmental disorder	81	63	FOXP2 (2), UBE3A (2), CHRNA7 (2), ANKRD11 (2), HNRNP1 (2), WWOX (1), ARID1B (2), AUTS2 (4), CHD2 (2), CNTNAP2 (2), CPA6 (2), GRIA1 (5)	0.08420	0.34764	3.695e-45	1.851e-43	
Microform holoprosencephaly	Septopreoptic holoprosencephaly	14	14	FGF8 (2), CDON (2), GLI2 (2), SHH (2), PTCH1 (2), SIX3 (2), GAS1 (2), ZIC2 (2), DLL1 (2), DISP1 (2), CRIPTO (2), FOXH1 (2)	0.77778	0.93333	3.747e-45	1.864e-43	110
Microform holoprosencephaly	Syntelencephaly	14	14	FGF8 (2), CDON (2), GLI2 (2), SHH (2), PTCH1 (2), SIX3 (2), GAS1 (2), ZIC2 (2), DLL1 (2), DISP1 (2), CRIPTO (2), FOXH1 (2)	0.77778	0.93333	3.747e-45	1.864e-43	110
Muscle eye brain disease	Walker-warburg syndrome	14	14	DAG1 (3), GMPBP (4), LARGE1 (3), CRPPA (3), POMGNT2 (3), POMT1 (4), POMT2 (4), POMGNT1 (4), FKR1 (4), FKTN (4), B3GALNT2 (3), B4GAT1 (3)	0.77778	0.93333	3.747e-45	1.864e-43	40
Ciliopathy	Joubert syndrome	25	25	ZNF423 (4), CC2D2A (6), RPGRIP1L (6), TMEM67 (7), SUFU (6), TMEM138 (7), TMEM216 (7), TMEM231 (6), CEP120 (7), TBC1D32 (3), CEP41 (6), IFT74 (6)	0.23810	0.43103	5.146e-45	2.554e-43	8
Hypertrophic cardiomyopathy	Left ventricular noncompaction cardiomyopathy	29	18	ACTN2 (3), DMD (1), DSG2 (1), JUP (1), MYPN (2), PKP2 (1), RBM20 (3), DSP (2), MYH6 (4), RYR2 (2), SCN5A (1), LDB3 (1)	0.10902	0.76316	7.147e-45	3.539e-43	3
Calcinosis	Heart valve disease	21	21	NOTCH1 (2), COL18A1 (2), SPP1 (2), CASP3 (2), IL1B (2), JAK2 (2), CCL2 (2), COL1A1 (2), TIMP1 (2), FCGR1A (2), IL18 (2), LCN2 (2)	0.31343	0.51220	1.085e-44	5.363e-43	391
Congenital brain malformation	Lissencephaly	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.33333	1.00000	2.298e-44	1.128e-42	124
Congenital hypoplasia of part of brain	Lissencephaly	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.33333	1.00000	2.298e-44	1.128e-42	124
Lissencephaly	Microgyria	17	0	CASK (1), ARL3 (1), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1), INPP5E (1)	0.33333	1.00000	2.298e-44	1.128e-42	124
Craniofacial abnormalities	Desbuquois syndrome	59	57	HSPG2 (2), SKI (2), FGF8 (2), COLEC11 (1), SOX9 (2), FGD1 (2), SLC26A2 (2), COL2A1 (2), BMPR1B (2), LTBP3 (2), ACTB (2), NOTCH1 (2)	0.08872	0.37821	2.761e-44	1.352e-42	
Arrhythmogenic right ventricular cardiomyopathy	Long qt syndrome	26	18	CACNB2 (1), CTNNA3 (7), DSG2 (6), JUP (5), PKP2 (7), RBM20 (1), TRPM4 (1), DSP (4), MYH6 (1), RYR1 (1), LMNA (2), RYR2 (3)	0.20155	0.50000	3.048e-44	1.490e-42	3
X-linked complex neurodevelopmental disorder	X-linked intellectual disability	22	22	FRMPD4 (3), GRIA3 (4), ARHGEF9 (3), ARX (3), THOC2 (5), PTCHD1 (4), CNKSR2 (4), AP1S2 (4), IL1RAPL1 (4), FTSJ1 (3), IQSEC2 (3), PCDH19 (3)	0.25000	0.62857	4.427e-44	2.158e-42	129
Dilated cardiomyopathy	Long qt syndrome	40	28	BRAF (1), CACNB2 (1), CTNNA3 (1), DSG2 (7), JUP (1), KCNE2 (7), PKP2 (2), RBM20 (8), TBX5 (2), TRPM4 (1), DSP (7), DPP6 (1)	0.11905	0.39216	6.850e-44	3.325e-42	3
Bipolar disorder	Obesity	238	100	SOX5 (1), RERE (1), COMT (2), INS (2), WWOX (1), AGT (1), AKAP6 (1), APOE (3), AS3MT (1), AUTS2 (1), C6orf118 (1), C8orf90 (1)	0.10932	0.19933	6.845e-44	3.325e-42	2
Cytochrome c oxidase deficiency	Mitochondrial complex deficiency	20	20	COX5A (5), LRPPRC (2), SCO2 (5), SCO1 (6), COA3 (4), COA5 (3), COA6 (3), COX15 (5), SURF1 (5), COX14 (5), FASTKD2 (3), PET100 (5)	0.16667	1.00000	1.077e-43	5.217e-42	62
Aplasia of the vermis	Ciliopathy	24	23	WDPCP (3), CC2D2A (3), RPGRIP1L (3), TMEM67 (3), SUFU (3), TMEM138 (3), TMEM216 (3), TMEM231 (3), CEP120 (3), IFT172 (3), CEP41 (2), IFT74 (3)	0.23529	0.44444	1.362e-43	6.584e-42	8
Brugada syndrome	Long qt syndrome	27	22	CACNB2 (6), PKP2 (4), SLMAP (4), TBX5 (3), TRPM4 (4), DSP (1), KCNJ2 (2), CACNA1C (7), KCNH2 (7), KCNQ1 (7), RYR2 (1), SCN5A (8)	0.19424	0.42857	1.421e-43	6.852e-42	3
Holoprosencephaly	Syntelencephaly	15	15	FGF8 (3), CDON (6), GLI2 (6), SHH (5), PTCH1 (7), SIX3 (6), GAS1 (5), ZIC2 (6), DLL1 (3), STIL (3), DISP1 (4), CRIPTO (4)	0.50000	1.00000	1.574e-43	7.559e-42	110
Holoprosencephaly	Septopreoptic holoprosencephaly	15	15	FGF8 (3), CDON (6), GLI2 (6), SHH (5), PTCH1 (7), SIX3 (6), GAS1 (5), ZIC2 (6), DLL1 (3), STIL (3), DISP1 (4), CRIPTO (4)	0.50000	1.00000	1.574e-43	7.559e-42	110

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Dentin dysplasia	Dentinogenesis imperfecta	14	1	SLC24A4 (1), AMBN (1), AMELX (1), DLX3 (1), ENAM (1), FAM20A (1), FAM83H (1), ITGB6 (1), KLK4 (1), LAMB3 (1), MMP20 (1), ODAPH (1)	0.70000	0.87500	1.698e-43	8.136e-42	390
Charcot-marie-tooth disease	Peripheral neuropathy	39	33	DHTKD1 (5), AARS1 (7), SLC12A6 (4), HINT1 (4), MME (8), SBF2 (7), NGF (1), DCTN1 (2), DYNC1H1 (5), KIF5A (4), MFN2 (7), NEFH (5)	0.13636	0.29545	1.730e-43	8.271e-42	
Respiratory system disease	Ulcerative colitis	72	8	CEBPA (1), RTEL1 (1), CCR7 (1), EMSY (1), ETS1 (1), FADS1 (1), FADS2 (1), HINT1 (1), HLA-DQA1 (1), HLA-DRB1 (3), IKZF1 (3), IL6R (1)	0.09219	0.29876	1.769e-43	8.440e-42	14
Breast neoplasms	Colorectal neoplasms	73	1	DPYD (1), BMP2 (1), COL7A1 (1), CHEK2 (2), TP53 (1), ABCA8 (1), ARID1A (1), ATP7B (1), EGFR (1), ESR2 (1), EXO1 (1), GPX4 (1)	0.09918	0.25086	2.044e-43	9.729e-42	4
Melanoma	Ovarian serous carcinoma	66	18	ANKRD11 (1), RREB1 (1), MAP3K1 (1), ACD (2), RTEL1 (1), TERT (5), TP53 (2), ASIP (2), BNC2 (1), CDH15 (1), EPB41L1 (1), FOXP1 (1)	0.10313	0.24444	2.494e-43	1.184e-41	
Diabetes mellitus	Stroke	61	9	ANKRD26 (1), ALDH1A2 (1), ANKRD31 (1), APOB (1), APOC1 (1), BAZ1B (1), BCL3 (1), CDKAL1 (2), FADS1 (1), FADS2 (1), LIPC (1), MAML3 (1)	0.10912	0.20608	2.878e-43	1.364e-41	
Peripheral vascular disease	Vascular disease	20	0	CSTPP1 (1), HDAC9 (1), NFAT5 (1), TCF7L2 (1), ATXN2 (1), CHRNA3 (1), TWIST1 (1), ABO (1), SLC19A2 (1), CELSR2 (1), LPA (1), PSRC1 (1)	0.30303	0.60606	3.088e-43	1.460e-41	
Age-related macular degeneration	Macular degeneration	26	16	ABCA4 (2), HMCN1 (3), CFI (4), APOE (3), VEGFA (2), C2 (3), C3 (3), PON1 (1), GSTM1 (1), RAD51B (1), CFB (3), CRP (1)	0.20800	0.38806	3.102e-43	1.464e-41	238
Hydranencephaly	Lissencephaly	18	1	CASK (1), ARL3 (1), NDE1 (6), TMEM216 (1), TMEM237 (1), SEPSECS (1), KIAA0586 (1), KIAA0753 (1), CHMP1A (1), IFT74 (1), TUBB3 (1), AMPD2 (1)	0.32727	0.81818	3.578e-43	1.685e-41	124
Immune system disease	Myasthenia gravis	20	5	FAM76B (1), HLA-DQA1 (2), HLA-DRB1 (2), TNIP1 (1), TRPM1 (1), ATXN2 (1), POMC (2), TBX18 (1), CEP43 (1), CTLA4 (1), HLA-B (2), PTPN22 (2)	0.30769	0.52632	8.026e-43	3.771e-41	1
Cardiomyopathy	Long qt syndrome	38	18	CTNNA3 (1), DSG2 (1), JUP (1), KCNE2 (7), PKP2 (1), RBM20 (1), TRPM4 (1), POMC (2), DSP (1), CACNA1C (6), MYH6 (3), TMPO (1)	0.12298	0.37255	1.233e-42	5.781e-41	3
Cutaneous squamous cell carcinoma	Skin neoplasms	25	2	BNC2 (1), FOXP1 (1), HLA-DQA1 (1), ICOS (1), TRPS1 (1), WEE1 (1), ZNF143 (1), OCA2 (1), RALY (1), IRF4 (1), KRT5 (1), AHR (1)	0.15723	0.65789	1.239e-42	5.799e-41	16
Congestive heart failure	Kidney failure	46	20	INS (1), CAT (2), TP53 (1), GATM (2), ACE (2), AGT (1), APOE (1), EPHX2 (1), PRKAG2 (2), SERPINE1 (2), VEGFA (1), NOS3 (1)	0.11948	0.25698	1.790e-42	8.356e-41	
Breast neoplasms	Lung neoplasms	68	3	WT1 (1), DPYD (1), NOTCH2 (1), PTEN (1), CHEK2 (2), TERT (1), TP53 (1), JAG1 (1), EGFR (1), ERBB3 (1), RARB (1), SPP1 (1)	0.09659	0.26772	1.959e-42	9.127e-41	4
Holoprosencephaly	Microform holoprosencephaly	15	15	FGF8 (3), CDON (6), GLI2 (6), SHH (5), PTCH1 (7), SIX3 (6), FGFR1 (3), GAS1 (5), ZIC2 (6), DLL1 (3), DISP1 (4), CRIPTO (4)	0.48387	0.93750	2.517e-42	1.170e-40	110
Connective tissue disease	Desbuquois syndrome	51	51	HSPG2 (2), HDAC4 (2), SOX9 (2), TRIP11 (2), SLC26A2 (2), COL2A1 (2), FGFR3 (2), FBN1 (2), NOTCH1 (3), ALPL (2), PEX7 (2), COL11A1 (2)	0.08044	0.43590	4.080e-42	1.893e-40	
Idiopathic steroid-resistant nephrotic syndrome	Nephrotic syndrome	23	21	WT1 (5), NUP107 (4), ACTN4 (2), ARHGAP24 (2), MYO1E (2), NUP160 (5), NUP85 (4), PAX2 (2), PTPRO (4), TRPC6 (2), PLCE1 (6), MAGI2 (4)	0.13372	0.82143	1.089e-41	5.041e-40	20
Atrial fibrillation	Coronary artery disease	184	54	SOX5 (3), CASZ1 (3), JMJD1C (1), ZFPM2 (1), ANKRD26 (1), ACE (2), AGT (2), ALDH1A2 (1), ANKRD31 (1), APOB (3), APOC1 (1), BAZ1B (1)	0.10093	0.21321	1.259e-41	5.815e-40	34
Distal spinal muscular atrophy	Hereditary motor and sensory neuropathies	20	2	AARS1 (1), SETX (1), TRPV4 (3), DCTN1 (1), DYNC1H1 (1), NEFL (1), LITAF (1), SH3TC2 (1), BSCL2 (1), HSPB1 (1), PLEKHG5 (1), GARS1 (1)	0.25641	0.64516	1.464e-41	6.749e-40	13
Cone-rod dystrophy	Leber congenital amaurosis	25	16	ABCA4 (7), CNGB3 (1), PRPH2 (4), AIPL1 (6), ALMS1 (1), PDE6B (1), RIMS1 (3), USH2A (1), CRB1 (6), CRX (8), GUCY2D (7), PROM1 (6)	0.20492	0.34722	1.507e-41	6.936e-40	7
Congenital contractural arachnodactyly	Thoracic aortic aneurysm and aortic dissection	18	18	SKI (2), FBN1 (6), FBN2 (8), PLOD1 (2), SLC2A10 (2), TGFB2 (5), THSD4 (3), BGN (5), SMAD3 (6), COL3A1 (2), EFEMP2 (3), TGFB1 (6)	0.33962	0.62069	1.880e-41	8.632e-40	50

Disease A	Disease B	Shared Genes	Corroborated Shared Genes	Shared Gene Names	Similarity Score	Overlap Coefficient	P-value	FDR Q-value	Shared Cluster
Congestive ophthalmopathy	Graves ophthalmopathy	13	3	SCD (2), ICAM1 (1), IL10 (1), IL2 (1), TNF (1), PTGS2 (2), IL3 (1), CTLA4 (1), IL23R (1), PTPN22 (1), IL1RN (1), TSHR (2)	0.68421	1.00000	1.960e-41	8.963e-40	153
Graves ophthalmopathy	Myopathic ophthalmopathy	13	3	SCD (2), ICAM1 (1), IL10 (1), IL2 (1), TNF (1), PTGS2 (2), IL3 (1), CTLA4 (1), IL23R (1), PTPN22 (1), IL1RN (1), TSHR (2)	0.68421	1.00000	1.960e-41	8.963e-40	153
Colobomatous microphthalmia	Microphthalmia	15	15	TENM3 (5), SHH (6), SOX2 (4), STRA6 (4), SIX6 (4), OTX2 (4), PORCN (3), RAX (4), VSX2 (7), RBP4 (6), MAB21L2 (6), ALDH1A3 (4)	0.38462	1.00000	3.141e-41	1.433e-39	52
Developmental coordination disorder	Motor skills disorder	12	12	PTEN (2), DISC1 (2), RPTOR (2), SQSTM1 (2), SOD1 (2), FGFR2 (2), CNR1 (2), SHANK1 (2), CAMKMT (2), NDUFS4 (2), OGG1 (2), AKAP5 (2)	0.85714	1.00000	3.520e-41	1.603e-39	
Congenital contractural arachnodactyly	Marfan syndrome	18	6	FBN1 (7), LTBP3 (1), FBN2 (7), SLC2A10 (1), TGFB2 (2), THSD4 (1), BGN (1), SMAD3 (1), COL3A1 (2), TGFBF1 (3), TGFBF2 (3), LOX (1)	0.32727	0.62069	5.651e-41	2.568e-39	50
Jeune syndrome	Short-rib thoracic dysplasia	17	17	NEK1 (4), IFT80 (6), CEP120 (5), DYNC2H1 (6), DYNC2I1 (6), DYNC2I2 (6), DYNC2LI1 (5), DYNLT2B (4), IFT140 (3), IFT172 (5), IFT52 (5), INTU (3)	0.34694	0.73913	5.944e-41	2.695e-39	19
Leber hereditary optic neuropathy	Melas syndrome	15	13	IL1A (2), IL1B (2), ND1 (2), ND2 (2), SOD2 (2), ATP6 (2), ND6 (2), COX3 (2), ATP8 (1), COX1 (2), ND5 (2), COX2 (2)	0.46875	0.83333	6.188e-41	2.800e-39	26
Atrial fibrillation	Cardioembolic stroke	54	35	PRRX1 (3), ESR2 (3), GORAB (1), KCNN2 (3), KCNN3 (3), NCOR2 (1), RBM20 (3), TBX5 (3), TNFSF12-TNFSF13 (1), TRIM36 (1), VRTN (1), IGF1R (3)	0.05928	0.53465	6.897e-41	3.115e-39	
Congenital impairment of spermatozoa motility	Spermatogenic failure	20	20	CATSPER1 (5), SPAG17 (4), SPEF2 (4), ACTL9 (4), ARMC2 (5), CFAP43 (5), TTC29 (4), SLC26A8 (4), DRC1 (4), DNAH1 (5), AK7 (5), DNAH17 (4)	0.16949	0.86957	7.341e-41	3.308e-39	11
Cancer	Stroke	56	2	SH2B3 (2), ANKRD26 (1), ALDH1A2 (1), ANKRD31 (1), APOB (1), APOC1 (1), BAZ1B (1), BCL3 (1), CCDC91 (1), FADS1 (1), FADS2 (1), LIPC (1)	0.10586	0.21456	1.070e-40	4.810e-39	
Liver disease	Nonalcoholic fatty liver disease	46	25	INS (2), MTTP (3), SERPINA1 (3), APOC1 (1), APOE (1), CYP1A2 (2), HS3ST1 (1), TRIB1 (3), HFE (2), ALDH2 (2), GSTP1 (2), GSTT1 (2)	0.10748	0.29299	1.375e-40	6.170e-39	288
Jeune syndrome	Short rib dysplasia-polydactyly syndrome	17	16	NEK1 (3), IFT80 (5), CEP120 (3), DYNC2H1 (6), DYNC2I1 (4), DYNC2I2 (4), DYNC2LI1 (4), DYNLT2B (2), IFT140 (3), IFT172 (3), IFT52 (2), INTU (1)	0.34000	0.70833	2.035e-40	9.114e-39	19
Kidney failure	Myocardial ischemia	59	42	TP53 (1), GATM (3), AHSF1 (1), SERPINA1 (2), ABCA1 (2), ACE (2), AGT (2), APOE (2), EPHX2 (2), MLXIPL (2), MMP3 (1), SCARB1 (3)	0.10103	0.23506	2.170e-40	9.699e-39	73
Astrocytoma	Glioblastoma	76	3	NF1 (1), NOTCH2 (1), NOTCH1 (1), HMCN1 (1), TEAD1 (1), AGBL1 (1), ARHGEF28 (1), C6orf118 (1), CTNNA3 (1), DSCAM (1), FAM163A (1), G3BP1 (2)	0.09124	0.25249	2.463e-40	1.099e-38	291
Diabetes mellitus type 2	Gout	324	55	SIN3A (1), SKI (1), JMJD1C (1), RREB1 (1), INS (3), GNAT2 (1), ATP2A2 (3), NOTCH2 (3), PIK3R1 (3), TPCN2 (1), SERPINF2 (1), ABCA1 (2)	0.09060	0.39560	3.561e-40	1.586e-38	2
Bardet-biedl syndrome	Ciliopathy	23	23	WDPCP (8), RPGRIP1L (3), TMEM67 (4), IFT172 (6), WDR19 (2), SCLT1 (3), BBS7 (5), SDCCAG8 (7), IFT74 (7), ARL6 (7), BBS2 (7), CFAP418 (7)	0.21296	0.38983	4.399e-40	1.954e-38	8
Congenital neutropenia	Severe congenital neutropenia	14	14	CLPB (5), CSF3R (6), VPS45 (6), GFI1 (6), ELANE (6), SRP19 (2), SRP54 (5), TCIRG1 (3), SEC61A1 (3), G6PC3 (7), JAGN1 (6), HAX1 (3)	0.53846	0.82353	4.521e-40	2.004e-38	211
Lung neoplasms	Prostatic neoplasms	71	0	HNF1B (1), PTEN (1), CHEK2 (1), TERT (1), TP53 (1), ACE (1), BRAF (1), CDH13 (1), EGFR (1), ERBB3 (1), ROBO1 (1), MPO (1)	0.08755	0.27953	5.915e-40	2.617e-38	4
Generalized epilepsy	Partial epilepsy	21	1	CUX2 (1), GABRA2 (1), GRM3 (1), OGA (1), PCDH7 (1), RPH3A (1), TRIM36 (1), ALDH2 (1), VRK2 (1), GBF1 (1), SCN1A (3), TNKS1 (1)	0.23596	0.47727	6.876e-40	3.037e-38	223
Neurotic disorder	Post-traumatic stress disorder	56	0	SOX5 (1), KANSL1 (1), ARHGAP15 (1), CACNA1E (1), CSMD1 (1), CTTNBP2 (1), DCC (1), FOXP2 (1), GABBR1 (1), GRM8 (1), LINC02210-CRHR1 (1), LINGO1 (1)	0.09605	0.27586	6.952e-40	3.064e-38	2