

Supplementary Table S1. Statistically significant DEGs (Adj.*p*-value<0.05) derived from DGEA of RNA-Seq data from human iPSC-Derived Cardiomyocytes after X-ray irradiation, using DESeq2. The experiment consists of 3 control samples and 3 irradiated with 5 Gy X-ray radiation for 48 hours [Bioproject: PRJNA421022].

Ensembl ID	Gene Symbol	Gene Description	Adj. <i>p</i> -Value
Up-Regulated Genes ↑			
ENSG00000196826	AC008758.1	Novel zinc finger protein	1.48E-13
ENSG00000163071	SPATA18	Spermatogenesis associated 18	2.89E-13
ENSG00000173535	TNFRSF10C	TNF receptor superfamily member 10c	2.50E-11
ENSG00000124762	CDKN1A	Cyclin dependent kinase inhibitor 1A	3.30E-09
ENSG00000128271	ADORA2A	Adenosine A2a receptor	7.41E-09
ENSG00000161513	FDXR	Ferredoxin reductase	3.25E-07
ENSG00000198211	AC092143.1	Novel protein (MC1R-TUBB3 readthrough)	1.03E-06
ENSG00000270181	BIVM-ERCC5	BIVM-ERCC5 readthrough	4.30E-06
ENSG00000177106	EPS8L2	EPS8 like 2	6.65E-06
ENSG00000080546	SESN1	Sestrin 1	7.62E-06
ENSG00000256664	AC025423.2	Ribosomal L24 domain containing 1 (RSL24D1) pseudogene	9.78E-06
ENSG00000102935	ZNF423	Zinc finger protein 423	1.66E-05
ENSG00000135679	MDM2	MDM2 proto-oncogene	2.63E-05
ENSG00000174307	PHLDA3	Pleckstrin homology like domain family A member 3	2.92E-05
ENSG00000225968	ELFN1	Extracellular leucine rich repeat and fibronectin type III domain containing 1	3.06E-05
ENSG00000244694	PTCHD4	Patched domain containing 4	8.94E-05
ENSG00000131398	KCNC3	Potassium voltage-gated channel subfamily C member 3	9.03E-05
ENSG00000181026	AEN	Apoptosis enhancing nuclease	0.000143
ENSG00000069188	SDK2	Sidekick cell adhesion molecule 2	0.000209
ENSG00000185088	RPS27L	Ribosomal protein S27 like	0.000357
ENSG00000166923	GREM1	Gremlin 1, DAN family BMP antagonist	0.000363
ENSG00000196562	SULF2	Sulfatase 2	0.000365
ENSG00000130766	SESN2	Sestrin 2	0.000467
ENSG00000131080	EDA2R	Ectodysplasin A2 receptor	0.000562
ENSG00000130517	PGPEP1	Pyroglutamyl-peptidase I	0.000565
ENSG00000185559	DLK1	Delta like non-canonical Notch ligand 1	0.000604
ENSG00000110900	TSPAN11	Tetraspanin 11	0.001129
ENSG00000118971	CCND2	Cyclin D2	0.001327
ENSG00000064201	TSPAN32	Tetraspanin 32	0.001755
ENSG00000172667	ZMAT3	Zinc finger matrin-type 3	0.001871
ENSG00000135709	KIAA0513	Kiaa0513	0.001996
ENSG00000198753	PLXNB3	Plexin B3	0.002337
ENSG00000026103	FAS	Fas cell surface death receptor	0.00256
ENSG00000112249	ASCC3	Activating signal cointegrator 1 complex subunit 3	0.002767
ENSG00000177076	ACER2	Alkaline ceramidase 2	0.002961
ENSG00000130513	GDF15	Growth differentiation factor 15	0.003049
ENSG00000078237	TIGAR	TP53 induced glycolysis regulatory phosphatase	0.003505
ENSG00000156097	GPR61	G protein-coupled receptor 61	0.004582
ENSG00000251357	AP000350.4	Novel protein	0.00497
ENSG00000196557	CACNA1H	Calcium voltage-gated channel subunit alpha1 H	0.005111
ENSG00000105290	APLP1	Amyloid beta precursor like protein 1	0.006093

ENSG00000244509	APOBEC3C	Apolipoprotein B mrna editing enzyme catalytic subunit 3C	0.006844
ENSG00000137103	TMEM8B	Transmembrane protein 8B	0.006913
ENSG00000110665	C11orf21	Chromosome 11 open reading frame 21	0.008327
ENSG00000167971	CASKIN1	CASK interacting protein 1	0.008441
ENSG00000105327	BBC3	BCL2 binding component 3	0.010488
ENSG00000087088	BAX	BCL2 associated X, apoptosis regulator	0.011202
ENSG00000170271	FAXDC2	Fatty acid hydroxylase domain containing 2	0.012676
ENSG00000125746	EML2	EMAP like 2	0.013186
ENSG00000160685	ZBTB7B	Zinc finger and BTB domain containing 7B	0.014514
ENSG00000188322	SBK1	SH3 domain binding kinase 1	0.014946
ENSG00000103227	LMF1	Lipase maturation factor 1	0.014951
ENSG00000285188	AC008397.2	Camp-specific 3',5'-cyclic phosphodiesterase 4C	0.018796
ENSG00000178947	SMIM10L2A	Small integral membrane protein 10 like 2A	0.019552
ENSG00000238098	ABCA17P	ATP binding cassette subfamily A member 17, pseudogene	0.020843
ENSG00000262481	TMEM256-PLSCR3	TMEM256-PLSCR3 readthrough (NMD candidate)	0.021436
ENSG00000162643	WDR63	WD repeat domain 63	0.021956
ENSG00000136378	ADAMTS7	ADAM metalloproteinase with thrombospondin type 1 motif 7	0.023072
ENSG00000158113	LRRC43	Leucine rich repeat containing 43	0.024473
ENSG00000170835	CEL	Carboxyl ester lipase	0.025568
ENSG00000138792	ENPEP	Glutamyl aminopeptidase	0.025659
ENSG00000142046	TMEM91	Transmembrane protein 91	0.028467
ENSG00000185650	ZFP36L1	ZFP36 ring finger protein like 1	0.030315
ENSG00000172831	CES2	Carboxylesterase 2	0.031055
ENSG00000117016	RIMS3	Regulating synaptic membrane exocytosis 3	0.031222
ENSG00000154767	XPC	XPC complex subunit, DNA damage recognition and repair factor	0.031234
ENSG00000100100	PIK3IP1	Phosphoinositide-3-kinase interacting protein 1	0.033966
ENSG00000102032	RENBP	Renin binding protein	0.034619
ENSG00000013364	MVP	Major vault protein	0.037031
ENSG00000029534	ANK1	Ankyrin 1	0.04171
ENSG00000184481	FOXO4	Forkhead box O4	0.046386
ENSG00000042445	RETSAT	Retinol saturase	0.046776
ENSG00000174938	SEZ6L2	Seizure related 6 homolog like 2	0.047378
Down-Regulated Genes ↓			
ENSG00000145386	CCNA2	Cyclin A2	1.01E-161
ENSG00000170312	CDK1	Cyclin dependent kinase 1	1.30E-148
ENSG00000148773	MKI67	Marker of proliferation Ki-67	1.92E-144
ENSG00000024526	DEPDC1	DEP domain containing 1	6.73E-135
ENSG00000203811	H3C14	H3 clustered histone 14	2.21E-134
ENSG00000166851	PLK1	Polo like kinase 1	4.21E-134
ENSG00000171848	RRM2	Ribonucleotide reductase regulatory subunit M2	4.33E-130
ENSG00000126787	DLGAP5	DLG associated protein 5	2.93E-121
ENSG00000175063	UBE2C	Ubiquitin conjugating enzyme E2 C	6.58E-120
ENSG00000112984	KIF20A	Kinesin family member 20A	3.08E-119
ENSG00000168078	PBK	PDZ binding kinase	5.35E-119
ENSG00000157456	CCNB2	Cyclin B2	1.21E-112
ENSG00000183856	IQGAP3	IQ motif containing gtpase activating protein 3	1.84E-111

ENSG00000090889	KIF4A	Kinesin family member 4A	2.97E-111
ENSG00000101447	FAM83D	Family with sequence similarity 83 member D	1.82E-110
ENSG00000286522	H3C2	H3 clustered histone 2	1.55E-109
ENSG00000142945	KIF2C	Kinesin family member 2C	7.68E-104
ENSG00000117724	CENPF	Centromere protein F	5.74E-100
ENSG00000101057	MYBL2	MYB proto-oncogene like 2	8.03E-100
ENSG00000169607	CKAP2L	Cytoskeleton associated protein 2 like	1.48E-98
ENSG00000094804	CDC6	Cell division cycle 6	1.90E-98
ENSG00000198826	ARHGAP11A	Rho gtpase activating protein 11A	2.70E-98
ENSG00000088325	TPX2	TPX2 microtubule nucleation factor	3.63E-98
ENSG00000131747	TOP2A	DNA topoisomerase II alpha	1.29E-97
ENSG00000112742	TTK	TTK protein kinase	1.26E-96
ENSG00000121152	NCAPH	Non-SMC condensin I complex subunit H	1.44E-95
ENSG00000134690	CDC48	Cell division cycle associated 8	8.76E-94
ENSG00000189057	FAM111B	Family with sequence similarity 111 member B	1.39E-91
ENSG00000198901	PRC1	Protein regulator of cytokinesis 1	2.25E-90
ENSG00000066279	ASPM	Abnormal spindle microtubule assembly	6.02E-89
ENSG00000117650	NEK2	NIMA related kinase 2	1.68E-88
ENSG00000118193	KIF14	Kinesin family member 14	1.79E-86
ENSG00000109805	NCAPG	Non-SMC condensin I complex subunit G	2.49E-86
ENSG00000167900	TK1	Thymidine kinase 1	2.24E-85
ENSG00000138180	CEP55	Centrosomal protein 55	2.41E-85
ENSG00000164611	PTTG1	PTTG1 regulator of sister chromatid separation, securin	4.61E-85
ENSG00000143476	DTL	Denticleless E3 ubiquitin protein ligase homolog	1.95E-84
ENSG00000076382	SPAG5	Sperm associated antigen 5	2.24E-84
ENSG00000161800	RACGAP1	Rac gtpase activating protein 1	6.31E-82
ENSG00000134057	CCNB1	Cyclin B1	6.31E-82
ENSG00000075218	GTSE1	G2 and S-phase expressed 1	1.75E-79
ENSG00000111665	CDCA3	Cell division cycle associated 3	3.42E-79
ENSG00000273983	H3C8	H3 clustered histone 8	1.79E-76
ENSG00000137804	NUSAP1	Nucleolar and spindle associated protein 1	1.85E-75
ENSG00000122966	CIT	Citron rho-interacting serine/threonine kinase	1.02E-72
ENSG00000129195	PIMREG	PICALM interacting mitotic regulator	4.17E-70
ENSG00000138160	KIF11	Kinesin family member 11	2.43E-69
ENSG00000138778	CENPE	Centromere protein E	2.80E-69
ENSG00000065328	MCM10	Minichromosome maintenance 10 replication initiation factor	4.13E-67
ENSG00000139354	GAS2L3	Growth arrest specific 2 like 3	3.90E-65
ENSG00000068489	PRR11	Proline rich 11	1.18E-64
ENSG00000164109	MAD2L1	Mitotic arrest deficient 2 like 1	1.18E-64
ENSG00000105011	ASF1B	Anti-silencing function 1B histone chaperone	3.04E-64
ENSG00000129810	SGO1	Shugoshin 1	1.03E-62
ENSG00000143228	NUF2	NUF2 component of NDC80 kinetochore complex	2.28E-62
ENSG00000169679	BUB1	BUB1 mitotic checkpoint serine/threonine kinase	1.23E-61
ENSG00000186871	ERCC6L	ERCC excision repair 6 like, spindle assembly checkpoint helicase	2.30E-59
ENSG00000167513	CDT1	Chromatin licensing and DNA replication factor 1	7.22E-59
ENSG00000171241	SHCBP1	SHC binding and spindle associated 1	1.72E-58
ENSG00000108106	UBE2S	Ubiquitin conjugating enzyme E2 S	6.65E-57
ENSG00000175305	CCNE2	Cyclin E2	9.61E-57
ENSG00000186193	SAPCD2	Suppressor APC domain containing 2	2.49E-55

ENSG00000115163	CENPA	Centromere protein A	1.01E-53
ENSG00000092853	CLSPN	Claspin	5.80E-53
ENSG00000100297	MCM5	Minichromosome maintenance complex component 5	1.42E-52
ENSG00000121621	KIF18A	Kinesin family member 18A	1.46E-51
ENSG00000122952	ZWINT	ZW10 interacting kinetochore protein	3.76E-51
ENSG00000158402	CDC25C	Cell division cycle 25C	1.07E-50
ENSG00000111247	RAD51AP1	RAD51 associated protein 1	1.68E-50
ENSG00000135451	TROAP	Trophinin associated protein	1.73E-50
ENSG00000186185	KIF18B	Kinesin family member 18B	4.42E-50
ENSG00000137807	KIF23	Kinesin family member 23	1.07E-49
ENSG00000123485	HJURP	Holliday junction recognition protein	9.76E-49
ENSG00000136122	BORA	BORA aurora kinase A activator	1.39E-48
ENSG00000165490	DDIAS	DNA damage induced apoptosis suppressor	2.80E-48
ENSG00000146670	CDCA5	Cell division cycle associated 5	2.15E-47
ENSG00000035499	DEPDC1B	DEP domain containing 1B	2.60E-47
ENSG00000178999	AURKB	Aurora kinase B	1.99E-46
ENSG00000276043	UHRF1	Ubiquitin like with PHD and ring finger domains 1	2.18E-46
ENSG00000274641	H2BC17	H2B clustered histone 17	2.61E-46
ENSG00000165304	MELK	Maternal embryonic leucine zipper kinase	2.82E-46
ENSG00000161888	SPC24	SPC24 component of NDC80 kinetochore complex	4.48E-45
ENSG00000089685	BIRC5	Baculoviral IAP repeat containing 5	7.07E-45
ENSG00000174371	EXO1	Exonuclease 1	1.65E-44
ENSG00000111206	FOXM1	Forkhead box M1	8.33E-44
ENSG00000274997	H2AC12	H2A clustered histone 12	1.03E-43
ENSG00000093009	CDC45	Cell division cycle 45	1.43E-43
ENSG00000184357	H1-5	H1.5 linker histone, cluster member	4.58E-43
ENSG00000119969	HELLS	Helicase, lymphoid specific	6.16E-43
ENSG00000123080	CDKN2C	Cyclin dependent kinase inhibitor 2C	7.48E-43
ENSG00000156970	BUB1B	BUB1 mitotic checkpoint serine/threonine kinase B	9.01E-43
ENSG00000166803	PCLAF	PCNA clamp associated factor	1.39E-42
ENSG00000100526	CDKN3	Cyclin dependent kinase inhibitor 3	1.97E-42
ENSG00000182010	RTKN2	Rhotekin 2	6.20E-42
ENSG00000014138	POLA2	DNA polymerase alpha 2, accessory subunit	1.36E-41
ENSG00000185480	PARPBP	PARP1 binding protein	1.66E-41
ENSG00000137812	KNL1	Kinetochore scaffold 1	1.00E-40
ENSG00000080986	NDC80	NDC80 kinetochore complex component	5.33E-40
ENSG00000165480	SKA3	Spindle and kinetochore associated complex subunit 3	5.33E-40
ENSG00000164087	POC1A	POC1 centriolar protein A	1.17E-39
ENSG00000276368	H2AC14	H2A clustered histone 14	1.64E-39
ENSG00000175643	RMI2	Recq mediated genome instability 2	1.92E-39
ENSG00000259316	AC087632.2	Novel protein	2.51E-39
ENSG00000196787	H2AC11	H2A clustered histone 11	2.96E-39
ENSG00000146918	NCAPG2	Non-SMC condensin II complex subunit G2	7.41E-39
ENSG00000138182	KIF20B	Kinesin family member 20B	2.10E-38
ENSG00000177602	HASPIN	Histone H3 associated protein kinase	2.17E-38
ENSG00000188486	H2AX	H2A.X variant histone	4.82E-38
ENSG00000182481	KPNA2	Karyopherin subunit alpha 2	5.92E-38
ENSG00000109674	NEIL3	Nei like DNA glycosylase 3	9.07E-38
ENSG00000092470	WDR76	WD repeat domain 76	4.57E-37
ENSG00000278588	H2BC10	H2B clustered histone 10	1.81E-36
ENSG00000071539	TRIP13	Thyroid hormone receptor interactor 13	1.98E-36

ENSG00000171320	ESCO2	Establishment of sister chromatid cohesion N-acetyltransferase 2	5.27E-36
ENSG00000077152	UBE2T	Ubiquitin conjugating enzyme E2 T	5.99E-36
ENSG00000011426	ANLN	Anillin actin binding protein	6.42E-36
ENSG00000137310	TCF19	Transcription factor 19	3.43E-35
ENSG00000196747	H2AC13	H2A clustered histone 13	1.90E-34
ENSG00000124635	H2BC11	H2B clustered histone 11	8.04E-34
ENSG00000007968	E2F2	E2F transcription factor 2	5.74E-33
ENSG00000142731	PLK4	Polo like kinase 4	6.32E-33
ENSG00000102384	CENPI	Centromere protein I	1.19E-32
ENSG00000104147	OIP5	Opa interacting protein 5	1.33E-32
ENSG00000139618	BRCA2	BRCA2 DNA repair associated	2.60E-32
ENSG00000121211	MND1	Meiotic nuclear divisions 1	5.32E-32
ENSG00000197153	H3C12	H3 clustered histone 12	7.56E-32
ENSG00000170540	ARL6IP1	ADP ribosylation factor like gtpase 6 interacting protein 1	2.14E-31
ENSG00000100162	CENPM	Centromere protein M	9.49E-31
ENSG00000135476	ESPL1	Extra spindle pole bodies like 1, separase	1.52E-30
ENSG00000087586	AURKA	Aurora kinase A	5.61E-30
ENSG00000172244	C5orf34	Chromosome 5 open reading frame 34	8.35E-30
ENSG00000277775	H3C7	H3 clustered histone 7	7.29E-29
ENSG00000136982	DSCC1	DNA replication and sister chromatid cohesion 1	1.10E-28
ENSG00000166845	C18orf54	Chromosome 18 open reading frame 54	1.12E-28
ENSG00000113810	SMC4	Structural maintenance of chromosomes 4	1.77E-28
ENSG00000112029	FBXO5	F-box protein 5	2.24E-28
ENSG00000121957	GPSM2	G protein signaling modulator 2	2.24E-28
ENSG00000144554	FANCD2	FA complementation group D2	2.37E-28
ENSG00000167670	CHAF1A	Chromatin assembly factor 1 subunit A	3.43E-28
ENSG00000282988	AL031777.2	Novel protein	3.70E-28
ENSG00000153044	CENPH	Centromere protein H	1.06E-27
ENSG00000163507	CIP2A	Cell proliferation regulating inhibitor of protein phosphatase 2A	1.06E-27
ENSG00000278677	H2AC17	H2A clustered histone 17	3.60E-27
ENSG00000131153	GIN5	GIN5 complex subunit 2	8.28E-27
ENSG00000151725	CENPU	Centromere protein U	1.60E-26
ENSG00000073111	MCM2	Minichromosome maintenance complex component 2	4.28E-26
ENSG00000140525	FANCI	FA complementation group I	8.75E-26
ENSG00000168496	FEN1	Flap structure-specific endonuclease 1	8.78E-26
ENSG00000076003	MCM6	Minichromosome maintenance complex component 6	1.19E-25
ENSG00000072571	HMMR	Hyaluronan mediated motility receptor	1.69E-25
ENSG00000173207	CKS1B	CDC28 protein kinase regulatory subunit 1B	4.45E-25
ENSG00000101224	CDC25B	Cell division cycle 25B	5.02E-25
ENSG00000165244	ZNF367	Zinc finger protein 367	5.57E-25
ENSG00000117399	CDC20	Cell division cycle 20	6.80E-25
ENSG00000111602	TIMELESS	Timeless circadian regulator	1.52E-24
ENSG00000270882	H4C14	H4 clustered histone 14	2.06E-24
ENSG00000213186	TRIM59	Tripartite motif containing 59	3.64E-24
ENSG00000275713	H2BC9	H2B clustered histone 9	5.65E-24
ENSG00000051180	RAD51	RAD51 recombinase	6.61E-24
ENSG00000188610	FAM72B	Family with sequence similarity 72 member B	1.16E-23
ENSG00000101003	GIN5	GIN5 complex subunit 1	1.31E-23
ENSG00000127564	PKMYT1	Protein kinase, membrane associated tyrosine/threonine 1	1.32E-23

ENSG00000278463	H2AC4	H2A clustered histone 4	1.87E-23
ENSG00000147536	GINS4	GINS complex subunit 4	2.49E-23
ENSG00000164045	CDC25A	Cell division cycle 25A	6.68E-23
ENSG00000133119	RFC3	Replication factor C subunit 3	9.48E-23
ENSG00000203760	CENPW	Centromere protein W	9.58E-23
ENSG00000113368	LMNB1	Lamin B1	1.08E-22
ENSG00000284946	AC068831.8	Novel protein	1.25E-22
ENSG00000197472	ZNF695	Zinc finger protein 695	1.51E-22
ENSG00000274750	H3C6	H3 clustered histone 6	2.00E-22
ENSG00000085840	ORC1	Origin recognition complex subunit 1	3.74E-22
ENSG00000154760	SLFN13	Schlafen family member 13	5.58E-22
ENSG00000164104	HMGB2	High mobility group box 2	1.76E-21
ENSG00000013810	TACC3	Transforming acidic coiled-coil containing protein 3	1.94E-21
ENSG00000144354	CDCA7	Cell division cycle associated 7	2.07E-21
ENSG00000186638	KIF24	Kinesin family member 24	4.38E-21
ENSG00000164032	H2AZ1	H2A.Z variant histone 1	4.87E-21
ENSG00000213347	MXD3	MAX dimerization protein 3	6.81E-21
ENSG00000097046	CDC7	Cell division cycle 7	9.48E-21
ENSG00000051341	POLQ	DNA polymerase theta	9.54E-21
ENSG00000285920	AC087721.2	Novel protein	1.01E-20
ENSG00000166801	FAM111A	Family with sequence similarity 111 member A	1.04E-20
ENSG00000005189	REXO5	RNA exonuclease 5	1.95E-20
ENSG00000215784	FAM72D	Family with sequence similarity 72 member D	4.10E-20
ENSG00000176890	TYMS	Thymidylate synthetase	4.68E-20
ENSG00000127423	AUNIP	Aurora kinase A and ninein interacting protein	9.66E-20
ENSG00000162063	CCNF	Cyclin F	1.02E-19
ENSG00000273703	H2BC14	H2B clustered histone 14	2.25E-19
ENSG00000117632	STMN1	Stathmin 1	2.80E-19
ENSG00000276903	H2AC16	H2A clustered histone 16	3.02E-19
ENSG00000163535	SGO2	Shugoshin 2	3.58E-19
ENSG00000171208	NETO2	Neuropilin and tolloid like 2	4.32E-19
ENSG00000174442	ZWILCH	Zwilch kinetochore protein	6.40E-19
ENSG00000123473	STIL	STIL centriolar assembly protein	6.93E-19
ENSG00000274290	H2BC6	H2B clustered histone 6	7.07E-19
ENSG00000158164	TMSB15A	Thymosin beta 15a	8.21E-19
ENSG00000176244	ACBD7	Acyl-coa binding domain containing 7	1.03E-18
ENSG00000123219	CENPK	Centromere protein K	1.35E-18
ENSG00000134222	PSRC1	Proline and serine rich coiled-coil 1	1.41E-18
ENSG00000006634	DBF4	DBF4 zinc finger	1.94E-18
ENSG00000214357	NEURL1B	Neutralized E3 ubiquitin protein ligase 1B	2.09E-18
ENSG00000100479	POLE2	DNA polymerase epsilon 2, accessory subunit	2.40E-18
ENSG00000123975	CKS2	CDC28 protein kinase regulatory subunit 2	2.64E-18
ENSG00000120802	TMPO	Thymopoietin	3.21E-18
ENSG00000076770	MBNL3	Muscleblind like splicing regulator 3	3.32E-18
ENSG00000138092	CENPO	Centromere protein O	3.39E-18
ENSG00000197299	BLM	BLM recq like helicase	4.91E-18
ENSG00000123374	CDK2	Cyclin dependent kinase 2	6.77E-18
ENSG00000106462	EZH2	Enhancer of zeste 2 polycomb repressive complex 2 subunit	1.64E-17
ENSG00000136492	BRIP1	BRCA1 interacting protein C-terminal helicase 1	2.46E-17
ENSG00000159259	CHAF1B	Chromatin assembly factor 1 subunit B	2.46E-17

ENSG00000275591	XKR5	XK related 5	2.91E-17
ENSG00000198554	WDHD1	WD repeat and HMG-box DNA binding protein 1	1.67E-16
ENSG00000183598	H3C13	H3 clustered histone 13	2.49E-16
ENSG00000163918	RFC4	Replication factor C subunit 4	5.24E-16
ENSG00000128944	KNSTRN	Kinetochoe localized astrin (SPAG5) binding protein	6.57E-16
ENSG00000148019	CEP78	Centrosomal protein 78	2.70E-15
ENSG00000131470	PSMC3IP	PSMC3 interacting protein	3.76E-15
ENSG00000197061	H4C3	H4 clustered histone 3	5.36E-15
ENSG00000163808	KIF15	Kinesin family member 15	7.93E-15
ENSG00000137563	GGH	Gamma-glutamyl hydrolase	8.11E-15
ENSG00000102098	SCML2	Scm polycomb group protein like 2	8.39E-15
ENSG00000185130	H2BC13	H2B clustered histone 13	8.82E-15
ENSG00000100629	CEP128	Centrosomal protein 128	1.96E-14
ENSG00000149503	INCENP	Inner centromere protein	2.09E-14
ENSG00000168393	DTYMK	Deoxythymidylate kinase	2.16E-14
ENSG00000278637	H4C1	H4 clustered histone 1	2.19E-14
ENSG00000149636	DSN1	DSN1 component of MIS12 kinetochoe complex	2.64E-14
ENSG00000183850	ZNF730	Zinc finger protein 730	4.00E-14
ENSG00000167325	RRM1	Ribonucleotide reductase catalytic subunit M1	5.63E-14
ENSG00000137135	ARHGEF39	Rho guanine nucleotide exchange factor 39	6.14E-14
ENSG00000204899	MZT1	Mitotic spindle organizing protein 1	6.60E-14
ENSG00000186777	ZNF732	Zinc finger protein 732	7.09E-14
ENSG00000156876	SASS6	SAS-6 centriolar assembly protein	9.14E-14
ENSG00000112118	MCM3	Minichromosome maintenance complex component 3	1.01E-13
ENSG00000183763	TRAIIP	TRAF interacting protein	1.16E-13
ENSG00000149554	CHEK1	Checkpoint kinase 1	1.17E-13
ENSG00000168411	RFWD3	Ring finger and WD repeat domain 3	1.34E-13
ENSG00000101412	E2F1	E2F transcription factor 1	1.55E-13
ENSG00000185697	MYBL1	MYB proto-oncogene like 1	2.09E-13
ENSG00000196550	FAM72A	Family with sequence similarity 72 member A	4.90E-13
ENSG00000079616	KIF22	Kinesin family member 22	5.11E-13
ENSG00000049541	RFC2	Replication factor C subunit 2	5.58E-13
ENSG00000283559	AC139491.6	Centrosomal protein 192kda (CEP192) pseudogene	5.66E-13
ENSG00000160957	RECQL4	Recq like helicase 4	5.91E-13
ENSG00000122483	CCDC18	Coiled-coil domain containing 18	7.76E-13
ENSG00000187741	FANCA	FA complementation group A	8.96E-13
ENSG00000277157	H4C4	H4 clustered histone 4	1.40E-12
ENSG00000120539	MASTL	Microtubule associated serine/threonine kinase like	1.53E-12
ENSG00000156802	ATAD2	Atpase family AAA domain containing 2	2.15E-12
ENSG00000146143	PRIM2	DNA primase subunit 2	2.68E-12
ENSG00000129534	MIS18BP1	MIS18 binding protein 1	3.66E-12
ENSG00000186767	SPIN4	Spindlin family member 4	4.11E-12
ENSG00000221829	FANCG	FA complementation group G	7.18E-12
ENSG00000140534	TICRR	TOPBP1 interacting checkpoint and replication regulator	7.36E-12
ENSG00000196584	XRCC2	X-ray repair cross complementing 2	1.26E-11
ENSG00000100749	VRK1	VRK serine/threonine kinase 1	1.92E-11
ENSG00000114346	ECT2	Epithelial cell transforming 2	2.48E-11
ENSG00000119403	PHF19	PHD finger protein 19	3.06E-11
ENSG00000196866	H2AC7	H2A clustered histone 7	3.29E-11
ENSG00000156136	DCK	Deoxycytidine kinase	3.58E-11
ENSG00000277075	H2AC8	H2A clustered histone 8	3.90E-11

ENSG00000124575	H1-3	H1.3 linker histone, cluster member	4.22E-11
ENSG00000275714	H3C1	H3 clustered histone 1	4.57E-11
ENSG00000146410	MTFR2	Mitochondrial fission regulator 2	4.73E-11
ENSG00000170779	CDCA4	Cell division cycle associated 4	4.87E-11
ENSG00000092140	G2E3	G2/M-phase specific E3 ubiquitin protein ligase	6.24E-11
ENSG00000198830	HMGN2	High mobility group nucleosomal binding domain 2	7.07E-11
ENSG00000125885	MCM8	Minichromosome maintenance 8 homologous recombination repair factor	7.32E-11
ENSG00000166881	NEMP1	Nuclear envelope integral membrane protein 1	8.09E-11
ENSG00000103995	CEP152	Centrosomal protein 152	1.01E-10
ENSG00000176208	ATAD5	Atpase family AAA domain containing 5	1.31E-10
ENSG00000171792	RHNO1	RAD9-HUS1-RAD1 interacting nuclear orphan 1	1.36E-10
ENSG00000278828	H3C10	H3 clustered histone 10	1.44E-10
ENSG00000154920	EME1	Essential meiotic structure-specific endonuclease 1	2.45E-10
ENSG00000101945	SUV39H1	Suppressor of variegation 3-9 homolog 1	2.92E-10
ENSG00000234289	H2BS1	H2B.S histone 1	2.97E-10
ENSG00000166508	MCM7	Minichromosome maintenance complex component 7	3.91E-10
ENSG00000115159	GPD2	Glycerol-3-phosphate dehydrogenase 2	4.38E-10
ENSG00000132436	FIGNL1	Fidgetin like 1	4.84E-10
ENSG00000160298	C21orf58	Chromosome 21 open reading frame 58	5.63E-10
ENSG00000151849	CENPJ	Centromere protein J	5.92E-10
ENSG00000112877	CEP72	Centrosomal protein 72	7.62E-10
ENSG00000198056	PRIM1	DNA primase subunit 1	8.00E-10
ENSG00000284491	THSD8	Thrombospondin type 1 domain containing 8	1.00E-09
ENSG00000185361	TNFAIP8L1	TNF alpha induced protein 8 like 1	1.13E-09
ENSG00000180596	H2BC4	H2B clustered histone 4	2.85E-09
ENSG00000040275	SPDL1	Spindle apparatus coiled-coil protein 1	3.08E-09
ENSG00000277224	H2BC7	H2B clustered histone 7	3.51E-09
ENSG00000146263	MMS22L	MMS22 like, DNA repair protein	4.58E-09
ENSG00000112312	GMNN	Geminin DNA replication inhibitor	5.01E-09
ENSG00000205208	C4orf46	Chromosome 4 open reading frame 46	5.63E-09
ENSG00000166451	CENPN	Centromere protein N	7.63E-09
ENSG00000172167	MTBP	MDM2 binding protein	1.10E-08
ENSG00000163923	RPL39L	Ribosomal protein L39 like	1.12E-08
ENSG00000187123	LYPD6	LY6/PLAUR domain containing 6	1.17E-08
ENSG00000120334	CENPL	Centromere protein L	1.55E-08
ENSG00000133101	CCNA1	Cyclin A1	2.03E-08
ENSG00000115687	PASK	PAS domain containing serine/threonine kinase	2.73E-08
ENSG00000197238	H4C11	H4 clustered histone 11	3.80E-08
ENSG00000080839	RBL1	RB transcriptional corepressor like 1	4.03E-08
ENSG00000188312	CENPP	Centromere protein P	4.20E-08
ENSG00000167747	C19orf48	Chromosome 19 open reading frame 48	4.54E-08
ENSG00000064199	SPA17	Sperm autoantigenic protein 17	5.23E-08
ENSG00000198331	HYLS1	HYLS1 centriolar and ciliogenesis associated	6.75E-08
ENSG00000126215	XRCC3	X-ray repair cross complementing 3	7.28E-08
ENSG00000158406	H4C8	H4 clustered histone 8	7.29E-08
ENSG00000031691	CENPQ	Centromere protein Q	7.30E-08
ENSG00000115392	FANCL	FA complementation group L	8.50E-08
ENSG00000189403	HMGB1	High mobility group box 1	1.10E-07
ENSG00000278705	H4C2	H4 clustered histone 2	1.15E-07
ENSG00000276180	H4C9	H4 clustered histone 9	1.17E-07

ENSG00000123136	DDX39A	Dexd-box helicase 39A	1.17E-07
ENSG00000181544	FANCB	FA complementation group B	1.21E-07
ENSG00000228716	DHFR	Dihydrofolate reductase	1.21E-07
ENSG00000006047	YBX2	Y-box binding protein 2	1.30E-07
ENSG00000136943	CTSV	Cathepsin V	1.32E-07
ENSG00000273802	H2BC8	H2B clustered histone 8	1.41E-07
ENSG00000237649	KIFC1	Kinesin family member C1	1.52E-07
ENSG00000160949	TONSL	Tonsoku like, DNA repair protein	1.71E-07
ENSG00000175175	PPM1E	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1E	1.82E-07
ENSG00000128245	YWHAH	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein eta	2.30E-07
ENSG00000197275	RAD54B	RAD54 homolog B	2.39E-07
ENSG00000154839	SKA1	Spindle and kinetochore associated complex subunit 1	2.58E-07
ENSG00000133863	TEX15	Testis expressed 15, meiosis and synapsis associated	2.72E-07
ENSG00000127337	YEATS4	YEATS domain containing 4	2.79E-07
ENSG00000275379	H3C11	H3 clustered histone 11	2.84E-07
ENSG00000145832	SLC25A48	Solute carrier family 25 member 48	3.01E-07
ENSG00000138346	DNA2	DNA replication helicase/nuclease 2	3.14E-07
ENSG00000162607	USP1	Ubiquitin specific peptidase 1	3.89E-07
ENSG00000285077	ARHGAP11B	Rho gtpase activating protein 11B	4.16E-07
ENSG00000144395	CCDC150	Coiled-coil domain containing 150	4.21E-07
ENSG00000105486	LIG1	DNA ligase 1	4.25E-07
ENSG00000159055	MIS18A	MIS18 kinetochore protein A	4.37E-07
ENSG00000180198	RCC1	Regulator of chromosome condensation 1	4.72E-07
ENSG00000135045	C9orf40	Chromosome 9 open reading frame 40	4.81E-07
ENSG00000077264	PAK3	P21 (RAC1) activated kinase 3	4.90E-07
ENSG00000167553	TUBA1C	Tubulin alpha 1c	4.90E-07
ENSG00000143815	LBR	Lamin B receptor	4.90E-07
ENSG00000124795	DEK	DEK proto-oncogene	7.52E-07
ENSG00000138376	BARD1	BRCA1 associated RING domain 1	7.86E-07
ENSG00000233822	H2BC15	H2B clustered histone 15	8.68E-07
ENSG00000152503	TRIM36	Tripartite motif containing 36	9.65E-07
ENSG00000131773	KHDRBS3	KH RNA binding domain containing, signal transduction associated 3	9.83E-07
ENSG00000131351	HAUS8	HAUS augmin like complex subunit 8	1.01E-06
ENSG00000109084	TMEM97	Transmembrane protein 97	1.01E-06
ENSG00000140451	PIF1	PIF1 5'-to-3' DNA helicase	1.07E-06
ENSG00000197903	H2BC12	H2B clustered histone 12	1.17E-06
ENSG00000196247	ZNF107	Zinc finger protein 107	1.18E-06
ENSG00000189159	JPT1	Jupiter microtubule associated homolog 1	1.24E-06
ENSG00000111445	RFC5	Replication factor C subunit 5	1.44E-06
ENSG00000178966	RMI1	Recq mediated genome instability 1	1.46E-06
ENSG00000135407	AVIL	Advillin	1.68E-06
ENSG00000163781	TOPBP1	DNA topoisomerase II binding protein 1	1.69E-06
ENSG00000072864	NDE1	Nude neurodevelopment protein 1	2.08E-06
ENSG00000154473	BUB3	BUB3 mitotic checkpoint protein	2.09E-06
ENSG00000119397	CNTRL	Centriolin	2.21E-06
ENSG00000062822	POLD1	DNA polymerase delta 1, catalytic subunit	2.23E-06
ENSG00000128408	RIBC2	RIB43A domain with coiled-coils 2	2.31E-06
ENSG00000099901	RANBP1	RAN binding protein 1	2.73E-06
ENSG00000178878	APOLD1	Apolipoprotein L domain containing 1	2.74E-06

ENSG00000132646	PCNA	Proliferating cell nuclear antigen	2.77E-06
ENSG00000092621	PHGDH	Phosphoglycerate dehydrogenase	3.10E-06
ENSG00000185432	METTL7A	Methyltransferase like 7A	3.12E-06
ENSG00000165197	VEGFD	Vascular endothelial growth factor D	3.25E-06
ENSG00000111581	NUP107	Nucleoporin 107	3.39E-06
ENSG00000125319	HROB	Homologous recombination factor with OB-fold	3.73E-06
ENSG00000158373	H2BC5	H2B clustered histone 5	4.25E-06
ENSG00000010292	NCAPD2	Non-SMC condensin I complex subunit D2	4.63E-06
ENSG00000091651	ORC6	Origin recognition complex subunit 6	5.20E-06
ENSG00000284906	ARHGAP11B	Rho gtpase activating protein 11B	5.29E-06
ENSG00000198176	TFDP1	Transcription factor Dp-1	5.47E-06
ENSG00000079819	EPB41L2	Erythrocyte membrane protein band 4.1 like 2	5.69E-06
ENSG00000175455	CCDC14	Coiled-coil domain containing 14	5.93E-06
ENSG00000278023	RDM1	RAD52 motif containing 1	6.48E-06
ENSG00000159147	DONSON	Downstream neighbor of SON	6.92E-06
ENSG00000094916	CBX5	Chromobox 5	8.04E-06
ENSG00000106399	RPA3	Replication protein A3	8.37E-06
ENSG00000095002	MSH2	Muts homolog 2	8.91E-06
ENSG00000152270	PDE3B	Phosphodiesterase 3B	9.13E-06
ENSG00000132967	HMGB1P5	High mobility group box 1 pseudogene 5	1.00E-05
ENSG00000152240	HAUS1	HAUS augmin like complex subunit 1	1.01E-05
ENSG00000132749	TESMIN	Testis expressed metallothionein like protein	1.03E-05
ENSG00000172687	ZNF738	Zinc finger protein 738	1.03E-05
ENSG00000136824	SMC2	Structural maintenance of chromosomes 2	1.16E-05
ENSG00000104738	MCM4	Minichromosome maintenance complex component 4	1.24E-05
ENSG00000118655	DCLRE1B	DNA cross-link repair 1B	1.24E-05
ENSG00000169918	OTUD7A	OTU deubiquitinase 7A	1.27E-05
ENSG00000145375	SPATA5	Spermatogenesis associated 5	1.46E-05
ENSG00000160447	PKN3	Protein kinase N3	1.48E-05
ENSG00000185710	SMG1P4	SMG1 pseudogene 4	1.50E-05
ENSG00000165891	E2F7	E2F transcription factor 7	1.50E-05
ENSG00000168476	REEP4	Receptor accessory protein 4	1.65E-05
ENSG00000187790	FANCM	FA complementation group M	1.74E-05
ENSG00000142149	HUNK	Hormonally up-regulated Neu-associated kinase	2.00E-05
ENSG00000256663	AC112777.1	Ubiquitin-like with PHD and ring finger domains 1 (UHRF1) pseudogene	2.06E-05
ENSG00000160229	ZNF66	Zinc finger protein 66	2.09E-05
ENSG00000155755	TMEM237	Transmembrane protein 237	2.11E-05
ENSG00000163002	NUP35	Nucleoporin 35	2.19E-05
ENSG00000165501	LRR1	Leucine rich repeat protein 1	2.38E-05
ENSG00000182504	CEP97	Centrosomal protein 97	2.50E-05
ENSG00000103495	MAZ	MYC associated zinc finger protein	2.67E-05
ENSG00000231205	ZNF826P	Zinc finger protein 826, pseudogene	2.91E-05
ENSG00000258555	SPECC1L-ADORA2A	SPECC1L-ADORA2A readthrough (NMD candidate)	3.12E-05
ENSG00000130270	ATP8B3	Atpase phospholipid transporting 8B3	3.16E-05
ENSG00000177084	POLE	DNA polymerase epsilon, catalytic subunit	3.36E-05
ENSG00000267041	ZNF850	Zinc finger protein 850	3.45E-05
ENSG00000070081	NUCB2	Nucleobindin 2	3.52E-05
ENSG00000184661	CDCA2	Cell division cycle associated 2	3.87E-05
ENSG00000174799	CEP135	Centrosomal protein 135	3.95E-05

ENSG00000154146	NRGN	Neurogranin	4.17E-05
ENSG00000184897	H1-10	H1.10 linker histone	4.58E-05
ENSG00000164985	PSIP1	PC4 and SFRS1 interacting protein 1	4.78E-05
ENSG00000176619	LMNB2	Lamin B2	4.84E-05
ENSG00000175445	LPL	Lipoprotein lipase	4.91E-05
ENSG00000133739	LRRCC1	Leucine rich repeat and coiled-coil centrosomal protein 1	5.27E-05
ENSG00000136518	ACTL6A	Actin like 6A	5.44E-05
ENSG00000099256	PRTFDC1	Phosphoribosyl transferase domain containing 1	6.89E-05
ENSG00000173218	VANGL1	VANGL planar cell polarity protein 1	7.03E-05
ENSG00000176974	SHMT1	Serine hydroxymethyltransferase 1	7.09E-05
ENSG00000137337	MDC1	Mediator of DNA damage checkpoint 1	7.45E-05
ENSG00000124207	CSE1L	Chromosome segregation 1 like	8.64E-05
ENSG00000116830	TTF2	Transcription termination factor 2	8.87E-05
ENSG00000081320	STK17B	Serine/threonine kinase 17b	9.07E-05
ENSG00000101868	POLA1	DNA polymerase alpha 1, catalytic subunit	9.38E-05
ENSG00000158427	TMSB15B	Thymosin beta 15B	9.44E-05
ENSG00000050438	SLC4A8	Solute carrier family 4 member 8	0.000106
ENSG00000256229	ZNF486	Zinc finger protein 486	0.000106
ENSG00000123737	EXOSC9	Exosome component 9	0.00011
ENSG00000106268	NUDT1	Nudix hydrolase 1	0.000112
ENSG00000109861	CTSC	Cathepsin C	0.000117
ENSG00000198189	HSD17B11	Hydroxysteroid 17-beta dehydrogenase 11	0.000134
ENSG00000183765	CHEK2	Checkpoint kinase 2	0.000149
ENSG00000213551	DNAJC9	Dnaj heat shock protein family (Hsp40) member C9	0.000151
ENSG00000070950	RAD18	RAD18 E3 ubiquitin protein ligase	0.000153
ENSG00000115875	SRSF7	Serine and arginine rich splicing factor 7	0.000161
ENSG00000267500	ZNF887P	Zinc finger protein 887, pseudogene	0.000166
ENSG00000136108	CKAP2	Cytoskeleton associated protein 2	0.000187
ENSG00000095777	MYO3A	Myosin IIIA	0.00019
ENSG00000144485	HES6	Hes family bhlh transcription factor 6	0.000192
ENSG00000274588	DGKK	Diacylglycerol kinase kappa	0.000223
ENSG00000100242	SUN2	Sad1 and UNC84 domain containing 2	0.000239
ENSG00000156509	FBXO43	F-box protein 43	0.00024
ENSG00000128951	DUT	Deoxyuridine triphosphatase	0.000243
ENSG00000187837	H1-2	H1.2 linker histone, cluster member	0.000256
ENSG00000155561	NUP205	Nucleoporin 205	0.000274
ENSG00000167617	CDC42EP5	CDC42 effector protein 5	0.000282
ENSG00000149548	CCDC15	Coiled-coil domain containing 15	0.000317
ENSG00000214826	DDX12P	DEAD/H-box helicase 12, pseudogene	0.000325
ENSG00000067955	CBFB	Core-binding factor subunit beta	0.000344
ENSG00000162062	TEDC2	Tubulin epsilon and delta complex 2	0.000358
ENSG00000179841	AKAP5	A-kinase anchoring protein 5	0.000405
ENSG00000103540	CCP110	Centriolar coiled-coil protein 110	0.000415
ENSG00000259781	HMGB1P6	High mobility group box 1 pseudogene 6	0.000423
ENSG00000144645	OSBPL10	Oxysterol binding protein like 10	0.000429
ENSG00000136811	ODF2	Outer dense fiber of sperm tails 2	0.000447
ENSG00000081870	HSPB11	Heat shock protein family B (small) member 11	0.000492
ENSG00000158201	ABHD3	Abhydrolase domain containing 3	0.000587
ENSG00000178295	GEN1	GEN1 Holliday junction 5' flap endonuclease	0.000634
ENSG00000076248	UNG	Uracil DNA glycosylase	0.00069

ENSG00000106355	LSM5	LSM5 homolog, U6 small nuclear RNA and mrna degradation associated	0.000694
ENSG00000259845	HERC2P10	Hect domain and RLD 2 pseudogene 10	0.000698
ENSG00000275221	H2AC15	H2A clustered histone 15	0.000699
ENSG00000242419	PCDHGC4	Protocadherin gamma subfamily C, 4	0.0007
ENSG00000077514	POLD3	DNA polymerase delta 3, accessory subunit	0.000702
ENSG00000125148	MT2A	Metallothionein 2A	0.000725
ENSG00000101773	RBBP8	RB binding protein 8, endonuclease	0.000773
ENSG00000126453	BCL2L12	BCL2 like 12	0.000785
ENSG00000248710	AC079594.2	TRIM59 and ift80 readthrough	0.000797
ENSG00000197451	HNRNPAB	Heterogeneous nuclear ribonucleoprotein A/B	0.000898
ENSG00000080200	CRYBG3	Crystallin beta-gamma domain containing 3	0.000912
ENSG00000260342	AC138811.2	Novel protein	0.000916
ENSG00000104219	ZDHHC2	Zinc finger DHHC-type palmitoyltransferase 2	0.000937
ENSG00000272196	H2AC19	H2A clustered histone 19	0.000939
ENSG00000100578	KIAA0586	Kiaa0586	0.000966
ENSG00000275126	H4C13	H4 clustered histone 13	0.000979
ENSG00000183684	ALYREF	Aly/REF export factor	0.000984
ENSG00000163006	CCDC138	Coiled-coil domain containing 138	0.000999
ENSG00000029993	HMGB3	High mobility group box 3	0.001048
ENSG00000263513	FAM72C	Family with sequence similarity 72 member C	0.001078
ENSG00000179750	APOBEC3B	Apolipoprotein B mrna editing enzyme catalytic subunit 3B	0.001273
ENSG00000187833	C2orf78	Chromosome 2 open reading frame 78	0.001295
ENSG00000162174	ASRGL1	Asparaginase and isoaspartyl peptidase 1	0.001295
ENSG00000012048	BRCA1	BRCA1 DNA repair associated	0.001392
ENSG00000163950	SLBP	Stem-loop binding protein	0.001392
ENSG00000116062	MSH6	Muts homolog 6	0.001401
ENSG00000177917	ARL6IP6	ADP ribosylation factor like gtpase 6 interacting protein 6	0.001414
ENSG00000217555	CKLF	Chemokine like factor	0.001614
ENSG00000184635	ZNF93	Zinc finger protein 93	0.00165
ENSG00000214796	AC098934.1	Tubulin, alpha (TUBA) pseudogene	0.001755
ENSG00000013573	DDX11	DEAD/H-box helicase 11	0.001846
ENSG00000162636	FAM102B	Family with sequence similarity 102 member B	0.001932
ENSG00000108468	CBX1	Chromobox 1	0.001949
ENSG00000156398	SFXN2	Sideroflexin 2	0.001949
ENSG00000152455	SUV39H2	Suppressor of variegation 3-9 homolog 2	0.002016
ENSG00000164754	RAD21	RAD21 cohesin complex component	0.002147
ENSG00000029153	ARNTL2	Aryl hydrocarbon receptor nuclear translocator like 2	0.002311
ENSG00000143493	INTS7	Integrator complex subunit 7	0.002371
ENSG00000147050	KDM6A	Lysine demethylase 6A	0.002564
ENSG00000120647	CCDC77	Coiled-coil domain containing 77	0.002565
ENSG00000178343	SHISA3	Shisa family member 3	0.002773
ENSG00000162039	MEIOB	Meiosis specific with OB-fold	0.002914
ENSG00000167088	SNRPD1	Small nuclear ribonucleoprotein D1 polypeptide	0.002961
ENSG00000122566	HNRNPA2B1	Heterogeneous nuclear ribonucleoprotein A2/B1	0.003167
ENSG00000134291	TMEM106C	Transmembrane protein 106C	0.003506
ENSG00000187134	AKR1C1	Aldo-keto reductase family 1 member C1	0.003687
ENSG00000152253	SPC25	SPC25 component of NDC80 kinetochore complex	0.003714
ENSG00000196172	ZNF681	Zinc finger protein 681	0.003918
ENSG00000149929	HIRIP3	HIRA interacting protein 3	0.004202

ENSG00000276256	AC011043.1	Uncharacterized LOC389831	0.004312
ENSG00000178177	LCORL	Ligand dependent nuclear receptor corepressor like	0.004477
ENSG00000154040	CABYR	Calcium binding tyrosine phosphorylation regulated	0.004515
ENSG00000196081	ZNF724	Zinc finger protein 724	0.004551
ENSG00000109255	NMU	Neuromedin U	0.004588
ENSG00000004777	ARHGAP33	Rho gtpase activating protein 33	0.004665
ENSG00000120699	EXOSC8	Exosome component 8	0.004677
ENSG00000160352	ZNF714	Zinc finger protein 714	0.004715
ENSG00000175322	ZNF519	Zinc finger protein 519	0.004817
ENSG00000100206	DMC1	DNA meiotic recombinase 1	0.00495
ENSG00000100401	RANGAP1	Ran gtpase activating protein 1	0.004974
ENSG00000251188	AC079140.3	Novel zinc finger protein pseudogene	0.005107
ENSG00000214425	LRRC37A4P	Leucine rich repeat containing 37 member A4, pseudogene	0.005111
ENSG00000188985	DHFRP1	Dihydrofolate reductase pseudogene 1	0.005143
ENSG00000000460	C1orf112	Chromosome 1 open reading frame 112	0.005155
ENSG00000089280	FUS	FUS RNA binding protein	0.00523
ENSG00000112081	SRSF3	Serine and arginine rich splicing factor 3	0.005289
ENSG00000147231	RADX	RPA1 related single stranded DNA binding protein, X-linked	0.005719
ENSG00000128059	PPAT	Phosphoribosyl pyrophosphate amidotransferase	0.005774
ENSG00000253250	C8orf88	Chromosome 8 open reading frame 88	0.005837
ENSG00000235748	SEPTIN14P12	Septin 14 pseudogene 12	0.005948
ENSG00000104626	ERI1	Exoribonuclease 1	0.006691
ENSG00000105750	ZNF85	Zinc finger protein 85	0.006724
ENSG00000187514	PTMA	Prothymosin alpha	0.006724
ENSG00000184992	BRI3BP	BRI3 binding protein	0.006796
ENSG00000198157	HMG5	High mobility group nucleosome binding domain 5	0.006989
ENSG00000147274	RBMX	RNA binding motif protein X-linked	0.007154
ENSG00000151287	TEX30	Testis expressed 30	0.007212
ENSG00000162073	PAQR4	Progesterone and adiponectin receptor family member 4	0.007582
ENSG00000119333	WDR34	WD repeat domain 34	0.007634
ENSG00000213024	NUP62	Nucleoporin 62	0.007664
ENSG00000149136	SSRP1	Structure specific recognition protein 1	0.007799
ENSG00000105717	PBX4	PBX homeobox 4	0.008232
ENSG00000132780	NASP	Nuclear autoantigenic sperm protein	0.008232
ENSG00000250312	ZNF718	Zinc finger protein 718	0.008774
ENSG00000198088	NUP62CL	Nucleoporin 62 C-terminal like	0.009001
ENSG00000271254	AC240274.1	Neuroblastoma breakpoint family member 1	0.009001
ENSG00000025770	NCAPH2	Non-SMC condensin II complex subunit H2	0.009174
ENSG00000151503	NCAPD3	Non-SMC condensin II complex subunit D3	0.00932
ENSG00000204209	DAXX	Death domain associated protein	0.009468
ENSG00000214944	ARHGEF28	Rho guanine nucleotide exchange factor 28	0.009631
ENSG00000175130	MARCKSL1	MARCKS like 1	0.009761
ENSG00000171793	CTPS1	CTP synthase 1	0.009934
ENSG00000079387	SENP1	SUMO specific peptidase 1	0.009978
ENSG00000197121	PGAP1	Post-GPI attachment to proteins inositol deacylase 1	0.009987
ENSG00000148835	TAF5	TATA-box binding protein associated factor 5	0.010421
ENSG00000173848	NET1	Neuroepithelial cell transforming 1	0.010811
ENSG00000077684	JADE1	Jade family PHD finger 1	0.01111

ENSG00000151388	ADAMTS12	ADAM metallopeptidase with thrombospondin type 1 motif 12	0.011792
ENSG00000136861	CDK5RAP2	CDK5 regulatory subunit associated protein 2	0.012035
ENSG00000186298	PPP1CC	Protein phosphatase 1 catalytic subunit gamma	0.012084
ENSG00000169684	CHRNA5	Cholinergic receptor nicotinic alpha 5 subunit	0.012309
ENSG00000118298	CA14	Carbonic anhydrase 14	0.012535
ENSG00000244306	AL589743.1	Double homeobox A pseudogene 10	0.013477
ENSG00000123416	TUBA1B	Tubulin alpha 1b	0.013583
ENSG00000196230	TUBB	Tubulin beta class I	0.013583
ENSG00000141576	RNF157	Ring finger protein 157	0.014763
ENSG00000068028	RASSF1	Ras association domain family member 1	0.014917
ENSG00000198435	NRARP	NOTCH regulated ankyrin repeat protein	0.01502
ENSG00000139291	TMEM19	Transmembrane protein 19	0.015387
ENSG00000139734	DIAPH3	Diaphanous related formin 3	0.015427
ENSG00000269226	TMSB15B	Thymosin beta 15B	0.016019
ENSG00000115355	CCDC88A	Coiled-coil domain containing 88A	0.016645
ENSG00000162929	KIAA1841	Kiaa1841	0.01682
ENSG00000107566	ERLIN1	ER lipid raft associated 1	0.017038
ENSG00000141401	IMPA2	Inositol monophosphatase 2	0.017097
ENSG00000198521	ZNF43	Zinc finger protein 43	0.017097
ENSG00000174600	CMKLR1	Chemerin chemokine-like receptor 1	0.017237
ENSG00000182628	SKA2	Spindle and kinetochore associated complex subunit 2	0.017932
ENSG00000174010	KLHL15	Kelch like family member 15	0.018042
ENSG00000125450	NUP85	Nucleoporin 85	0.01827
ENSG00000277112	ANKRD20A21 P	Ankyrin repeat domain 20 family member A21, pseudogene	0.018527
ENSG00000176894	PXMP2	Peroxisomal membrane protein 2	0.018527
ENSG00000099783	HNRNPM	Heterogeneous nuclear ribonucleoprotein M	0.01863
ENSG00000133985	TTC9	Tetratricopeptide repeat domain 9	0.01902
ENSG00000132016	C19orf57	Chromosome 19 open reading frame 57	0.019595
ENSG00000143643	TTC13	Tetratricopeptide repeat domain 13	0.019841
ENSG00000011332	DPF1	Double PHD fingers 1	0.019976
ENSG00000101911	PRPS2	Phosphoribosyl pyrophosphate synthetase 2	0.02015
ENSG00000197020	ZNF100	Zinc finger protein 100	0.020626
ENSG00000138587	MNS1	Meiosis specific nuclear structural 1	0.020638
ENSG00000151466	SCLT1	Sodium channel and clathrin linker 1	0.021023
ENSG00000104059	FAM189A1	Family with sequence similarity 189 member A1	0.02128
ENSG00000102230	PCYT1B	Phosphate cytidylyltransferase 1, choline, beta	0.021392
ENSG00000114405	C3orf14	Chromosome 3 open reading frame 14	0.021959
ENSG00000147874	HAUS6	HAUS augmin like complex subunit 6	0.022358
ENSG00000183624	HMCES	5-hydroxymethylcytosine binding, ES cell specific	0.022527
ENSG00000179241	LDLRAD3	Low density lipoprotein receptor class A domain containing 3	0.022638
ENSG00000128708	HAT1	Histone acetyltransferase 1	0.022648
ENSG00000105968	H2AZ2	H2A.Z variant histone 2	0.022686
ENSG00000183207	RUVBL2	Ruvb like AAA atpase 2	0.022768
ENSG00000104267	CA2	Carbonic anhydrase 2	0.023145
ENSG0000020922	MRE11	MRE11 homolog, double strand break repair nuclease	0.023578
ENSG00000189362	NEMP2	Nuclear envelope integral membrane protein 2	0.024134
ENSG00000170264	FAM161A	FAM161 centrosomal protein A	0.024257
ENSG00000106571	GLI3	GLI family zinc finger 3	0.024473

ENSG00000136159	NUDT15	Nudix hydrolase 15	0.024473
ENSG00000114541	FRMD4B	FERM domain containing 4B	0.027076
ENSG00000197771	MCMBP	Minichromosome maintenance complex binding protein	0.027145
ENSG00000213390	ARHGAP19	Rho gtpase activating protein 19	0.027612
ENSG00000198039	ZNF273	Zinc finger protein 273	0.028146
ENSG00000249115	HAUS5	HAUS augmin like complex subunit 5	0.029503
ENSG00000107672	NSMCE4A	NSE4 homolog A, SMC5-SMC6 complex component	0.032497
ENSG00000136938	ANP32B	Acidic nuclear phosphoprotein 32 family member B	0.033534
ENSG00000183148	ANKRD20A2	Ankyrin repeat domain 20 family member A2	0.033804
ENSG00000186522	SEPTIN10	Septin 10	0.033966
ENSG00000286132	AC022415.3	Novel protein	0.033993
ENSG00000169508	GPR183	G protein-coupled receptor 183	0.034006
ENSG00000241634	AC069499.2	Ribosomal protein L13 (RPL13) pseudogene	0.035083
ENSG00000198168	SVIP	Small VCP interacting protein	0.035464
ENSG00000107105	ELAVL2	ELAV like RNA binding protein 2	0.035771
ENSG00000130816	DNMT1	DNA methyltransferase 1	0.036655
ENSG00000134758	RNF138	Ring finger protein 138	0.037618
ENSG00000146426	TIAM2	TIAM Rac1 associated GEF 2	0.038632
ENSG00000121988	ZRANB3	Zinc finger RANBP2-type containing 3	0.040433
ENSG00000280571	AC006059.2	Novel protein	0.040631
ENSG00000161547	SRSF2	Serine and arginine rich splicing factor 2	0.041157
ENSG00000126878	AIF1L	Allograft inflammatory factor 1 like	0.04171
ENSG00000056050	HPF1	Histone parylation factor 1	0.041956
ENSG00000104889	RNASEH2A	Ribonuclease H2 subunit A	0.043069
ENSG00000184270	H2AC21	H2A clustered histone 21	0.043394
ENSG00000203814	H2BC18	H2B clustered histone 18	0.043794
ENSG00000181588	MEX3D	Mex-3 RNA binding family member D	0.04415
ENSG00000171960	PPIH	Peptidylprolyl isomerase H	0.044159
ENSG00000198155	ZNF876P	Zinc finger protein 876, pseudogene	0.044573
ENSG00000170037	CNTROB	Centrobin, centriole duplication and spindle assembly protein	0.044584
ENSG00000260802	SERTM2	Serine rich and transmembrane domain containing 2	0.04481
ENSG00000183798	EMILIN3	Elastin microfibril interfacer 3	0.044836
ENSG00000104177	MYEF2	Myelin expression factor 2	0.045202
ENSG00000180998	GPR137C	G protein-coupled receptor 137C	0.045294
ENSG00000096654	ZNF184	Zinc finger protein 184	0.045418
ENSG00000118412	CASP8AP2	Caspase 8 associated protein 2	0.046588
ENSG00000149639	SOGA1	Suppressor of glucose, autophagy associated 1	0.047252
ENSG00000118513	MYB	MYB proto-oncogene, transcription factor	0.048162
ENSG00000204410	MSH5	Muts homolog 5	0.048907
ENSG00000160201	U2AF1	U2 small nuclear RNA auxiliary factor 1	0.049099
ENSG00000144677	CTDSPL	CTD small phosphatase like	0.049262
ENSG00000087301	TXNDC16	Thioredoxin domain containing 16	0.049712

Supplementary Table S2. Statistically significant DEGs (Adj.*p*-value<0.05) derived from DGEA of RNA-Seq data from Primary Human Lung Fibroblasts (IMR90) after X-ray irradiation, using DESeq2. The experiment consists of 3 control samples and 3 irradiated with 2 Gy X-ray radiation for 24 hours [Bioproject: PRJNA436999].

Ensembl ID	Gene Symbol	Gene Description	Adj. <i>p</i> -Value
Up-Regulated Genes ↑			
ENSG00000124762	CDKN1A	Cyclin dependent kinase inhibitor 1A	1.17E-83
ENSG00000163071	SPATA18	Spermatogenesis associated 18	3.10E-38
ENSG00000173530	TNFRSF10D	TNF receptor superfamily member 10d	5.93E-29
ENSG00000181026	AEN	Apoptosis enhancing nuclease	7.02E-28
ENSG00000055163	CYFIP2	Cytoplasmic FMR1 interacting protein 2	1.83E-27
ENSG00000161513	FDXR	Ferredoxin reductase	7.58E-27
ENSG00000130513	GDF15	Growth differentiation factor 15	3.66E-25
ENSG00000087088	BAX	BCL2 associated X, apoptosis regulator	7.75E-25
ENSG00000105327	BBC3	BCL2 binding component 3	8.07E-22
ENSG00000131080	EDA2R	Ectodysplasin A2 receptor	4.88E-21
ENSG00000110900	TSPAN11	Tetraspanin 11	2.57E-20
ENSG00000120889	TNFRSF10B	TNF receptor superfamily member 10b	2.82E-20
ENSG00000134574	DDB2	Damage specific DNA binding protein 2	5.11E-19
ENSG00000132274	TRIM22	Tripartite motif containing 22	4.48E-17
ENSG00000080546	SESN1	Sestrin 1	1.39E-14
ENSG00000180155	LYNX1	Ly6/neurotoxin 1	3.06E-14
ENSG00000167196	FBXO22	F-box protein 22	9.81E-14
ENSG00000154767	XPC	XPC complex subunit, DNA damage recognition and repair factor	1.90E-13
ENSG00000174307	PHLDA3	Pleckstrin homology like domain family A member 3	6.02E-13
ENSG00000112249	ASCC3	Activating signal cointegrator 1 complex subunit 3	3.45E-12
ENSG00000196562	SULF2	Sulfatase 2	5.29E-12
ENSG00000172667	ZMAT3	Zinc finger matrin-type 3	3.93E-11
ENSG00000173535	TNFRSF10C	TNF receptor superfamily member 10c	7.97E-11
ENSG00000142627	EPHA2	EPH receptor A2	8.93E-11
ENSG00000026103	FAS	Fas cell surface death receptor	5.97E-10
ENSG00000228430	AL162726.3	Serine palmitoyltransferase long chain base subunit 1 (SPTLC1) pseudogene	5.24E-09
ENSG00000148175	STOM	Stomatin	9.52E-09
ENSG00000135919	SERPINE2	Serpin family E member 2	1.07E-08
ENSG00000170855	TRIAP1	TP53 regulated inhibitor of apoptosis 1	1.51E-08
ENSG00000177106	EPS8L2	EPS8 like 2	1.97E-08
ENSG00000128422	KRT17	Keratin 17	2.02E-08
ENSG00000130766	SESN2	Sestrin 2	4.04E-08
ENSG00000054148	PHPT1	Phosphohistidine phosphatase 1	7.49E-08
ENSG00000177943	MAMDC4	MAM domain containing 4	1.02E-07
ENSG00000051108	HERPUD1	Homocysteine inducible ER protein with ubiquitin like domain 1	1.14E-07
ENSG00000171246	NPTX1	Neuronal pentraxin 1	1.98E-07
ENSG00000112715	VEGFA	Vascular endothelial growth factor A	3.01E-07
ENSG00000159388	BTG2	BTG anti-proliferation factor 2	3.74E-07
ENSG00000141232	TOB1	Transducer of ERBB2, 1	4.46E-07
ENSG00000176697	BDNF	Brain derived neurotrophic factor	1.77E-06
ENSG00000173846	PLK3	Polo like kinase 3	1.96E-06

ENSG00000182247	UBE2E2	Ubiquitin conjugating enzyme E2 E2	2.10E-06
ENSG00000048392	RRM2B	Ribonucleotide reductase regulatory TP53 inducible subunit M2B	4.60E-06
ENSG00000011114	BTBD7	BTB domain containing 7	5.28E-06
ENSG00000168621	GDNF	Glial cell derived neurotrophic factor	5.35E-06
ENSG00000197093	GAL3ST4	Galactose-3-O-sulfotransferase 4	6.71E-06
ENSG00000165072	MAMDC2	MAM domain containing 2	6.71E-06
ENSG00000163735	CXCL5	C-X-C motif chemokine ligand 5	6.71E-06
ENSG00000196975	ANXA4	Annexin A4	8.08E-06
ENSG00000178607	ERN1	Endoplasmic reticulum to nucleus signaling 1	1.09E-05
ENSG00000162643	WDR63	WD repeat domain 63	1.70E-05
ENSG00000113328	CCNG1	Cyclin G1	1.76E-05
ENSG00000138166	DUSP5	Dual specificity phosphatase 5	2.22E-05
ENSG00000185088	RPS27L	Ribosomal protein S27 like	2.45E-05
ENSG00000182752	PAPPA	Pappalysin 1	2.64E-05
ENSG00000113108	APBB3	Amyloid beta precursor protein binding family B member 3	3.20E-05
ENSG00000059804	SLC2A3	Solute carrier family 2 member 3	3.41E-05
ENSG00000244509	APOBEC3C	Apolipoprotein B mRNA editing enzyme catalytic subunit 3C	5.14E-05
ENSG00000124466	LYPD3	LY6/PLAUR domain containing 3	6.25E-05
ENSG00000104689	TNFRSF10A	TNF receptor superfamily member 10a	6.46E-05
ENSG00000277639	AC007906.2	Novel protein	7.16E-05
ENSG00000116574	RHOU	Ras homolog family member U	7.34E-05
ENSG00000169429	CXCL8	C-X-C motif chemokine ligand 8	7.42E-05
ENSG00000116183	PAPPA2	Pappalysin 2	7.89E-05
ENSG00000160691	SHC1	SHC adaptor protein 1	8.01E-05
ENSG00000182580	EPHB3	EPH receptor B3	9.16E-05
ENSG00000197872	FAM49A	Family with sequence similarity 49 member A	0.000157
ENSG00000244694	PTCHD4	Patched domain containing 4	0.000157
ENSG00000168918	INPP5D	Inositol polyphosphate-5-phosphatase D	0.000158
ENSG00000065491	TBC1D22B	TBC1 domain family member 22B	0.000162
ENSG00000103257	SLC7A5	Solute carrier family 7 member 5	0.000169
ENSG00000101928	MOSPD1	Motile sperm domain containing 1	0.000182
ENSG00000136244	IL6	Interleukin 6	0.000211
ENSG00000196152	ZNF79	Zinc finger protein 79	0.000221
ENSG00000105372	RPS19	Ribosomal protein S19	0.000222
ENSG00000197632	SERPINB2	Serpin family B member 2	0.000301
ENSG00000163734	CXCL3	C-X-C motif chemokine ligand 3	0.000325
ENSG00000105649	RAB3A	RAB3A, member RAS oncogene family	0.000326
ENSG00000225511	LINC00475	Long intergenic non-protein coding RNA 475	0.000345
ENSG00000125538	IL1B	Interleukin 1 beta	0.000353
ENSG00000163739	CXCL1	C-X-C motif chemokine ligand 1	0.000369
ENSG00000124098	FAM210B	Family with sequence similarity 210 member B	0.000386
ENSG00000198064	NPIP13	Nuclear pore complex interacting protein family, member B13	0.000395
ENSG00000081041	CXCL2	C-X-C motif chemokine ligand 2	0.000443
ENSG00000164938	TP53INP1	Tumor protein p53 inducible nuclear protein 1	0.000451
ENSG00000116761	CTH	Cystathionine gamma-lyase	0.000466
ENSG00000140379	BCL2A1	BCL2 related protein A1	0.000486
ENSG00000168209	DDIT4	DNA damage inducible transcript 4	0.000509

ENSG00000158050	DUSP2	Dual specificity phosphatase 2	0.000558
ENSG00000132256	TRIM5	Tripartite motif containing 5	0.000573
ENSG00000135679	MDM2	MDM2 proto-oncogene	0.000593
ENSG00000112773	TENT5A	Terminal nucleotidyltransferase 5A	0.000594
ENSG00000144476	ACKR3	Atypical chemokine receptor 3	0.000595
ENSG00000115008	IL1A	Interleukin 1 alpha	0.000596
ENSG00000255112	CHMP1B	Charged multivesicular body protein 1B	0.000621
ENSG00000172890	NADSYN1	NAD synthetase 1	0.000626
ENSG00000116741	RGS2	Regulator of G protein signaling 2	0.000658
ENSG00000123358	NR4A1	Nuclear receptor subfamily 4 group A member 1	0.000684
ENSG00000272921	AC005832.4	Novel protein	0.000887
ENSG00000104613	INTS10	Integrator complex subunit 10	0.00091
ENSG00000068912	ERLEC1	Endoplasmic reticulum lectin 1	0.000989
ENSG00000013588	GPRC5A	G protein-coupled receptor class C group 5 member A	0.001023
ENSG00000185112	FAM43A	Family with sequence similarity 43 member A	0.001062
ENSG00000163659	TIPARP	TCDD inducible poly(ADP-ribose) polymerase	0.001064
ENSG00000138685	FGF2	Fibroblast growth factor 2	0.001151
ENSG00000111817	DSE	Dermatan sulfate epimerase	0.001176
ENSG00000168497	CAVIN2	Caveolae associated protein 2	0.00125
ENSG00000108342	CSF3	Colony stimulating factor 3	0.00125
ENSG00000112697	TMEM30A	Transmembrane protein 30A	0.001326
ENSG00000184205	TSPYL2	TSPY like 2	0.001374
ENSG00000065357	DGKA	Diacylglycerol kinase alpha	0.001546
ENSG00000136826	KLF4	Kruppel like factor 4	0.001598
ENSG00000196576	PLXNB2	Plexin B2	0.001926
ENSG00000171033	PKIA	Camp-dependent protein kinase inhibitor alpha	0.002065
ENSG00000137819	PAQR5	Progesterin and adipog receptor family member 5	0.002151
ENSG00000095794	CREM	Camp responsive element modulator	0.002188
ENSG00000179094	PER1	Period circadian regulator 1	0.002197
ENSG00000146592	CREB5	Camp responsive element binding protein 5	0.00231
ENSG00000088826	SMOX	Spermine oxidase	0.002351
ENSG00000087589	CASS4	Cas scaffold protein family member 4	0.002384
ENSG00000106004	HOXA5	Homeobox A5	0.00253
ENSG00000128590	DNAJB9	Dnaj heat shock protein family (Hsp40) member B9	0.002562
ENSG00000184588	PDE4B	Phosphodiesterase 4B	0.002629
ENSG00000001626	CFTR	CF transmembrane conductance regulator	0.002785
ENSG00000176907	TCIM	Transcriptional and immune response regulator	0.002798
ENSG00000070540	WIPI1	WD repeat domain, phosphoinositide interacting 1	0.002885
ENSG00000154319	FAM167A	Family with sequence similarity 167 member A	0.003048
ENSG00000073756	PTGS2	Prostaglandin-endoperoxide synthase 2	0.003157
ENSG00000285976	AL135905.2	Novel protein	0.003404
ENSG00000256206	AC018523.2	Novel protein	0.003457
ENSG00000130066	SAT1	Spermidine/spermine N1-acetyltransferase 1	0.003582
ENSG00000104970	KIR3DX1	Killer cell immunoglobulin like receptor, three Ig domains X1 (pseudogene)	0.003582
ENSG00000121039	RDH10	Retinol dehydrogenase 10	0.003664
ENSG00000171219	CDC42BPG	CDC42 binding protein kinase gamma	0.003842
ENSG00000134107	BHLHE40	Basic helix-loop-helix family member e40	0.00399
ENSG00000100739	BDKRB1	Bradykinin receptor B1	0.003994
ENSG00000143507	DUSP10	Dual specificity phosphatase 10	0.003994
ENSG00000145040	UCN2	Urocortin 2	0.004269

ENSG00000167992	VWCE	Von Willebrand factor C and EGF domains	0.004289
ENSG00000100906	NFKBIA	NFKB inhibitor alpha	0.004488
ENSG00000169594	BNC1	Basonuclin 1	0.0052
ENSG00000102804	TSC22D1	TSC22 domain family member 1	0.00534
ENSG00000124216	SNAI1	Snail family transcriptional repressor 1	0.005595
ENSG00000122484	RPAP2	RNA polymerase II associated protein 2	0.005767
ENSG00000164237	CMBL	Carboxymethylenebutenolidase homolog	0.005945
ENSG00000128342	LIF	LIF interleukin 6 family cytokine	0.00626
ENSG00000115421	PAPOLG	Poly(A) polymerase gamma	0.007146
ENSG00000175600	SUGCT	Succinyl-coa:glutarate-coa transferase	0.00734
ENSG00000188243	COMM6	COMM domain containing 6	0.007405
ENSG00000104321	TRPA1	Transient receptor potential cation channel subfamily A member 1	0.007434
ENSG00000091592	NLRP1	NLR family pyrin domain containing 1	0.007483
ENSG00000101255	TRIB3	Tribbles pseudokinase 3	0.007787
ENSG00000003989	SLC7A2	Solute carrier family 7 member 2	0.008206
ENSG00000142178	SIK1	Salt inducible kinase 1	0.008358
ENSG00000170836	PPM1D	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1D	0.008422
ENSG00000176531	PHLDB3	Pleckstrin homology like domain family B member 3	0.008947
ENSG00000075413	MARK3	Microtubule affinity regulating kinase 3	0.009249
ENSG00000137975	CLCA2	Chloride channel accessory 2	0.009424
ENSG00000042445	RETSAT	Retinol saturase	0.009564
ENSG00000130844	ZNF331	Zinc finger protein 331	0.00959
ENSG00000088340	FER1L4	Fer-1 like family member 4 (pseudogene)	0.010024
ENSG00000165272	AQP3	Aquaporin 3 (Gill blood group)	0.010913
ENSG00000163638	ADAMTS9	ADAM metallopeptidase with thrombospondin type 1 motif 9	0.010973
ENSG00000124882	EREG	Epiregulin	0.011037
ENSG00000078237	TIGAR	TP53 induced glycolysis regulatory phosphatase	0.011078
ENSG00000114270	COL7A1	Collagen type VII alpha 1 chain	0.011081
ENSG00000124875	CXCL6	C-X-C motif chemokine ligand 6	0.011613
ENSG00000204920	ZNF155	Zinc finger protein 155	0.011786
ENSG00000134363	FST	Follistatin	0.011789
ENSG00000103253	HAGHL	Hydroxyacylglutathione hydrolase like	0.011802
ENSG00000145632	PLK2	Polo like kinase 2	0.011821
ENSG00000148344	PTGES	Prostaglandin E synthase	0.011821
ENSG00000144655	CSRNP1	Cysteine and serine rich nuclear protein 1	0.011836
ENSG00000162496	DHRS3	Dehydrogenase/reductase 3	0.01195
ENSG00000171223	JUNB	Junb proto-oncogene, AP-1 transcription factor subunit	0.012326
ENSG00000255730	AC011462.1	Novel protein	0.012385
ENSG00000153234	NR4A2	Nuclear receptor subfamily 4 group A member 2	0.012396
ENSG00000104635	SLC39A14	Solute carrier family 39 member 14	0.012936
ENSG00000152049	KCNE4	Potassium voltage-gated channel subfamily E regulatory subunit 4	0.013231
ENSG00000188234	AGAP4	Arfgap with gtpase domain, ankyrin repeat and PH domain 4	0.013316
ENSG00000115009	CCL20	C-C motif chemokine ligand 20	0.013408
ENSG00000132510	KDM6B	Lysine demethylase 6B	0.0135
ENSG00000151065	DCP1B	Decapping mma 1B	0.013627
ENSG00000177595	PIDD1	P53-induced death domain protein 1	0.013665
ENSG00000165312	OTUD1	OTU deubiquitinase 1	0.014166

ENSG00000186866	POFUT2	Protein O-fucosyltransferase 2	0.014758
ENSG00000099875	MKNK2	MAPK interacting serine/threonine kinase 2	0.014866
ENSG00000164331	ANKRA2	Ankyrin repeat family A member 2	0.015052
ENSG00000124067	SLC12A4	Solute carrier family 12 member 4	0.015183
ENSG00000156976	EIF4A2	Eukaryotic translation initiation factor 4A2	0.015304
ENSG00000125772	GPCPD1	Glycerophosphocholine phosphodiesterase 1	0.015445
ENSG00000198001	AC093012.1	Interleukin 1 receptor associated kinase 4	0.015605
ENSG00000013441	CLK1	CDC like kinase 1	0.015605
ENSG00000143333	RGS16	Regulator of G protein signaling 16	0.015635
ENSG00000224877	NDUFAF8	NADH:ubiquinone oxidoreductase complex assembly factor 8	0.015678
ENSG00000204219	TCEA3	Transcription elongation factor A3	0.015678
ENSG00000173230	GOLGB1	Golgin B1	0.01621
ENSG00000123610	TNFAIP6	TNF alpha induced protein 6	0.016961
ENSG00000121361	KCNJ8	Potassium inwardly rectifying channel subfamily J member 8	0.017063
ENSG00000056972	TRAF3IP2	TRAF3 interacting protein 2	0.01728
ENSG00000103742	IGDCC4	Immunoglobulin superfamily DCC subclass member 4	0.017285
ENSG00000110944	IL23A	Interleukin 23 subunit alpha	0.018741
ENSG00000186340	THBS2	Thrombospondin 2	0.019515
ENSG00000139112	GABARAPL1	GABA type A receptor associated protein like 1	0.019696
ENSG00000139636	LMBR1L	Limb development membrane protein 1 like	0.020848
ENSG00000259529	AL136295.5	Novel transcript	0.02178
ENSG00000128052	KDR	Kinase insert domain receptor	0.022347
ENSG00000002745	WNT16	Wnt family member 16	0.022521
ENSG00000279483	AC090498.1	Ribosomal protein L41 (RPL41) pseudogene	0.022677
ENSG00000164125	GASK1B	Golgi associated kinase 1B	0.022743
ENSG00000140285	FGF7	Fibroblast growth factor 7	0.023727
ENSG00000137500	CCDC90B	Coiled-coil domain containing 90B	0.023889
ENSG00000120129	DUSP1	Dual specificity phosphatase 1	0.024747
ENSG00000160746	ANO10	Anoctamin 10	0.024981
ENSG00000114841	DNAH1	Dynein axonemal heavy chain 1	0.026204
ENSG00000172216	CEBPB	CCAAT enhancer binding protein beta	0.02658
ENSG00000119729	RHOQ	Ras homolog family member Q	0.026876
ENSG00000141337	ARSG	Arylsulfatase G	0.027492
ENSG00000099625	CBARP	CACN subunit beta associated regulatory protein	0.027492
ENSG00000099860	GADD45B	Growth arrest and DNA damage inducible beta	0.028408
ENSG00000184319	RPL23AP82	Ribosomal protein L23a pseudogene 82	0.028908
ENSG00000182220	ATP6AP2	Atpase H+ transporting accessory protein 2	0.029037
ENSG00000111275	ALDH2	Aldehyde dehydrogenase 2 family member	0.029527
ENSG00000162772	ATF3	Activating transcription factor 3	0.029783
ENSG00000164181	ELOVL7	ELOVL fatty acid elongase 7	0.029969
ENSG00000204815	TTC25	Tetratricopeptide repeat domain 25	0.030457
ENSG00000152229	PSTPIP2	Proline-serine-threonine phosphatase interacting protein 2	0.030546
ENSG00000172738	TMEM217	Transmembrane protein 217	0.030546
ENSG00000078142	PIK3C3	Phosphatidylinositol 3-kinase catalytic subunit type 3	0.030698
ENSG00000135452	TSPAN31	Tetraspanin 31	0.030926
ENSG00000140945	CDH13	Cadherin 13	0.031045
ENSG00000243970	PPIEL	Peptidylprolyl isomerase E like pseudogene	0.031437
ENSG00000228463	AP006222.1	Ribosomal protein L23a (RPL23A) pseudogene	0.032863

ENSG00000153714	LURAP1L	Leucine rich adaptor protein 1 like	0.033138
ENSG00000187479	C11orf96	Chromosome 11 open reading frame 96	0.033138
ENSG00000105928	GSDME	Gasdermin E	0.033901
ENSG00000184557	SOCS3	Suppressor of cytokine signaling 3	0.034506
ENSG00000119899	SLC17A5	Solute carrier family 17 member 5	0.035611
ENSG00000149968	MMP3	Matrix metalloproteinase 3	0.036731
ENSG00000115107	STEAP3	STEAP3 metalloproteinase	0.037274
ENSG00000196072	BLOC1S2	Biogenesis of lysosomal organelles complex 1 subunit 2	0.037385
ENSG00000162004	CCDC78	Coiled-coil domain containing 78	0.038281
ENSG00000083097	DOP1A	DOP1 leucine zipper like protein A	0.039387
ENSG00000120669	SOHLH2	Spermatogenesis and oogenesis specific basic helix-loop-helix 2	0.039778
ENSG00000044574	HSPA5	Heat shock protein family A (Hsp70) member 5	0.040279
ENSG00000100647	SUSD6	Sushi domain containing 6	0.041242
ENSG00000138449	SLC40A1	Solute carrier family 40 member 1	0.041272
ENSG00000126785	RHOJ	Ras homolog family member J	0.041803
ENSG00000132793	LPIN3	Lipin 3	0.042514
ENSG00000139874	SSTR1	Somatostatin receptor 1	0.042888
ENSG00000134070	IRAK2	Interleukin 1 receptor associated kinase 2	0.043333
ENSG00000206561	COLQ	Collagen like tail subunit of asymmetric acetylcholinesterase	0.045497
ENSG00000150681	RGS18	Regulator of G protein signaling 18	0.046018
ENSG00000149428	HYOU1	Hypoxia up-regulated 1	0.047357
ENSG00000109323	MANBA	Mannosidase beta	0.047357
ENSG00000091129	NRCAM	Neuronal cell adhesion molecule	0.047357
ENSG00000100298	APOBEC3H	Apolipoprotein B mRNA editing enzyme catalytic subunit 3H	0.047536
ENSG00000198722	UNC13B	Unc-13 homolog B	0.047741
ENSG00000113504	SLC12A7	Solute carrier family 12 member 7	0.048192
Down-Regulated Genes ↓			
ENSG00000111665	CDCA3	Cell division cycle associated 3	2.18E-103
ENSG00000148773	MKI67	Marker of proliferation Ki-67	2.13E-87
ENSG00000164104	HMGB2	High mobility group box 2	1.47E-69
ENSG00000123485	HJURP	Holliday junction recognition protein	4.95E-68
ENSG00000178999	AURKB	Aurora kinase B	1.18E-65
ENSG00000117399	CDC20	Cell division cycle 20	4.35E-65
ENSG00000101057	MYBL2	MYB proto-oncogene like 2	3.61E-63
ENSG00000105011	ASF1B	Anti-silencing function 1B histone chaperone	3.87E-63
ENSG00000127564	PKMYT1	Protein kinase, membrane associated tyrosine/threonine 1	7.64E-62
ENSG0000013810	TACC3	Transforming acidic coiled-coil containing protein 3	7.96E-62
ENSG00000134690	CDCA8	Cell division cycle associated 8	2.18E-61
ENSG00000145386	CCNA2	Cyclin A2	3.15E-61
ENSG00000171848	RRM2	Ribonucleotide reductase regulatory subunit M2	2.90E-59
ENSG00000075218	GTSE1	G2 and S-phase expressed 1	2.96E-59
ENSG00000113368	LMNB1	Lamin B1	7.27E-58
ENSG00000146670	CDCA5	Cell division cycle associated 5	1.05E-57
ENSG00000166851	PLK1	Polo like kinase 1	1.53E-54
ENSG00000237649	KIFC1	Kinesin family member C1	2.60E-54
ENSG00000011426	ANLN	Anillin actin binding protein	2.81E-54
ENSG00000162063	CCNF	Cyclin F	1.05E-53
ENSG00000175063	UBE2C	Ubiquitin conjugating enzyme E2 C	3.42E-53

ENSG00000111206	FOXM1	Forkhead box M1	1.39E-51
ENSG00000101447	FAM83D	Family with sequence similarity 83 member D	1.88E-51
ENSG00000161888	SPC24	SPC24 component of NDC80 kinetochore complex	5.98E-50
ENSG00000088325	TPX2	TPX2 microtubule nucleation factor	1.48E-49
ENSG00000137804	NUSAP1	Nucleolar and spindle associated protein 1	6.72E-49
ENSG00000186185	KIF18B	Kinesin family member 18B	1.75E-48
ENSG00000109805	NCAPG	Non-SMC condensin I complex subunit G	4.92E-48
ENSG00000156970	BUB1B	BUB1 mitotic checkpoint serine/threonine kinase B	7.72E-48
ENSG00000188486	H2AX	H2A.X variant histone	9.64E-48
ENSG00000162073	PAQR4	Progesterone and adiponectin receptor family member 4	1.48E-47
ENSG00000121152	NCAPH	Non-SMC condensin I complex subunit H	4.12E-47
ENSG00000138180	CEP55	Centrosomal protein 55	6.03E-46
ENSG00000170312	CDK1	Cyclin dependent kinase 1	1.50E-45
ENSG00000126787	DLGAP5	DLG associated protein 5	1.77E-44
ENSG00000165480	SKA3	Spindle and kinetochore associated complex subunit 3	4.20E-43
ENSG00000137807	KIF23	Kinesin family member 23	5.31E-43
ENSG00000122952	ZWINT	ZW10 interacting kinetochore protein	8.01E-43
ENSG00000138160	KIF11	Kinesin family member 11	3.03E-42
ENSG00000142945	KIF2C	Kinesin family member 2C	3.39E-42
ENSG00000174371	EXO1	Exonuclease 1	1.54E-41
ENSG00000073111	MCM2	Minichromosome maintenance complex component 2	1.93E-39
ENSG00000198901	PRC1	Protein regulator of cytokinesis 1	3.11E-39
ENSG00000213347	MXD3	MAX dimerization protein 3	1.97E-38
ENSG00000276043	UHRF1	Ubiquitin like with PHD and ring finger domains 1	1.02E-37
ENSG00000112029	FBXO5	F-box protein 5	1.05E-37
ENSG00000165304	MELK	Maternal embryonic leucine zipper kinase	1.06E-37
ENSG00000112984	KIF20A	Kinesin family member 20A	3.88E-37
ENSG00000166508	MCM7	Minichromosome maintenance complex component 7	4.74E-37
ENSG00000161800	RACGAP1	Rac gtpase activating protein 1	6.29E-37
ENSG00000101412	E2F1	E2F transcription factor 1	1.48E-36
ENSG00000168496	FEN1	Flap structure-specific endonuclease 1	4.66E-36
ENSG00000080986	NDC80	NDC80 kinetochore complex component	4.96E-36
ENSG00000076382	SPAG5	Sperm associated antigen 5	6.41E-36
ENSG00000183856	IQGAP3	IQ motif containing gtpase activating protein 3	1.37E-35
ENSG00000169679	BUB1	BUB1 mitotic checkpoint serine/threonine kinase	2.81E-35
ENSG00000090889	KIF4A	Kinesin family member 4A	3.57E-35
ENSG00000140534	TICRR	TOPBP1 interacting checkpoint and replication regulator	2.17E-34
ENSG00000179750	APOBEC3B	Apolipoprotein B mRNA editing enzyme catalytic subunit 3B	5.36E-34
ENSG00000085840	ORC1	Origin recognition complex subunit 1	2.93E-33
ENSG00000093009	CDC45	Cell division cycle 45	4.26E-33
ENSG00000131747	TOP2A	DNA topoisomerase II alpha	1.01E-32
ENSG00000186193	SAPCD2	Suppressor APC domain containing 2	1.25E-32
ENSG00000120802	TMPO	Thymopoietin	1.31E-32
ENSG00000228716	DHFR	Dihydrofolate reductase	3.65E-32
ENSG00000158402	CDC25C	Cell division cycle 25C	9.50E-32
ENSG00000189057	FAM111B	Family with sequence similarity 111 member B	1.94E-31
ENSG00000135451	TROAP	Trophinin associated protein	2.11E-31
ENSG00000129195	PIMREG	PICALM interacting mitotic regulator	3.73E-31
ENSG00000131153	GINS2	GINS complex subunit 2	8.11E-31
ENSG00000066279	ASPM	Abnormal spindle microtubule assembly	1.28E-30

ENSG00000065328	MCM10	Minichromosome maintenance 10 replication initiation factor	3.54E-30
ENSG00000112118	MCM3	Minichromosome maintenance complex component 3	2.90E-29
ENSG00000149503	INCENP	Inner centromere protein	6.53E-29
ENSG00000089685	BIRC5	Baculoviral IAP repeat containing 5	1.61E-28
ENSG00000071539	TRIP13	Thyroid hormone receptor interactor 13	1.71E-28
ENSG00000143228	NUF2	NUF2 component of NDC80 kinetochore complex	4.27E-28
ENSG00000007968	E2F2	E2F transcription factor 2	8.22E-28
ENSG00000129173	E2F8	E2F transcription factor 8	8.54E-28
ENSG00000156802	ATAD2	Atpase family AAA domain containing 2	1.44E-27
ENSG00000079616	KIF22	Kinesin family member 22	2.80E-27
ENSG00000184661	CDCA2	Cell division cycle associated 2	5.96E-27
ENSG00000115163	CENPA	Centromere protein A	7.58E-27
ENSG00000151725	CENPU	Centromere protein U	7.72E-27
ENSG00000092853	CLSPN	Claspin	2.14E-26
ENSG00000101003	GIN51	GIN5 complex subunit 1	2.64E-26
ENSG00000167670	CHAF1A	Chromatin assembly factor 1 subunit A	3.85E-26
ENSG00000182481	KPNA2	Karyopherin subunit alpha 2	6.32E-26
ENSG00000075702	WDR62	WD repeat domain 62	6.59E-26
ENSG00000100162	CENPM	Centromere protein M	1.12E-25
ENSG00000167513	CDT1	Chromatin licensing and DNA replication factor 1	3.94E-25
ENSG00000170779	CDCA4	Cell division cycle associated 4	4.26E-25
ENSG00000117724	CENPF	Centromere protein F	5.46E-25
ENSG00000138778	CENPE	Centromere protein E	5.88E-25
ENSG00000160957	RECQL4	Recq like helicase 4	1.38E-24
ENSG00000165244	ZNF367	Zinc finger protein 367	1.45E-24
ENSG00000187741	FANCA	FA complementation group A	5.08E-24
ENSG00000117650	NEK2	NIMA related kinase 2	7.86E-24
ENSG00000135476	ESPL1	Extra spindle pole bodies like 1, separase	7.93E-24
ENSG00000085999	RAD54L	RAD54 like	8.65E-24
ENSG00000166803	PCLAF	PCNA clamp associated factor	8.74E-24
ENSG00000144554	FANCD2	FA complementation group D2	1.32E-23
ENSG00000112742	TTK	TTK protein kinase	1.37E-23
ENSG00000035499	DEPDC1B	DEP domain containing 1B	2.45E-23
ENSG00000094804	CDC6	Cell division cycle 6	5.15E-23
ENSG00000122966	CIT	Citron rho-interacting serine/threonine kinase	1.10E-22
ENSG00000123219	CENPK	Centromere protein K	1.35E-22
ENSG00000169607	CKAP2L	Cytoskeleton associated protein 2 like	1.70E-22
ENSG00000111247	RAD51AP1	RAD51 associated protein 1	2.14E-22
ENSG00000167325	RRM1	Ribonucleotide reductase catalytic subunit M1	2.71E-22
ENSG00000157456	CCNB2	Cyclin B2	4.45E-22
ENSG00000168078	PBK	PDZ binding kinase	4.75E-22
ENSG00000171241	SHCBP1	SHC binding and spindle associated 1	6.42E-22
ENSG00000184445	KNTC1	Kinetochore associated 1	9.61E-22
ENSG00000175305	CCNE2	Cyclin E2	1.74E-21
ENSG00000092470	WDR76	WD repeat domain 76	3.30E-21
ENSG00000137135	ARHGEF39	Rho guanine nucleotide exchange factor 39	6.74E-21
ENSG00000143476	DTL	Denticleless E3 ubiquitin protein ligase homolog	1.14E-20
ENSG00000134222	PSRC1	Proline and serine rich coiled-coil 1	1.20E-20
ENSG00000051180	RAD51	RAD51 recombinase	1.22E-20

ENSG00000186871	ERCC6L	ERCC excision repair 6 like, spindle assembly checkpoint helicase	1.30E-20
ENSG00000213551	DNAJC9	Dnaj heat shock protein family (Hsp40) member C9	1.42E-20
ENSG00000133119	RFC3	Replication factor C subunit 3	1.53E-20
ENSG00000106462	EZH2	Enhancer of zeste 2 polycomb repressive complex 2 subunit	1.53E-20
ENSG00000176619	LMNB2	Lamin B2	2.35E-20
ENSG00000111602	TIMELESS	Timeless circadian regulator	2.53E-20
ENSG00000149636	DSN1	DSN1 component of MIS12 kinetochore complex	2.90E-20
ENSG00000176890	TYMS	Thymidylate synthetase	3.70E-20
ENSG00000131470	PSMC3IP	PSMC3 interacting protein	1.16E-19
ENSG00000136108	CKAP2	Cytoskeleton associated protein 2	1.78E-19
ENSG00000151503	NCAPD3	Non-SMC condensin II complex subunit D3	2.30E-19
ENSG00000163808	KIF15	Kinesin family member 15	2.96E-19
ENSG00000101945	SUV39H1	Suppressor of variegation 3-9 homolog 1	3.70E-19
ENSG00000104889	RNASEH2A	Ribonuclease H2 subunit A	4.62E-19
ENSG00000077152	UBE2T	Ubiquitin conjugating enzyme E2 T	6.14E-19
ENSG00000159259	CHAF1B	Chromatin assembly factor 1 subunit B	6.46E-19
ENSG00000029993	HMGB3	High mobility group box 3	1.71E-18
ENSG00000068489	PRR11	Proline rich 11	2.43E-18
ENSG00000198056	PRIM1	DNA primase subunit 1	2.85E-18
ENSG00000177602	HASPIN	Histone H3 associated protein kinase	5.38E-18
ENSG00000186638	KIF24	Kinesin family member 24	6.01E-18
ENSG00000171320	ESCO2	Establishment of sister chromatid cohesion N-acetyltransferase 2	1.02E-17
ENSG00000160949	TONSL	Tonsoku like, DNA repair protein	1.73E-17
ENSG00000138182	KIF20B	Kinesin family member 20B	1.92E-17
ENSG00000113810	SMC4	Structural maintenance of chromosomes 4	1.94E-17
ENSG00000146918	NCAPG2	Non-SMC condensin II complex subunit G2	2.51E-17
ENSG00000160298	C21orf58	Chromosome 21 open reading frame 58	3.49E-17
ENSG00000198826	ARHGAP11A	Rho gtpase activating protein 11A	5.47E-17
ENSG00000164087	POC1A	POC1 centriolar protein A	5.98E-17
ENSG00000100297	MCM5	Minichromosome maintenance complex component 5	9.98E-17
ENSG00000091651	ORC6	Origin recognition complex subunit 6	1.15E-16
ENSG00000144354	CDCA7	Cell division cycle associated 7	1.18E-16
ENSG00000127586	CHTF18	Chromosome transmission fidelity factor 18	1.41E-16
ENSG00000123080	CDKN2C	Cyclin dependent kinase inhibitor 2C	1.60E-16
ENSG00000138092	CENPO	Centromere protein O	2.72E-16
ENSG00000176974	SHMT1	Serine hydroxymethyltransferase 1	3.69E-16
ENSG00000131351	HAUS8	HAUS augmin like complex subunit 8	3.89E-16
ENSG00000170540	ARL6IP1	ADP ribosylation factor like gtpase 6 interacting protein 1	4.24E-16
ENSG00000134057	CCNB1	Cyclin B1	4.34E-16
ENSG00000024526	DEPDC1	DEP domain containing 1	4.38E-16
ENSG00000117632	STMN1	Stathmin 1	7.15E-16
ENSG00000167900	TK1	Thymidine kinase 1	8.56E-16
ENSG00000072571	HMMR	Hyaluronan mediated motility receptor	1.24E-15
ENSG00000137812	KNL1	Kinetochore scaffold 1	1.48E-15
ENSG00000284946	AC068831.8	Novel protein	1.53E-15
ENSG00000119333	WDR34	WD repeat domain 34	4.88E-15
ENSG00000154839	SKA1	Spindle and kinetochore associated complex subunit 1	4.93E-15
ENSG00000112312	GMNN	Geminin DNA replication inhibitor	6.13E-15

ENSG00000198554	WDHD1	WD repeat and HMG-box DNA binding protein 1	6.42E-15
ENSG00000104147	OIP5	Opa interacting protein 5	6.63E-15
ENSG00000154146	NRGN	Neurogranin	1.05E-14
ENSG00000164611	PTTG1	PTTG1 regulator of sister chromatid separation, securin	1.45E-14
ENSG00000149554	CHEK1	Checkpoint kinase 1	1.64E-14
ENSG00000163507	CIP2A	Cell proliferation regulating inhibitor of protein phosphatase 2A	1.70E-14
ENSG00000120539	MASTL	Microtubule associated serine/threonine kinase like	3.12E-14
ENSG00000177084	POLE	DNA polymerase epsilon, catalytic subunit	5.11E-14
ENSG00000196584	XRCC2	X-ray repair cross complementing 2	7.72E-14
ENSG00000123473	STIL	STIL centriolar assembly protein	8.12E-14
ENSG00000013573	DDX11	DEAD/H-box helicase 11	2.73E-13
ENSG00000163918	RFC4	Replication factor C subunit 4	6.02E-13
ENSG00000130816	DNMT1	DNA methyltransferase 1	6.33E-13
ENSG00000109674	NEIL3	Nei like DNA glycosylase 3	7.28E-13
ENSG00000185347	TEDC1	Tubulin epsilon and delta complex 1	7.42E-13
ENSG00000101868	POLA1	DNA polymerase alpha 1, catalytic subunit	1.14E-12
ENSG00000214826	DDX12P	DEAD/H-box helicase 12, pseudogene	1.22E-12
ENSG00000160447	PKN3	Protein kinase N3	1.34E-12
ENSG00000136492	BRIP1	BRCA1 interacting protein C-terminal helicase 1	2.39E-12
ENSG00000100526	CDKN3	Cyclin dependent kinase inhibitor 3	2.55E-12
ENSG00000076003	MCM6	Minichromosome maintenance complex component 6	4.06E-12
ENSG00000105486	LIG1	DNA ligase 1	4.21E-12
ENSG00000119403	PHF19	PHD finger protein 19	4.27E-12
ENSG00000125885	MCM8	Minichromosome maintenance 8 homologous recombination repair factor	5.13E-12
ENSG00000129810	SGO1	Shugoshin 1	6.31E-12
ENSG00000100714	MTHFD1	Methylenetetrahydrofolate dehydrogenase, cyclohydrolase and formyltetrahydrofolate synthetase 1	6.58E-12
ENSG00000145861	C1QTNF2	C1q and TNF related 2	9.64E-12
ENSG00000164032	H2AZ1	H2A.Z variant histone 1	1.16E-11
ENSG00000101224	CDC25B	Cell division cycle 25B	1.24E-11
ENSG00000249115	HAUS5	HAUS augmin like complex subunit 5	1.26E-11
ENSG00000128973	CLN6	CLN6 transmembrane ER protein	1.31E-11
ENSG00000162607	USP1	Ubiquitin specific peptidase 1	1.61E-11
ENSG00000143799	PARP1	Poly(ADP-ribose) polymerase 1	1.72E-11
ENSG00000118193	KIF14	Kinesin family member 14	2.19E-11
ENSG00000111445	RFC5	Replication factor C subunit 5	3.42E-11
ENSG00000121211	MND1	Meiotic nuclear divisions 1	3.43E-11
ENSG00000104738	MCM4	Minichromosome maintenance complex component 4	3.71E-11
ENSG00000097046	CDC7	Cell division cycle 7	3.92E-11
ENSG00000168411	RFWD3	Ring finger and WD repeat domain 3	4.19E-11
ENSG00000168393	DTYMK	Deoxythymidylate kinase	5.37E-11
ENSG00000142731	PLK4	Polo like kinase 4	6.21E-11
ENSG00000164045	CDC25A	Cell division cycle 25A	6.26E-11
ENSG00000124795	DEK	DEK proto-oncogene	7.32E-11
ENSG00000139734	DIAPH3	Diaphanous related formin 3	1.10E-10
ENSG00000154920	EME1	Essential meiotic structure-specific endonuclease 1	1.25E-10
ENSG00000075624	ACTB	Actin beta	1.56E-10
ENSG00000153044	CENPH	Centromere protein H	1.69E-10
ENSG00000126215	XRCC3	X-ray repair cross complementing 3	1.80E-10

ENSG00000080839	RBL1	RB transcriptional corepressor like 1	1.86E-10
ENSG00000138376	BARD1	BRCA1 associated RING domain 1	1.87E-10
ENSG00000214357	NEURL1B	Neutralized E3 ubiquitin protein ligase 1B	2.13E-10
ENSG00000004777	ARHGAP33	Rho gtpase activating protein 33	2.16E-10
ENSG00000051341	POLQ	DNA polymerase theta	2.34E-10
ENSG00000130695	CEP85	Centrosomal protein 85	2.71E-10
ENSG00000123975	CKS2	CDC28 protein kinase regulatory subunit 2	2.81E-10
ENSG00000062822	POLD1	DNA polymerase delta 1, catalytic subunit	2.93E-10
ENSG00000213186	TRIM59	Tripartite motif containing 59	3.34E-10
ENSG00000119969	HELLS	Helicase, lymphoid specific	5.58E-10
ENSG00000163950	SLBP	Stem-loop binding protein	5.84E-10
ENSG00000132780	NASP	Nuclear autoantigenic sperm protein	6.00E-10
ENSG00000183763	TRAIIP	TRAF interacting protein	6.57E-10
ENSG00000100629	CEP128	Centrosomal protein 128	6.79E-10
ENSG00000118655	DCLRE1B	DNA cross-link repair 1B	6.80E-10
ENSG00000164109	MAD2L1	Mitotic arrest deficient 2 like 1	7.09E-10
ENSG00000040275	SPDL1	Spindle apparatus coiled-coil protein 1	7.34E-10
ENSG00000185361	TNFAIP8L1	TNF alpha induced protein 8 like 1	8.82E-10
ENSG00000159055	MIS18A	MIS18 kinetochore protein A	1.21E-09
ENSG00000180198	RCC1	Regulator of chromosome condensation 1	1.32E-09
ENSG00000126453	BCL2L12	BCL2 like 12	1.76E-09
ENSG00000203760	CENPW	Centromere protein W	1.77E-09
ENSG00000173207	CKS1B	CDC28 protein kinase regulatory subunit 1B	1.88E-09
ENSG00000140451	PIF1	PIF1 5'-to-3' DNA helicase	2.10E-09
ENSG00000166451	CENPN	Centromere protein N	2.63E-09
ENSG00000161692	DBF4B	DBF4 zinc finger B	3.59E-09
ENSG00000136824	SMC2	Structural maintenance of chromosomes 2	4.40E-09
ENSG00000139354	GAS2L3	Growth arrest specific 2 like 3	4.76E-09
ENSG00000161547	SRSF2	Serine and arginine rich splicing factor 2	6.59E-09
ENSG00000120334	CENPL	Centromere protein L	7.90E-09
ENSG00000173894	CBX2	Chromobox 2	8.93E-09
ENSG00000182963	GJC1	Gap junction protein gamma 1	9.52E-09
ENSG00000123136	DDX39A	Dexd-box helicase 39A	9.61E-09
ENSG00000134291	TMEM106C	Transmembrane protein 106C	9.93E-09
ENSG00000143401	ANP32E	Acidic nuclear phosphoprotein 32 family member E	1.07E-08
ENSG00000049541	RFC2	Replication factor C subunit 2	1.45E-08
ENSG00000058804	NDC1	NDC1 transmembrane nucleoporin	1.83E-08
ENSG00000111331	OAS3	2'-5'-oligoadenylate synthetase 3	2.07E-08
ENSG00000096060	FKBP5	FKBP prolyl isomerase 5	2.38E-08
ENSG00000162062	TEDC2	Tubulin epsilon and delta complex 2	2.56E-08
ENSG00000095002	MSH2	Muts homolog 2	2.65E-08
ENSG00000158164	TMSB15A	Thymosin beta 15a	3.11E-08
ENSG00000188229	TUBB4B	Tubulin beta 4B class ivb	3.39E-08
ENSG00000109881	CCDC34	Coiled-coil domain containing 34	3.43E-08
ENSG00000176887	SOX11	SRY-box transcription factor 11	3.64E-08
ENSG00000014138	POLA2	DNA polymerase alpha 2, accessory subunit	5.71E-08
ENSG00000102384	CENPI	Centromere protein I	6.00E-08
ENSG00000197299	BLM	BLM recq like helicase	6.72E-08
ENSG00000100350	FOXRED2	FAD dependent oxidoreductase domain containing 2	7.02E-08
ENSG00000012963	UBR7	Ubiquitin protein ligase E3 component n-recogin 7 (putative)	9.52E-08

ENSG00000166845	C18orf54	Chromosome 18 open reading frame 54	1.01E-07
ENSG00000128245	YWHAH	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein eta	1.26E-07
ENSG00000136699	SMPD4	Sphingomyelin phosphodiesterase 4	1.40E-07
ENSG00000000460	C1orf112	Chromosome 1 open reading frame 112	1.42E-07
ENSG00000109084	TMEM97	Transmembrane protein 97	1.69E-07
ENSG00000127423	AUNIP	Aurora kinase A and ninein interacting protein	1.95E-07
ENSG00000213390	ARHGAP19	Rho gtpase activating protein 19	2.55E-07
ENSG00000163535	SGO2	Shugoshin 2	2.82E-07
ENSG00000083720	OXCT1	3-oxoacid coa-transferase 1	3.01E-07
ENSG00000168077	SCARA3	Scavenger receptor class A member 3	3.60E-07
ENSG00000140525	FANCI	FA complementation group I	3.66E-07
ENSG00000198176	TFDP1	Transcription factor Dp-1	4.02E-07
ENSG00000167747	C19orf48	Chromosome 19 open reading frame 48	4.17E-07
ENSG00000128944	KNSTRN	Kinetochores localized astrin (SPAG5) binding protein	4.53E-07
ENSG00000125319	HROB	Homologous recombination factor with OB-fold	5.11E-07
ENSG00000108106	UBE2S	Ubiquitin conjugating enzyme E2 S	5.58E-07
ENSG00000188807	TMEM201	Transmembrane protein 201	5.83E-07
ENSG00000164985	PSIP1	PC4 and SFRS1 interacting protein 1	6.21E-07
ENSG00000259781	HMGB1P6	High mobility group box 1 pseudogene 6	6.29E-07
ENSG00000010292	NCAPD2	Non-SMC condensin I complex subunit D2	6.46E-07
ENSG00000285920	AC087721.2	Novel protein	6.72E-07
ENSG00000114346	ECT2	Epithelial cell transforming 2	7.29E-07
ENSG00000165490	DDIAS	DNA damage induced apoptosis suppressor	8.02E-07
ENSG00000149929	HIRIP3	HIRA interacting protein 3	8.24E-07
ENSG00000221829	FANCG	FA complementation group G	8.41E-07
ENSG00000174442	ZWILCH	Zwilch kinetochores protein	8.99E-07
ENSG00000196230	TUBB	Tubulin beta class I	1.22E-06
ENSG00000146410	MTFR2	Mitochondrial fission regulator 2	1.26E-06
ENSG00000130402	ACTN4	Actinin alpha 4	1.30E-06
ENSG00000198830	HMGN2	High mobility group nucleosomal binding domain 2	1.44E-06
ENSG00000025770	NCAPH2	Non-SMC condensin II complex subunit H2	1.70E-06
ENSG00000136982	DSCC1	DNA replication and sister chromatid cohesion 1	1.94E-06
ENSG00000184216	IRAK1	Interleukin 1 receptor associated kinase 1	2.16E-06
ENSG00000106144	CASP2	Caspase 2	2.40E-06
ENSG00000011304	PTBP1	Polypyrimidine tract binding protein 1	3.14E-06
ENSG00000153048	CARHSP1	Calcium regulated heat stable protein 1	3.23E-06
ENSG00000182010	RTKN2	Rhotekin 2	4.48E-06
ENSG00000077514	POLD3	DNA polymerase delta 3, accessory subunit	4.73E-06
ENSG00000128951	DUT	Deoxyuridine triphosphatase	4.73E-06
ENSG00000189403	HMGB1	High mobility group box 1	5.17E-06
ENSG00000187514	PTMA	Prothymosin alpha	5.42E-06
ENSG00000129534	MIS18BP1	MIS18 binding protein 1	5.47E-06
ENSG00000213853	EMP2	Epithelial membrane protein 2	5.72E-06
ENSG00000087586	AURKA	Aurora kinase A	5.96E-06
ENSG00000012048	BRCA1	BRCA1 DNA repair associated	5.99E-06
ENSG00000076248	UNG	Uracil DNA glycosylase	6.63E-06
ENSG00000183048	SLC25A10	Solute carrier family 25 member 10	7.67E-06
ENSG00000158246	TENT5B	Terminal nucleotidyltransferase 5B	9.14E-06
ENSG00000096433	ITPR3	Inositol 1,4,5-trisphosphate receptor type 3	9.55E-06
ENSG00000143554	SLC27A3	Solute carrier family 27 member 3	9.75E-06

ENSG00000061337	LZTS1	Leucine zipper tumor suppressor 1	1.01E-05
ENSG00000092820	EZR	Ezrin	1.02E-05
ENSG00000166881	NEMP1	Nuclear envelope integral membrane protein 1	1.09E-05
ENSG00000132436	FIGNL1	Fidgetin like 1	1.17E-05
ENSG00000146263	MMS22L	MMS22 like, DNA repair protein	1.37E-05
ENSG00000121957	GPSM2	G protein signaling modulator 2	1.37E-05
ENSG00000144395	CCDC150	Coiled-coil domain containing 150	1.54E-05
ENSG00000117748	RPA2	Replication protein A2	1.56E-05
ENSG00000205208	C4orf46	Chromosome 4 open reading frame 46	1.76E-05
ENSG00000184635	ZNF93	Zinc finger protein 93	1.90E-05
ENSG00000166483	WEE1	WEE1 G2 checkpoint kinase	1.91E-05
ENSG00000099901	RANBP1	RAN binding protein 1	2.03E-05
ENSG00000184162	NR2C2AP	Nuclear receptor 2C2 associated protein	2.32E-05
ENSG00000169258	GPRIN1	G protein regulated inducer of neurite outgrowth 1	2.53E-05
ENSG00000123416	TUBA1B	Tubulin alpha 1b	3.18E-05
ENSG00000100749	VRK1	VRK serine/threonine kinase 1	3.46E-05
ENSG00000165891	E2F7	E2F transcription factor 7	3.99E-05
ENSG00000099783	HNRNPM	Heterogeneous nuclear ribonucleoprotein M	4.28E-05
ENSG00000141560	FN3KRP	Fructosamine 3 kinase related protein	4.29E-05
ENSG00000181938	GINS3	GINS complex subunit 3	4.73E-05
ENSG00000123737	EXOSC9	Exosome component 9	4.74E-05
ENSG00000137563	GGH	Gamma-glutamyl hydrolase	4.79E-05
ENSG00000167553	TUBA1C	Tubulin alpha 1c	5.13E-05
ENSG00000164649	CDCA7L	Cell division cycle associated 7 like	5.15E-05
ENSG00000123374	CDK2	Cyclin dependent kinase 2	5.77E-05
ENSG00000164105	SAP30	Sin3A associated protein 30	5.91E-05
ENSG00000133026	MYH10	Myosin heavy chain 10	6.11E-05
ENSG00000213024	NUP62	Nucleoporin 62	6.22E-05
ENSG00000124207	CSE1L	Chromosome segregation 1 like	6.71E-05
ENSG00000079462	PAFAH1B3	Platelet activating factor acetylhydrolase 1b catalytic subunit 3	7.23E-05
ENSG00000105968	H2AZ2	H2A.Z variant histone 2	7.56E-05
ENSG00000035928	RFC1	Replication factor C subunit 1	7.74E-05
ENSG00000121774	KHDRBS1	KH RNA binding domain containing, signal transduction associated 1	8.00E-05
ENSG00000121621	KIF18A	Kinesin family member 18A	9.17E-05
ENSG00000175592	FOSL1	FOS like 1, AP-1 transcription factor subunit	0.000108
ENSG00000148019	CEP78	Centrosomal protein 78	0.000111
ENSG00000186767	SPIN4	Spindlin family member 4	0.000127
ENSG00000053438	NNAT	Neuronatin	0.000133
ENSG00000161618	ALDH16A1	Aldehyde dehydrogenase 16 family member A1	0.000133
ENSG00000111581	NUP107	Nucleoporin 107	0.000136
ENSG00000115875	SRSF7	Serine and arginine rich splicing factor 7	0.000136
ENSG00000197275	RAD54B	RAD54 homolog B	0.000155
ENSG00000185480	PARPBP	PARP1 binding protein	0.000171
ENSG00000086475	SEPHS1	Selenophosphate synthetase 1	0.000175
ENSG00000135045	C9orf40	Chromosome 9 open reading frame 40	0.000185
ENSG00000242114	MTFP1	Mitochondrial fission process 1	0.000197
ENSG00000108055	SMC3	Structural maintenance of chromosomes 3	0.000198
ENSG00000185262	UBALD2	UBA like domain containing 2	0.00022
ENSG00000163781	TOPBP1	DNA topoisomerase II binding protein 1	0.000231

ENSG00000113569	NUP155	Nucleoporin 155	0.000241
ENSG00000183963	SMTN	Smoothelin	0.000247
ENSG00000116237	ICMT	Isoprenylcysteine carboxyl methyltransferase	0.000278
ENSG00000275591	XKR5	XK related 5	0.00029
ENSG00000089280	FUS	FUS RNA binding protein	0.00029
ENSG00000112759	SLC29A1	Solute carrier family 29 member 1 (Augustine blood group)	0.000291
ENSG00000197771	MCMBP	Minichromosome maintenance complex binding protein	0.000301
ENSG00000006634	DBF4	DBF4 zinc finger	0.000306
ENSG00000159147	DONSON	Downstream neighbor of SON	0.000309
ENSG00000075131	TIPIN	TIMELESS interacting protein	0.000311
ENSG00000173456	RNF26	Ring finger protein 26	0.000325
ENSG00000005189	REXO5	RNA exonuclease 5	0.000353
ENSG00000137814	HAUS2	HAUS augmin like complex subunit 2	0.000358
ENSG00000156136	DCK	Deoxycytidine kinase	0.000368
ENSG00000151287	TEX30	Testis expressed 30	0.000375
ENSG00000184992	BRI3BP	BRI3 binding protein	0.000399
ENSG00000206053	JPT2	Jupiter microtubule associated homolog 2	0.000403
ENSG00000108179	PPIF	Peptidylprolyl isomerase F	0.000415
ENSG00000156876	SASS6	SAS-6 centriolar assembly protein	0.000451
ENSG00000116133	DHCR24	24-dehydrocholesterol reductase	0.000461
ENSG00000184897	H1-10	H1.10 linker histone	0.000499
ENSG00000138658	ZGRF1	Zinc finger GRF-type containing 1	0.000545
ENSG00000149136	SSRP1	Structure specific recognition protein 1	0.000582
ENSG00000277443	MARCKS	Myristoylated alanine rich protein kinase C substrate	0.000584
ENSG00000092201	SUPT16H	SPT16 homolog, facilitates chromatin remodeling subunit	0.000593
ENSG00000031691	CENPQ	Centromere protein Q	0.000598
ENSG00000136861	CDK5RAP2	CDK5 regulatory subunit associated protein 2	0.000733
ENSG00000115687	PASK	PAS domain containing serine/threonine kinase	0.000756
ENSG00000168476	REEP4	Receptor accessory protein 4	0.000757
ENSG00000141556	TBCD	Tubulin folding cofactor D	0.000779
ENSG00000131462	TUBG1	Tubulin gamma 1	0.000839
ENSG00000176208	ATAD5	Atpase family AAA domain containing 5	0.000881
ENSG00000125450	NUP85	Nucleoporin 85	0.000948
ENSG00000178966	RMI1	Recq mediated genome instability 1	0.000983
ENSG00000142856	ITGB3BP	Integrin subunit beta 3 binding protein	0.001004
ENSG00000132341	RAN	RAN, member RAS oncogene family	0.001072
ENSG00000100242	SUN2	Sad1 and UNC84 domain containing 2	0.001084
ENSG00000068028	RASSF1	Ras association domain family member 1	0.001096
ENSG00000125347	IRF1	Interferon regulatory factor 1	0.001204
ENSG00000134802	SLC43A3	Solute carrier family 43 member 3	0.00125
ENSG00000141499	WRAP53	WD repeat containing antisense to TP53	0.001402
ENSG00000110108	TMEM109	Transmembrane protein 109	0.001608
ENSG00000253304	TMEM200B	Transmembrane protein 200B	0.00168
ENSG00000138668	HNRNPD	Heterogeneous nuclear ribonucleoprotein D	0.001742
ENSG00000132383	RPA1	Replication protein A1	0.001825
ENSG00000054967	RELT	RELT TNF receptor	0.001825
ENSG00000104081	BMF	Bcl2 modifying factor	0.001825
ENSG00000129484	PARP2	Poly(ADP-ribose) polymerase 2	0.001969
ENSG00000160392	C19orf47	Chromosome 19 open reading frame 47	0.001986
ENSG00000169813	HNRNPF	Heterogeneous nuclear ribonucleoprotein F	0.001986

ENSG0000005022	SLC25A5	Solute carrier family 25 member 5	0.002021
ENSG00000136122	BORA	BORA aurora kinase A activator	0.002034
ENSG00000151849	CENPJ	Centromere protein J	0.002065
ENSG00000173848	NET1	Neuroepithelial cell transforming 1	0.002078
ENSG00000101773	RBBP8	RB binding protein 8, endonuclease	0.00212
ENSG00000147536	GINS4	GINS complex subunit 4	0.002139
ENSG00000160352	ZNF714	Zinc finger protein 714	0.00216
ENSG00000070814	TCOF1	Treacle ribosome biogenesis factor 1	0.002176
ENSG00000179409	GEMIN4	Gem nuclear organelle associated protein 4	0.002248
ENSG00000136527	TRA2B	Transformer 2 beta homolog	0.002288
ENSG00000176894	PXMP2	Peroxisomal membrane protein 2	0.002301
ENSG00000172009	THOP1	Thimet oligopeptidase 1	0.002351
ENSG00000112039	FANCE	FA complementation group E	0.002427
ENSG00000105173	CCNE1	Cyclin E1	0.00243
ENSG00000109685	NSD2	Nuclear receptor binding SET domain protein 2	0.002641
ENSG00000100479	POLE2	DNA polymerase epsilon 2, accessory subunit	0.002647
ENSG00000215784	FAM72D	Family with sequence similarity 72 member D	0.002685
ENSG00000136518	ACTL6A	Actin like 6A	0.002756
ENSG00000103995	CEP152	Centrosomal protein 152	0.00278
ENSG00000125898	FAM110A	Family with sequence similarity 110 member A	0.002874
ENSG00000151702	FLI1	Fli-1 proto-oncogene, ETS transcription factor	0.003093
ENSG00000126822	PLEKHG3	Pleckstrin homology and rhoGef domain containing G3	0.003149
ENSG00000154473	BUB3	BUB3 mitotic checkpoint protein	0.003235
ENSG00000140365	COMMD4	COMM domain containing 4	0.003242
ENSG00000126216	TUBGCP3	Tubulin gamma complex associated protein 3	0.003404
ENSG00000187790	FANCM	FA complementation group M	0.003445
ENSG00000156509	FBXO43	F-box protein 43	0.00345
ENSG00000156381	ANKRD9	Ankyrin repeat domain 9	0.003664
ENSG00000104626	ERI1	Exoribonuclease 1	0.00371
ENSG00000175216	CKAP5	Cytoskeleton associated protein 5	0.003755
ENSG00000117877	CD3EAP	CD3e molecule associated protein	0.003817
ENSG00000102007	PLP2	Proteolipid protein 2	0.003947
ENSG00000114999	TTL	Tubulin tyrosine ligase	0.003956
ENSG00000155561	NUP205	Nucleoporin 205	0.003987
ENSG00000149548	CCDC15	Coiled-coil domain containing 15	0.004037
ENSG00000182054	IDH2	Isocitrate dehydrogenase (NADP(+)) 2	0.004037
ENSG00000051596	THOC3	THO complex 3	0.004277
ENSG00000161996	WDR90	WD repeat domain 90	0.004285
ENSG00000198885	ITPRIPL1	ITPRIP like 1	0.0044
ENSG00000142149	HUNK	Hormonally up-regulated Neu-associated kinase	0.00441
ENSG00000025772	TOMM34	Translocase of outer mitochondrial membrane 34	0.004497
ENSG00000248710	AC079594.2	TRIM59 and ift80 readthrough	0.004565
ENSG00000119326	CTNNAL1	Catenin alpha like 1	0.004758
ENSG00000102900	NUP93	Nucleoporin 93	0.004808
ENSG00000159231	CBR3	Carbonyl reductase 3	0.004817
ENSG00000149596	JPH2	Junctophilin 2	0.004928
ENSG00000103121	CMC2	C-X9-C motif containing 2	0.005154
ENSG00000102974	CTCF	CCCTC-binding factor	0.005154
ENSG00000142733	MAP3K6	Mitogen-activated protein kinase kinase kinase 6	0.005354
ENSG00000136450	SRSF1	Serine and arginine rich splicing factor 1	0.005354
ENSG00000143815	LBR	Lamin B receptor	0.005399

ENSG00000064666	CNN2	Calponin 2	0.005641
ENSG00000138796	HADH	Hydroxyacyl-coa dehydrogenase	0.005689
ENSG00000142230	SAE1	SUMO1 activating enzyme subunit 1	0.005742
ENSG00000120437	ACAT2	Acetyl-coa acetyltransferase 2	0.005944
ENSG00000284491	THSD8	Thrombospondin type 1 domain containing 8	0.006122
ENSG00000136811	ODF2	Outer dense fiber of sperm tails 2	0.006324
ENSG00000151466	SCLT1	Sodium channel and clathrin linker 1	0.006372
ENSG00000106628	POLD2	DNA polymerase delta 2, accessory subunit	0.006372
ENSG00000239306	RBM14	RNA binding motif protein 14	0.006383
ENSG00000005059	MCUB	Mitochondrial calcium uniporter dominant negative beta subunit	0.006408
ENSG00000100401	RANGAP1	Ran gtpase activating protein 1	0.006465
ENSG00000184009	ACTG1	Actin gamma 1	0.006504
ENSG00000147155	EBP	EBP cholestenol delta-isomerase	0.006573
ENSG00000171388	APLN	Apelin	0.006642
ENSG00000213160	KLHL23	Kelch like family member 23	0.006672
ENSG00000171649	ZIK1	Zinc finger protein interacting with K protein 1	0.006678
ENSG00000122483	CCDC18	Coiled-coil domain containing 18	0.006996
ENSG00000171793	CTPS1	CTP synthase 1	0.007255
ENSG00000165501	LRR1	Leucine rich repeat protein 1	0.007324
ENSG00000132017	DCAF15	DDB1 and CUL4 associated factor 15	0.00734
ENSG00000108468	CBX1	Chromobox 1	0.007358
ENSG00000136159	NUDT15	Nudix hydrolase 15	0.007576
ENSG00000136715	SAP130	Sin3A associated protein 130	0.007802
ENSG00000169683	LRRC45	Leucine rich repeat containing 45	0.007919
ENSG00000174013	FBXO45	F-box protein 45	0.00816
ENSG00000075618	FSCN1	Fascin actin-bundling protein 1	0.008264
ENSG00000163002	NUP35	Nucleoporin 35	0.008337
ENSG00000205476	CCDC85C	Coiled-coil domain containing 85C	0.008337
ENSG00000131504	DIAPH1	Diaphanous related formin 1	0.008364
ENSG00000100304	TTL12	Tubulin tyrosine ligase like 12	0.008527
ENSG00000166833	NAV2	Neuron navigator 2	0.008651
ENSG00000011332	DPF1	Double PHD fingers 1	0.008712
ENSG00000095319	NUP188	Nucleoporin 188	0.008725
ENSG00000197451	HNRNPAB	Heterogeneous nuclear ribonucleoprotein A/B	0.00947
ENSG00000116670	MAD2L2	Mitotic arrest deficient 2 like 2	0.009539
ENSG00000180998	GPR137C	G protein-coupled receptor 137C	0.009912
ENSG00000172687	ZNF738	Zinc finger protein 738	0.009912
ENSG00000088247	KHSRP	KH-type splicing regulatory protein	0.009973
ENSG00000101407	TTI1	TELO2 interacting protein 1	0.010043
ENSG00000166801	FAM111A	Family with sequence similarity 111 member A	0.010294
ENSG00000129355	CDKN2D	Cyclin dependent kinase inhibitor 2D	0.010324
ENSG00000128408	RIBC2	RIB43A domain with coiled-coils 2	0.010623
ENSG00000136938	ANP32B	Acidic nuclear phosphoprotein 32 family member B	0.010943
ENSG00000163923	RPL39L	Ribosomal protein L39 like	0.011078
ENSG00000111788	AC009533.1	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide like pseudogene	0.011081
ENSG00000183814	LIN9	Lin-9 DREAM muvb core complex component	0.011502
ENSG00000105323	HNRNPUL1	Heterogeneous nuclear ribonucleoprotein U like 1	0.011502
ENSG00000170379	TCAF2	TRPM8 channel associated factor 2	0.011704
ENSG00000267041	ZNF850	Zinc finger protein 850	0.01177

ENSG00000198331	HYLS1	HYLS1 centriolar and ciliogenesis associated	0.011836
ENSG00000164002	EXO5	Exonuclease 5	0.01195
ENSG00000117593	DARS2	Aspartyl-trna synthetase 2, mitochondrial	0.011999
ENSG00000138587	MNS1	Meiosis specific nuclear structural 1	0.012054
ENSG00000133392	MYH11	Myosin heavy chain 11	0.012167
ENSG00000044459	CNTLN	Centlein	0.012396
ENSG00000196363	WDR5	WD repeat domain 5	0.012396
ENSG00000101004	NINL	Ninein like	0.012575
ENSG00000138780	GSTCD	Glutathione S-transferase C-terminal domain containing	0.012814
ENSG00000164742	ADCY1	Adenylate cyclase 1	0.012936
ENSG00000061918	GUCY1B1	Guanylate cyclase 1 soluble subunit beta 1	0.012936
ENSG00000164053	ATRIP	ATR interacting protein	0.013591
ENSG00000135801	TAF5L	TATA-box binding protein associated factor 5 like	0.013811
ENSG00000112081	SRSF3	Serine and arginine rich splicing factor 3	0.013855
ENSG00000106459	NRF1	Nuclear respiratory factor 1	0.01391
ENSG00000183688	RFLNB	Refilin B	0.014333
ENSG00000170144	HNRNPA3	Heterogeneous nuclear ribonucleoprotein A3	0.014552
ENSG00000101361	NOP56	NOP56 ribonucleoprotein	0.015183
ENSG00000135744	AGT	Angiotensinogen	0.015251
ENSG00000143321	HDGF	Heparin binding growth factor	0.015251
ENSG00000167088	SNRPD1	Small nuclear ribonucleoprotein D1 polypeptide	0.015445
ENSG00000285035	AC091057.6	Serine/threonine-protein kinase ULK4 (ULK4), pseudogene	0.015448
ENSG00000217555	CKLF	Chemokine like factor	0.015563
ENSG00000177613	CSTF2T	Cleavage stimulation factor subunit 2 tau variant	0.015683
ENSG00000183955	KMT5A	Lysine methyltransferase 5A	0.016031
ENSG00000187676	B3GLCT	Beta 3-glucosyltransferase	0.016838
ENSG00000166889	PATL1	PAT1 homolog 1, processing body mrna decay factor	0.01728
ENSG00000152455	SUV39H2	Suppressor of variegation 3-9 homolog 2	0.017679
ENSG00000176225	RTTN	Rotatin	0.018559
ENSG00000138346	DNA2	DNA replication helicase/nuclease 2	0.018897
ENSG00000099849	RASSF7	Ras association domain family member 7	0.019598
ENSG00000182575	NXPH3	Neurexophilin 3	0.020821
ENSG00000198055	GRK6	G protein-coupled receptor kinase 6	0.021082
ENSG00000183496	MEX3B	Mex-3 RNA binding family member B	0.021203
ENSG00000171960	PPIH	Peptidylprolyl isomerase H	0.021378
ENSG00000116350	SRSF4	Serine and arginine rich splicing factor 4	0.021864
ENSG00000110958	PTGES3	Prostaglandin E synthase 3	0.021904
ENSG00000121775	TMEM39B	Transmembrane protein 39B	0.021924
ENSG00000169710	FASN	Fatty acid synthase	0.022366
ENSG00000204899	MZT1	Mitotic spindle organizing protein 1	0.022521
ENSG00000008838	MED24	Mediator complex subunit 24	0.022521
ENSG00000180385	EMC3-AS1	EMC3 antisense RNA 1	0.022533
ENSG00000116161	CACYBP	Calcyclin binding protein	0.022743
ENSG00000130881	LRP3	LDL receptor related protein 3	0.022743
ENSG00000171097	KYAT1	Kynurenine aminotransferase 1	0.023335
ENSG00000275895	U2AF1L5	U2 small nuclear RNA auxiliary factor 1 like 5	0.023804
ENSG00000183684	ALYREF	Aly/REF export factor	0.023953
ENSG00000130520	LSM4	LSM4 homolog, U6 small nuclear RNA and mrna degradation associated	0.024258
ENSG00000198700	IPO9	Importin 9	0.025198

ENSG0000006625	GGCT	Gamma-glutamylcyclotransferase	0.025742
ENSG00000175643	RMI2	Recq mediated genome instability 2	0.025825
ENSG00000167306	MYO5B	Myosin VB	0.025836
ENSG00000254726	MEX3A	Mex-3 RNA binding family member A	0.025836
ENSG00000205659	LIN52	Lin-52 DREAM muvb core complex component	0.026108
ENSG00000078900	TP73	Tumor protein p73	0.026449
ENSG00000188312	CENPP	Centromere protein P	0.026939
ENSG00000074696	HACD3	3-hydroxyacyl-coa dehydratase 3	0.027313
ENSG00000172336	POP7	POP7 homolog, ribonuclease P/MRP subunit	0.02736
ENSG00000128578	STRIP2	Striatin interacting protein 2	0.027816
ENSG00000170989	S1PR1	Sphingosine-1-phosphate receptor 1	0.02853
ENSG00000075461	CACNG4	Calcium voltage-gated channel auxiliary subunit gamma 4	0.028547
ENSG00000197977	ELOVL2	ELOVL fatty acid elongase 2	0.028879
ENSG00000103495	MAZ	MYC associated zinc finger protein	0.028879
ENSG00000189159	JPT1	Jupiter microtubule associated homolog 1	0.028893
ENSG00000256663	AC112777.1	Ubiquitin-like with PHD and ring finger domains 1 (UHRF1) pseudogene	0.029783
ENSG00000069974	RAB27A	RAB27A, member RAS oncogene family	0.029807
ENSG00000112658	SRF	Serum response factor	0.030132
ENSG00000094916	CBX5	Chromobox 5	0.03022
ENSG00000198168	SVIP	Small VCP interacting protein	0.030297
ENSG00000127337	YEATS4	YEATS domain containing 4	0.030373
ENSG00000181588	MEX3D	Mex-3 RNA binding family member D	0.030405
ENSG00000122779	TRIM24	Tripartite motif containing 24	0.030405
ENSG00000137656	BUD13	BUD13 homolog	0.030405
ENSG00000119397	CNTRL	Centriolin	0.030478
ENSG00000147955	SIGMAR1	Sigma non-opioid intracellular receptor 1	0.030847
ENSG00000128708	HAT1	Histone acetyltransferase 1	0.031237
ENSG00000162613	FUBP1	Far upstream element binding protein 1	0.031577
ENSG00000177917	ARL6IP6	ADP ribosylation factor like gtpase 6 interacting protein 6	0.031885
ENSG00000130826	DKC1	Dyskerin pseudouridine synthase 1	0.031885
ENSG00000155755	TMEM237	Transmembrane protein 237	0.031929
ENSG00000169689	CENPX	Centromere protein X	0.032383
ENSG00000066044	ELAVL1	ELAV like RNA binding protein 1	0.032383
ENSG00000139998	RAB15	RAB15, member RAS oncogene family	0.032659
ENSG00000183386	FHL3	Four and a half LIM domains 3	0.034072
ENSG00000229676	ZNF492	Zinc finger protein 492	0.034179
ENSG00000128050	PAICS	Phosphoribosylaminoimidazole carboxylase and phosphoribosylaminoimidazolesuccinocarboxamide synthase	0.034399
ENSG00000130935	NOL11	Nucleolar protein 11	0.034588
ENSG00000130208	APOC1	Apolipoprotein C1	0.035042
ENSG00000130726	TRIM28	Tripartite motif containing 28	0.035584
ENSG00000106268	NUDT1	Nudix hydrolase 1	0.035611
ENSG00000164754	RAD21	RAD21 cohesin complex component	0.035736
ENSG00000124160	NCOA5	Nuclear receptor coactivator 5	0.036026
ENSG00000117676	RPS6KA1	Ribosomal protein S6 kinase A1	0.037086
ENSG00000051825	MPHOSPH9	M-phase phosphoprotein 9	0.037086
ENSG00000135052	GOLM1	Golgi membrane protein 1	0.037261
ENSG00000137124	ALDH1B1	Aldehyde dehydrogenase 1 family member B1	0.037274

ENSG00000103966	EHD4	EH domain containing 4	0.037302
ENSG00000090273	NUDC	Nuclear distribution C, dynein complex regulator	0.038214
ENSG00000149782	PLCB3	Phospholipase C beta 3	0.038218
ENSG00000188566	NDOR1	NADPH dependent diflavin oxidoreductase 1	0.039752
ENSG00000178531	CTXN1	Cortexin 1	0.040737
ENSG00000120699	EXOSC8	Exosome component 8	0.041059
ENSG00000165527	ARF6	ADP ribosylation factor 6	0.041662
ENSG00000256229	ZNF486	Zinc finger protein 486	0.042014
ENSG00000104885	DOT1L	DOT1 like histone lysine methyltransferase	0.042079
ENSG00000180979	LRRC57	Leucine rich repeat containing 57	0.042184
ENSG00000130669	PAK4	P21 (RAC1) activated kinase 4	0.042878
ENSG00000205531	NAP1L4	Nucleosome assembly protein 1 like 4	0.04297
ENSG00000177733	HNRNPA0	Heterogeneous nuclear ribonucleoprotein A0	0.04367
ENSG00000092036	HAUS4	HAUS augmin like complex subunit 4	0.043836
ENSG00000078246	TULP3	TUB like protein 3	0.044114
ENSG00000132661	NXT1	Nuclear transport factor 2 like export factor 1	0.045091
ENSG00000070950	RAD18	RAD18 E3 ubiquitin protein ligase	0.045478
ENSG00000116062	MSH6	Muts homolog 6	0.045478
ENSG00000127191	TRAF2	TNF receptor associated factor 2	0.045478
ENSG00000162066	AMDHD2	Amidohydrolase domain containing 2	0.045478
ENSG00000105202	FBL	Fibrillarin	0.045478
ENSG00000167173	C15orf39	Chromosome 15 open reading frame 39	0.045478
ENSG00000257921	AC025165.3	Novel protein	0.045983
ENSG00000050820	BCAR1	BCAR1 scaffold protein, Cas family member	0.046295
ENSG00000102034	ELF4	E74 like ETS transcription factor 4	0.046427
ENSG00000172731	LRRC20	Leucine rich repeat containing 20	0.04662
ENSG00000143493	INTS7	Integrator complex subunit 7	0.046652
ENSG00000152284	TCF7L1	Transcription factor 7 like 1	0.046684
ENSG00000267060	PTGES3L	Prostaglandin E synthase 3 like	0.046763
ENSG00000002822	MAD1L1	Mitotic arrest deficient 1 like 1	0.047023
ENSG00000167699	GLOD4	Glyoxalase domain containing 4	0.047357
ENSG00000140682	TGFB11	Transforming growth factor beta 1 induced transcript 1	0.047357
ENSG00000171791	BCL2	BCL2 apoptosis regulator	0.047694
ENSG00000172244	C5orf34	Chromosome 5 open reading frame 34	0.047741
ENSG00000084710	EFR3B	EFR3 homolog B	0.047741
ENSG00000178202	POGLUT3	Protein O-glucosyltransferase 3	0.047763
ENSG00000137834	SMAD6	SMAD family member 6	0.048255
ENSG00000156787	TBC1D31	TBC1 domain family member 31	0.04935

Supplementary Table S3. Statistically significant DEGs (Adj,*p*-value<0.05) derived from DGEA of RNA-Seq data from Human Lens Epithelial Cells after X-ray irradiation, using DESeq2. The experiment consists of 5 control samples and 5 irradiated with 5 Gy X-ray radiation for 20 hours [Bioproject: PRJNA494581].

Ensembl ID	Gene Symbol	Gene Description	Adj. <i>p</i> -Value
Up-Regulated Genes ↑			
ENSG00000124762	CDKN1A	Cyclin dependent kinase inhibitor 1A	3.70E-39
ENSG00000109321	AREG	Amphiregulin	1.75E-27
ENSG00000164938	TP53INP1	Tumor protein p53 inducible nuclear protein 1	5.09E-24
ENSG00000130513	GDF15	Growth differentiation factor 15	7.44E-16
ENSG00000076382	SPAG5	Sperm associated antigen 5	1.34E-15
ENSG00000256664	AC025423.2	Ribosomal L24 domain containing 1 (RSL24D1) pseudogene	1.35E-14
ENSG00000175063	UBE2C	Ubiquitin conjugating enzyme E2 C	1.24E-13
ENSG00000090889	KIF4A	Kinesin family member 4A	2.64E-13
ENSG00000132563	REEP2	Receptor accessory protein 2	3.57E-13
ENSG00000176244	ACBD7	Acyl-coa binding domain containing 7	1.92E-12
ENSG00000119397	CNTRL	Centriolin	2.15E-12
ENSG00000157456	CCNB2	Cyclin B2	2.34E-12
ENSG00000143217	NECTIN4	Nectin cell adhesion molecule 4	3.08E-12
ENSG00000177459	ERICH5	Glutamate rich 5	5.58E-12
ENSG00000135679	MDM2	MDM2 proto-oncogene	8.64E-12
ENSG00000135423	GLS2	Glutaminase 2	1.49E-11
ENSG00000120889	TNFRSF10B	TNF receptor superfamily member 10b	3.97E-11
ENSG00000087586	AURKA	Aurora kinase A	1.58E-10
ENSG00000162490	DRAXIN	Dorsal inhibitory axon guidance protein	1.69E-10
ENSG00000100526	CDKN3	Cyclin dependent kinase inhibitor 3	1.03E-09
ENSG00000159388	BTG2	BTG anti-proliferation factor 2	1.47E-09
ENSG00000123933	MXD4	MAX dimerization protein 4	6.31E-09
ENSG00000167107	ACSF2	Acyl-coa synthetase family member 2	7.26E-09
ENSG00000117724	CENPF	Centromere protein F	8.50E-09
ENSG00000112984	KIF20A	Kinesin family member 20A	1.18E-08
ENSG00000185361	TNFAIP8L1	TNF alpha induced protein 8 like 1	3.11E-08
ENSG00000115163	CENPA	Centromere protein A	4.32E-08
ENSG00000066279	ASPM	Abnormal spindle microtubule assembly	5.00E-08
ENSG00000166592	RRAD	RRAD, Ras related glycolysis inhibitor and calcium channel regulator	5.37E-08
ENSG00000198919	DZIP3	DAZ interacting zinc finger protein 3	5.98E-08
ENSG00000170540	ARL6IP1	ADP ribosylation factor like gtpase 6 interacting protein 1	1.03E-07
ENSG00000104870	FCGRT	Fc fragment of igg receptor and transporter	1.08E-07
ENSG00000068745	IP6K2	Inositol hexakisphosphate kinase 2	1.14E-07
ENSG00000161513	FDXR	Ferredoxin reductase	1.72E-07
ENSG00000139354	GAS2L3	Growth arrest specific 2 like 3	2.20E-07
ENSG00000153208	MERTK	MER proto-oncogene, tyrosine kinase	4.61E-07
ENSG00000142945	KIF2C	Kinesin family member 2C	4.85E-07
ENSG00000214357	NEURL1B	Neuralized E3 ubiquitin protein ligase 1B	8.49E-07
ENSG00000177076	ACER2	Alkaline ceramidase 2	1.07E-06
ENSG00000010030	ETV7	ETS variant transcription factor 7	2.33E-06
ENSG00000239713	APOBEC3G	Apolipoprotein B mrna editing enzyme catalytic subunit 3G	2.89E-06
ENSG00000118193	KIF14	Kinesin family member 14	3.00E-06

ENSG00000111665	CDCA3	Cell division cycle associated 3	3.45E-06
ENSG00000127483	HP1BP3	Heterochromatin protein 1 binding protein 3	3.72E-06
ENSG00000021826	CPS1	Carbamoyl-phosphate synthase 1	3.86E-06
ENSG00000168918	INPP5D	Inositol polyphosphate-5-phosphatase D	4.12E-06
ENSG00000055163	CYFIP2	Cytoplasmic FMR1 interacting protein 2	4.56E-06
ENSG00000138271	GPR87	G protein-coupled receptor 87	4.69E-06
ENSG00000026103	FAS	Fas cell surface death receptor	6.14E-06
ENSG00000276180	H4C9	H4 clustered histone 9	7.10E-06
ENSG00000164463	CREBRF	CREB3 regulatory factor	7.20E-06
ENSG00000158402	CDC25C	Cell division cycle 25C	8.12E-06
ENSG00000137975	CLCA2	Chloride channel accessory 2	9.39E-06
ENSG00000154040	CABYR	Calcium binding tyrosine phosphorylation regulated	1.17E-05
ENSG00000169760	NLGN1	Neuroigin 1	1.33E-05
ENSG00000153029	MR1	Major histocompatibility complex, class I-related	1.33E-05
ENSG00000072571	HMMR	Hyaluronan mediated motility receptor	1.67E-05
ENSG00000117461	PIK3R3	Phosphoinositide-3-kinase regulatory subunit 3	1.68E-05
ENSG00000131747	TOP2A	DNA topoisomerase II alpha	1.78E-05
ENSG00000075218	GTSE1	G2 and S-phase expressed 1	1.93E-05
ENSG00000133101	CCNA1	Cyclin A1	2.12E-05
ENSG00000173156	RHOD	Ras homolog family member D	2.83E-05
ENSG00000105650	PDE4C	Phosphodiesterase 4C	3.37E-05
ENSG00000132824	SERINC3	Serine incorporator 3	4.40E-05
ENSG00000196814	MVB12B	Multivesicular body subunit 12B	5.87E-05
ENSG00000047346	FAM214A	Family with sequence similarity 214 member A	6.26E-05
ENSG00000139291	TMEM19	Transmembrane protein 19	8.39E-05
ENSG00000189195	BTBD8	BTB domain containing 8	0.000107
ENSG00000129195	PIMREG	PICALM interacting mitotic regulator	0.000127
ENSG00000073331	ALPK1	Alpha kinase 1	0.000133
ENSG00000063854	HAGH	Hydroxyacylglutathione hydrolase	0.000149
ENSG00000164611	PTTG1	PTTG1 regulator of sister chromatid separation, securin	0.000192
ENSG00000117650	NEK2	NIMA related kinase 2	0.000198
ENSG00000161896	IP6K3	Inositol hexakisphosphate kinase 3	0.000204
ENSG00000137414	FAM8A1	Family with sequence similarity 8 member A1	0.000216
ENSG00000166313	APBB1	Amyloid beta precursor protein binding family B member 1	0.000227
ENSG00000233369	GTF2IP4	General transcription factor iii pseudogene 4	0.00023
ENSG00000198909	MAP3K3	Mitogen-activated protein kinase kinase kinase 3	0.000241
ENSG00000173230	GOLGB1	Golgin B1	0.000243
ENSG00000148660	CAMK2G	Calcium/calmodulin dependent protein kinase II gamma	0.000244
ENSG00000175938	ORAI3	ORAI calcium release-activated calcium modulator 3	0.000264
ENSG00000105325	FZR1	Fizzy and cell division cycle 20 related 1	0.000299
ENSG00000130517	PGPEP1	Pyroglutamyl-peptidase I	0.000335
ENSG00000128944	KNSTRN	Kinetochore localized astrin (SPAG5) binding protein	0.00034
ENSG00000178401	DNAJC22	Dnaj heat shock protein family (Hsp40) member C22	0.000362
ENSG00000144452	ABCA12	ATP binding cassette subfamily A member 12	0.000394
ENSG00000179163	FUCA1	Alpha-L-fucosidase 1	0.000403
ENSG00000024526	DEPDC1	DEP domain containing 1	0.000498
ENSG00000175793	SFN	Stratifin	0.000587
ENSG00000158055	GRHL3	Grainyhead like transcription factor 3	0.000589
ENSG00000197892	KIF13B	Kinesin family member 13B	0.000602
ENSG00000108830	RND2	Rho family gtpase 2	0.000646

ENSG00000139508	SLC46A3	Solute carrier family 46 member 3	0.000674
ENSG00000092140	G2E3	G2/M-phase specific E3 ubiquitin protein ligase	0.000686
ENSG00000136859	ANGPTL2	Angiopoietin like 2	0.000698
ENSG00000157150	TIMP4	TIMP metalloproteinase inhibitor 4	0.000706
ENSG00000151117	TMEM86A	Transmembrane protein 86A	0.000728
ENSG00000126709	IFI6	Interferon alpha inducible protein 6	0.000759
ENSG00000160539	PLPP7	Phospholipid phosphatase 7 (inactive)	0.000832
ENSG00000163346	PBXIP1	PBX homeobox interacting protein 1	0.000946
ENSG00000119630	PGF	Placental growth factor	0.001018
ENSG00000197496	SLC2A10	Solute carrier family 2 member 10	0.00119
ENSG00000163683	SMIM14	Small integral membrane protein 14	0.001282
ENSG00000136108	CKAP2	Cytoskeleton associated protein 2	0.001294
ENSG00000105483	CARD8	Caspase recruitment domain family member 8	0.001435
ENSG00000174684	B4GAT1	Beta-1,4-glucuronyltransferase 1	0.001489
ENSG00000132793	LPIN3	Lipin 3	0.001489
ENSG00000188921	HACD4	3-hydroxyacyl-coa dehydratase 4	0.001678
ENSG00000166233	ARIH1	Ariadne RBR E3 ubiquitin protein ligase 1	0.00175
ENSG00000182481	KPNA2	Karyopherin subunit alpha 2	0.00175
ENSG00000011243	AKAP8L	A-kinase anchoring protein 8 like	0.001787
ENSG00000119139	TJP2	Tight junction protein 2	0.001898
ENSG00000175216	CKAP5	Cytoskeleton associated protein 5	0.001912
ENSG00000160469	BRSK1	BR serine/threonine kinase 1	0.001928
ENSG00000001461	NIPAL3	NIPA like domain containing 3	0.001944
ENSG00000184661	CDCA2	Cell division cycle associated 2	0.002024
ENSG00000116299	KIAA1324	Kiaa1324	0.002318
ENSG00000163596	ICA1L	Islet cell autoantigen 1 like	0.002417
ENSG00000089041	P2RX7	Purinergic receptor P2X 7	0.002478
ENSG00000131015	ULBP2	UL16 binding protein 2	0.002618
ENSG00000185215	TNFAIP2	TNF alpha induced protein 2	0.002838
ENSG00000096872	IFT74	Intraflagellar transport 74	0.00284
ENSG00000166311	SMPD1	Sphingomyelin phosphodiesterase 1	0.002855
ENSG00000105443	CYTH2	Cytohesin 2	0.002957
ENSG00000161618	ALDH16A1	Aldehyde dehydrogenase 16 family member A1	0.003124
ENSG00000138606	SHF	Src homology 2 domain containing F	0.003198
ENSG00000136378	ADAMTS7	ADAM metalloproteinase with thrombospondin type 1 motif 7	0.003198
ENSG00000108187	PBLD	Phenazine biosynthesis like protein domain containing	0.003218
ENSG00000142459	EVI5L	Ecotropic viral integration site 5 like	0.003222
ENSG00000188002	AC026412.1	Programmed cell death 6 (PDCD6) pseudogene	0.003222
ENSG00000213463	SYNJ2BP	Synaptojanin 2 binding protein	0.003299
ENSG00000118898	PPL	Periplakin	0.0033
ENSG00000156973	PDE6D	Phosphodiesterase 6D	0.003349
ENSG00000241839	PLEKHO2	Pleckstrin homology domain containing O2	0.003407
ENSG00000204219	TCEA3	Transcription elongation factor A3	0.003501
ENSG00000120693	SMAD9	SMAD family member 9	0.003514
ENSG00000143390	RFX5	Regulatory factor X5	0.003522
ENSG00000176438	SYNE3	Spectrin repeat containing nuclear envelope family member 3	0.003522
ENSG00000179277	MEIS3P1	Meis homeobox 3 pseudogene 1	0.00357
ENSG00000244694	PTCHD4	Patched domain containing 4	0.003593
ENSG00000035499	DEPDC1B	DEP domain containing 1B	0.003685

ENSG00000168874	ATOH8	Atonal bhlh transcription factor 8	0.003702
ENSG00000149809	TM7SF2	Transmembrane 7 superfamily member 2	0.003729
ENSG00000169679	BUB1	BUB1 mitotic checkpoint serine/threonine kinase	0.003775
ENSG00000117399	CDC20	Cell division cycle 20	0.003917
ENSG00000175893	ZDHHC21	Zinc finger DHHC-type containing 21	0.003964
ENSG00000104177	MYEF2	Myelin expression factor 2	0.004088
ENSG00000237094	AL732372.2	Pseudogene similar to part of septin 14 SEPT14	0.004106
ENSG00000132623	ANKEF1	Ankyrin repeat and EF-hand domain containing 1	0.004148
ENSG00000130703	OSBPL2	Oxysterol binding protein like 2	0.004328
ENSG00000133460	SLC2A11	Solute carrier family 2 member 11	0.004328
ENSG00000196187	TMEM63A	Transmembrane protein 63A	0.004328
ENSG00000167861	HID1	HID1 domain containing	0.004328
ENSG00000142619	PADI3	Peptidyl arginine deiminase 3	0.004328
ENSG00000231007	CDC20P1	Cell division cycle 20 pseudogene 1	0.004468
ENSG00000185432	METTL7A	Methyltransferase like 7A	0.004498
ENSG00000139112	GABARAPL1	GABA type A receptor associated protein like 1	0.004541
ENSG00000165861	ZFYVE1	Zinc finger FYVE-type containing 1	0.004612
ENSG00000102981	PAR6A	Par-6 family cell polarity regulator alpha	0.004721
ENSG00000196550	FAM72A	Family with sequence similarity 72 member A	0.004743
ENSG00000034713	GABARAPL2	GABA type A receptor associated protein like 2	0.004771
ENSG00000076685	NT5C2	5'-nucleotidase, cytosolic II	0.004943
ENSG00000197429	IPP	Intracisternal A particle-promoted polypeptide	0.00519
ENSG00000184602	SNN	Stannin	0.005326
ENSG00000114107	CEP70	Centrosomal protein 70	0.005499
ENSG00000165219	GAPVD1	Gtpase activating protein and VPS9 domains 1	0.005565
ENSG00000188554	NBR1	NBR1 autophagy cargo receptor	0.005581
ENSG00000119403	PHF19	PHD finger protein 19	0.005763
ENSG00000064199	SPA17	Sperm autoantigenic protein 17	0.006228
ENSG00000139597	N4BP2L1	NEDD4 binding protein 2 like 1	0.006267
ENSG00000164088	PPM1M	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1M	0.006334
ENSG00000132849	PATJ	PATJ crumbs cell polarity complex component	0.006337
ENSG00000156671	SAMD8	Sterile alpha motif domain containing 8	0.006347
ENSG00000138495	COX17	Cytochrome c oxidase copper chaperone COX17	0.00656
ENSG00000169621	APLF	Aprataxin and PNKP like factor	0.00661
ENSG00000135452	TSPAN31	Tetraspanin 31	0.00664
ENSG00000135451	TROAP	Trophinin associated protein	0.00664
ENSG00000085998	POMGNT1	Protein O-linked mannose N-acetylglucosaminyltransferase 1 (beta 1,2-)	0.006658
ENSG00000080986	NDC80	NDC80 kinetochore complex component	0.006658
ENSG00000126787	DLGAP5	DLG associated protein 5	0.006732
ENSG00000185339	TCN2	Transcobalamin 2	0.006737
ENSG00000112983	BRD8	Bromodomain containing 8	0.006845
ENSG00000103485	QPRT	Quinolate phosphoribosyltransferase	0.00685
ENSG00000125746	EML2	EMAP like 2	0.00685
ENSG00000169902	TPST1	Tyrosylprotein sulfotransferase 1	0.007033
ENSG00000158467	AHCYL2	Adenosylhomocysteinase like 2	0.0073
ENSG00000101447	FAM83D	Family with sequence similarity 83 member D	0.007334
ENSG00000141504	SAT2	Spermidine/spermine N1-acetyltransferase family member 2	0.007526
ENSG00000149212	SESN3	Sestrin 3	0.007815
ENSG00000138798	EGF	Epidermal growth factor	0.007859

ENSG00000127914	AKAP9	A-kinase anchoring protein 9	0.007878
ENSG00000132570	PCBD2	Pterin-4 alpha-carbinolamine dehydratase 2	0.007986
ENSG00000168734	PKIG	Camp-dependent protein kinase inhibitor gamma	0.008273
ENSG00000158457	TSPAN33	Tetraspanin 33	0.008298
ENSG00000064687	ABCA7	ATP binding cassette subfamily A member 7	0.008324
ENSG00000111269	CREBL2	Camp responsive element binding protein like 2	0.008329
ENSG00000146232	NFKBIE	NFKB inhibitor epsilon	0.008329
ENSG00000161835	GRASP	General receptor for phosphoinositides 1 associated scaffold protein	0.008421
ENSG00000163449	TMEM169	Transmembrane protein 169	0.008489
ENSG00000158106	RHPN1	Rhophilin Rho gtpase binding protein 1	0.008495
ENSG00000188766	SPRED3	Sprouty related EVH1 domain containing 3	0.008537
ENSG00000174007	CEP19	Centrosomal protein 19	0.008557
ENSG00000105851	PIK3CG	Phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit gamma	0.00866
ENSG00000121310	ECHDC2	Enoyl-coa hydratase domain containing 2	0.009255
ENSG00000137880	GCHFR	GTP cyclohydrolase I feedback regulator	0.009255
ENSG00000154240	CEP112	Centrosomal protein 112	0.009681
ENSG00000012822	CALCOCO1	Calcium binding and coiled-coil domain 1	0.009774
ENSG00000173064	HECTD4	HECT domain E3 ubiquitin protein ligase 4	0.009934
ENSG00000239382	ALKBH6	Alkb homolog 6	0.010383
ENSG00000181513	ACBD4	Acyl-coa binding domain containing 4	0.010426
ENSG00000092758	COL9A3	Collagen type IX alpha 3 chain	0.010511
ENSG00000155111	CDK19	Cyclin dependent kinase 19	0.010678
ENSG00000110713	NUP98	Nucleoporin 98	0.010749
ENSG00000089685	BIRC5	Baculoviral IAP repeat containing 5	0.010906
ENSG00000055732	MCOLN3	Mucolipin 3	0.011107
ENSG00000196502	SULT1A1	Sulfotransferase family 1A member 1	0.011272
ENSG00000173214	MFS4B	Major facilitator superfamily domain containing 4B	0.011392
ENSG00000135119	RNFT2	Ring finger protein, transmembrane 2	0.011459
ENSG00000169583	CLIC3	Chloride intracellular channel 3	0.011513
ENSG00000144834	TAGLN3	Transgelin 3	0.011947
ENSG00000087884	AAMDC	Adipogenesis associated Mth938 domain containing	0.011965
ENSG00000056558	TRAF1	TNF receptor associated factor 1	0.012012
ENSG00000178038	ALS2CL	ALS2 C-terminal like	0.012283
ENSG00000108106	UBE2S	Ubiquitin conjugating enzyme E2 S	0.012575
ENSG00000137804	NUSAP1	Nucleolar and spindle associated protein 1	0.012956
ENSG00000181754	AMIGO1	Adhesion molecule with Ig like domain 1	0.013273
ENSG00000134057	CCNB1	Cyclin B1	0.0133
ENSG00000219481	NBPF1	NBPF member 1	0.013365
ENSG00000140386	SCAPER	S-phase cyclin A associated protein in the ER	0.013486
ENSG00000123609	NMI	N-myc and STAT interactor	0.013486
ENSG00000120709	FAM53C	Family with sequence similarity 53 member C	0.013752
ENSG00000100401	RANGAP1	Ran gtpase activating protein 1	0.013752
ENSG00000146411	SLC2A12	Solute carrier family 2 member 12	0.013844
ENSG00000100290	BIK	BCL2 interacting killer	0.013844
ENSG00000181045	SLC26A11	Solute carrier family 26 member 11	0.013926
ENSG00000243749	TMEM35B	Transmembrane protein 35B	0.014452
ENSG00000163535	SGO2	Shugoshin 2	0.014452
ENSG00000136874	STX17	Syntaxin 17	0.014537
ENSG00000141232	TOB1	Transducer of ERBB2, 1	0.014837

ENSG00000198331	HYLS1	HYLS1 centriolar and ciliogenesis associated	0.015192
ENSG00000160460	AC020929.1	Spectrin beta, non-erythrocytic 4	0.015222
ENSG00000157184	CPT2	Carnitine palmitoyltransferase 2	0.015481
ENSG00000066926	FECH	Ferrochelatase	0.0155
ENSG00000134070	IRAK2	Interleukin 1 receptor associated kinase 2	0.0155
ENSG00000197302	ZNF720	Zinc finger protein 720	0.0155
ENSG00000060656	PTPRU	Protein tyrosine phosphatase receptor type U	0.0155
ENSG00000065320	NTN1	Netrin 1	0.0155
ENSG00000067369	TP53BP1	Tumor protein p53 binding protein 1	0.015728
ENSG00000178184	PARD6G	Par-6 family cell polarity regulator gamma	0.015736
ENSG00000138653	NDST4	N-deacetylase and N-sulfotransferase 4	0.015948
ENSG00000170667	RASA4B	RAS p21 protein activator 4B	0.015948
ENSG00000166145	SPINT1	Serine peptidase inhibitor, Kunitz type 1	0.015996
ENSG00000213918	DNASE1	Deoxyribonuclease 1	0.015998
ENSG00000064961	HMG20B	High mobility group 20B	0.016158
ENSG00000031003	FAM13B	Family with sequence similarity 13 member B	0.016299
ENSG00000112981	NME5	NME/NM23 family member 5	0.016486
ENSG00000285827	AP001267.5	Novel protein	0.017593
ENSG00000128917	DLL4	Delta like canonical Notch ligand 4	0.017956
ENSG00000183763	TRAIIP	TRAF interacting protein	0.018133
ENSG00000138182	KIF20B	Kinesin family member 20B	0.018192
ENSG00000187688	TRPV2	Transient receptor potential cation channel subfamily V member 2	0.018419
ENSG00000163701	IL17RE	Interleukin 17 receptor E	0.018529
ENSG00000137207	YIPF3	Yip1 domain family member 3	0.018805
ENSG00000165280	VCP	Valosin containing protein	0.019236
ENSG00000138641	HERC3	HECT and RLD domain containing E3 ubiquitin protein ligase 3	0.019692
ENSG00000111058	ACSS3	Acy-coa synthetase short chain family member 3	0.019948
ENSG00000175854	SWI5	SWI5 homologous recombination repair protein	0.020255
ENSG00000141380	SS18	SS18 subunit of BAF chromatin remodeling complex	0.020397
ENSG00000166816	LDHD	Lactate dehydrogenase D	0.020625
ENSG00000175352	NRIP3	Nuclear receptor interacting protein 3	0.020865
ENSG00000156970	BUB1B	BUB1 mitotic checkpoint serine/threonine kinase B	0.020959
ENSG00000027869	SH2D2A	SH2 domain containing 2A	0.020959
ENSG00000165209	STRBP	Spermatid perinuclear RNA binding protein	0.021159
ENSG00000153237	CCDC148	Coiled-coil domain containing 148	0.021195
ENSG00000165113	GKAP1	G kinase anchoring protein 1	0.022053
ENSG00000240771	ARHGEF25	Rho guanine nucleotide exchange factor 25	0.022312
ENSG00000161800	RACGAP1	Rac gtpase activating protein 1	0.022425
ENSG00000132879	FBXO44	F-box protein 44	0.022425
ENSG00000171236	LRG1	Leucine rich alpha-2-glycoprotein 1	0.022425
ENSG00000171680	PLEKHG5	Pleckstrin homology and rhogef domain containing G5	0.022753
ENSG00000141376	BCAS3	BCAS3 microtubule associated cell migration factor	0.023124
ENSG00000166887	VPS39	VPS39 subunit of HOPS complex	0.023249
ENSG00000115226	FNDC4	Fibronectin type III domain containing 4	0.023754
ENSG00000135506	OS9	OS9 endoplasmic reticulum lectin	0.024111
ENSG00000043143	JADE2	Jade family PHD finger 2	0.024111
ENSG00000163521	GLB1L	Galactosidase beta 1 like	0.024677
ENSG00000104756	KCTD9	Potassium channel tetramerization domain containing 9	0.02474
ENSG00000101298	SNPH	Syntaphilin	0.02474

ENSG00000185745	IFIT1	Interferon induced protein with tetratricopeptide repeats 1	0.024853
ENSG00000112561	TFEB	Transcription factor EB	0.024856
ENSG00000138166	DUSP5	Dual specificity phosphatase 5	0.024897
ENSG00000122483	CCDC18	Coiled-coil domain containing 18	0.024897
ENSG00000135828	RNASEL	Ribonuclease L	0.024901
ENSG00000175155	YPEL2	Yippee like 2	0.024995
ENSG00000129003	VPS13C	Vacuolar protein sorting 13 homolog C	0.025037
ENSG00000138036	DYNC2LI1	Dynein cytoplasmic 2 light intermediate chain 1	0.02518
ENSG00000174307	PHLDA3	Pleckstrin homology like domain family A member 3	0.02518
ENSG00000157954	WIP1	WD repeat domain, phosphoinositide interacting 2	0.025197
ENSG00000165475	CRYL1	Crystallin lambda 1	0.025231
ENSG00000172738	TMEM217	Transmembrane protein 217	0.0253
ENSG00000125347	IRF1	Interferon regulatory factor 1	0.025727
ENSG00000128604	IRF5	Interferon regulatory factor 5	0.025768
ENSG00000066084	DIP2B	Disco interacting protein 2 homolog B	0.025984
ENSG00000182134	TDRKH	Tudor and KH domain containing	0.025984
ENSG00000273045	C2orf15	Chromosome 2 open reading frame 15	0.026342
ENSG00000159592	GPBP1L1	GC-rich promoter binding protein 1 like 1	0.026379
ENSG00000185669	SNAI3	Snail family transcriptional repressor 3	0.026379
ENSG00000171130	ATP6V0E2	ATPase H ⁺ transporting V0 subunit e2	0.027007
ENSG00000102038	SMARCA1	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 1	0.027438
ENSG00000211584	SLC48A1	Solute carrier family 48 member 1	0.028058
ENSG00000078304	PPP2R5C	Protein phosphatase 2 regulatory subunit b'gamma	0.028337
ENSG00000189241	TSPYL1	TSPY like 1	0.028611
ENSG00000081377	CDC14B	Cell division cycle 14B	0.028971
ENSG00000178078	STAP2	Signal transducing adaptor family member 2	0.028971
ENSG00000138160	KIF11	Kinesin family member 11	0.029221
ENSG00000100577	GSTZ1	Glutathione S-transferase zeta 1	0.029284
ENSG00000109654	TRIM2	Tripartite motif containing 2	0.029637
ENSG00000172508	CARNS1	Carnosine synthase 1	0.03065
ENSG00000283050	GTF2IP12	General transcription factor iii pseudogene 12	0.031757
ENSG00000054267	ARID4B	AT-rich interaction domain 4B	0.031907
ENSG00000156042	CFAP70	Cilia and flagella associated protein 70	0.032416
ENSG00000198842	DUSP27	Dual specificity phosphatase 27, atypical	0.032807
ENSG00000188610	FAM72B	Family with sequence similarity 72 member B	0.032955
ENSG00000242294	STAG3L5P	Stromal antigen 3-like 5 pseudogene	0.033107
ENSG00000186193	SAPCD2	Suppressor APC domain containing 2	0.033107
ENSG00000197056	ZMYM1	Zinc finger MYM-type containing 1	0.034281
ENSG00000072954	TMEM38A	Transmembrane protein 38A	0.034347
ENSG00000054219	LY75	Lymphocyte antigen 75	0.035345
ENSG00000278023	RDM1	RAD52 motif containing 1	0.035475
ENSG00000137807	KIF23	Kinesin family member 23	0.036362
ENSG00000120733	KDM3B	Lysine demethylase 3B	0.036419
ENSG00000173992	CCS	Copper chaperone for superoxide dismutase	0.036822
ENSG00000116793	PHTF1	Putative homeodomain transcription factor 1	0.037191
ENSG00000148950	IMMP1L	Inner mitochondrial membrane peptidase subunit 1	0.037191
ENSG00000176907	TCIM	Transcriptional and immune response regulator	0.037191
ENSG00000183682	BMP8A	Bone morphogenetic protein 8a	0.037551
ENSG00000183624	HMCES	5-hydroxymethylcytosine binding, ES cell specific	0.037593

ENSG00000105327	BBC3	BCL2 binding component 3	0.037696
ENSG00000174125	TLR1	Toll like receptor 1	0.037722
ENSG00000260300			0.037731
ENSG00000130477	UNC13A	Unc-13 homolog A	0.037771
ENSG00000172831	CES2	Carboxylesterase 2	0.037908
ENSG00000162643	WDR63	WD repeat domain 63	0.038078
ENSG00000140451	PIF1	PIF1 5'-to-3' DNA helicase	0.038158
ENSG00000205403	CFI	Complement factor I	0.03888
ENSG00000136158	SPRY2	Sprouty RTK signaling antagonist 2	0.038978
ENSG00000123975	CKS2	CDC28 protein kinase regulatory subunit 2	0.039119
ENSG00000112294	ALDH5A1	Aldehyde dehydrogenase 5 family member A1	0.040097
ENSG00000170634	ACYP2	Acylphosphatase 2	0.040295
ENSG00000084764	MAPRE3	Microtubule associated protein RP/EB family member 3	0.040436
ENSG00000134202	GSTM3	Glutathione S-transferase mu 3	0.040533
ENSG00000141574	SECTM1	Secreted and transmembrane 1	0.040735
ENSG00000170734	POLH	DNA polymerase eta	0.040897
ENSG00000171812	COL8A2	Collagen type VIII alpha 2 chain	0.040897
ENSG00000205089	CCNI2	Cyclin I family member 2	0.040897
ENSG00000150977	RILPL2	Rab interacting lysosomal protein like 2	0.041042
ENSG00000170542	SERPINB9	Serpin family B member 9	0.041584
ENSG00000115129	TP53I3	Tumor protein p53 inducible protein 3	0.042293
ENSG00000101347	SAMHD1	SAM and HD domain containing deoxynucleoside triphosphate triphosphohydrolase 1	0.042377
ENSG00000100897	DCAF11	DDB1 and CUL4 associated factor 11	0.042607
ENSG00000213186	TRIM59	Tripartite motif containing 59	0.042807
ENSG00000125744	RTN2	Reticulon 2	0.04398
ENSG00000103490	PYCARD	PYD and CARD domain containing	0.04398
ENSG00000135525	MAP7	Microtubule associated protein 7	0.04406
ENSG00000130363	RSPH3	Radial spoke head 3	0.044069
ENSG00000128394	APOBEC3F	Apolipoprotein B mRNA editing enzyme catalytic subunit 3F	0.045478
ENSG00000213930	GALT	Galactose-1-phosphate uridylyltransferase	0.046342
ENSG00000231551	AC245100.4	Phosphodiesterase 4D interacting protein (PDE4DIP) pseudogene	0.046342
ENSG00000118292	C1orf54	Chromosome 1 open reading frame 54	0.04641
ENSG00000136861	CDK5RAP2	CDK5 regulatory subunit associated protein 2	0.046519
ENSG00000182511	FES	FES proto-oncogene, tyrosine kinase	0.046523
ENSG00000197165	SULT1A2	Sulfotransferase family 1A member 2	0.04733
ENSG00000006283	CACNA1G	Calcium voltage-gated channel subunit alpha1 G	0.047333
ENSG00000236609	ZNF853	Zinc finger protein 853	0.047432
ENSG00000148057	IDNK	IDNK gluconokinase	0.047852
ENSG00000137135	ARHGEF39	Rho guanine nucleotide exchange factor 39	0.047866
ENSG00000160014	CALM3	Calmodulin 3	0.047954
ENSG00000108771	DHX58	Dexh-box helicase 58	0.048092
ENSG00000100027	YPEL1	Yippee like 1	0.048719
ENSG00000173193	PARP14	Poly(ADP-ribose) polymerase family member 14	0.049401
ENSG00000119508	NR4A3	Nuclear receptor subfamily 4 group A member 3	0.049457
ENSG00000255150	EID3	EP300 interacting inhibitor of differentiation 3	0.049717
ENSG00000078487	ZCWPW1	Zinc finger CW-type and PWWP domain containing 1	0.049821
Down-Regulated Genes ↓			
ENSG00000107562	CXCL12	C-X-C motif chemokine ligand 12	4.22E-27

ENSG00000168298	H1-4	H1.4 linker histone, cluster member	3.66E-25
ENSG00000146674	IGFBP3	Insulin like growth factor binding protein 3	1.84E-24
ENSG00000184357	H1-5	H1.5 linker histone, cluster member	1.35E-22
ENSG00000277075	H2AC8	H2A clustered histone 8	3.10E-22
ENSG00000197153	H3C12	H3 clustered histone 12	2.98E-20
ENSG00000184260	H2AC20	H2A clustered histone 20	1.11E-18
ENSG00000184270	H2AC21	H2A clustered histone 21	2.48E-18
ENSG00000183688	RFLNB	Refilin B	6.46E-18
ENSG00000276903	H2AC16	H2A clustered histone 16	1.21E-17
ENSG00000183598	H3C13	H3 clustered histone 13	2.42E-17
ENSG00000278463	H2AC4	H2A clustered histone 4	3.72E-17
ENSG00000187837	H1-2	H1.2 linker histone, cluster member	1.41E-16
ENSG00000154678	PDE1C	Phosphodiesterase 1C	7.97E-16
ENSG00000092969	TGFB2	Transforming growth factor beta 2	1.00E-14
ENSG00000127863	TNFRSF19	TNF receptor superfamily member 19	6.99E-14
ENSG00000286522	H3C2	H3 clustered histone 2	1.17E-13
ENSG00000196747	H2AC13	H2A clustered histone 13	1.86E-13
ENSG00000124575	H1-3	H1.3 linker histone, cluster member	1.57E-12
ENSG00000278677	H2AC17	H2A clustered histone 17	1.92E-12
ENSG00000273802	H2BC8	H2B clustered histone 8	2.22E-12
ENSG00000100504	PYGL	Glycogen phosphorylase L	3.50E-12
ENSG00000203814	H2BC18	H2B clustered histone 18	8.56E-12
ENSG00000274997	H2AC12	H2A clustered histone 12	1.07E-11
ENSG00000275379	H3C11	H3 clustered histone 11	1.32E-11
ENSG00000101938	CHRD1	Chordin like 1	2.08E-11
ENSG00000180596	H2BC4	H2B clustered histone 4	2.73E-11
ENSG00000164125	GASK1B	Golgi associated kinase 1B	2.95E-11
ENSG00000185130	H2BC13	H2B clustered histone 13	5.61E-11
ENSG00000277224	H2BC7	H2B clustered histone 7	6.63E-11
ENSG00000277157	H4C4	H4 clustered histone 4	1.58E-10
ENSG00000272196	H2AC19	H2A clustered histone 19	2.65E-10
ENSG00000145681	HAPLN1	Hyaluronan and proteoglycan link protein 1	4.93E-10
ENSG00000196787	H2AC11	H2A clustered histone 11	5.71E-10
ENSG00000128422	KRT17	Keratin 17	5.71E-10
ENSG00000162909	CAPN2	Calpain 2	5.71E-10
ENSG00000282988	AL031777.2	Novel protein	7.51E-10
ENSG00000099194	SCD	Stearoyl-coa desaturase	1.16E-09
ENSG00000275714	H3C1	H3 clustered histone 1	1.52E-09
ENSG00000203811	H3C14	H3 clustered histone 14	1.67E-09
ENSG00000145604	SKP2	S-phase kinase associated protein 2	2.17E-09
ENSG00000180730	SHISA2	Shisa family member 2	2.93E-09
ENSG00000197903	H2BC12	H2B clustered histone 12	2.99E-09
ENSG00000156466	GDF6	Growth differentiation factor 6	3.77E-09
ENSG00000105974	CAV1	Caveolin 1	3.90E-09
ENSG00000196866	H2AC7	H2A clustered histone 7	3.97E-09
ENSG00000044524	EPHA3	EPH receptor A3	4.04E-09
ENSG00000183287	CCBE1	Collagen and calcium binding EGF domains 1	4.37E-09
ENSG00000072041	SLC6A15	Solute carrier family 6 member 15	5.21E-09
ENSG00000124610	H1-1	H1.1 linker histone, cluster member	5.75E-09
ENSG00000158373	H2BC5	H2B clustered histone 5	7.51E-09
ENSG00000180914	OXTR	Oxytocin receptor	1.06E-08

ENSG00000179431	FJX1	Four-jointed box kinase 1	1.44E-08
ENSG00000276368	H2AC14	H2A clustered histone 14	2.23E-08
ENSG00000270882	H4C14	H4 clustered histone 14	2.31E-08
ENSG00000116774	OLFML3	Olfactomedin like 3	2.58E-08
ENSG00000147202	DIAPH2	Diaphanous related formin 2	3.30E-08
ENSG00000120158	RCL1	RNA terminal phosphate cyclase like 1	4.10E-08
ENSG00000162849	KIF26B	Kinesin family member 26B	4.90E-08
ENSG00000117597	UTP25	UTP25 small subunit processor component	5.12E-08
ENSG00000074800	ENO1	Enolase 1	6.29E-08
ENSG00000137124	ALDH1B1	Aldehyde dehydrogenase 1 family member B1	7.68E-08
ENSG00000134986	NREP	Neuronal regeneration related protein	8.06E-08
ENSG00000120217	CD274	CD274 molecule	8.42E-08
ENSG00000107796	ACTA2	Actin alpha 2, smooth muscle	1.23E-07
ENSG00000141052	MYOCD	Myocardin	1.40E-07
ENSG00000168672	LRATD2	LRAT domain containing 2	1.94E-07
ENSG00000115380	EFEMP1	EGF containing fibulin extracellular matrix protein 1	1.96E-07
ENSG00000125384	PTGER2	Prostaglandin E receptor 2	2.10E-07
ENSG00000135763	URB2	URB2 ribosome biogenesis homolog	2.53E-07
ENSG00000125485	DDX31	DEAD-box helicase 31	2.65E-07
ENSG00000274641	H2BC17	H2B clustered histone 17	4.05E-07
ENSG00000174371	EXO1	Exonuclease 1	4.11E-07
ENSG00000123213	NLN	Neurolysin	5.05E-07
ENSG00000170153	RNF150	Ring finger protein 150	5.76E-07
ENSG00000278828	H3C10	H3 clustered histone 10	9.34E-07
ENSG00000113140	SPARC	Secreted protein acidic and cysteine rich	9.34E-07
ENSG00000234289	H2BS1	H2B.S histone 1	1.01E-06
ENSG00000019549	SNAI2	Snail family transcriptional repressor 2	1.12E-06
ENSG00000146477	SLC22A3	Solute carrier family 22 member 3	1.16E-06
ENSG00000120658	ENOX1	Ecto-NOX disulfide-thiol exchanger 1	1.17E-06
ENSG00000139278	GLIPR1	GLI pathogenesis related 1	1.17E-06
ENSG00000129038	LOXL1	Lysyl oxidase like 1	1.17E-06
ENSG00000144891	AGTR1	Angiotensin II receptor type 1	1.27E-06
ENSG00000134775	FHOD3	Formin homology 2 domain containing 3	1.27E-06
ENSG00000076248	UNG	Uracil DNA glycosylase	1.27E-06
ENSG00000275221	H2AC15	H2A clustered histone 15	1.32E-06
ENSG00000118596	SLC16A7	Solute carrier family 16 member 7	1.59E-06
ENSG00000133019	CHRM3	Cholinergic receptor muscarinic 3	1.89E-06
ENSG00000135549	PKIB	Camp-dependent protein kinase inhibitor beta	2.03E-06
ENSG00000135362	PRR5L	Proline rich 5 like	2.50E-06
ENSG00000153993	SEMA3D	Semaphorin 3D	3.13E-06
ENSG00000189057	FAM111B	Family with sequence similarity 111 member B	3.23E-06
ENSG00000144681	STAC	SH3 and cysteine rich domain	3.27E-06
ENSG00000082512	TRAF5	TNF receptor associated factor 5	4.26E-06
ENSG00000170017	ALCAM	Activated leukocyte cell adhesion molecule	4.42E-06
ENSG00000243955	GSTA1	Glutathione S-transferase alpha 1	4.56E-06
ENSG00000196456	ZNF775	Zinc finger protein 775	4.56E-06
ENSG00000154734	ADAMTS1	ADAM metalloproteinase with thrombospondin type 1 motif 1	4.90E-06
ENSG00000178409	BEND3	BEN domain containing 3	4.90E-06
ENSG00000101868	POLA1	DNA polymerase alpha 1, catalytic subunit	5.53E-06
ENSG00000197238	H4C11	H4 clustered histone 11	5.88E-06

ENSG00000115648	MLPH	Melanophilin	6.14E-06
ENSG00000003989	SLC7A2	Solute carrier family 7 member 2	6.14E-06
ENSG00000133107	TRPC4	Transient receptor potential cation channel subfamily C member 4	6.14E-06
ENSG00000134285	FKBP11	FKBP prolyl isomerase 11	6.17E-06
ENSG00000157168	NRG1	Neuregulin 1	6.50E-06
ENSG00000119285	HEATR1	HEAT repeat containing 1	6.72E-06
ENSG00000101361	NOP56	NOP56 ribonucleoprotein	7.16E-06
ENSG00000150687	PRSS23	Serine protease 23	7.20E-06
ENSG00000185760	KCNQ5	Potassium voltage-gated channel subfamily Q member 5	7.31E-06
ENSG00000151376	ME3	Malic enzyme 3	7.95E-06
ENSG00000164619	BMPER	BMP binding endothelial regulator	9.52E-06
ENSG00000115461	IGFBP5	Insulin like growth factor binding protein 5	9.62E-06
ENSG00000091986	CCDC80	Coiled-coil domain containing 80	9.62E-06
ENSG00000178695	KCTD12	Potassium channel tetramerization domain containing 12	9.62E-06
ENSG00000182240	BACE2	Beta-secretase 2	9.62E-06
ENSG00000172197	MBOAT1	Membrane bound O-acyltransferase domain containing 1	1.01E-05
ENSG00000158406	H4C8	H4 clustered histone 8	1.07E-05
ENSG00000143179	UCK2	Uridine-cytidine kinase 2	1.28E-05
ENSG00000104356	POP1	POP1 homolog, ribonuclease P/MRP subunit	1.36E-05
ENSG00000196950	SLC39A10	Solute carrier family 39 member 10	1.68E-05
ENSG00000180573	H2AC6	H2A clustered histone 6	1.76E-05
ENSG00000182197	EXT1	Exostosin glycosyltransferase 1	1.86E-05
ENSG00000233822	H2BC15	H2B clustered histone 15	1.91E-05
ENSG00000080823	MOK	MOK protein kinase	2.18E-05
ENSG00000136111	TBC1D4	TBC1 domain family member 4	2.48E-05
ENSG00000234571	H2BP2	H2B histone pseudogene 2	2.54E-05
ENSG00000184678	H2BC21	H2B clustered histone 21	2.65E-05
ENSG00000116679	IVNS1ABP	Influenza virus NS1A binding protein	2.65E-05
ENSG00000120254	MTHFD1L	Methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 1 like	2.83E-05
ENSG00000120708	TGFBI	Transforming growth factor beta induced	2.83E-05
ENSG00000145934	TENM2	Teneurin transmembrane protein 2	2.94E-05
ENSG00000154646	TMPRSS15	Transmembrane serine protease 15	3.00E-05
ENSG00000135919	SERPINE2	Serpin family E member 2	3.03E-05
ENSG00000128510	CPA4	Carboxypeptidase A4	3.04E-05
ENSG00000122870	BICC1	Bicc family RNA binding protein 1	3.37E-05
ENSG00000144354	CDCA7	Cell division cycle associated 7	4.30E-05
ENSG00000120594	PLXDC2	Plexin domain containing 2	4.44E-05
ENSG00000060982	BCAT1	Branched chain amino acid transaminase 1	4.53E-05
ENSG00000070404	FSTL3	Follistatin like 3	4.53E-05
ENSG00000172927	MYEOV	Myeloma overexpressed	4.61E-05
ENSG00000111057	KRT18	Keratin 18	4.70E-05
ENSG00000183010	PYCR1	Pyrroline-5-carboxylate reductase 1	5.04E-05
ENSG00000168003	SLC3A2	Solute carrier family 3 member 2	5.06E-05
ENSG00000164176	EDIL3	EGF like repeats and discoidin domains 3	5.33E-05
ENSG00000139211	AMIGO2	Adhesion molecule with Ig like domain 2	5.45E-05
ENSG00000159131	GART	Phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase	5.66E-05
ENSG00000180535	BHLHA15	Basic helix-loop-helix family member a15	5.69E-05

ENSG00000119537	KDSR	3-ketodihydrosphingosine reductase	6.27E-05
ENSG00000187840	EIF4EBP1	Eukaryotic translation initiation factor 4E binding protein 1	6.85E-05
ENSG00000124635	H2BC11	H2B clustered histone 11	7.05E-05
ENSG00000145675	PIK3R1	Phosphoinositide-3-kinase regulatory subunit 1	8.01E-05
ENSG00000115232	ITGA4	Integrin subunit alpha 4	8.35E-05
ENSG00000204291	COL15A1	Collagen type XV alpha 1 chain	9.03E-05
ENSG00000181751	C5orf30	Chromosome 5 open reading frame 30	9.28E-05
ENSG00000113739	STC2	Stanniocalcin 2	9.45E-05
ENSG00000136261	BZW2	Basic leucine zipper and W2 domains 2	9.62E-05
ENSG00000265107	GJA5	Gap junction protein alpha 5	0.000101
ENSG00000117394	SLC2A1	Solute carrier family 2 member 1	0.000107
ENSG00000161647	MPP3	Membrane palmitoylated protein 3	0.000113
ENSG00000157483	MYO1E	Myosin IE	0.000134
ENSG00000102271	KLHL4	Kelch like family member 4	0.000142
ENSG00000128050	PAICS	Phosphoribosylaminoimidazole carboxylase and phosphoribosylaminoimidazolesuccinocarboxamide synthase	0.000142
ENSG00000132669	RIN2	Ras and Rab interactor 2	0.000147
ENSG00000153823	PID1	Phosphotyrosine interaction domain containing 1	0.000148
ENSG00000170854	RIOX2	Ribosomal oxygenase 2	0.000154
ENSG00000141569	TRIM65	Tripartite motif containing 65	0.000154
ENSG00000122420	PTGFR	Prostaglandin F receptor	0.000155
ENSG00000109861	CTSC	Cathepsin C	0.000173
ENSG00000197837	H4-16	H4 histone 16	0.000184
ENSG00000112276	BVES	Blood vessel epicardial substance	0.000192
ENSG00000198796	ALPK2	Alpha kinase 2	0.000194
ENSG00000111885	MAN1A1	Mannosidase alpha class 1A member 1	0.000195
ENSG00000183722	LHFPL6	LHFPL tetraspan subfamily member 6	0.000195
ENSG00000054277	OPN3	Opsin 3	0.000198
ENSG00000113013	HSPA9	Heat shock protein family A (Hsp70) member 9	0.000203
ENSG00000186854	TRABD2A	Trab domain containing 2A	0.000209
ENSG00000156265	MAP3K7CL	MAP3K7 C-terminal like	0.000209
ENSG00000145416	MARCHF1	Membrane associated ring-CH-type finger 1	0.000212
ENSG00000176697	BDNF	Brain derived neurotrophic factor	0.000225
ENSG00000275126	H4C13	H4 clustered histone 13	0.000229
ENSG00000178776	C5orf46	Chromosome 5 open reading frame 46	0.000243
ENSG00000050344	NFE2L3	Nuclear factor, erythroid 2 like 3	0.000254
ENSG00000243444			0.000257
ENSG00000181418	DDN	Dendrin	0.000262
ENSG00000186480	INSIG1	Insulin induced gene 1	0.000279
ENSG00000156398	SFXN2	Sideroflexin 2	0.000292
ENSG00000140416	TPM1	Tropomyosin 1	0.000298
ENSG00000152661	GJA1	Gap junction protein alpha 1	0.000303
ENSG00000179104	TMTC2	Transmembrane O-mannosyltransferase targeting cadherins 2	0.00032
ENSG00000187193	MT1X	Metallothionein 1X	0.000331
ENSG00000111186	WNT5B	Wnt family member 5B	0.00034
ENSG00000106105	GARS1	Glycyl-trna synthetase 1	0.000342
ENSG00000197061	H4C3	H4 clustered histone 3	0.00037
ENSG00000117877	CD3EAP	CD3e molecule associated protein	0.000394

ENSG00000132768	DPH2	Diphthamide biosynthesis 2	0.000403
ENSG00000206190	ATP10A	Atpase phospholipid transporting 10A (putative)	0.000403
ENSG00000166333	ILK	Integrin linked kinase	0.000405
ENSG00000189212	DPY19L2P1	DPY19L2 pseudogene 1	0.000415
ENSG00000150051	MKX	Mohawk homeobox	0.00042
ENSG00000071575	TRIB2	Tribbles pseudokinase 2	0.00042
ENSG00000166002	SMCO4	Single-pass membrane protein with coiled-coil domains 4	0.000429
ENSG00000159176	CSRP1	Cysteine and glycine rich protein 1	0.00044
ENSG00000157064	NMNAT2	Nicotinamide nucleotide adenylyltransferase 2	0.000459
ENSG00000244067	GSTA2	Glutathione S-transferase alpha 2	0.00046
ENSG00000082516	GEMIN5	Gem nuclear organelle associated protein 5	0.000482
ENSG00000141384	TAF4B	TATA-box binding protein associated factor 4b	0.000487
ENSG00000198947	DMD	Dystrophin	0.000543
ENSG00000143314	MRPL24	Mitochondrial ribosomal protein L24	0.000546
ENSG00000148484	RSU1	Ras suppressor protein 1	0.000547
ENSG00000278705	H4C2	H4 clustered histone 2	0.000554
ENSG00000026559	KCNG1	Potassium voltage-gated channel modifier subfamily G member 1	0.000554
ENSG00000072274	TFRC	Transferrin receptor	0.000581
ENSG00000125257	ABCC4	ATP binding cassette subfamily C member 4	0.000589
ENSG00000101546	RBFA	Ribosome binding factor A	0.000589
ENSG00000170515	PA2G4	Proliferation-associated 2G4	0.00059
ENSG00000105810	CDK6	Cyclin dependent kinase 6	0.000593
ENSG00000106366	SERPINE1	Serpin family E member 1	0.000603
ENSG00000120800	UTP20	UTP20 small subunit processome component	0.000614
ENSG00000091527	CDV3	CDV3 homolog	0.000625
ENSG00000163083	INHBB	Inhibin subunit beta B	0.000634
ENSG00000115107	STEAP3	STEAP3 metalloreductase	0.000634
ENSG00000238243	OR2W3	Olfactory receptor family 2 subfamily W member 3	0.000634
ENSG00000189007	ADAT2	Adenosine deaminase trna specific 2	0.000662
ENSG00000162419	GMEB1	Glucocorticoid modulatory element binding protein 1	0.000662
ENSG00000143157	POGK	Pogo transposable element derived with KRAB domain	0.000797
ENSG00000053372	MRT04	MRT4 homolog, ribosome maturation factor	0.000798
ENSG00000121057	AKAP1	A-kinase anchoring protein 1	0.000807
ENSG00000125458	NT5C	5', 3'-nucleotidase, cytosolic	0.000819
ENSG00000196730	DAPK1	Death associated protein kinase 1	0.000839
ENSG00000164649	CDCA7L	Cell division cycle associated 7 like	0.000853
ENSG00000140945	CDH13	Cadherin 13	0.000869
ENSG00000106628	POLD2	DNA polymerase delta 2, accessory subunit	0.000872
ENSG00000170876	TMEM43	Transmembrane protein 43	0.000873
ENSG00000152256	PDK1	Pyruvate dehydrogenase kinase 1	0.000879
ENSG00000149485	FADS1	Fatty acid desaturase 1	0.000887
ENSG00000255561	FDXACB1	Ferredoxin-fold anticodon binding domain containing 1	0.000887
ENSG00000072682	P4HA2	Prolyl 4-hydroxylase subunit alpha 2	0.000892
ENSG00000106799	TGFBR1	Transforming growth factor beta receptor 1	0.000944
ENSG00000219607	PPP1R3G	Protein phosphatase 1 regulatory subunit 3G	0.000946
ENSG00000164687	FABP5	Fatty acid binding protein 5	0.00098
ENSG00000144824	PHLDB2	Pleckstrin homology like domain family B member 2	0.000988
ENSG00000168405	CMAHP	Cytidine monophospho-N-acetylneuraminic acid hydroxylase, pseudogene	0.00103
ENSG00000134987	WDR36	WD repeat domain 36	0.001108

ENSG00000197646	PDCD1LG2	Programmed cell death 1 ligand 2	0.001122
ENSG00000183496	MEX3B	Mex-3 RNA binding family member B	0.001154
ENSG00000276966	H4C5	H4 clustered histone 5	0.001243
ENSG00000168542	COL3A1	Collagen type III alpha 1 chain	0.001294
ENSG00000251493	FOXD1	Forkhead box D1	0.0013
ENSG00000113657	DPYSL3	Dihydropyrimidinase like 3	0.00132
ENSG00000135318	NT5E	5'-nucleotidase ecto	0.001363
ENSG00000247626	MARS2	Methionyl-trna synthetase 2, mitochondrial	0.001384
ENSG00000137054	POLR1E	RNA polymerase I subunit E	0.001412
ENSG00000181201	H2BU2P	H2B.U histone 2, pseudogene	0.001435
ENSG00000135312	HTR1B	5-hydroxytryptamine receptor 1B	0.001451
ENSG00000085276	MECOM	MDS1 and EVI1 complex locus	0.00147
ENSG00000113578	FGF1	Fibroblast growth factor 1	0.001568
ENSG00000087116	ADAMTS2	ADAM metallopeptidase with thrombospondin type 1 motif 2	0.001648
ENSG00000137819	PAQR5	Progesterin and adipog receptor family member 5	0.001648
ENSG00000178860	MSC	Musculin	0.001696
ENSG00000136933	RABEPK	Rab9 effector protein with kelch motifs	0.001798
ENSG00000165175	MID1IP1	MID1 interacting protein 1	0.001861
ENSG00000138356	AOX1	Aldehyde oxidase 1	0.001898
ENSG00000091136	LAMB1	Laminin subunit beta 1	0.001906
ENSG00000180611	MB21D2	Mab-21 domain containing 2	0.001936
ENSG00000196352	CD55	CD55 molecule (Cromer blood group)	0.001936
ENSG00000177191	B3GNT8	UDP-glcnae:betagal beta-1,3-N-acetylglucosaminyltransferase 8	0.001944
ENSG00000102452	NALCN	Sodium leak channel, non-selective	0.001944
ENSG00000278637	H4C1	H4 clustered histone 1	0.00195
ENSG00000173457	PPP1R14B	Protein phosphatase 1 regulatory inhibitor subunit 14B	0.00195
ENSG00000196890	H2BU1	H2B.U histone 1	0.002024
ENSG00000273703	H2BC14	H2B clustered histone 14	0.002187
ENSG00000065150	IPO5	Importin 5	0.002231
ENSG00000116132	PRRX1	Paired related homeobox 1	0.002263
ENSG00000039139	DNAH5	Dynein axonemal heavy chain 5	0.002444
ENSG00000039560	RAI14	Retinoic acid induced 14	0.002464
ENSG00000079156	OSBPL6	Oxysterol binding protein like 6	0.002528
ENSG00000141668	CBLN2	Cerebellin 2 precursor	0.002552
ENSG00000158716	DUSP23	Dual specificity phosphatase 23	0.002639
ENSG00000158483	FAM86C1	Family with sequence similarity 86 member C1	0.002657
ENSG00000144867	SRPRB	SRP receptor subunit beta	0.00275
ENSG00000186340	THBS2	Thrombospondin 2	0.002815
ENSG00000112773	TENT5A	Terminal nucleotidyltransferase 5A	0.002853
ENSG00000135245	HILPDA	Hypoxia inducible lipid droplet associated	0.002957
ENSG00000198081	ZBTB14	Zinc finger and BTB domain containing 14	0.003085
ENSG00000138074	SLC5A6	Solute carrier family 5 member 6	0.003124
ENSG00000169432	SCN9A	Sodium voltage-gated channel alpha subunit 9	0.003312
ENSG00000156471	PTDSS1	Phosphatidylserine synthase 1	0.00336
ENSG00000171492	LRR8D	Leucine rich repeat containing 8 VRAC subunit D	0.00348
ENSG00000153885	KCTD15	Potassium channel tetramerization domain containing 15	0.003522
ENSG00000144749	LRIG1	Leucine rich repeats and immunoglobulin like domains 1	0.00357
ENSG00000137801	THBS1	Thrombospondin 1	0.003584
ENSG00000019186	CYP24A1	Cytochrome P450 family 24 subfamily A member 1	0.003591

ENSG00000176171	BNIP3	BCL2 interacting protein 3	0.00361
ENSG00000139329	LUM	Lumican	0.00362
ENSG00000151892	GFRA1	GDNF family receptor alpha 1	0.003685
ENSG00000120256	LRP11	LDL receptor related protein 11	0.003702
ENSG00000159399	HK2	Hexokinase 2	0.003751
ENSG00000139263	LRIG3	Leucine rich repeats and immunoglobulin like domains 3	0.003752
ENSG00000111371	SLC38A1	Solute carrier family 38 member 1	0.003774
ENSG00000162433	AK4	Adenylate kinase 4	0.003837
ENSG00000135446	CDK4	Cyclin dependent kinase 4	0.003837
ENSG00000168502	MTCL1	Microtubule crosslinking factor 1	0.003917
ENSG00000130299	GTPBP3	GTP binding protein 3, mitochondrial	0.003955
ENSG00000099250	NRP1	Neuropilin 1	0.004047
ENSG00000102743	SLC25A15	Solute carrier family 25 member 15	0.004106
ENSG00000144642	RBMS3	RNA binding motif single stranded interacting protein 3	0.004204
ENSG00000117152	RGS4	Regulator of G protein signaling 4	0.004258
ENSG00000164284	GRPEL2	Grpe like 2, mitochondrial	0.004259
ENSG00000184675	AMER1	APC membrane recruitment protein 1	0.004295
ENSG00000181982	CCDC149	Coiled-coil domain containing 149	0.004328
ENSG00000100234	TIMP3	TIMP metalloproteinase inhibitor 3	0.004328
ENSG00000147883	CDKN2B	Cyclin dependent kinase inhibitor 2B	0.004328
ENSG00000075142	SRI	Sorcin	0.004328
ENSG00000105855	ITGB8	Integrin subunit beta 8	0.004477
ENSG00000125863	MKKS	Mckusick-Kaufman syndrome	0.004498
ENSG00000165030	NFIL3	Nuclear factor, interleukin 3 regulated	0.00456
ENSG00000198121	LPAR1	Lysophosphatidic acid receptor 1	0.00459
ENSG00000174827	PDZK1	PDZ domain containing 1	0.004596
ENSG00000174136	RGMB	Repulsive guidance molecule BMP co-receptor b	0.004608
ENSG00000176055	MBLAC2	Metallo-beta-lactamase domain containing 2	0.004633
ENSG00000239264	TXNDC5	Thioredoxin domain containing 5	0.004707
ENSG00000145242	EPHA5	EPH receptor A5	0.004763
ENSG00000203805	PLPP4	Phospholipid phosphatase 4	0.004798
ENSG00000123096	SSPN	Sarcospan	0.004887
ENSG00000113721	PDGFRB	Platelet derived growth factor receptor beta	0.005066
ENSG00000141858	SAMD1	Sterile alpha motif domain containing 1	0.005111
ENSG00000186523	FAM86B1	Family with sequence similarity 86 member B1	0.005182
ENSG00000148848	ADAM12	ADAM metalloproteinase domain 12	0.005341
ENSG00000154978	VOPP1	VOPP1 WW domain binding protein	0.005411
ENSG00000160193	WDR4	WD repeat domain 4	0.005522
ENSG00000242114	MTFP1	Mitochondrial fission process 1	0.005545
ENSG00000155858	LSM11	LSM11, U7 small nuclear RNA associated	0.005565
ENSG00000150938	CRIM1	Cysteine rich transmembrane BMP regulator 1	0.005736
ENSG00000196517	SLC6A9	Solute carrier family 6 member 9	0.005763
ENSG00000103196	CRISPLD2	Cysteine rich secretory protein LCCL domain containing 2	0.005843
ENSG00000115657	ABCB6	ATP binding cassette subfamily B member 6 (Langereis blood group)	0.006087
ENSG00000244026	FAM86DP	Family with sequence similarity 86 member D, pseudogene	0.006251
ENSG00000185070	FLRT2	Fibronectin leucine rich transmembrane protein 2	0.006328
ENSG00000145990	GFOD1	Glucose-fructose oxidoreductase domain containing 1	0.006334
ENSG00000180448	AC004151.1	Rho gtpase activating protein 45	0.006347

ENSG00000186352	ANKRD37	Ankyrin repeat domain 37	0.006347
ENSG00000164107	HAND2	Heart and neural crest derivatives expressed 2	0.006383
ENSG00000112902	SEMA5A	Semaphorin 5A	0.006533
ENSG00000021645	NRXN3	Neurexin 3	0.006619
ENSG00000241697	TMEFF1	Transmembrane protein with EGF like and two follistatin like domains 1	0.00664
ENSG00000181588	MEX3D	Mex-3 RNA binding family member D	0.006658
ENSG00000184009	ACTG1	Actin gamma 1	0.00675
ENSG00000167778	SPRYD3	SPRY domain containing 3	0.006961
ENSG00000073536	NLE1	Notchless homolog 1	0.007115
ENSG00000203668	CHML	CHM like Rab escort protein	0.007195
ENSG00000112365	ZBTB24	Zinc finger and BTB domain containing 24	0.0073
ENSG00000103522	IL21R	Interleukin 21 receptor	0.007366
ENSG00000183023	SLC8A1	Solute carrier family 8 member A1	0.007393
ENSG00000150556	LYPD6B	LY6/PLAUR domain containing 6B	0.007412
ENSG00000182173	TSEN54	Trna splicing endonuclease subunit 54	0.007471
ENSG00000123843	C4BPB	Complement component 4 binding protein beta	0.007475
ENSG00000167460	TPM4	Tropomyosin 4	0.007588
ENSG00000117519	CNN3	Calponin 3	0.007662
ENSG00000148680	HTR7	5-hydroxytryptamine receptor 7	0.007768
ENSG00000074410	CA12	Carbonic anhydrase 12	0.007768
ENSG00000070961	ATP2B1	ATPase plasma membrane Ca ²⁺ transporting 1	0.007768
ENSG00000106484	MEST	Mesoderm specific transcript	0.007815
ENSG00000132661	NXT1	Nuclear transport factor 2 like export factor 1	0.007839
ENSG00000049323	LTBP1	Latent transforming growth factor beta binding protein 1	0.007859
ENSG00000137547	MRPL15	Mitochondrial ribosomal protein L15	0.008181
ENSG00000166741	NNMT	Nicotinamide N-methyltransferase	0.008199
ENSG00000146281	PM20D2	Peptidase M20 domain containing 2	0.008298
ENSG00000134668	SPOCD1	SPOC domain containing 1	0.008329
ENSG00000125630	POLR1B	RNA polymerase I subunit B	0.008495
ENSG00000128973	CLN6	CLN6 transmembrane ER protein	0.008566
ENSG00000038295	TLL1	Tolloid like 1	0.00859
ENSG00000106772	PRUNE2	Prune homolog 2 with BCH domain	0.008606
ENSG00000174206	C12orf66	Chromosome 12 open reading frame 66	0.00866
ENSG00000171791	BCL2	BCL2 apoptosis regulator	0.008669
ENSG00000101255	TRIB3	Tribbles pseudokinase 3	0.009087
ENSG00000133816	MICAL2	Microtubule associated monooxygenase, calponin and LIM domain containing 2	0.009167
ENSG00000187742	SECISBP2	SECIS binding protein 2	0.009381
ENSG00000112658	SRF	Serum response factor	0.009519
ENSG00000125247	TMTC4	Transmembrane O-mannosyltransferase targeting cadherins 4	0.009804
ENSG00000119938	PPP1R3C	Protein phosphatase 1 regulatory subunit 3C	0.009804
ENSG00000188290	HES4	Hes family bHLH transcription factor 4	0.009834
ENSG00000166289	PLEKHF1	Pleckstrin homology and FYVE domain containing 1	0.010088
ENSG00000137273	FOXF2	Forkhead box F2	0.010511
ENSG00000147485	PXDNL	Peroxidasin like	0.010573
ENSG00000139370	SLC15A4	Solute carrier family 15 member 4	0.010678
ENSG00000171488	LRRRC8C	Leucine rich repeat containing 8 VRAC subunit C	0.010744
ENSG00000261236	BOP1	BOP1 ribosomal biogenesis factor	0.011134
ENSG00000138944	SHISAL1	Shisa like 1	0.011167

ENSG00000131019	ULBP3	UL16 binding protein 3	0.011403
ENSG00000163751	CPA3	Carboxypeptidase A3	0.011513
ENSG00000042832	TG	Thyroglobulin	0.011686
ENSG00000072310	SREBF1	Sterol regulatory element binding transcription factor 1	0.011686
ENSG00000099725	PRKY	Protein kinase Y-linked (pseudogene)	0.011876
ENSG00000130810	PPAN	Peter pan homolog	0.011955
ENSG00000205542	TMSB4X	Thymosin beta 4 X-linked	0.012568
ENSG00000204856	FAM216A	Family with sequence similarity 216 member A	0.012575
ENSG00000107104	KANK1	KN motif and ankyrin repeat domains 1	0.012714
ENSG00000125430	HS3ST3B1	Heparan sulfate-glucosamine 3-sulfotransferase 3B1	0.012714
ENSG00000145632	PLK2	Polo like kinase 2	0.012735
ENSG00000117479	SLC19A2	Solute carrier family 19 member 2	0.012735
ENSG00000112893	MAN2A1	Mannosidase alpha class 2A member 1	0.012751
ENSG00000134294	SLC38A2	Solute carrier family 38 member 2	0.012751
ENSG00000049192	ADAMTS6	ADAM metallopeptidase with thrombospondin type 1 motif 6	0.013066
ENSG00000180801	ARSJ	Arylsulfatase family member J	0.013066
ENSG00000118894	EEF2KMT	Eukaryotic elongation factor 2 lysine methyltransferase	0.013108
ENSG00000161547	SRSF2	Serine and arginine rich splicing factor 2	0.013136
ENSG00000161091	MFSD12	Major facilitator superfamily domain containing 12	0.0133
ENSG00000080493	SLC4A4	Solute carrier family 4 member 4	0.013348
ENSG00000180198	RCC1	Regulator of chromosome condensation 1	0.013365
ENSG00000105971	CAV2	Caveolin 2	0.013365
ENSG00000154127	UBASH3B	Ubiquitin associated and SH3 domain containing B	0.013533
ENSG00000177192	PUS1	Pseudouridine synthase 1	0.013606
ENSG00000102967	DHODH	Dihydroorotate dehydrogenase (quinone)	0.013606
ENSG00000077092	RARB	Retinoic acid receptor beta	0.013752
ENSG00000277775	H3C7	H3 clustered histone 7	0.013771
ENSG00000176749	CDK5R1	Cyclin dependent kinase 5 regulatory subunit 1	0.013844
ENSG00000104907	TRMT1	Trna methyltransferase 1	0.013844
ENSG00000153976	HS3ST3A1	Heparan sulfate-glucosamine 3-sulfotransferase 3A1	0.013874
ENSG00000111450	STX2	Syntaxin 2	0.014621
ENSG00000185238	PRMT3	Protein arginine methyltransferase 3	0.014754
ENSG00000254093	PINX1	PIN2 (TERF1) interacting telomerase inhibitor 1	0.014819
ENSG00000148229	POLE3	DNA polymerase epsilon 3, accessory subunit	0.01538
ENSG00000171208	NETO2	Neuropilin and tolloid like 2	0.015481
ENSG00000213853	EMP2	Epithelial membrane protein 2	0.015481
ENSG00000138448	ITGAV	Integrin subunit alpha V	0.015481
ENSG00000160208	RRP1B	Ribosomal RNA processing 1B	0.015481
ENSG00000124787	RPP40	Ribonuclease P/MRP subunit p40	0.0155
ENSG00000184465	WDR27	WD repeat domain 27	0.0155
ENSG00000125266	EFNB2	Ephrin B2	0.0155
ENSG00000244306	AL589743.1	Double homeobox A pseudogene 10	0.0155
ENSG00000157193	LRP8	LDL receptor related protein 8	0.015728
ENSG00000165732	DDX21	Dexd-box helicase 21	0.015728
ENSG00000154553	PDLIM3	PDZ and LIM domain 3	0.015742
ENSG00000186654	PRR5	Proline rich 5	0.015905
ENSG00000085415	SEH1L	SEH1 like nucleoporin	0.015905
ENSG00000158125	XDH	Xanthine dehydrogenase	0.015948
ENSG00000075223	SEMA3C	Semaphorin 3C	0.015948
ENSG00000122861	PLAU	Plasminogen activator, urokinase	0.016158

ENSG00000128294	TPST2	Tyrosylprotein sulfotransferase 2	0.016256
ENSG00000136999	CCN3	Cellular communication network factor 3	0.016269
ENSG00000118508	RAB32	RAB32, member RAS oncogene family	0.016269
ENSG00000117411	B4GALT2	Beta-1,4-galactosyltransferase 2	0.01643
ENSG00000120942	UBIAD1	Ubiquitin prenyltransferase domain containing 1	0.016683
ENSG00000116667	C1orf21	Chromosome 1 open reading frame 21	0.017091
ENSG00000234602	MCIDAS	Multiciliate differentiation and DNA synthesis associated cell cycle protein	0.017213
ENSG00000168785	TSPAN5	Tetraspanin 5	0.017365
ENSG00000093217	XYLB	Xylulokinase	0.017815
ENSG00000128272	ATF4	Activating transcription factor 4	0.017815
ENSG00000138741	TRPC3	Transient receptor potential cation channel subfamily C member 3	0.017853
ENSG00000136720	HS6ST1	Heparan sulfate 6-O-sulfotransferase 1	0.01787
ENSG00000131652	THOC6	THO complex 6	0.017996
ENSG00000124784	RIOK1	RIO kinase 1	0.017996
ENSG00000145287	PLAC8	Placenta associated 8	0.018116
ENSG00000155846	PPARGC1B	PPARG coactivator 1 beta	0.018192
ENSG00000183605	SFXN4	Sideroflexin 4	0.018192
ENSG00000100029	PES1	Pescadillo ribosomal biogenesis factor 1	0.018192
ENSG00000100314	CABP7	Calcium binding protein 7	0.018223
ENSG00000239672	NME1	NME/NM23 nucleoside diphosphate kinase 1	0.018223
ENSG00000048162	NOP16	NOP16 nucleolar protein	0.018301
ENSG00000127329	PTPRB	Protein tyrosine phosphatase receptor type B	0.018322
ENSG00000284620	AF228730.5	RNA binding protein, fox-1 homolog (C. Elegans) 1 (RBFOX1) pseudogene	0.018561
ENSG00000145545	SRD5A1	Steroid 5 alpha-reductase 1	0.018586
ENSG00000050405	LIMA1	LIM domain and actin binding 1	0.018652
ENSG00000082482	KCNK2	Potassium two pore domain channel subfamily K member 2	0.018805
ENSG00000114686	MRPL3	Mitochondrial ribosomal protein L3	0.019114
ENSG00000186847	KRT14	Keratin 14	0.019236
ENSG00000165359	INTS6L	Integrator complex subunit 6 like	0.019344
ENSG00000055813	CCDC85A	Coiled-coil domain containing 85A	0.019794
ENSG00000106348	IMPDH1	Inosine monophosphate dehydrogenase 1	0.020452
ENSG00000086848	ALG9	ALG9 alpha-1,2-mannosyltransferase	0.020551
ENSG00000169926	KLF13	Kruppel like factor 13	0.020703
ENSG00000205426	KRT81	Keratin 81	0.020959
ENSG00000162711	NLRP3	NLR family pyrin domain containing 3	0.020959
ENSG00000183527	PSMG1	Proteasome assembly chaperone 1	0.020959
ENSG00000118263	KLF7	Kruppel like factor 7	0.021223
ENSG00000214706	IFRD2	Interferon related developmental regulator 2	0.021859
ENSG00000150990	DHX37	DEAH-box helicase 37	0.022255
ENSG00000074582	BCS1L	BCS1 homolog, ubiquinol-cytochrome c reductase complex chaperone	0.022255
ENSG00000111641	NOP2	NOP2 nucleolar protein	0.022255
ENSG00000038427	VCAN	Versican	0.022425
ENSG00000227120	AC009238.1	Pseudogene similar to part of Cdon homolog (mouse) (CDON)	0.023124
ENSG00000109576	AADAT	Amino adipate aminotransferase	0.023985
ENSG00000198478	SH3BGL2	SH3 domain binding glutamate rich protein like 2	0.024079

ENSG00000071242	RPS6KA2	Ribosomal protein S6 kinase A2	0.024148
ENSG00000185304	RGPD2	RANBP2 like and GRIP domain containing 2	0.024677
ENSG00000077348	EXOSC5	Exosome component 5	0.02474
ENSG00000106546	AHR	Aryl hydrocarbon receptor	0.02474
ENSG00000147955	SIGMAR1	Sigma non-opioid intracellular receptor 1	0.02491
ENSG00000278540	ACACA	Acetyl-coa carboxylase alpha	0.024952
ENSG00000175183	CSRP2	Cysteine and glycine rich protein 2	0.025037
ENSG00000094804	CDC6	Cell division cycle 6	0.025037
ENSG00000171490	RSL1D1	Ribosomal L1 domain containing 1	0.025131
ENSG00000171067	C11orf24	Chromosome 11 open reading frame 24	0.025197
ENSG00000116991	SIPA1L2	Signal induced proliferation associated 1 like 2	0.025231
ENSG00000106263	EIF3B	Eukaryotic translation initiation factor 3 subunit B	0.025231
ENSG00000111666	CHPT1	Choline phosphotransferase 1	0.025327
ENSG00000126785	RHOJ	Ras homolog family member J	0.025399
ENSG00000157680	DGKI	Diacylglycerol kinase iota	0.025399
ENSG00000134490	TMEM241	Transmembrane protein 241	0.025878
ENSG00000198142	SOWAHC	Sosondowah ankyrin repeat domain family member C	0.025919
ENSG00000168209	DDIT4	DNA damage inducible transcript 4	0.025984
ENSG00000168496	FEN1	Flap structure-specific endonuclease 1	0.025984
ENSG00000122042	UBL3	Ubiquitin like 3	0.026224
ENSG00000071564	TCF3	Transcription factor 3	0.026266
ENSG00000069122	ADGRF5	Adhesion G protein-coupled receptor F5	0.026343
ENSG00000151835	SACS	Sacsin molecular chaperone	0.026379
ENSG00000244274	DBNDD2	Dysbindin domain containing 2	0.026379
ENSG00000138772	ANXA3	Annexin A3	0.026554
ENSG00000128951	DUT	Deoxyuridine triphosphatase	0.02713
ENSG00000186141	POLR3C	RNA polymerase III subunit C	0.027285
ENSG00000251669	FAM86EP	Family with sequence similarity 86 member E, pseudogene	0.027302
ENSG00000148926	ADM	Adrenomedullin	0.028611
ENSG00000155438	NIFK	Nucleolar protein interacting with the FHA domain of MKI67	0.028809
ENSG00000102178	UBL4A	Ubiquitin like 4A	0.028971
ENSG00000105185	PDCD5	Programmed cell death 5	0.029192
ENSG00000270276	H4C15	H4 clustered histone 15	0.029418
ENSG00000157827	FMNL2	Formin like 2	0.029504
ENSG00000111799	COL12A1	Collagen type XII alpha 1 chain	0.029767
ENSG00000149591	TAGLN	Transgelin	0.030118
ENSG00000185640	KRT79	Keratin 79	0.030242
ENSG00000133597	ADCK2	Aarf domain containing kinase 2	0.030507
ENSG00000069998	HDHD5	Haloacid dehalogenase like hydrolase domain containing 5	0.030535
ENSG00000119599	DCAF4	DDB1 and CUL4 associated factor 4	0.030564
ENSG00000188549	CCDC9B	Coiled-coil domain containing 9B	0.030614
ENSG00000140937	CDH11	Cadherin 11	0.030614
ENSG00000122644	ARL4A	ADP ribosylation factor like gtpase 4A	0.030614
ENSG00000284753	EEF1AKMT4	EEF1A lysine methyltransferase 4	0.030729
ENSG00000066583	ISOC1	Isochorismatase domain containing 1	0.030878
ENSG00000131378	RFTN1	Raftlin, lipid raft linker 1	0.030923
ENSG00000288031	AC093838.2	Novel pseudogene	0.031492
ENSG00000159199	ATP5MC1	ATP synthase membrane subunit c locus 1	0.031728

ENSG00000143476	DTL	Denticleless E3 ubiquitin protein ligase homolog	0.031757
ENSG00000186918	ZNF395	Zinc finger protein 395	0.031907
ENSG00000154122	ANKH	ANKH inorganic pyrophosphate transport regulator	0.031907
ENSG00000256667	KLRA1P	Killer cell lectin like receptor A1, pseudogene	0.032072
ENSG00000085840	ORC1	Origin recognition complex subunit 1	0.032072
ENSG00000124766	SOX4	SRY-box transcription factor 4	0.032844
ENSG00000160214	RRP1	Ribosomal RNA processing 1	0.032855
ENSG00000065485	PDIA5	Protein disulfide isomerase family A member 5	0.033075
ENSG00000065183	WDR3	WD repeat domain 3	0.033075
ENSG00000134917	ADAMTS8	ADAM metalloproteinase with thrombospondin type 1 motif 8	0.033107
ENSG00000011677	GABRA3	Gamma-aminobutyric acid type A receptor alpha3 subunit	0.033107
ENSG00000165724	ZMYND19	Zinc finger MYND-type containing 19	0.033107
ENSG00000156697	UTP14A	UTP14A small subunit processome component	0.033107
ENSG00000154319	FAM167A	Family with sequence similarity 167 member A	0.033469
ENSG00000138347	MYPN	Myopalladin	0.033855
ENSG00000213585	VDAC1	Voltage dependent anion channel 1	0.033855
ENSG00000177425	PAWR	Pro-apoptotic WT1 regulator	0.033855
ENSG00000103888	CEMP1	Cell migration inducing hyaluronidase 1	0.034194
ENSG00000106511	MEOX2	Mesenchyme homeobox 2	0.034267
ENSG00000205221	VIT	Vitrin	0.034281
ENSG00000170802	FOXN2	Forkhead box N2	0.034281
ENSG00000268089	GABRQ	Gamma-aminobutyric acid type A receptor theta subunit	0.034835
ENSG00000154736	ADAMTS5	ADAM metalloproteinase with thrombospondin type 1 motif 5	0.035587
ENSG00000114850	SSR3	Signal sequence receptor subunit 3	0.036362
ENSG00000136877	FPGS	Folylpolyglutamate synthase	0.036362
ENSG00000122641	INHBA	Inhibin subunit beta A	0.036563
ENSG00000100664	EIF5	Eukaryotic translation initiation factor 5	0.036563
ENSG00000041982	TNC	Tenascin C	0.036947
ENSG00000132359	AC002316.1	RAP1 gtpase activating protein 2	0.037175
ENSG00000148120	AOPEP	Aminopeptidase O (putative)	0.037191
ENSG00000109452	INPP4B	Inositol polyphosphate-4-phosphatase type II B	0.037506
ENSG00000114251	WNT5A	Wnt family member 5A	0.037551
ENSG00000136813	ECPAS	Ecm29 proteasome adaptor and scaffold	0.037611
ENSG00000144233	AMMECR1L	AMMECR1 like	0.037686
ENSG00000220201	ZGLP1	Zinc finger GATA like protein 1	0.037722
ENSG00000145685	LHFPL2	LHFPL tetraspan subfamily member 2	0.038198
ENSG00000105976	MET	MET proto-oncogene, receptor tyrosine kinase	0.038662
ENSG00000165617	DACT1	Dishevelled binding antagonist of beta catenin 1	0.039097
ENSG00000264230	ANXA8L1	Annexin A8 like 1	0.039791
ENSG00000187123	LYPD6	LY6/PLAUR domain containing 6	0.040303
ENSG00000136379	ABHD17C	Abhydrolase domain containing 17C	0.040533
ENSG00000130826	DKC1	Dyskerin pseudouridine synthase 1	0.040533
ENSG00000130204	TOMM40	Translocase of outer mitochondrial membrane 40	0.040533
ENSG00000198912	C1orf174	Chromosome 1 open reading frame 174	0.040542
ENSG00000183098	GPC6	Glypican 6	0.040569
ENSG00000114423	CBLB	Cbl proto-oncogene B	0.040686
ENSG00000175305	CCNE2	Cyclin E2	0.040735
ENSG00000004660	CAMKK1	Calcium/calmodulin dependent protein kinase kinase 1	0.04092

ENSG00000079150	FKBP7	FKBP prolyl isomerase 7	0.040951
ENSG00000138758	SEPTIN11	Septin 11	0.041077
ENSG00000162746	FCRLB	Fc receptor like B	0.041766
ENSG00000124370	MCEE	Methylmalonyl-coa epimerase	0.042041
ENSG00000115414	FN1	Fibronectin 1	0.042709
ENSG00000116761	CTH	Cystathionine gamma-lyase	0.042711
ENSG00000187957	DNER	Delta/notch like EGF repeat containing	0.042711
ENSG00000117143	UAP1	UDP-N-acetylglucosamine pyrophosphorylase 1	0.042711
ENSG00000114450	GNB4	G protein subunit beta 4	0.043143
ENSG00000181788	SIAH2	Siah E3 ubiquitin protein ligase 2	0.043916
ENSG00000173926	MARCHF3	Membrane associated ring-CH-type finger 3	0.044693
ENSG00000171084	FAM86JP	Family with sequence similarity 86 member J, pseudogene	0.044974
ENSG00000173638	SLC19A1	Solute carrier family 19 member 1	0.045964
ENSG00000173898	SPTBN2	Spectrin beta, non-erythrocytic 2	0.046283
ENSG00000113460	BRX1	Biogenesis of ribosomes BRX1	0.046283
ENSG00000166250	CLMP	CXADR like membrane protein	0.046309
ENSG00000185875	THNSL1	Threonine synthase like 1	0.046309
ENSG00000186104	CYP2R1	Cytochrome P450 family 2 subfamily R member 1	0.046329
ENSG00000156502	SUPV3L1	Suv3 like RNA helicase	0.046342
ENSG00000011052	NME1-NME2	NME1-NME2 readthrough	0.046348
ENSG00000119900	OGFRL1	Opioid growth factor receptor like 1	0.047101
ENSG00000164122	ASB5	Ankyrin repeat and SOCS box containing 5	0.047107
ENSG00000176022	B3GALT6	Beta-1,3-galactosyltransferase 6	0.04733
ENSG00000035687	ADSS2	Adenylosuccinate synthase 2	0.047481
ENSG00000066468	FGFR2	Fibroblast growth factor receptor 2	0.047866
ENSG00000273213	H3-2	H3.2 histone (putative)	0.047866
ENSG00000160752	FDPS	Farnesyl diphosphate synthase	0.047866
ENSG00000119950	MXI1	MAX interactor 1, dimerization protein	0.048368
ENSG00000170468	RIOX1	Ribosomal oxygenase 1	0.048644
ENSG00000197498	RPF2	Ribosome production factor 2 homolog	0.049042
ENSG00000105825	TFPI2	Tissue factor pathway inhibitor 2	0.049042
ENSG00000121440	PDZRN3	PDZ domain containing ring finger 3	0.049401
ENSG00000116106	EPHA4	EPH receptor A4	0.049401
ENSG00000170456	DENND5B	DENN domain containing 5B	0.049401
ENSG00000111364	DDX55	DEAD-box helicase 55	0.049401
ENSG00000185730	ZNF696	Zinc finger protein 696	0.049457
ENSG00000171793	CTPS1	CTP synthase 1	0.049457
ENSG00000182985	CADM1	Cell adhesion molecule 1	0.049717
ENSG00000168952	STXBP6	Syntaxin binding protein 6	0.049821

Supplementary Table S4. Statistically significant DEGs derived from a meta-analysis comparing DESeq2 outputs from irradiated and control samples of three datasets [PRJNA421022, PRJNA436999, PRJNA494581].

Ensembl ID	Gene Symbol	Gene Description	Adj. p-Value
Up-Regulated Genes ↑			
ENSG00000124762	CDKN1A	Cyclin dependent kinase inhibitor 1A	1.24E-108
ENSG00000130513	GDF15	Growth differentiation factor 15	1.07E-38
ENSG00000161513	FDXR	Ferredoxin reductase	7.72E-33
ENSG00000164938	TP53INP1	Tumor protein p53 inducible nuclear protein 1	5.26E-29
ENSG00000120889	TNFRSF10B	TNF receptor superfamily member 10b	1.18E-27
ENSG00000163071	SPATA18	Spermatogenesis associated 18	1.45E-25
ENSG00000055163	CYFIP2	Cytoplasmic FMR1 interacting protein 2	1.79E-24
ENSG00000256664	AC025423.2	Ribosomal L24 domain containing 1 (RSL24D1) pseudogene	5.27E-22
ENSG00000135679	MDM2	MDM2 proto-oncogene	1.49E-21
ENSG00000109321	AREG	Amphiregulin	1.86E-21
ENSG00000026103	FAS	Fas cell surface death receptor	1.97E-17
ENSG00000105327	BBC3	BCL2 binding component 3	1.22E-15
ENSG00000173535	TNFRSF10C	TNF receptor superfamily member 10c	5.43E-15
ENSG00000159388	BTG2	BTG anti-proliferation factor 2	6.41E-15
ENSG00000132563	REEP2	Receptor accessory protein 2	6.87E-15
ENSG00000174307	PHLDA3	Pleckstrin homology like domain family A member 3	1.47E-14
ENSG00000080546	SESN1	Sestrin 1	2.06E-13
ENSG00000110900	TSPAN11	Tetraspanin 11	2.86E-13
ENSG00000181026	AEN	Apoptosis enhancing nuclease	2.08E-12
ENSG00000177076	ACER2	Alkaline ceramidase 2	1.54E-11
ENSG00000134574	DDB2	Damage specific DNA binding protein 2	3.93E-11
ENSG00000087088	BAX	BCL2 associated X, apoptosis regulator	4.17E-11
ENSG00000244694	PTCHD4	Patched domain containing 4	4.57E-11
ENSG00000143217	NECTIN4	Nectin cell adhesion molecule 4	7.59E-11
ENSG00000177106	EPS8L2	EPS8 like 2	1.69E-10
ENSG00000154767	XPC	XPC complex subunit, DNA damage recognition and repair factor	9.08E-10
ENSG00000168918	INPP5D	Inositol polyphosphate-5-phosphatase D	1.43E-09
ENSG00000130517	PGPEP1	Pyroglutamyl-peptidase I	2.23E-09
ENSG00000131080	EDA2R	Ectodysplasin A2 receptor	1.96E-08
ENSG00000166592	RRAD	RRAD, Ras related glycolysis inhibitor and calcium channel regulator	2.30E-08
ENSG00000172667	ZMAT3	Zinc finger matrin-type 3	3.68E-08
ENSG00000162490	DRAXIN	Dorsal inhibitory axon guidance protein	3.69E-08
ENSG00000162643	WDR63	WD repeat domain 63	4.68E-08
ENSG00000141232	TOB1	Transducer of ERBB2, 1	4.96E-08
ENSG00000177459	ERICH5	Glutamate rich 5	5.51E-08
ENSG00000196562	SULF2	Sulfatase 2	6.51E-08
ENSG00000104870	FCGRT	Fc fragment of igg receptor and transporter	6.70E-08
ENSG00000135423	GLS2	Glutaminase 2	1.10E-07
ENSG00000112249	ASCC3	Activating signal cointegrator 1 complex subunit 3	1.22E-07
ENSG00000123933	MXD4	MAX dimerization protein 4	1.25E-07
ENSG00000173530	TNFRSF10D	TNF receptor superfamily member 10d	1.78E-07
ENSG00000167107	ACSF2	Acyl-coa synthetase family member 2	1.84E-07

ENSG00000164463	CREBRF	CREB3 regulatory factor	9.14E-07
ENSG00000068745	IP6K2	Inositol hexakisphosphate kinase 2	1.06E-06
ENSG00000105650	PDE4C	Phosphodiesterase 4C	1.35E-06
ENSG00000175938	ORAI3	ORAI calcium release-activated calcium modulator 3	2.07E-06
ENSG00000137975	CLCA2	Chloride channel accessory 2	3.38E-06
ENSG00000104689	TNFRSF10A	TNF receptor superfamily member 10a	4.22E-06
ENSG00000173230	GOLGB1	Golgin B1	4.41E-06
ENSG00000125746	EML2	EMAP like 2	4.83E-06
ENSG00000139112	GABARAPL1	GABA type A receptor associated protein like 1	7.55E-06
ENSG00000164237	CMBL	Carboxymethylenebutenolidase homolog	1.85E-05
ENSG00000135452	TSPAN31	Tetraspanin 31	2.16E-05
ENSG00000173846	PLK3	Polo like kinase 3	3.09E-05
ENSG00000132824	SERINC3	Serine incorporator 3	3.59E-05
ENSG00000185088	RPS27L	Ribosomal protein S27 like	3.88E-05
ENSG00000204219	TCEA3	Transcription elongation factor A3	3.90E-05
ENSG00000042445	RETSAT	Retinol saturase	3.90E-05
ENSG00000001461	NIPAL3	NIPA like domain containing 3	4.99E-05
ENSG00000196975	ANXA4	Annexin A4	5.76E-05
ENSG00000198919	DZIP3	DAZ interacting zinc finger protein 3	7.37E-05
ENSG00000130703	OSBPL2	Oxysterol binding protein like 2	7.75E-05
ENSG00000196814	MVB12B	Multivesicular body subunit 12B	9.89E-05
ENSG00000010030	ETV7	ETS variant transcription factor 7	0.000112
ENSG00000158055	GRHL3	Grainyhead like transcription factor 3	0.000113
ENSG00000105290	APLP1	Amyloid beta precursor like protein 1	0.00012
ENSG00000132793	LPIN3	Lipin 3	0.000134
ENSG00000138166	DUSP5	Dual specificity phosphatase 5	0.000151
ENSG00000244509	APOBEC3C	Apolipoprotein B mRNA editing enzyme catalytic subunit 3C	0.000165
ENSG00000153029	MR1	Major histocompatibility complex, class I-related	0.000166
ENSG00000239713	APOBEC3G	Apolipoprotein B mRNA editing enzyme catalytic subunit 3G	0.00017
ENSG00000172831	CES2	Carboxylesterase 2	0.000172
ENSG00000161896	IP6K3	Inositol hexakisphosphate kinase 3	0.000172
ENSG00000119630	PGF	Placental growth factor	0.000179
ENSG00000188554	NBR1	NBR1 autophagy cargo receptor	0.000189
ENSG00000117461	PIK3R3	Phosphoinositide-3-kinase regulatory subunit 3	0.00022
ENSG00000148660	CAMK2G	Calcium/calmodulin dependent protein kinase II gamma	0.000221
ENSG00000130477	UNC13A	Unc-13 homolog A	0.000226
ENSG00000132274	TRIM22	Tripartite motif containing 22	0.00023
ENSG00000161835	GRASP	General receptor for phosphoinositides 1 associated scaffold protein	0.000236
ENSG00000169429	CXCL8	C-X-C motif chemokine ligand 8	0.000238
ENSG00000173156	RHOD	Ras homolog family member D	0.000258
ENSG00000047346	FAM214A	Family with sequence similarity 214 member A	0.000265
ENSG00000153208	MERTK	MER proto-oncogene, tyrosine kinase	0.00028
ENSG00000116299	KIAA1324	Kiaa1324	0.000295
ENSG00000163346	PBXIP1	PBX homeobox interacting protein 1	0.000296
ENSG00000149809	TM7SF2	Transmembrane 7 superfamily member 2	0.000299
ENSG00000012822	CALCOCO1	Calcium binding and coiled-coil domain 1	0.000304
ENSG00000169760	NLGN1	Neuroigin 1	0.000322
ENSG00000167861	HID1	HID1 domain containing	0.000352

ENSG00000188002	AC026412.1	Programmed cell death 6 (PDCD6) pseudogene	0.000444
ENSG00000166887	VPS39	VPS39 subunit of HOPS complex	0.000459
ENSG00000136378	ADAMTS7	ADAM metallopeptidase with thrombospondin type 1 motif 7	0.000484
ENSG00000060656	PTPRU	Protein tyrosine phosphatase receptor type U	0.00051
ENSG00000175155	YPEL2	Yippee like 2	0.000521
ENSG00000181513	ACBD4	Acyl-coa binding domain containing 4	0.000543
ENSG00000130766	SESN2	Sestrin 2	0.000573
ENSG00000197093	GAL3ST4	Galactose-3-O-sulfotransferase 4	0.0006
ENSG00000131015	ULBP2	UL16 binding protein 2	0.000695
ENSG00000137414	FAM8A1	Family with sequence similarity 8 member A1	0.000705
ENSG00000138271	GPR87	G protein-coupled receptor 87	0.000705
ENSG00000132906	CASP9	Caspase 9	0.000746
ENSG00000189195	BTBD8	BTB domain containing 8	0.000798
ENSG00000043143	JADE2	Jade family PHD finger 2	0.000828
ENSG00000185215	TNFAIP2	TNF alpha induced protein 2	0.000839
ENSG00000146411	SLC2A12	Solute carrier family 2 member 12	0.000899
ENSG00000198753	PLXNB3	Plexin B3	0.000995
ENSG00000232871	SEC1P	Secretory blood group 1, pseudogene	0.000995
ENSG00000167196	FBXO22	F-box protein 22	0.000997
ENSG00000176907	TCIM	Transcriptional and immune response regulator	0.001035
ENSG00000135506	OS9	OS9 endoplasmic reticulum lectin	0.001174
ENSG00000134070	IRAK2	Interleukin 1 receptor associated kinase 2	0.001241
ENSG00000144452	ABCA12	ATP binding cassette subfamily A member 12	0.001241
ENSG00000160469	BRSK1	BR serine/threonine kinase 1	0.001282
ENSG00000085998	POMGNT1	Protein O-linked mannose N-acetylglucosaminyltransferase 1 (beta 1,2-)	0.001319
ENSG00000156671	SAMD8	Sterile alpha motif domain containing 8	0.001324
ENSG00000174684	B4GAT1	Beta-1,4-glucuronyltransferase 1	0.001414
ENSG00000163683	SMIM14	Small integral membrane protein 14	0.00145
ENSG00000142627	EPHA2	EPH receptor A2	0.001464
ENSG00000048392	RRM2B	Ribonucleotide reductase regulatory TP53 inducible subunit M2B	0.001513
ENSG00000184205	TSPYL2	TSPY like 2	0.001563
ENSG00000132879	FBXO44	F-box protein 44	0.001681
ENSG00000196187	TMEM63A	Transmembrane protein 63A	0.001702
ENSG00000185669	SNAI3	Snail family transcriptional repressor 3	0.001744
ENSG00000179163	FUCA1	Alpha-L-fucosidase 1	0.001923
ENSG00000166233	ARIH1	Ariadne RBR E3 ubiquitin protein ligase 1	0.002131
ENSG00000178184	PARD6G	Par-6 family cell polarity regulator gamma	0.002273
ENSG00000197496	SLC2A10	Solute carrier family 2 member 10	0.002423
ENSG00000166311	SMPD1	Sphingomyelin phosphodiesterase 1	0.002441
ENSG00000176531	PHLDB3	Pleckstrin homology like domain family B member 3	0.002467
ENSG00000109323	MANBA	Mannosidase beta	0.002517
ENSG00000125538	IL1B	Interleukin 1 beta	0.002517
ENSG00000115008	IL1A	Interleukin 1 alpha	0.002599
ENSG00000151117	TMEM86A	Transmembrane protein 86A	0.002599
ENSG00000101298	SNPH	Syntaphilin	0.002627
ENSG00000170271	FAXDC2	Fatty acid hydroxylase domain containing 2	0.002631
ENSG00000157150	TIMP4	TIMP metallopeptidase inhibitor 4	0.002757
ENSG00000165861	ZFYVE1	Zinc finger FYVE-type containing 1	0.002785

ENSG00000021826	CPS1	Carbamoyl-phosphate synthase 1	0.002804
ENSG00000188766	SPRED3	Sprouty related EVH1 domain containing 3	0.002817
ENSG00000059122	FLYWCH1	FLYWCH-type zinc finger 1	0.002831
ENSG00000138606	SHF	Src homology 2 domain containing F	0.002851
ENSG00000135828	RNASEL	Ribonuclease L	0.002908
ENSG00000124098	FAM210B	Family with sequence similarity 210 member B	0.002966
ENSG00000148344	PTGES	Prostaglandin E synthase	0.003043
ENSG00000172738	TMEM217	Transmembrane protein 217	0.003065
ENSG00000164331	ANKRA2	Ankyrin repeat family A member 2	0.003113
ENSG00000142459	EVI5L	Ecotropic viral integration site 5 like	0.003197
ENSG00000137207	YIPF3	Yip1 domain family member 3	0.003408
ENSG00000163703	CRELD1	Cysteine rich with EGF like domains 1	0.003548
ENSG00000064687	ABCA7	ATP binding cassette subfamily A member 7	0.003625
ENSG00000160460	AC020929.1	Spectrin beta, non-erythrocytic 4	0.003738
ENSG00000067369	TP53BP1	Tumor protein p53 binding protein 1	0.003938
ENSG00000135709	KIAA0513	Kiaa0513	0.003938
ENSG00000198722	UNC13B	Unc-13 homolog B	0.004119
ENSG00000084764	MAPRE3	Microtubule associated protein RP/EB family member 3	0.004163
ENSG00000163947	ARHGEF3	Rho guanine nucleotide exchange factor 3	0.004163
ENSG00000142687	KIAA0319L	KIAA0319 like	0.004222
ENSG00000146278	PNRC1	Proline rich nuclear receptor coactivator 1	0.004421
ENSG00000103742	IGDCC4	Immunoglobulin superfamily DCC subclass member 4	0.004506
ENSG00000056558	TRAF1	TNF receptor associated factor 1	0.004527
ENSG00000133460	SLC2A11	Solute carrier family 2 member 11	0.004527
ENSG00000196152	ZNF79	Zinc finger protein 79	0.004664
ENSG00000063854	HAGH	Hydroxyacylglutathione hydrolase	0.005015
ENSG00000086544	ITPKC	Inositol-trisphosphate 3-kinase C	0.005288
ENSG00000078237	TIGAR	TP53 induced glycolysis regulatory phosphatase	0.005419
ENSG00000139508	SLC46A3	Solute carrier family 46 member 3	0.005919
ENSG00000170734	POLH	DNA polymerase eta	0.005974
ENSG00000180155	LYNX1	Ly6/neurotoxin 1	0.006029
ENSG00000105204	DYRK1B	Dual specificity tyrosine phosphorylation regulated kinase 1B	0.006123
ENSG00000173214	MFS4B	Major facilitator superfamily domain containing 4B	0.006123
ENSG00000118898	PPL	Periplakin	0.006231
ENSG00000179277	MEIS3P1	Meis homeobox 3 pseudogene 1	0.006423
ENSG00000197429	IPP	Intracisternal A particle-promoted polypeptide	0.006446
ENSG00000127914	AKAP9	A-kinase anchoring protein 9	0.006666
ENSG00000029534	ANK1	Ankyrin 1	0.006967
ENSG00000186866	POFUT2	Protein O-fucosyltransferase 2	0.007011
ENSG00000260300			0.007032
ENSG00000137880	GCHFR	GTP cyclohydrolase I feedback regulator	0.007257
ENSG00000156804	FBXO32	F-box protein 32	0.007462
ENSG00000182580	EPHB3	EPH receptor B3	0.007504
ENSG00000099875	MKNK2	MAPK interacting serine/threonine kinase 2	0.008133
ENSG00000158769	F11R	F11 receptor	0.008233
ENSG00000054148	PHPT1	Phosphohistidine phosphatase 1	0.008371
ENSG00000141504	SAT2	Spermidine/spermine N1-acetyltransferase family member 2	0.00841
ENSG00000143390	RFX5	Regulatory factor X5	0.00841
ENSG00000139266	MARCHF9	Membrane associated ring-CH-type finger 9	0.008567

ENSG00000181045	SLC26A11	Solute carrier family 26 member 11	0.008812
ENSG00000181754	AMIGO1	Adhesion molecule with Ig like domain 1	0.008831
ENSG00000186591	UBE2H	Ubiquitin conjugating enzyme E2 H	0.008957
ENSG00000255112	CHMP1B	Charged multivesicular body protein 1B	0.009272
ENSG00000277639	AC007906.2	Novel protein	0.009577
ENSG00000185339	TCN2	Transcobalamin 2	0.009642
ENSG00000274180	NATD1	N-acetyltransferase domain containing 1	0.01023
ENSG00000088340	FER1L4	Fer-1 like family member 4 (pseudogene)	0.010493
ENSG00000034713	GABARAPL2	GABA type A receptor associated protein like 2	0.010759
ENSG00000158467	AHCYL2	Adenosylhomocysteinase like 2	0.010975
ENSG00000169902	TPST1	Tyrosylprotein sulfotransferase 1	0.010991
ENSG00000136003	ISCU	Iron-sulfur cluster assembly enzyme	0.01108
ENSG00000128394	APOBEC3F	Apolipoprotein B mrna editing enzyme catalytic subunit 3F	0.011326
ENSG00000111269	CREBL2	Camp responsive element binding protein like 2	0.011329
ENSG00000113319	RASGRF2	Ras protein specific guanine nucleotide releasing factor 2	0.011676
ENSG00000139182	CLSTN3	Calsyntenin 3	0.011719
ENSG00000187688	TRPV2	Transient receptor potential cation channel subfamily V member 2	0.012032
ENSG00000168216	LMBRD1	LMBR1 domain containing 1	0.012324
ENSG00000012171	SEMA3B	Semaphorin 3B	0.012916
ENSG00000140463	BBS4	Bardet-Biedl syndrome 4	0.012929
ENSG00000076641	PAG1	Phosphoprotein membrane anchor with glycosphingolipid microdomains 1	0.01297
ENSG00000117533	VAMP4	Vesicle associated membrane protein 4	0.013104
ENSG00000160539	PLPP7	Phospholipid phosphatase 7 (inactive)	0.013293
ENSG00000237094	AL732372.2	Pseudogene similar to part of septin 14 SEPT14	0.013765
ENSG00000175854	SWI5	SWI5 homologous recombination repair protein	0.013831
ENSG00000112343	TRIM38	Tripartite motif containing 38	0.013936
ENSG00000173193	PARP14	Poly(ADP-ribose) polymerase family member 14	0.013936
ENSG00000157954	WIPI2	WD repeat domain, phosphoinositide interacting 2	0.014002
ENSG00000100100	PIK3IP1	Phosphoinositide-3-kinase interacting protein 1	0.014107
ENSG00000166816	LDHD	Lactate dehydrogenase D	0.014434
ENSG00000136874	STX17	Syntaxin 17	0.014483
ENSG00000119508	NR4A3	Nuclear receptor subfamily 4 group A member 3	0.014559
ENSG00000011243	AKAP8L	A-kinase anchoring protein 8 like	0.014597
ENSG00000197892	KIF13B	Kinesin family member 13B	0.014938
ENSG00000163956	LRPAP1	LDL receptor related protein associated protein 1	0.015172
ENSG00000184588	PDE4B	Phosphodiesterase 4B	0.015719
ENSG00000105649	RAB3A	RAB3A, member RAS oncogene family	0.015913
ENSG00000136928	GABBR2	Gamma-aminobutyric acid type B receptor subunit 2	0.015976
ENSG00000087085	ACHE	Acetylcholinesterase (Cartwright blood group)	0.016047
ENSG00000103021	CCDC113	Coiled-coil domain containing 113	0.016057
ENSG00000132256	TRIM5	Tripartite motif containing 5	0.01666
ENSG00000119899	SLC17A5	Solute carrier family 17 member 5	0.01685
ENSG00000137103	TMEM8B	Transmembrane protein 8B	0.017031
ENSG00000065357	DGKA	Diacylglycerol kinase alpha	0.017314
ENSG00000186642	PDE2A	Phosphodiesterase 2A	0.017314
ENSG00000213463	SYNJ2BP	Synaptojanin 2 binding protein	0.017466
ENSG00000283050	GTF2IP12	General transcription factor iii pseudogene 12	0.018207
ENSG00000100577	GSTZ1	Glutathione S-transferase zeta 1	0.018272

ENSG00000121310	ECHDC2	Enoyl-coa hydratase domain containing 2	0.018318
ENSG00000149577	SIDT2	SID1 transmembrane family member 2	0.018318
ENSG00000148541	FAM13C	Family with sequence similarity 13 member C	0.01862
ENSG00000175793	SFN	Stratifin	0.019005
ENSG00000170855	TRIAP1	TP53 regulated inhibitor of apoptosis 1	0.019174
ENSG00000173992	CCS	Copper chaperone for superoxide dismutase	0.019205
ENSG00000161544	CYGB	Cytoglobin	0.019473
ENSG00000168300	PCMTD1	Protein-L-isoaspartate (D-aspartate) O-methyltransferase domain containing 1	0.019636
ENSG00000178607	ERN1	Endoplasmic reticulum to nucleus signaling 1	0.019691
ENSG00000166145	SPINT1	Serine peptidase inhibitor, Kunitz type 1	0.020192
ENSG00000243749	TMEM35B	Transmembrane protein 35B	0.020192
ENSG00000129472	RAB2B	RAB2B, member RAS oncogene family	0.020472
ENSG00000121743	GJA3	Gap junction protein alpha 3	0.021079
ENSG00000124067	SLC12A4	Solute carrier family 12 member 4	0.021132
ENSG00000197302	ZNF720	Zinc finger protein 720	0.021656
ENSG00000115129	TP53I3	Tumor protein p53 inducible protein 3	0.021687
ENSG00000116209	TMEM59	Transmembrane protein 59	0.022305
ENSG00000089847	ANKRD24	Ankyrin repeat domain 24	0.022555
ENSG00000131386	GALNT15	Polypeptide N-acetylgalactosaminyltransferase 15	0.02256
ENSG00000025434	NR1H3	Nuclear receptor subfamily 1 group H member 3	0.022759
ENSG00000076344	RGS11	Regulator of G protein signaling 11	0.022809
ENSG00000213930	GALT	Galactose-1-phosphate uridylyltransferase	0.023225
ENSG00000137145	DENND4C	DENN domain containing 4C	0.023499
ENSG00000100647	SUSD6	Sushi domain containing 6	0.024199
ENSG00000135823	STX6	Syntaxin 6	0.024199
ENSG00000143409	MINDY1	MINDY lysine 48 deubiquitinase 1	0.024199
ENSG00000109103	UNC119	Unc-119 lipid binding chaperone	0.024368
ENSG00000138641	HERC3	HECT and RLD domain containing E3 ubiquitin protein ligase 3	0.025289
ENSG00000172508	CARNS1	Carnosine synthase 1	0.025289
ENSG00000168890	TMEM150A	Transmembrane protein 150A	0.025662
ENSG00000124406	ATP8A1	Atpase phospholipid transporting 8A1	0.025871
ENSG00000170581	STAT2	Signal transducer and activator of transcription 2	0.026216
ENSG00000173221	GLRX	Glutaredoxin	0.026216
ENSG00000165475	CRYL1	Crystallin lambda 1	0.026375
ENSG00000142961	MOB3C	MOB kinase activator 3C	0.026764
ENSG00000114626	ABTB1	Ankyrin repeat and BTB domain containing 1	0.027893
ENSG00000136859	ANGPTL2	Angiopoietin like 2	0.027893
ENSG00000169242	EFNA1	Ephrin A1	0.027893
ENSG00000121671	CRY2	Cryptochrome circadian regulator 2	0.028045
ENSG00000166313	APBB1	Amyloid beta precursor protein binding family B member 1	0.028045
ENSG00000171219	CDC42BPG	CDC42 binding protein kinase gamma	0.028222
ENSG00000137216	TMEM63B	Transmembrane protein 63B	0.028398
ENSG00000169621	APLF	Aprataxin and PNKP like factor	0.028923
ENSG00000285188	AC008397.2	Camp-specific 3',5'-cyclic phosphodiesterase 4C	0.028923
ENSG00000233369	GTF2IP4	General transcription factor iii pseudogene 4	0.029097
ENSG00000105967	TFEC	Transcription factor EC	0.029244
ENSG00000178038	ALS2CL	ALS2 C-terminal like	0.02939
ENSG00000180104	EXOC3	Exocyst complex component 3	0.029588

ENSG00000275066	SYNRG	Synerglin gamma	0.029759
ENSG00000004799	PDK4	Pyruvate dehydrogenase kinase 4	0.030153
ENSG00000114796	KLHL24	Kelch like family member 24	0.030153
ENSG00000159214	CCDC24	Coiled-coil domain containing 24	0.030349
ENSG00000170836	PPM1D	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1D	0.030545
ENSG00000095970	TREM2	Triggering receptor expressed on myeloid cells 2	0.030687
ENSG00000120709	FAM53C	Family with sequence similarity 53 member C	0.031243
ENSG00000166046	TCP11L2	T-complex 11 like 2	0.031243
ENSG00000006282	SPATA20	Spermatogenesis associated 20	0.031382
ENSG00000132510	KDM6B	Lysine demethylase 6B	0.031382
ENSG00000077150	NFKB2	Nuclear factor kappa B subunit 2	0.031713
ENSG00000103485	QPRT	Quinolate phosphoribosyltransferase	0.031822
ENSG00000165272	AQP3	Aquaporin 3 (Gill blood group)	0.031822
ENSG00000250770	AC005865.1	Tetraspanin 11 (TSPAN11) pseudogene	0.031822
ENSG00000189241	TSPYL1	TSPY like 1	0.032148
ENSG00000146232	NFKBIE	NFKB inhibitor epsilon	0.032473
ENSG00000070540	WIPI1	WD repeat domain, phosphoinositide interacting 1	0.03288
ENSG00000167703	SLC43A2	Solute carrier family 43 member 2	0.033852
ENSG00000132623	ANKF1	Ankyrin repeat and EF-hand domain containing 1	0.03404
ENSG00000113328	CCNG1	Cyclin G1	0.034444
ENSG00000231551	AC245100.4	Phosphodiesterase 4D interacting protein (PDE4DIP) pseudogene	0.034817
ENSG00000135525	MAP7	Microtubule associated protein 7	0.035159
ENSG00000240771	ARHGEF25	Rho guanine nucleotide exchange factor 25	0.035159
ENSG00000206561	COLQ	Collagen like tail subunit of asymmetric acetylcholinesterase	0.035684
ENSG00000068912	ERLEC1	Endoplasmic reticulum lectin 1	0.036298
ENSG00000136114	THSD1	Thrombospondin type 1 domain containing 1	0.036754
ENSG00000130363	RSPH3	Radial spoke head 3	0.036873
ENSG00000249624	AP000295.1	Novel protein	0.036873
ENSG00000117305	HMGCL	3-hydroxy-3-methylglutaryl-coa lyase	0.037472
ENSG00000027869	SH2D2A	SH2 domain containing 2A	0.037495
ENSG00000265808	SEC22B	SEC22 homolog B, vesicle trafficking protein (gene/pseudogene)	0.037495
ENSG00000164088	PPM1M	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1M	0.037611
ENSG00000163449	TMEM169	Transmembrane protein 169	0.037789
ENSG00000006283	CACNA1G	Calcium voltage-gated channel subunit alpha1 G	0.037905
ENSG00000106992	AK1	Adenylate kinase 1	0.037905
ENSG00000102981	PARD6A	Par-6 family cell polarity regulator alpha	0.038019
ENSG00000111540	RAB5B	RAB5B, member RAS oncogene family	0.038019
ENSG00000105514	RAB3D	RAB3D, member RAS oncogene family	0.038133
ENSG00000179941	BBS10	Bardet-Biedl syndrome 10	0.038133
ENSG00000138036	DYNC2LI1	Dynein cytoplasmic 2 light intermediate chain 1	0.038215
ENSG00000141295	SCRN2	Secernin 2	0.038215
ENSG00000095066	HOOK2	Hook microtubule tethering protein 2	0.038853
ENSG00000163659	TIPARP	TCDD inducible poly(ADP-ribose) polymerase	0.038853
ENSG00000167971	CASKIN1	CASK interacting protein 1	0.038996
ENSG00000155957	TMBIM4	Transmembrane BAX inhibitor motif containing 4	0.03917
ENSG00000161509	GRIN2C	Glutamate ionotropic receptor NMDA type subunit 2C	0.039518
ENSG00000186814	ZSCAN30	Zinc finger and SCAN domain containing 30	0.039518
ENSG00000158604	TMED4	Transmembrane p24 trafficking protein 4	0.039659

ENSG00000128604	IRF5	Interferon regulatory factor 5	0.040004
ENSG00000111275	ALDH2	Aldehyde dehydrogenase 2 family member	0.040455
ENSG00000128268	MGAT3	Beta-1,4-mannosyl-glycoprotein 4-beta-N-acetylglucosaminyltransferase	0.040455
ENSG00000132471	WBP2	WW domain binding protein 2	0.041276
ENSG00000132849	PATJ	PATJ crumbs cell polarity complex component	0.041276
ENSG00000092758	COL9A3	Collagen type IX alpha 3 chain	0.041615
ENSG00000285976	AL135905.2	Novel protein	0.041751
ENSG00000171174	RBKS	Ribokinase	0.041852
ENSG00000130244	FAM98C	Family with sequence similarity 98 member C	0.041987
ENSG00000138642	HERC6	HECT and RLD domain containing E3 ubiquitin protein ligase family member 6	0.041987
ENSG00000135414	GDF11	Growth differentiation factor 11	0.042155
ENSG00000090238	YPEL3	Yippee like 3	0.042589
ENSG00000126709	IFI6	Interferon alpha inducible protein 6	0.042589
ENSG00000213918	DNASE1	Deoxyribonuclease 1	0.044011
ENSG00000173918	C1QTNF1	C1q and TNF related 1	0.044175
ENSG00000171236	LRG1	Leucine rich alpha-2-glycoprotein 1	0.044503
ENSG00000198208	RPS6KL1	Ribosomal protein S6 kinase like 1	0.044666
ENSG00000167642	SPINT2	Serine peptidase inhibitor, Kunitz type 2	0.044957
ENSG00000171408	PDE7B	Phosphodiesterase 7B	0.046018
ENSG00000167986	DDB1	Damage specific DNA binding protein 1	0.04639
ENSG00000185133	INPP5J	Inositol polyphosphate-5-phosphatase J	0.04639
ENSG00000225511	LINC00475	Long intergenic non-protein coding RNA 475	0.04639
ENSG00000182473	EXOC7	Exocyst complex component 7	0.046477
ENSG00000026950	BTN3A1	Butyrophilin subfamily 3 member A1	0.0466
ENSG00000127125	PPCS	Phosphopantothenoylcysteine synthetase	0.046918
ENSG00000100731	PCNX1	Pecanex 1	0.047392
ENSG00000107537	PHYH	Phytanoyl-coa 2-hydroxylase	0.04767
ENSG00000141376	BCAS3	BCAS3 microtubule associated cell migration factor	0.04767
ENSG00000197872	FAM49A	Family with sequence similarity 49 member A	0.047827
ENSG00000108306	FBXL20	F-box and leucine rich repeat protein 20	0.048222
ENSG00000186994	KANK3	KN motif and ankyrin repeat domains 3	0.048222
ENSG00000088726	TMEM40	Transmembrane protein 40	0.048341
ENSG00000116183	PAPPA2	Pappalysin 2	0.048341
ENSG00000170634	ACYP2	Acyolphosphatase 2	0.048652
ENSG00000239382	ALKBH6	Alkb homolog 6	0.048807
ENSG00000116017	ARID3A	AT-rich interaction domain 3A	0.049079
ENSG00000089486	CDIP1	Cell death inducing p53 target 1	0.049312
ENSG00000167676	PLIN4	Perilipin 4	0.049312
ENSG00000184117	NIPSNAP1	Nipsnap homolog 1	0.049312
ENSG00000250510	GPR162	G protein-coupled receptor 162	0.049772
Down-Regulated Genes↓			
ENSG00000171848	RRM2	Ribonucleotide reductase regulatory subunit M2	2.30E-94
ENSG00000148773	MKI67	Marker of proliferation Ki-67	7.25E-89
ENSG00000189057	FAM111B	Family with sequence similarity 111 member B	2.04E-78
ENSG00000145386	CCNA2	Cyclin A2	7.75E-75
ENSG00000101057	MYBL2	MYB proto-oncogene like 2	2.95E-69
ENSG00000203811	H3C14	H3 clustered histone 14	6.26E-67
ENSG00000174371	EXO1	Exonuclease 1	6.70E-65
ENSG00000166851	PLK1	Polo like kinase 1	1.01E-64

ENSG00000094804	CDC6	Cell division cycle 6	3.12E-61
ENSG00000286522	H3C2	H3 clustered histone 2	1.17E-60
ENSG00000170312	CDK1	Cyclin dependent kinase 1	1.94E-60
ENSG00000143476	DTL	Denticleless E3 ubiquitin protein ligase homolog	7.63E-54
ENSG00000134690	CDCA8	Cell division cycle associated 8	2.75E-53
ENSG00000184357	H1-5	H1.5 linker histone, cluster member	2.63E-52
ENSG00000088325	TPX2	TPX2 microtubule nucleation factor	5.98E-51
ENSG00000121152	NCAPH	Non-SMC condensin I complex subunit H	2.44E-50
ENSG00000146670	CDCA5	Cell division cycle associated 5	2.67E-49
ENSG00000109805	NCAPG	Non-SMC condensin I complex subunit G	7.17E-49
ENSG00000105011	ASF1B	Anti-silencing function 1B histone chaperone	1.12E-48
ENSG00000183856	IQGAP3	IQ motif containing gtpase activating protein 3	1.93E-47
ENSG00000123485	HJURP	Holliday junction recognition protein	4.30E-47
ENSG00000101447	FAM83D	Family with sequence similarity 83 member D	1.08E-45
ENSG00000126787	DLGAP5	DLG associated protein 5	1.41E-45
ENSG00000111665	CDCA3	Cell division cycle associated 3	1.98E-45
ENSG00000175305	CCNE2	Cyclin E2	1.75E-43
ENSG00000093009	CDC45	Cell division cycle 45	6.26E-43
ENSG00000168078	PBK	PDZ binding kinase	6.94E-43
ENSG00000138180	CEP55	Centrosomal protein 55	7.27E-43
ENSG00000065328	MCM10	Minichromosome maintenance 10 replication initiation factor	2.68E-42
ENSG00000178999	AURKB	Aurora kinase B	1.54E-40
ENSG00000198901	PRC1	Protein regulator of cytokinesis 1	7.13E-39
ENSG00000122952	ZWINT	ZW10 interacting kinetochore protein	9.99E-39
ENSG00000186185	KIF18B	Kinesin family member 18B	1.68E-38
ENSG00000169607	CKAP2L	Cytoskeleton associated protein 2 like	2.20E-38
ENSG00000168496	FEN1	Flap structure-specific endonuclease 1	4.87E-38
ENSG00000276043	UHRF1	Ubiquitin like with PHD and ring finger domains 1	6.49E-38
ENSG00000111206	FOXM1	Forkhead box M1	1.52E-37
ENSG00000165304	MELK	Maternal embryonic leucine zipper kinase	2.45E-37
ENSG00000167900	TK1	Thymidine kinase 1	5.48E-37
ENSG00000197153	H3C12	H3 clustered histone 12	9.95E-37
ENSG00000092853	CLSPN	Claspin	1.51E-36
ENSG00000165480	SKA3	Spindle and kinetochore associated complex subunit 3	3.55E-36
ENSG00000112742	TTK	TTK protein kinase	3.72E-36
ENSG00000127564	PKMYT1	Protein kinase, membrane associated tyrosine/threonine 1	6.84E-36
ENSG00000188486	H2AX	H2A.X variant histone	1.31E-35
ENSG00000100297	MCM5	Minichromosome maintenance complex component 5	1.60E-35
ENSG00000137804	NUSAP1	Nucleolar and spindle associated protein 1	5.45E-35
ENSG00000167513	CDT1	Chromatin licensing and DNA replication factor 1	8.21E-35
ENSG00000131153	GINS2	GINS complex subunit 2	1.20E-34
ENSG00000085840	ORC1	Origin recognition complex subunit 1	2.05E-34
ENSG00000111247	RAD51AP1	RAD51 associated protein 1	3.36E-34
ENSG00000071539	TRIP13	Thyroid hormone receptor interactor 13	3.41E-34
ENSG00000161888	SPC24	SPC24 component of NDC80 kinetochore complex	9.15E-34
ENSG00000075218	GTSE1	G2 and S-phase expressed 1	5.62E-33
ENSG00000166803	PCLAF	PCNA clamp associated factor	6.45E-33
ENSG00000161800	RACGAP1	Rac gtpase activating protein 1	6.99E-33
ENSG00000274997	H2AC12	H2A clustered histone 12	8.31E-33
ENSG00000144354	CDCA7	Cell division cycle associated 7	9.53E-33

ENSG00000112029	FBXO5	F-box protein 5	2.47E-32
ENSG00000164104	HMGB2	High mobility group box 2	2.97E-32
ENSG00000198826	ARHGAP11A	Rho gtpase activating protein 11A	7.04E-32
ENSG00000138160	KIF11	Kinesin family member 11	8.98E-32
ENSG00000011426	ANLN	Anillin actin binding protein	1.66E-31
ENSG00000092470	WDR76	WD repeat domain 76	1.98E-31
ENSG00000073111	MCM2	Minichromosome maintenance complex component 2	2.34E-31
ENSG00000024526	DEPDC1	DEP domain containing 1	7.22E-31
ENSG00000113368	LMNB1	Lamin B1	7.23E-31
ENSG00000186871	ERCC6L	ERCC excision repair 6 like, spindle assembly checkpoint helicase	1.41E-30
ENSG00000007968	E2F2	E2F transcription factor 2	1.76E-30
ENSG00000142945	KIF2C	Kinesin family member 2C	1.88E-30
ENSG00000196747	H2AC13	H2A clustered histone 13	5.84E-30
ENSG00000278463	H2AC4	H2A clustered histone 4	5.84E-30
ENSG00000112984	KIF20A	Kinesin family member 20A	1.24E-29
ENSG00000276903	H2AC16	H2A clustered histone 16	2.43E-29
ENSG00000175063	UBE2C	Ubiquitin conjugating enzyme E2 C	2.45E-29
ENSG00000276368	H2AC14	H2A clustered histone 14	1.07E-28
ENSG00000277075	H2AC8	H2A clustered histone 8	2.14E-28
ENSG00000119969	HELLS	Helicase, lymphoid specific	4.73E-28
ENSG00000122966	CIT	Citron rho-interacting serine/threonine kinase	5.85E-28
ENSG00000274641	H2BC17	H2B clustered histone 17	6.07E-28
ENSG00000171241	SHCBP1	SHC binding and spindle associated 1	6.07E-28
ENSG00000131747	TOP2A	DNA topoisomerase II alpha	8.14E-28
ENSG00000143228	NUF2	NUF2 component of NDC80 kinetochore complex	3.49E-27
ENSG00000166508	MCM7	Minichromosome maintenance complex component 7	4.07E-27
ENSG00000278677	H2AC17	H2A clustered histone 17	4.45E-27
ENSG00000101412	E2F1	E2F transcription factor 1	2.24E-26
ENSG00000196787	H2AC11	H2A clustered histone 11	3.45E-26
ENSG00000137807	KIF23	Kinesin family member 23	3.84E-26
ENSG00000138778	CENPE	Centromere protein E	5.78E-26
ENSG00000013810	TACC3	Transforming acidic coiled-coil containing protein 3	1.41E-25
ENSG00000068489	PRR11	Proline rich 11	1.68E-25
ENSG00000183598	H3C13	H3 clustered histone 13	3.24E-25
ENSG00000101003	GIN51	GIN5 complex subunit 1	3.66E-25
ENSG00000282988	AL031777.2	Novel protein	5.24E-25
ENSG00000156970	BUB1B	BUB1 mitotic checkpoint serine/threonine kinase B	1.05E-24
ENSG00000151725	CENPU	Centromere protein U	1.55E-24
ENSG00000171320	ESCO2	Establishment of sister chromatid cohesion N-acetyltransferase 2	2.27E-24
ENSG00000162073	PAQR4	Progesterin and adipopo receptor family member 4	2.80E-24
ENSG00000165490	DDIAS	DNA damage induced apoptosis suppressor	2.99E-24
ENSG00000169679	BUB1	BUB1 mitotic checkpoint serine/threonine kinase	3.74E-24
ENSG00000144554	FANCD2	FA complementation group D2	5.20E-24
ENSG00000186193	SAPCD2	Suppressor APC domain containing 2	6.28E-24
ENSG00000117650	NEK2	NIMA related kinase 2	1.26E-23
ENSG00000120802	TMPO	Thymopoietin	1.64E-23
ENSG00000164109	MAD2L1	Mitotic arrest deficient 2 like 1	2.63E-23
ENSG00000167670	CHAF1A	Chromatin assembly factor 1 subunit A	5.68E-23
ENSG00000112118	MCM3	Minichromosome maintenance complex component 3	6.03E-23

ENSG0000051180	RAD51	RAD51 recombinase	2.39E-22
ENSG00000159259	CHAF1B	Chromatin assembly factor 1 subunit B	2.60E-22
ENSG00000134057	CCNB1	Cyclin B1	2.75E-22
ENSG00000077152	UBE2T	Ubiquitin conjugating enzyme E2 T	4.31E-22
ENSG00000129195	PIMREG	PICALM interacting mitotic regulator	8.03E-22
ENSG00000168298	H1-4	H1.4 linker histone, cluster member	8.99E-22
ENSG00000133119	RFC3	Replication factor C subunit 3	1.12E-21
ENSG00000090889	KIF4A	Kinesin family member 4A	1.58E-21
ENSG00000165244	ZNF367	Zinc finger protein 367	3.38E-21
ENSG00000100162	CENPM	Centromere protein M	3.45E-21
ENSG00000187741	FANCA	FA complementation group A	3.48E-21
ENSG00000117399	CDC20	Cell division cycle 20	3.77E-21
ENSG00000160957	RECQL4	Recq like helicase 4	3.89E-21
ENSG00000066279	ASPM	Abnormal spindle microtubule assembly	4.69E-21
ENSG00000162063	CCNF	Cyclin F	4.71E-21
ENSG00000076003	MCM6	Minichromosome maintenance complex component 6	7.70E-21
ENSG00000142731	PLK4	Polo like kinase 4	1.03E-20
ENSG00000185130	H2BC13	H2B clustered histone 13	1.15E-20
ENSG00000136982	DSCC1	DNA replication and sister chromatid cohesion 1	1.50E-20
ENSG00000101868	POLA1	DNA polymerase alpha 1, catalytic subunit	1.54E-20
ENSG00000146918	NCAPG2	Non-SMC condensin II complex subunit G2	2.66E-20
ENSG00000117724	CENPF	Centromere protein F	2.84E-20
ENSG00000135451	TROAP	Trophinin associated protein	3.97E-20
ENSG00000014138	POLA2	DNA polymerase alpha 2, accessory subunit	9.02E-20
ENSG00000124635	H2BC11	H2B clustered histone 11	1.12E-19
ENSG00000170779	CDCA4	Cell division cycle associated 4	1.23E-19
ENSG00000164087	POC1A	POC1 centriolar protein A	1.54E-19
ENSG00000177602	HASPIN	Histone H3 associated protein kinase	2.14E-19
ENSG00000123219	CENPK	Centromere protein K	3.12E-19
ENSG00000277157	H4C4	H4 clustered histone 4	6.95E-19
ENSG00000140534	TICRR	TOPBP1 interacting checkpoint and replication regulator	7.84E-19
ENSG00000183688	RFLNB	Refilin B	8.48E-19
ENSG00000124575	H1-3	H1.3 linker histone, cluster member	1.25E-18
ENSG00000213347	MXD3	MAX dimerization protein 3	1.28E-18
ENSG00000080986	NDC80	NDC80 kinetochore complex component	1.35E-18
ENSG00000270882	H4C14	H4 clustered histone 14	1.91E-18
ENSG00000164611	PTTG1	PTTG1 regulator of sister chromatid separation, securin	2.39E-18
ENSG00000107562	CXCL12	C-X-C motif chemokine ligand 12	3.10E-18
ENSG00000187837	H1-2	H1.2 linker histone, cluster member	3.36E-18
ENSG00000135476	ESPL1	Extra spindle pole bodies like 1, separase	4.99E-18
ENSG00000089685	BIRC5	Baculoviral IAP repeat containing 5	5.82E-18
ENSG00000131470	PSMC3IP	PSMC3 interacting protein	7.30E-18
ENSG00000228716	DHFR	Dihydrofolate reductase	8.64E-18
ENSG00000157456	CCNB2	Cyclin B2	9.65E-18
ENSG00000129810	SGO1	Shugoshin 1	1.06E-17
ENSG00000167325	RRM1	Ribonucleotide reductase catalytic subunit M1	1.59E-17
ENSG00000176890	TYMS	Thymidylate synthetase	1.72E-17
ENSG00000121211	MND1	Meiotic nuclear divisions 1	1.92E-17
ENSG00000273983	H3C8	H3 clustered histone 8	2.20E-17
ENSG00000111602	TIMELESS	Timeless circadian regulator	2.28E-17
ENSG00000137812	KNL1	Kinetochore scaffold 1	2.46E-17

ENSG00000184270	H2AC21	H2A clustered histone 21	2.53E-17
ENSG00000275714	H3C1	H3 clustered histone 1	7.46E-17
ENSG00000139618	BRCA2	BRCA2 DNA repair associated	8.24E-17
ENSG00000109674	NEIL3	Nei like DNA glycosylase 3	1.13E-16
ENSG00000136492	BRIP1	BRCA1 interacting protein C-terminal helicase 1	1.15E-16
ENSG00000164045	CDC25A	Cell division cycle 25A	1.28E-16
ENSG00000163918	RFC4	Replication factor C subunit 4	2.26E-16
ENSG00000076248	UNG	Uracil DNA glycosylase	3.57E-16
ENSG00000149636	DSN1	DSN1 component of MIS12 kinetochore complex	5.60E-16
ENSG00000153044	CENPH	Centromere protein H	6.65E-16
ENSG00000273802	H2BC8	H2B clustered histone 8	1.09E-15
ENSG00000277224	H2BC7	H2B clustered histone 7	1.09E-15
ENSG00000035499	DEPDC1B	DEP domain containing 1B	1.15E-15
ENSG00000198056	PRIM1	DNA primase subunit 1	1.70E-15
ENSG00000275379	H3C11	H3 clustered histone 11	1.97E-15
ENSG00000158402	CDC25C	Cell division cycle 25C	2.38E-15
ENSG00000237649	KIFC1	Kinesin family member C1	3.18E-15
ENSG00000106462	EZH2	Enhancer of zeste 2 polycomb repressive complex 2 subunit	5.05E-15
ENSG00000138092	CENPO	Centromere protein O	5.43E-15
ENSG00000198554	WDHD1	WD repeat and HMG-box DNA binding protein 1	5.67E-15
ENSG00000272196	H2AC19	H2A clustered histone 19	5.90E-15
ENSG00000104147	OIP5	Opa interacting protein 5	5.95E-15
ENSG00000137310	TCF19	Transcription factor 19	6.65E-15
ENSG00000197299	BLM	BLM recq like helicase	8.18E-15
ENSG00000113810	SMC4	Structural maintenance of chromosomes 4	9.62E-15
ENSG00000180198	RCC1	Regulator of chromosome condensation 1	1.04E-14
ENSG00000123080	CDKN2C	Cyclin dependent kinase inhibitor 2C	1.33E-14
ENSG00000277775	H3C7	H3 clustered histone 7	1.50E-14
ENSG00000076382	SPAG5	Sperm associated antigen 5	1.53E-14
ENSG00000118193	KIF14	Kinesin family member 14	1.89E-14
ENSG00000163808	KIF15	Kinesin family member 15	1.89E-14
ENSG00000164032	H2AZ1	H2A.Z variant histone 1	1.89E-14
ENSG00000166845	C18orf54	Chromosome 18 open reading frame 54	2.02E-14
ENSG00000184260	H2AC20	H2A clustered histone 20	3.18E-14
ENSG00000156802	ATAD2	Atpase family AAA domain containing 2	5.01E-14
ENSG00000140525	FANCI	FA complementation group I	6.04E-14
ENSG00000221829	FANCG	FA complementation group G	8.53E-14
ENSG00000175643	RMI2	Recq mediated genome instability 2	9.02E-14
ENSG00000182010	RTKN2	Rhotekin 2	1.31E-13
ENSG00000182481	KPNA2	Karyopherin subunit alpha 2	1.72E-13
ENSG00000196866	H2AC7	H2A clustered histone 7	2.23E-13
ENSG00000125885	MCM8	Minichromosome maintenance 8 homologous recombination repair factor	2.38E-13
ENSG00000117632	STMN1	Stathmin 1	2.42E-13
ENSG00000278588	H2BC10	H2B clustered histone 10	2.86E-13
ENSG00000097046	CDC7	Cell division cycle 7	2.97E-13
ENSG00000180596	H2BC4	H2B clustered histone 4	3.02E-13
ENSG00000102384	CENPI	Centromere protein I	4.38E-13
ENSG00000278828	H3C10	H3 clustered histone 10	7.44E-13
ENSG00000158164	TMSB15A	Thymosin beta 15a	7.54E-13

ENSG00000101945	SUV39H1	Suppressor of variegation 3-9 homolog 1	1.33E-12
ENSG00000112312	GMNN	Geminin DNA replication inhibitor	1.43E-12
ENSG00000138182	KIF20B	Kinesin family member 20B	1.65E-12
ENSG00000213551	DNAJC9	Dnaj heat shock protein family (Hsp40) member C9	2.02E-12
ENSG00000145604	SKP2	S-phase kinase associated protein 2	3.11E-12
ENSG00000273703	H2BC14	H2B clustered histone 14	3.32E-12
ENSG00000127423	AUNIP	Aurora kinase A and ninein interacting protein	3.37E-12
ENSG00000126215	XRCC3	X-ray repair cross complementing 3	3.75E-12
ENSG00000115163	CENPA	Centromere protein A	5.97E-12
ENSG00000174442	ZWILCH	Zwilch kinetochore protein	5.97E-12
ENSG00000167747	C19orf48	Chromosome 19 open reading frame 48	7.20E-12
ENSG00000149554	CHEK1	Checkpoint kinase 1	1.25E-11
ENSG00000168393	DTYMK	Deoxythymidylate kinase	1.47E-11
ENSG00000108106	UBE2S	Ubiquitin conjugating enzyme E2 S	1.47E-11
ENSG00000173207	CKS1B	CDC28 protein kinase regulatory subunit 1B	1.47E-11
ENSG00000123473	STIL	STIL centriolar assembly protein	1.56E-11
ENSG00000160447	PKN3	Protein kinase N3	1.68E-11
ENSG00000171208	NETO2	Neuropilin and tolloid like 2	2.13E-11
ENSG00000118655	DCLRE1B	DNA cross-link repair 1B	2.26E-11
ENSG00000149503	INCENP	Inner centromere protein	2.33E-11
ENSG00000162607	USP1	Ubiquitin specific peptidase 1	3.63E-11
ENSG00000186638	KIF24	Kinesin family member 24	3.85E-11
ENSG00000128245	YWHAH	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein eta	6.10E-11
ENSG00000136122	BORA	BORA aurora kinase A activator	7.18E-11
ENSG00000185480	PARPBP	PARP1 binding protein	7.52E-11
ENSG00000197238	H4C11	H4 clustered histone 11	8.01E-11
ENSG00000179750	APOBEC3B	Apolipoprotein B mma editing enzyme catalytic subunit 3B	8.52E-11
ENSG00000163507	CIP2A	Cell proliferation regulating inhibitor of protein phosphatase 2A	9.26E-11
ENSG00000196584	XRCC2	X-ray repair cross complementing 2	9.26E-11
ENSG00000160949	TONSL	Tonsoku like, DNA repair protein	9.37E-11
ENSG00000121621	KIF18A	Kinesin family member 18A	9.38E-11
ENSG00000197061	H4C3	H4 clustered histone 3	9.76E-11
ENSG00000051341	POLQ	DNA polymerase theta	1.04E-10
ENSG00000197903	H2BC12	H2B clustered histone 12	1.05E-10
ENSG00000111445	RFC5	Replication factor C subunit 5	1.15E-10
ENSG00000134222	PSRC1	Proline and serine rich coiled-coil 1	1.16E-10
ENSG00000104738	MCM4	Minichromosome maintenance complex component 4	1.47E-10
ENSG00000128973	CLN6	CLN6 transmembrane ER protein	1.49E-10
ENSG00000129173	E2F8	E2F transcription factor 8	1.58E-10
ENSG00000158373	H2BC5	H2B clustered histone 5	1.67E-10
ENSG00000121957	GPSM2	G protein signaling modulator 2	1.68E-10
ENSG00000161547	SRSF2	Serine and arginine rich splicing factor 2	1.80E-10
ENSG00000120539	MASTL	Microtubule associated serine/threonine kinase like	2.28E-10
ENSG00000159055	MIS18A	MIS18 kinetochore protein A	2.38E-10
ENSG00000104889	RNASEH2A	Ribonuclease H2 subunit A	2.45E-10
ENSG00000128951	DUT	Deoxyuridine triphosphatase	3.76E-10
ENSG00000198176	TFDP1	Transcription factor Dp-1	4.37E-10
ENSG00000278637	H4C1	H4 clustered histone 1	4.53E-10

ENSG00000079616	KIF22	Kinesin family member 22	4.55E-10
ENSG00000109084	TMEM97	Transmembrane protein 97	4.78E-10
ENSG00000105486	LIG1	DNA ligase 1	4.81E-10
ENSG00000203814	H2BC18	H2B clustered histone 18	5.42E-10
ENSG00000285920	AC087721.2	Novel protein	5.58E-10
ENSG00000101224	CDC25B	Cell division cycle 25B	5.63E-10
ENSG00000099901	RANBP1	RAN binding protein 1	6.39E-10
ENSG00000203760	CENPW	Centromere protein W	6.76E-10
ENSG00000184445	KNTC1	Kinetochores associated 1	7.70E-10
ENSG00000100479	POLE2	DNA polymerase epsilon 2, accessory subunit	8.85E-10
ENSG00000148019	CEP78	Centrosomal protein 78	9.22E-10
ENSG00000013573	DDX11	DEAD/H-box helicase 11	1.06E-09
ENSG00000100629	CEP128	Centrosomal protein 128	1.23E-09
ENSG00000146674	IGFBP3	Insulin like growth factor binding protein 3	1.23E-09
ENSG00000234289	H2BS1	H2B.S histone 1	1.28E-09
ENSG00000154678	PDE1C	Phosphodiesterase 1C	1.44E-09
ENSG00000176619	LMNB2	Lamin B2	1.45E-09
ENSG00000164649	CDCA7L	Cell division cycle associated 7 like	2.01E-09
ENSG00000147536	GINS4	GINS complex subunit 4	2.02E-09
ENSG00000100714	MTHFD1	Methylenetetrahydrofolate dehydrogenase, cyclohydrolase and formyltetrahydrofolate synthetase 1	2.27E-09
ENSG00000275591	XKR5	XK related 5	2.70E-09
ENSG00000119333	WDR34	WD repeat domain 34	3.51E-09
ENSG00000146263	MMS22L	MMS22 like, DNA repair protein	3.83E-09
ENSG00000146410	MTRF2	Mitochondrial fission regulator 2	4.03E-09
ENSG00000077514	POLD3	DNA polymerase delta 3, accessory subunit	6.49E-09
ENSG00000101361	NOP56	NOP56 ribonucleoprotein	7.16E-09
ENSG00000107796	ACTA2	Actin alpha 2, smooth muscle	7.16E-09
ENSG00000124795	DEK	DEK proto-oncogene	8.42E-09
ENSG00000284946	AC068831.8	Novel protein	1.23E-08
ENSG00000115687	PASK	PAS domain containing serine/threonine kinase	1.34E-08
ENSG00000138376	BARD1	BRCA1 associated RING domain 1	1.43E-08
ENSG00000123737	EXOSC9	Exosome component 9	1.49E-08
ENSG00000172244	C5orf34	Chromosome 5 open reading frame 34	1.57E-08
ENSG00000092969	TGFB2	Transforming growth factor beta 2	1.70E-08
ENSG00000160298	C21orf58	Chromosome 21 open reading frame 58	1.70E-08
ENSG00000049541	RFC2	Replication factor C subunit 2	1.91E-08
ENSG00000176974	SHMT1	Serine hydroxymethyltransferase 1	2.07E-08
ENSG00000139354	GAS2L3	Growth arrest specific 2 like 3	2.10E-08
ENSG00000062822	POLD1	DNA polymerase delta 1, catalytic subunit	2.74E-08
ENSG00000132436	FIGNL1	Fidgetin like 1	3.69E-08
ENSG00000100749	VRK1	VRK serine/threonine kinase 1	4.01E-08
ENSG00000187123	LYPD6	LY6/PLAUR domain containing 6	4.25E-08
ENSG00000275713	H2BC9	H2B clustered histone 9	4.49E-08
ENSG00000186767	SPIN4	Spindlin family member 4	4.97E-08
ENSG00000151849	CENPJ	Centromere protein J	5.97E-08
ENSG00000177084	POLE	DNA polymerase epsilon, catalytic subunit	6.10E-08
ENSG00000091651	ORC6	Origin recognition complex subunit 6	6.47E-08
ENSG00000154146	NRGN	Neurogranin	7.63E-08
ENSG00000278705	H4C2	H4 clustered histone 2	7.75E-08
ENSG00000189403	HMGB1	High mobility group box 1	7.95E-08

ENSG00000137563	GGH	Gamma-glutamyl hydrolase	8.73E-08
ENSG00000135763	URB2	URB2 ribosome biogenesis homolog	8.85E-08
ENSG00000158406	H4C8	H4 clustered histone 8	9.41E-08
ENSG00000187514	PTMA	Prothymosin alpha	9.89E-08
ENSG00000214826	DDX12P	DEAD/H-box helicase 12, pseudogene	1.18E-07
ENSG00000274750	H3C6	H3 clustered histone 6	1.38E-07
ENSG00000274290	H2BC6	H2B clustered histone 6	1.39E-07
ENSG00000117877	CD3EAP	CD3e molecule associated protein	1.41E-07
ENSG00000131351	HAUS8	HAUS augmin like complex subunit 8	1.46E-07
ENSG00000154920	EME1	Essential meiotic structure-specific endonuclease 1	1.48E-07
ENSG00000178409	BEND3	BEN domain containing 3	1.61E-07
ENSG00000179431	FJX1	Four-jointed box kinase 1	1.71E-07
ENSG00000137135	ARHGEF39	Rho guanine nucleotide exchange factor 39	1.93E-07
ENSG00000162062	TEDC2	Tubulin epsilon and delta complex 2	2.23E-07
ENSG00000109861	CTSC	Cathepsin C	2.43E-07
ENSG00000101773	RBBP8	RB binding protein 8, endonuclease	2.45E-07
ENSG00000124610	H1-1	H1.1 linker histone, cluster member	2.57E-07
ENSG00000123374	CDK2	Cyclin dependent kinase 2	2.68E-07
ENSG00000259316	AC087632.2	Novel protein	3.26E-07
ENSG00000166451	CENPN	Centromere protein N	3.70E-07
ENSG00000168411	RFWD3	Ring finger and WD repeat domain 3	3.78E-07
ENSG00000137124	ALDH1B1	Aldehyde dehydrogenase 1 family member B1	3.92E-07
ENSG00000156398	SFXN2	Sideroflexin 2	4.08E-07
ENSG00000178966	RMI1	Recq mediated genome instability 1	4.34E-07
ENSG00000101938	CHRDL1	Chordin like 1	4.68E-07
ENSG00000123213	NLN	Neurolysin	4.94E-07
ENSG00000085999	RAD54L	RAD54 like	6.27E-07
ENSG00000213186	TRIM59	Tripartite motif containing 59	7.59E-07
ENSG00000159147	DONSON	Downstream neighbor of SON	7.83E-07
ENSG00000233822	H2BC15	H2B clustered histone 15	8.01E-07
ENSG00000181588	MEX3D	Mex-3 RNA binding family member D	8.26E-07
ENSG00000123416	TUBA1B	Tubulin alpha 1b	8.37E-07
ENSG00000006634	DBF4	DBF4 zinc finger	8.41E-07
ENSG00000163950	SLBP	Stem-loop binding protein	8.46E-07
ENSG00000166801	FAM111A	Family with sequence similarity 111 member A	9.14E-07
ENSG00000275221	H2AC15	H2A clustered histone 15	9.77E-07
ENSG00000205208	C4orf46	Chromosome 4 open reading frame 46	9.94E-07
ENSG00000259781	HMGB1P6	High mobility group box 1 pseudogene 6	1.11E-06
ENSG00000128050	PAICS	Phosphoribosylaminoimidazole carboxylase and phosphoribosylaminoimidazolesuccinocarboxamide synthase	1.19E-06
ENSG00000095002	MSH2	Muts homolog 2	1.19E-06
ENSG00000172197	MBOAT1	Membrane bound O-acyltransferase domain containing 1	1.29E-06
ENSG00000180914	OXTR	Oxytocin receptor	1.29E-06
ENSG00000156136	DCK	Deoxycytidine kinase	1.32E-06
ENSG00000127586	CHTF18	Chromosome transmission fidelity factor 18	1.44E-06
ENSG00000005189	REXO5	RNA exonuclease 5	1.52E-06
ENSG00000120334	CENPL	Centromere protein L	1.58E-06
ENSG00000125450	NUP85	Nucleoporin 85	1.79E-06
ENSG00000171793	CTPS1	CTP synthase 1	1.80E-06
ENSG00000171791	BCL2	BCL2 apoptosis regulator	2.08E-06

ENSG00000213853	EMP2	Epithelial membrane protein 2	2.15E-06
ENSG00000105974	CAV1	Caveolin 1	2.16E-06
ENSG00000183287	CCBE1	Collagen and calcium binding EGF domains 1	2.34E-06
ENSG00000129534	MIS18BP1	MIS18 binding protein 1	2.36E-06
ENSG00000103995	CEP152	Centrosomal protein 152	2.41E-06
ENSG00000129038	LOXL1	Lysyl oxidase like 1	2.49E-06
ENSG00000127863	TNFRSF19	TNF receptor superfamily member 19	2.72E-06
ENSG00000149929	HIRIP3	HIRA interacting protein 3	2.72E-06
ENSG00000137054	POLR1E	RNA polymerase I subunit E	2.94E-06
ENSG00000025770	NCAPH2	Non-SMC condensin II complex subunit H2	2.98E-06
ENSG00000275126	H4C13	H4 clustered histone 13	3.15E-06
ENSG00000172687	ZNF738	Zinc finger protein 738	3.41E-06
ENSG00000134986	NREP	Neuronal regeneration related protein	3.42E-06
ENSG00000145861	C1QTNF2	C1q and TNF related 2	4.42E-06
ENSG00000197275	RAD54B	RAD54 homolog B	4.72E-06
ENSG00000100504	PYGL	Glycogen phosphorylase L	4.74E-06
ENSG00000115875	SRSF7	Serine and arginine rich splicing factor 7	4.90E-06
ENSG00000197771	MCMBP	Minichromosome maintenance complex binding protein	5.79E-06
ENSG00000146143	PRIM2	DNA primase subunit 2	5.84E-06
ENSG00000080839	RBL1	RB transcriptional corepressor like 1	6.04E-06
ENSG00000165501	LRR1	Leucine rich repeat protein 1	6.04E-06
ENSG00000113569	NUP155	Nucleoporin 155	6.15E-06
ENSG00000165891	E2F7	E2F transcription factor 7	7.59E-06
ENSG00000111581	NUP107	Nucleoporin 107	7.86E-06
ENSG00000125485	DDX31	DEAD-box helicase 31	8.25E-06
ENSG00000000460	C1orf112	Chromosome 1 open reading frame 112	1.05E-05
ENSG00000154839	SKA1	Spindle and kinetochore associated complex subunit 1	1.07E-05
ENSG00000115159	GPD2	Glycerol-3-phosphate dehydrogenase 2	1.10E-05
ENSG00000106628	POLD2	DNA polymerase delta 2, accessory subunit	1.11E-05
ENSG00000197472	ZNF695	Zinc finger protein 695	1.14E-05
ENSG00000070950	RAD18	RAD18 E3 ubiquitin protein ligase	1.14E-05
ENSG00000164687	FABP5	Fatty acid binding protein 5	1.19E-05
ENSG00000168405	CMAHP	Cytidine monophospho-N-acetylneuraminic acid hydroxylase, pseudogene	1.20E-05
ENSG00000166881	NEMP1	Nuclear envelope integral membrane protein 1	1.20E-05
ENSG00000284491	THSD8	Thrombospondin type 1 domain containing 8	1.22E-05
ENSG00000120437	ACAT2	Acetyl-coa acetyltransferase 2	1.31E-05
ENSG00000213024	NUP62	Nucleoporin 62	1.31E-05
ENSG00000123136	DDX39A	Dexd-box helicase 39A	1.34E-05
ENSG00000148229	POLE3	DNA polymerase epsilon 3, accessory subunit	1.36E-05
ENSG00000163781	TOPBP1	DNA topoisomerase II binding protein 1	1.56E-05
ENSG00000136824	SMC2	Structural maintenance of chromosomes 2	1.66E-05
ENSG00000170017	ALCAM	Activated leukocyte cell adhesion molecule	1.95E-05
ENSG00000173894	CBX2	Chromobox 2	1.95E-05
ENSG00000099194	SCD	Stearoyl-coa desaturase	1.95E-05
ENSG00000132341	RAN	RAN, member RAS oncogene family	1.95E-05
ENSG00000181751	C5orf30	Chromosome 5 open reading frame 30	1.95E-05
ENSG00000040275	SPDL1	Spindle apparatus coiled-coil protein 1	1.96E-05
ENSG00000134775	FHOD3	Formin homology 2 domain containing 3	1.97E-05
ENSG00000123975	CKS2	CDC28 protein kinase regulatory subunit 2	2.26E-05
ENSG00000031691	CENPQ	Centromere protein Q	2.27E-05

ENSG00000132646	PCNA	Proliferating cell nuclear antigen	2.40E-05
ENSG00000149136	SSRP1	Structure specific recognition protein 1	2.40E-05
ENSG00000197451	HNRNPAB	Heterogeneous nuclear ribonucleoprotein A/B	2.40E-05
ENSG00000175183	CSRP2	Cysteine and glycine rich protein 2	2.48E-05
ENSG00000132661	NXT1	Nuclear transport factor 2 like export factor 1	2.94E-05
ENSG00000183496	MEX3B	Mex-3 RNA binding family member B	3.01E-05
ENSG00000104356	POP1	POP1 homolog, ribonuclease P/MRP subunit	3.05E-05
ENSG00000116774	OLFML3	Olfactomedin like 3	3.18E-05
ENSG00000184162	NR2C2AP	Nuclear receptor 2C2 associated protein	3.29E-05
ENSG00000143179	UCK2	Uridine-cytidine kinase 2	3.74E-05
ENSG00000135549	PKIB	Camp-dependent protein kinase inhibitor beta	3.79E-05
ENSG00000135045	C9orf40	Chromosome 9 open reading frame 40	3.81E-05
ENSG00000136518	ACTL6A	Actin like 6A	3.95E-05
ENSG00000119285	HEATR1	HEAT repeat containing 1	4.09E-05
ENSG00000112081	SRSF3	Serine and arginine rich splicing factor 3	4.67E-05
ENSG00000072571	HMMR	Hyaluronan mediated motility receptor	4.71E-05
ENSG00000074800	ENO1	Enolase 1	4.82E-05
ENSG00000115648	MLPH	Melanophilin	5.09E-05
ENSG00000103495	MAZ	MYC associated zinc finger protein	5.27E-05
ENSG00000164125	GASK1B	Golgi associated kinase 1B	5.68E-05
ENSG00000160352	ZNF714	Zinc finger protein 714	5.72E-05
ENSG00000124207	CSE1L	Chromosome segregation 1 like	5.80E-05
ENSG00000120158	RCL1	RNA terminal phosphate cyclase like 1	5.94E-05
ENSG00000116679	IVNS1ABP	Influenza virus NS1A binding protein	6.04E-05
ENSG00000184897	H1-10	H1.10 linker histone	6.18E-05
ENSG00000176208	ATAD5	Atpase family AAA domain containing 5	6.32E-05
ENSG00000162909	CAPN2	Calpain 2	6.46E-05
ENSG00000076770	MBNL3	Muscleblind like splicing regulator 3	7.56E-05
ENSG00000127337	YEATS4	YEATS domain containing 4	8.03E-05
ENSG00000101911	PRPS2	Phosphoribosyl pyrophosphate synthetase 2	8.10E-05
ENSG00000158427	TMSB15B	Thymosin beta 15B	8.10E-05
ENSG00000143815	LBR	Lamin B receptor	8.19E-05
ENSG00000168672	LRATD2	LRAT domain containing 2	8.58E-05
ENSG00000170540	ARL6IP1	ADP ribosylation factor like gtpase 6 interacting protein 1	9.16E-05
ENSG00000249115	HAUS5	HAUS augmin like complex subunit 5	9.19E-05
ENSG00000134291	TMEM106C	Transmembrane protein 106C	9.68E-05
ENSG00000164105	SAP30	Sin3A associated protein 30	9.76E-05
ENSG00000058804	NDC1	NDC1 transmembrane nucleoporin	9.97E-05
ENSG00000156876	SASS6	SAS-6 centriolar assembly protein	1.00E-04
ENSG00000276966	H4C5	H4 clustered histone 5	0.000109
ENSG00000125319	HROB	Homologous recombination factor with OB-fold	0.000119
ENSG00000185760	KCNQ5	Potassium voltage-gated channel subfamily Q member 5	0.00012
ENSG00000029993	HMGB3	High mobility group box 3	0.000128
ENSG00000122870	BICC1	Bicc family RNA binding protein 1	0.000143
ENSG00000125384	PTGER2	Prostaglandin E receptor 2	0.00015
ENSG00000053372	MRTO4	MRT4 homolog, ribosome maturation factor	0.000162
ENSG00000120658	ENOX1	Ecto-NOX disulfide-thiol exchanger 1	0.000179
ENSG00000079462	PAFAH1B3	Platelet activating factor acetylhydrolase 1b catalytic subunit 3	0.000181
ENSG00000117519	CNN3	Calponin 3	0.000191
ENSG00000114999	TTL	Tubulin tyrosine ligase	0.000191

ENSG00000115380	EFEMP1	EGF containing fibulin extracellular matrix protein 1	0.000193
ENSG00000072041	SLC6A15	Solute carrier family 6 member 15	0.000196
ENSG00000061337	LZTS1	Leucine zipper tumor suppressor 1	0.000196
ENSG00000126453	BCL2L12	BCL2 like 12	0.000197
ENSG00000012963	UBR7	Ubiquitin protein ligase E3 component n-recognin 7 (putative)	0.000201
ENSG00000100526	CDKN3	Cyclin dependent kinase inhibitor 3	0.000204
ENSG00000169258	GPRIN1	G protein regulated inducer of neurite outgrowth 1	0.000204
ENSG00000147202	DIAPH2	Diaphanous related formin 2	0.00021
ENSG00000184635	ZNF93	Zinc finger protein 93	0.000221
ENSG00000196230	TUBB	Tubulin beta class I	0.000234
ENSG00000170264	FAM161A	FAM161 centrosomal protein A	0.000257
ENSG00000137814	HAUS2	HAUS augmin like complex subunit 2	0.00026
ENSG00000130816	DNMT1	DNA methyltransferase 1	0.00027
ENSG00000155858	LSM11	LSM11, U7 small nuclear RNA associated	0.000283
ENSG00000136527	TRA2B	Transformer 2 beta homolog	0.000285
ENSG00000071575	TRIB2	Tribbles pseudokinase 2	0.000285
ENSG00000198830	HMG2	High mobility group nucleosomal binding domain 2	0.000288
ENSG00000146281	PM20D2	Peptidase M20 domain containing 2	0.000291
ENSG00000176894	PXMP2	Peroxisomal membrane protein 2	0.000299
ENSG00000136450	SRSF1	Serine and arginine rich splicing factor 1	0.000303
ENSG00000151376	ME3	Malic enzyme 3	0.000304
ENSG00000151287	TEX30	Testis expressed 30	0.000309
ENSG00000242114	MTFP1	Mitochondrial fission process 1	0.000313
ENSG00000120217	CD274	CD274 molecule	0.00032
ENSG00000135446	CDK4	Cyclin dependent kinase 4	0.000324
ENSG00000154760	SLFN13	Schlafen family member 13	0.000337
ENSG00000170515	PA2G4	Proliferation-associated 2G4	0.00036
ENSG00000159131	GART	Phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase	0.000381
ENSG00000177917	ARL6IP6	ADP ribosylation factor like gtpase 6 interacting protein 6	0.000387
ENSG00000141052	MYOCD	Myocardin	0.000387
ENSG00000181544	FANCB	FA complementation group B	0.000418
ENSG00000149485	FADS1	Fatty acid desaturase 1	0.00043
ENSG00000116830	TTF2	Transcription termination factor 2	0.000436
ENSG00000180730	SHISA2	Shisa family member 2	0.000456
ENSG00000196363	WDR5	WD repeat domain 5	0.000456
ENSG00000073536	NLE1	Notchless homolog 1	0.000463
ENSG00000183527	PSMG1	Proteasome assembly chaperone 1	0.0005
ENSG00000164985	PSIP1	PC4 and SFRS1 interacting protein 1	0.000503
ENSG00000139278	GLIPR1	GLI pathogenesis related 1	0.000507
ENSG00000163535	SGO2	Shugoshin 2	0.000521
ENSG00000104626	ERI1	Exoribonuclease 1	0.000524
ENSG00000114346	ECT2	Epithelial cell transforming 2	0.000524
ENSG00000065150	IPO5	Importin 5	0.000527
ENSG00000196456	ZNF775	Zinc finger protein 775	0.000547
ENSG00000213160	KLHL23	Kelch like family member 23	0.000558
ENSG00000156466	GDF6	Growth differentiation factor 6	0.00057
ENSG00000241697	TMEFF1	Transmembrane protein with EGF like and two follistatin like domains 1	0.000589

ENSG0000011304	PTBP1	Polypyrimidine tract binding protein 1	0.0006
ENSG00000244306	AL589743.1	Double homeobox A pseudogene 10	0.000628
ENSG00000071564	TCF3	Transcription factor 3	0.000661
ENSG00000243444			0.000668
ENSG00000155561	NUP205	Nucleoporin 205	0.000671
ENSG0000012048	BRCA1	BRCA1 DNA repair associated	0.000727
ENSG00000184661	CDCA2	Cell division cycle associated 2	0.000727
ENSG0000029153	ARNTL2	Aryl hydrocarbon receptor nuclear translocator like 2	0.000746
ENSG00000162419	GMEB1	Glucocorticoid modulatory element binding protein 1	0.000801
ENSG00000128059	PPAT	Phosphoribosyl pyrophosphate amidotransferase	0.000862
ENSG00000138346	DNA2	DNA replication helicase/nuclease 2	0.000869
ENSG00000184009	ACTG1	Actin gamma 1	0.000872
ENSG00000077684	JADE1	Jade family PHD finger 1	0.000926
ENSG00000151503	NCAPD3	Non-SMC condensin II complex subunit D3	0.000928
ENSG00000150687	PRSS23	Serine protease 23	0.000939
ENSG00000106268	NUDT1	Nudix hydrolase 1	0.000995
ENSG00000132780	NASP	Nuclear autoantigenic sperm protein	0.001004
ENSG00000183763	TRAIIP	TRAF interacting protein	0.001006
ENSG00000116062	MSH6	Muts homolog 6	0.001032
ENSG00000159176	CSRP1	Cysteine and glycine rich protein 1	0.001037
ENSG00000143493	INTS7	Integrator complex subunit 7	0.001083
ENSG00000044524	EPHA3	EPH receptor A3	0.001098
ENSG00000169813	HNRNPF	Heterogeneous nuclear ribonucleoprotein F	0.001139
ENSG00000118513	MYB	MYB proto-oncogene, transcription factor	0.001146
ENSG00000145681	HAPLN1	Hyaluronan and proteoglycan link protein 1	0.001152
ENSG00000075624	ACTB	Actin beta	0.001168
ENSG00000147955	SIGMAR1	Sigma non-opioid intracellular receptor 1	0.001168
ENSG00000165724	ZMYND19	Zinc finger MYND-type containing 19	0.001176
ENSG00000130826	DKC1	Dyskerin pseudouridine synthase 1	0.001241
ENSG00000119326	CTNNAL1	Catenin alpha like 1	0.001243
ENSG00000181201	H2BU2P	H2B.U histone 2, pseudogene	0.001268
ENSG00000265107	GJA5	Gap junction protein alpha 5	0.00127
ENSG00000135245	HILPDA	Hypoxia inducible lipid droplet associated	0.001276
ENSG00000085415	SEH1L	SEH1 like nucleoporin	0.001282
ENSG00000162849	KIF26B	Kinesin family member 26B	0.001282
ENSG00000111450	STX2	Syntaxin 2	0.001361
ENSG00000198885	ITPRIPL1	ITPRIP like 1	0.001386
ENSG00000120699	EXOSC8	Exosome component 8	0.001492
ENSG00000128408	RIBC2	RIB43A domain with coiled-coils 2	0.001537
ENSG00000186777	ZNF732	Zinc finger protein 732	0.001561
ENSG00000083720	OXCT1	3-oxoacid coa-transferase 1	0.001587
ENSG00000154734	ADAMTS1	ADAM metallopeptidase with thrombospondin type 1 motif 1	0.0016
ENSG00000170468	RIOX1	Ribosomal oxygenase 1	0.001616
ENSG00000187840	EIF4EBP1	Eukaryotic translation initiation factor 4E binding protein 1	0.001625
ENSG00000147274	RBMX	RNA binding motif protein X-linked	0.001676
ENSG00000183684	ALYREF	Aly/REF export factor	0.001693
ENSG00000140416	TPM1	Tropomyosin 1	0.001764
ENSG00000215784	FAM72D	Family with sequence similarity 72 member D	0.00178
ENSG00000136699	SMPD4	Sphingomyelin phosphodiesterase 4	0.001815

ENSG00000139734	DIAPH3	Diaphanous related formin 3	0.001838
ENSG00000155755	TMEM237	Transmembrane protein 237	0.001847
ENSG00000075702	WDR62	WD repeat domain 62	0.001889
ENSG00000152240	HAUS1	HAUS augmin like complex subunit 1	0.001901
ENSG00000118596	SLC16A7	Solute carrier family 16 member 7	0.001906
ENSG00000178202	POGLUT3	Protein O-glucosyltransferase 3	0.001923
ENSG00000185347	TEDC1	Tubulin epsilon and delta complex 1	0.001923
ENSG00000144681	STAC	SH3 and cysteine rich domain	0.001961
ENSG00000108055	SMC3	Structural maintenance of chromosomes 3	0.002061
ENSG00000160752	FDP5	Farnesyl diphosphate synthase	0.002073
ENSG00000145545	SRD5A1	Steroid 5 alpha-reductase 1	0.002081
ENSG00000283559	AC139491.6	Centrosomal protein 192kda (CEP192) pseudogene	0.002103
ENSG00000188312	CENPP	Centromere protein P	0.002104
ENSG00000085276	MECOM	MDS1 and EVI1 complex locus	0.002104
ENSG00000187193	MT1X	Metallothionein 1X	0.002138
ENSG00000196890	H2BU1	H2B.U histone 1	0.002277
ENSG00000145675	PIK3R1	Phosphoinositide-3-kinase regulatory subunit 1	0.002405
ENSG00000116120	FARSB	Phenylalanyl-trna synthetase subunit beta	0.00243
ENSG00000102098	SCML2	Scm polycomb group protein like 2	0.002441
ENSG00000154646	TMPRSS15	Transmembrane serine protease 15	0.002478
ENSG00000138741	TRPC3	Transient receptor potential cation channel subfamily C member 3	0.002539
ENSG00000179409	GEMIN4	Gem nuclear organelle associated protein 4	0.002549
ENSG00000120800	UTP20	UTP20 small subunit processome component	0.002564
ENSG00000144283	PKP4	Plakophilin 4	0.002606
ENSG00000164002	EXO5	Exonuclease 5	0.002673
ENSG00000136875	PRPF4	Pre-mrna processing factor 4	0.00274
ENSG00000172336	POP7	POP7 homolog, ribonuclease P/MRP subunit	0.002743
ENSG00000108179	PPIF	Peptidylprolyl isomerase F	0.002788
ENSG00000204899	MZT1	Mitotic spindle organizing protein 1	0.002791
ENSG00000102172	SMS	Spermine synthase	0.002791
ENSG00000160193	WDR4	WD repeat domain 4	0.002804
ENSG00000099256	PRTFDC1	Phosphoribosyl transferase domain containing 1	0.002851
ENSG00000117597	UTP25	UTP25 small subunit processor component	0.002851
ENSG00000277443	MARCKS	Myristoylated alanine rich protein kinase C substrate	0.002864
ENSG00000101546	RBFA	Ribosome binding factor A	0.002874
ENSG00000172927	MYEOV	Myeloma overexpressed	0.002986
ENSG00000100304	TTL12	Tubulin tyrosine ligase like 12	0.002989
ENSG00000149548	CCDC15	Coiled-coil domain containing 15	0.003006
ENSG00000261236	BOP1	BOP1 ribosomal biogenesis factor	0.003065
ENSG00000103540	CCP110	Centriolar coiled-coil protein 110	0.003113
ENSG00000112658	SRF	Serum response factor	0.003113
ENSG00000243955	GSTA1	Glutathione S-transferase alpha 1	0.003113
ENSG00000178695	KCTD12	Potassium channel tetramerization domain containing 12	0.003123
ENSG00000115232	ITGA4	Integrin subunit alpha 4	0.003142
ENSG00000248710	AC079594.2	TRIM59 and ift80 readthrough	0.003189
ENSG00000119403	PHF19	PHD finger protein 19	0.003195
ENSG00000096060	FKBP5	FKBP prolyl isomerase 5	0.003342
ENSG00000203668	CHML	CHM like Rab escort protein	0.003471
ENSG00000111057	KRT18	Keratin 18	0.0035
ENSG00000134758	RNF138	Ring finger protein 138	0.003524

ENSG00000141668	CBLN2	Cerebellin 2 precursor	0.003524
ENSG00000134824	FADS2	Fatty acid desaturase 2	0.003548
ENSG00000107104	KANK1	KN motif and ankyrin repeat domains 1	0.003577
ENSG00000135362	PRR5L	Proline rich 5 like	0.003625
ENSG00000143157	POGK	Pogo transposable element derived with KRAB domain	0.003625
ENSG00000189212	DPY19L2P1	DPY19L2 pseudogene 1	0.003625
ENSG00000132669	RIN2	Ras and Rab interactor 2	0.003653
ENSG00000005059	MCUB	Mitochondrial calcium uniporter dominant negative beta subunit	0.00371
ENSG00000092201	SUPT16H	SPT16 homolog, facilitates chromatin remodeling subunit	0.00371
ENSG00000256229	ZNF486	Zinc finger protein 486	0.003799
ENSG00000154473	BUB3	BUB3 mitotic checkpoint protein	0.00386
ENSG00000082516	GEMIN5	Gem nuclear organelle associated protein 5	0.003888
ENSG00000092964	DPYSL2	Dihydropyrimidinase like 2	0.003938
ENSG00000217555	CKLF	Chemokine like factor	0.003966
ENSG00000082512	TRAF5	TNF receptor associated factor 5	0.004092
ENSG00000106144	CASP2	Caspase 2	0.004163
ENSG00000136261	BZW2	Basic leucine zipper and W2 domains 2	0.004163
ENSG00000101407	TTI1	TELO2 interacting protein 1	0.004374
ENSG00000115461	IGFBP5	Insulin like growth factor binding protein 5	0.004374
ENSG00000170153	RNF150	Ring finger protein 150	0.004395
ENSG00000188807	TMEM201	Transmembrane protein 201	0.004395
ENSG00000164284	GRPEL2	Grpe like 2, mitochondrial	0.004448
ENSG00000075131	TIPIN	TIMELESS interacting protein	0.004618
ENSG00000130935	NOL11	Nucleolar protein 11	0.004644
ENSG00000112039	FANCE	FA complementation group E	0.004664
ENSG00000107566	ERLIN1	ER lipid raft associated 1	0.004817
ENSG00000113460	BRX1	Biogenesis of ribosomes BRX1	0.004964
ENSG00000122644	ARL4A	ADP ribosylation factor like gtpase 4A	0.004964
ENSG00000116237	ICMT	Isoprenylcysteine carboxyl methyltransferase	0.00499
ENSG00000161647	MPP3	Membrane palmitoylated protein 3	0.005072
ENSG00000198912	C1orf174	Chromosome 1 open reading frame 174	0.005313
ENSG00000091527	CDV3	CDV3 homolog	0.005338
ENSG00000186522	SEPTIN10	Septin 10	0.005419
ENSG00000161996	WDR90	WD repeat domain 90	0.005475
ENSG00000134285	FKBP11	FKBP prolyl isomerase 11	0.005555
ENSG00000138587	MNS1	Meiosis specific nuclear structural 1	0.005555
ENSG00000204291	COL15A1	Collagen type XV alpha 1 chain	0.00558
ENSG00000231205	ZNF826P	Zinc finger protein 826, pseudogene	0.005636
ENSG00000163029	SMC6	Structural maintenance of chromosomes 6	0.00584
ENSG00000255561	FDXACB1	Ferredoxin-fold anticodon binding domain containing 1	0.00584
ENSG00000105185	PDCD5	Programmed cell death 5	0.005919
ENSG00000171492	LRR8D	Leucine rich repeat containing 8 VRAC subunit D	0.006052
ENSG00000150556	LYPD6B	LY6/PLAUR domain containing 6B	0.006107
ENSG00000093217	XYLB	Xylulokinase	0.006208
ENSG00000167088	SNRPD1	Small nuclear ribonucleoprotein D1 polypeptide	0.006254
ENSG00000184216	IRAK1	Interleukin 1 receptor associated kinase 1	0.006278
ENSG00000105202	FBL	Fibrillarin	0.006293
ENSG00000175175	PPM1E	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1E	0.006293
ENSG00000167553	TUBA1C	Tubulin alpha 1c	0.006377
ENSG00000151892	GFRA1	GDNF family receptor alpha 1	0.0064

ENSG00000105894	PTN	Pleiotrophin	0.00656
ENSG00000146477	SLC22A3	Solute carrier family 22 member 3	0.006666
ENSG00000091986	CCDC80	Coiled-coil domain containing 80	0.006688
ENSG00000156471	PTDSS1	Phosphatidylserine synthase 1	0.006771
ENSG00000258555	SPECC1L-ADORA2A	SPECC1L-ADORA2A readthrough (NMD candidate)	0.006793
ENSG00000054277	OPN3	Opsin 3	0.006989
ENSG00000133107	TRPC4	Transient receptor potential cation channel subfamily C member 4	0.007235
ENSG00000168077	SCARA3	Scavenger receptor class A member 3	0.007338
ENSG00000109576	AADAT	Amino adipate aminotransferase	0.007351
ENSG00000121057	AKAP1	A-kinase anchoring protein 1	0.007351
ENSG00000173457	PPP1R14B	Protein phosphatase 1 regulatory inhibitor subunit 14B	0.007504
ENSG00000116161	CACYBP	Calcyclin binding protein	0.007674
ENSG00000183048	SLC25A10	Solute carrier family 25 member 10	0.007754
ENSG00000179104	TMTC2	Transmembrane O-mannosyltransferase targeting cadherins 2	0.007894
ENSG00000163923	RPL39L	Ribosomal protein L39 like	0.008054
ENSG00000254726	MEX3A	Mex-3 RNA binding family member A	0.008054
ENSG00000150753	CCT5	Chaperonin containing TCP1 subunit 5	0.008233
ENSG00000143401	ANP32E	Acidic nuclear phosphoprotein 32 family member E	0.008518
ENSG00000080200	CRYBG3	Crystallin beta-gamma domain containing 3	0.008587
ENSG00000102007	PLP2	Proteolipid protein 2	0.00885
ENSG00000113657	DPYSL3	Dihydropyrimidinase like 3	0.008975
ENSG00000094916	CBX5	Chromobox 5	0.009082
ENSG00000143942	CHAC2	Chac cation transport regulator homolog 2	0.009159
ENSG00000182963	GJC1	Gap junction protein gamma 1	0.009177
ENSG00000109881	CCDC34	Coiled-coil domain containing 34	0.009225
ENSG00000141560	FN3KRP	Fructosamine 3 kinase related protein	0.009407
ENSG00000206190	ATP10A	Atpase phospholipid transporting 10A (putative)	0.009454
ENSG00000141401	IMPA2	Inositol monophosphatase 2	0.009472
ENSG00000134802	SLC43A3	Solute carrier family 43 member 3	0.009642
ENSG00000160229	ZNF66	Zinc finger protein 66	0.009775
ENSG00000111186	WNT5B	Wnt family member 5B	0.009908
ENSG00000089280	FUS	FUS RNA binding protein	0.010213
ENSG00000141569	TRIM65	Tripartite motif containing 65	0.010304
ENSG00000151576	QTRT2	Queuine trna-ribosyltransferase accessory subunit 2	0.010682
ENSG00000152455	SUV39H2	Suppressor of variegation 3-9 homolog 2	0.010727
ENSG00000079156	OSBPL6	Oxysterol binding protein like 6	0.010743
ENSG00000132773	TOE1	Target of EGR1, exonuclease	0.011007
ENSG00000113140	SPARC	Secreted protein acidic and cysteine rich	0.011153
ENSG00000011260	UTP18	UTP18 small subunit processome component	0.011169
ENSG00000110108	TMEM109	Transmembrane protein 109	0.011329
ENSG00000152503	TRIM36	Tripartite motif containing 36	0.011373
ENSG00000145416	MARCHF1	Membrane associated ring-CH-type finger 1	0.011388
ENSG00000133019	CHRM3	Cholinergic receptor muscarinic 3	0.011544
ENSG00000145990	GFOD1	Glucose-fructose oxidoreductase domain containing 1	0.011559
ENSG00000137337	MDC1	Mediator of DNA damage checkpoint 1	0.011674
ENSG00000163002	NUP35	Nucleoporin 35	0.011674
ENSG00000160208	RRP1B	Ribosomal RNA processing 1B	0.011676
ENSG00000068028	RASSF1	Ras association domain family member 1	0.011833

ENSG00000109099	PMP22	Peripheral myelin protein 22	0.011833
ENSG00000127418	FGFRL1	Fibroblast growth factor receptor like 1	0.011862
ENSG00000136111	TBC1D4	TBC1 domain family member 4	0.011862
ENSG00000163006	CCDC138	Coiled-coil domain containing 138	0.01196
ENSG00000104064	GABPB1	GA binding protein transcription factor subunit beta 1	0.011962
ENSG00000214706	IFRD2	Interferon related developmental regulator 2	0.011962
ENSG00000145934	TENM2	Teneurin transmembrane protein 2	0.012074
ENSG00000196950	SLC39A10	Solute carrier family 39 member 10	0.012116
ENSG00000145220	LYAR	Ly1 antibody reactive	0.01242
ENSG00000123505	AMD1	Adenosylmethionine decarboxylase 1	0.0126
ENSG00000170876	TMEM43	Transmembrane protein 43	0.012834
ENSG00000035928	RFC1	Replication factor C subunit 1	0.012847
ENSG00000157240	FZD1	Frizzled class receptor 1	0.012983
ENSG00000188610	FAM72B	Family with sequence similarity 72 member B	0.013051
ENSG00000135312	HTR1B	5-hydroxytryptamine receptor 1B	0.013064
ENSG00000144891	AGTR1	Angiotensin II receptor type 1	0.013091
ENSG00000166333	ILK	Integrin linked kinase	0.013091
ENSG00000184992	BRI3BP	BRI3 binding protein	0.013144
ENSG00000173848	NET1	Neuroepithelial cell transforming 1	0.013441
ENSG00000197646	PDCD1LG2	Programmed cell death 1 ligand 2	0.01359
ENSG00000079387	SENPA1	SUMO specific peptidase 1	0.014068
ENSG00000180611	MB21D2	Mab-21 domain containing 2	0.014119
ENSG00000144824	PHLDB2	Pleckstrin homology like domain family B member 2	0.014158
ENSG00000120256	LRP11	LDL receptor related protein 11	0.014384
ENSG00000162433	AK4	Adenylate kinase 4	0.014434
ENSG00000135480	KRT7	Keratin 7	0.014483
ENSG00000254093	PINX1	PIN2 (TERF1) interacting telomerase inhibitor 1	0.014548
ENSG00000129484	PARP2	Poly(ADP-ribose) polymerase 2	0.014768
ENSG00000188641	DPYD	Dihydropyrimidine dehydrogenase	0.014976
ENSG00000185298	CCDC137	Coiled-coil domain containing 137	0.015262
ENSG00000187231	SESTD1	SEC14 and spectrin domain containing 1	0.015309
ENSG00000198478	SH3BGL2	SH3 domain binding glutamate rich protein like 2	0.015309
ENSG00000099783	HNRNPM	Heterogeneous nuclear ribonucleoprotein M	0.015399
ENSG00000205659	LIN52	Lin-52 DREAM muvb core complex component	0.015436
ENSG00000119900	OGFRL1	Opioid growth factor receptor like 1	0.015657
ENSG00000153993	SEMA3D	Semaphorin 3D	0.016038
ENSG00000130204	TOMM40	Translocase of outer mitochondrial membrane 40	0.016145
ENSG00000206053	JPT2	Jupiter microtubule associated homolog 2	0.016337
ENSG00000117394	SLC2A1	Solute carrier family 2 member 1	0.016616
ENSG00000188529	SRSF10	Serine and arginine rich splicing factor 10	0.016616
ENSG00000183722	LHFPL6	LHFPL tetraspan subfamily member 6	0.016625
ENSG00000175768	TOMM5	Translocase of outer mitochondrial membrane 5	0.016747
ENSG00000111331	OAS3	2'-5'-oligoadenylate synthetase 3	0.016755
ENSG00000121775	TMEM39B	Transmembrane protein 39B	0.016764
ENSG00000153976	HS3ST3A1	Heparan sulfate-glucosamine 3-sulfotransferase 3A1	0.017014
ENSG00000171649	ZIK1	Zinc finger protein interacting with K protein 1	0.017023
ENSG00000006625	GGCT	Gamma-glutamylcyclotransferase	0.017143
ENSG00000010292	NCAPD2	Non-SMC condensin I complex subunit D2	0.017373
ENSG00000168476	REEP4	Receptor accessory protein 4	0.017433
ENSG00000124784	RIOK1	RIO kinase 1	0.017833
ENSG00000156265	MAP3K7CL	MAP3K7 C-terminal like	0.0182

ENSG00000133863	TEX15	Testis expressed 15, meiosis and synapsis associated	0.018214
ENSG00000119537	KDSR	3-ketodihydrosphingosine reductase	0.018318
ENSG00000136938	ANP32B	Acidic nuclear phosphoprotein 32 family member B	0.018434
ENSG00000169689	CENPX	Centromere protein X	0.018434
ENSG00000004777	ARHGAP33	Rho gtpase activating protein 33	0.018441
ENSG00000188985	DHFRP1	Dihydrofolate reductase pseudogene 1	0.018448
ENSG00000186918	ZNF395	Zinc finger protein 395	0.01848
ENSG00000174600	CMKLR1	Chemerin chemokine-like receptor 1	0.01862
ENSG00000196368	NUDT11	Nudix hydrolase 11	0.018652
ENSG00000150990	DHX37	DEAH-box helicase 37	0.018734
ENSG00000185697	MYBL1	MYB proto-oncogene like 1	0.018917
ENSG00000244067	GSTA2	Glutathione S-transferase alpha 2	0.018923
ENSG00000100664	EIF5	Eukaryotic translation initiation factor 5	0.019011
ENSG00000198959	TGM2	Transglutaminase 2	0.019042
ENSG00000118620	ZNF430	Zinc finger protein 430	0.019286
ENSG00000197785	ATAD3A	Atpase family AAA domain containing 3A	0.019473
ENSG00000180801	ARSJ	Arylsulfatase family member J	0.019503
ENSG00000102967	DHODH	Dihydroorotate dehydrogenase (quinone)	0.019559
ENSG00000134987	WDR36	WD repeat domain 36	0.019636
ENSG00000148459	PDSS1	Decaprenyl diphosphate synthase subunit 1	0.019636
ENSG00000125863	MKKS	Mckusick-Kaufman syndrome	0.019636
ENSG00000170802	FOXN2	Forkhead box N2	0.019636
ENSG00000256663	AC112777.1	Ubiquitin-like with PHD and ring finger domains 1 (UHRF1) pseudogene	0.019746
ENSG00000136159	NUDT15	Nudix hydrolase 15	0.019801
ENSG00000213397	HAUS7	HAUS augmin like complex subunit 7	0.019831
ENSG00000145293	ENOPH1	Enolase-phosphatase 1	0.020034
ENSG00000106348	IMPDH1	Inosine monophosphate dehydrogenase 1	0.020344
ENSG00000166582	CENPV	Centromere protein V	0.020673
ENSG00000075142	SRI	Sorcin	0.020801
ENSG00000112365	ZBTB24	Zinc finger and BTB domain containing 24	0.020977
ENSG00000173085	COQ2	Coenzyme Q2, polyprenyltransferase	0.021454
ENSG00000103404	USP31	Ubiquitin specific peptidase 31	0.021506
ENSG00000187790	FANCM	FA complementation group M	0.021687
ENSG00000172167	MTBP	MDM2 binding protein	0.022129
ENSG00000111788	AC009533.1	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide like pseudogene	0.022278
ENSG00000164619	BMPER	BMP binding endothelial regulator	0.022308
ENSG00000116667	C1orf21	Chromosome 1 open reading frame 21	0.022407
ENSG00000153048	CARHSP1	Calcium regulated heat stable protein 1	0.02256
ENSG00000167460	TPM4	Tropomyosin 4	0.022708
ENSG00000144395	CCDC150	Coiled-coil domain containing 150	0.022932
ENSG00000103121	CMC2	C-X9-C motif containing 2	0.023199
ENSG00000131462	TUBG1	Tubulin gamma 1	0.023226
ENSG00000145375	SPATA5	Spermatogenesis associated 5	0.023396
ENSG00000152402	GUCY1A2	Guanylate cyclase 1 soluble subunit alpha 2	0.023398
ENSG00000119335	SET	SET nuclear proto-oncogene	0.0234
ENSG00000253250	C8orf88	Chromosome 8 open reading frame 88	0.023473
ENSG00000095319	NUP188	Nucleoporin 188	0.023811
ENSG00000120253	NUP43	Nucleoporin 43	0.02403
ENSG00000142149	HUNK	Hormonally up-regulated Neu-associated kinase	0.02403

ENSG00000157483	MYO1E	Myosin IE	0.02403
ENSG00000184900	SUMO3	Small ubiquitin like modifier 3	0.02403
ENSG00000100522	GNPNAT1	Glucosamine-phosphate N-acetyltransferase 1	0.024368
ENSG00000174136	RGMB	Repulsive guidance molecule BMP co-receptor b	0.024368
ENSG00000122565	CBX3	Chromobox 3	0.024558
ENSG00000165197	VEGFD	Vascular endothelial growth factor D	0.024558
ENSG00000176887	SOX11	SRY-box transcription factor 11	0.024771
ENSG00000092621	PHGDH	Phosphoglycerate dehydrogenase	0.02496
ENSG00000131652	THOC6	THO complex 6	0.02496
ENSG00000105968	H2AZ2	H2A.Z variant histone 2	0.025102
ENSG00000136108	CKAP2	Cytoskeleton associated protein 2	0.025102
ENSG00000148120	AOPEP	Aminopeptidase O (putative)	0.025102
ENSG00000171067	C11orf24	Chromosome 11 open reading frame 24	0.025102
ENSG00000140451	PIF1	PIF1 5'-to-3' DNA helicase	0.025452
ENSG00000174827	PDZK1	PDZ domain containing 1	0.025452
ENSG00000179958	DCTPP1	Dctp pyrophosphatase 1	0.025452
ENSG00000139350	NEDD1	NEDD1 gamma-tubulin ring complex targeting factor	0.026216
ENSG00000149596	JPH2	Junctophilin 2	0.026216
ENSG00000167775	CD320	CD320 molecule	0.026216
ENSG00000130402	ACTN4	Actinin alpha 4	0.026375
ENSG00000154127	UBASH3B	Ubiquitin associated and SH3 domain containing B	0.026375
ENSG00000137547	MRPL15	Mitochondrial ribosomal protein L15	0.026558
ENSG00000178531	CTXN1	Cortexin 1	0.026558
ENSG00000131019	ULBP3	UL16 binding protein 3	0.02697
ENSG00000139211	AMIGO2	Adhesion molecule with Ig like domain 2	0.027176
ENSG00000134779	TPGS2	Tubulin polyglutamylase complex subunit 2	0.027356
ENSG00000158716	DUSP23	Dual specificity phosphatase 23	0.027356
ENSG00000051596	THOC3	THO complex 3	0.027561
ENSG00000011332	DPF1	Double PHD fingers 1	0.027765
ENSG00000148926	ADM	Adrenomedullin	0.027893
ENSG00000142230	SAE1	SUMO1 activating enzyme subunit 1	0.028045
ENSG00000121210	TMEM131L	Transmembrane 131 like	0.028222
ENSG00000182054	IDH2	Isocitrate dehydrogenase (NADP(+)) 2	0.028398
ENSG00000188229	TUBB4B	Tubulin beta 4B class ivb	0.0288
ENSG00000242265	PEG10	Paternally expressed 10	0.0288
ENSG00000166002	SMCO4	Single-pass membrane protein with coiled-coil domains 4	0.028923
ENSG00000196730	DAPK1	Death associated protein kinase 1	0.028923
ENSG00000160214	RRP1	Ribosomal RNA processing 1	0.029097
ENSG00000102271	KLHL4	Kelch like family member 4	0.029244
ENSG00000135801	TAF5L	TATA-box binding protein associated factor 5 like	0.029244
ENSG00000055044	NOP58	NOP58 ribonucleoprotein	0.02939
ENSG00000198142	SOWAHC	Sosondowah ankyrin repeat domain family member C	0.02939
ENSG00000139263	LRIG3	Leucine rich repeats and immunoglobulin like domains 3	0.029759
ENSG00000108468	CBX1	Chromobox 1	0.030687
ENSG00000156509	FBXO43	F-box protein 43	0.030687
ENSG00000153885	KCTD15	Potassium channel tetramerization domain containing 15	0.030882
ENSG00000198924	DCLRE1A	DNA cross-link repair 1A	0.031077
ENSG00000227120	AC009238.1	Pseudogene similar to part of Cdon homolog (mouse) (CDON)	0.031382
ENSG00000124787	RPP40	Ribonuclease P/MRP subunit p40	0.03152
ENSG00000147224	PRPS1	Phosphoribosyl pyrophosphate synthetase 1	0.03152

ENSG00000172009	THOP1	Thimet oligopeptidase 1	0.03152
ENSG00000128641	MYO1B	Myosin IB	0.031822
ENSG00000112276	BVES	Blood vessel epicardial substance	0.031985
ENSG00000173638	SLC19A1	Solute carrier family 19 member 1	0.031985
ENSG00000126216	TUBGCP3	Tubulin gamma complex associated protein 3	0.032148
ENSG00000075461	CACNG4	Calcium voltage-gated channel auxiliary subunit gamma 4	0.032283
ENSG00000107371	EXOSC3	Exosome component 3	0.032283
ENSG00000174013	FBXO45	F-box protein 45	0.032283
ENSG00000182173	TSEN54	Trna splicing endonuclease subunit 54	0.033287
ENSG00000105855	ITGB8	Integrin subunit beta 8	0.033476
ENSG00000172732	MUS81	MUS81 structure-specific endonuclease subunit	0.033664
ENSG00000127334	DYRK2	Dual specificity tyrosine phosphorylation regulated kinase 2	0.03463
ENSG00000131773	KHDRBS3	KH RNA binding domain containing, signal transduction associated 3	0.035003
ENSG00000151388	ADAMTS12	ADAM metallopeptidase with thrombospondin type 1 motif 12	0.035314
ENSG00000171960	PPIH	Peptidylprolyl isomerase H	0.035314
ENSG00000172059	KLF11	Kruppel like factor 11	0.035684
ENSG00000122861	PLAU	Plasminogen activator, urokinase	0.036481
ENSG00000178776	C5orf46	Chromosome 5 open reading frame 46	0.036664
ENSG00000114686	MRPL3	Mitochondrial ribosomal protein L3	0.036754
ENSG00000117152	RGS4	Regulator of G protein signaling 4	0.036754
ENSG00000125148	MT2A	Metallothionein 2A	0.036754
ENSG00000101574	METTL4	Methyltransferase like 4	0.036873
ENSG00000137801	THBS1	Thrombospondin 1	0.036993
ENSG00000164167	LSM6	LSM6 homolog, U6 small nuclear RNA and mrna degradation associated	0.036993
ENSG00000198890	PRMT6	Protein arginine methyltransferase 6	0.036993
ENSG00000234571	H2BP2	H2B histone pseudogene 2	0.037386
ENSG00000101220	C20orf27	Chromosome 20 open reading frame 27	0.037472
ENSG00000130520	LSM4	LSM4 homolog, U6 small nuclear RNA and mrna degradation associated	0.037472
ENSG00000136243	NUP42	Nucleoporin 42	0.037472
ENSG00000118894	EEF2KMT	Eukaryotic elongation factor 2 lysine methyltransferase	0.037495
ENSG00000138356	AOX1	Aldehyde oxidase 1	0.037495
ENSG00000165175	MID1IP1	MID1 interacting protein 1	0.037495
ENSG00000178031	ADAMTSL1	ADAMTS like 1	0.037495
ENSG00000064666	CNN2	Calponin 2	0.037611
ENSG00000070404	FSTL3	Follistatin like 3	0.037611
ENSG00000114450	GNB4	G protein subunit beta 4	0.037905
ENSG00000155189	AGPAT5	1-acylglycerol-3-phosphate O-acyltransferase 5	0.038019
ENSG00000128944	KNSTRN	Kinetochores localized astrin (SPAG5) binding protein	0.038133
ENSG00000125458	NT5C	5', 3'-nucleotidase, cytosolic	0.038215
ENSG00000125753	VASP	Vasodilator stimulated phosphoprotein	0.038215
ENSG00000117411	B4GALT2	Beta-1,4-galactosyltransferase 2	0.038359
ENSG00000178860	MSC	Musculin	0.038359
ENSG00000117228	GBP1	Guanylate binding protein 1	0.038535
ENSG00000129474	AJUBA	Ajuba LIM protein	0.038853
ENSG00000163655	GMPS	Guanine monophosphate synthase	0.038996

ENSG00000130921	C12orf65	Chromosome 12 open reading frame 65	0.039659
ENSG00000198168	SVIP	Small VCP interacting protein	0.040004
ENSG00000148484	RSU1	Ras suppressor protein 1	0.040382
ENSG00000115241	PPM1G	Protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1G	0.040455
ENSG00000166483	WEE1	WEE1 G2 checkpoint kinase	0.040455
ENSG00000173218	VANGL1	VANGL planar cell polarity protein 1	0.040626
ENSG00000155368	DBI	Diazepam binding inhibitor, acyl-coa binding protein	0.040797
ENSG00000121690	DEPDC7	DEP domain containing 7	0.041276
ENSG00000123843	C4BPB	Complement component 4 binding protein beta	0.041276
ENSG00000284989	AL451062.4	Novel transcript	0.041445
ENSG00000197837	H4-16	H4 histone 16	0.041751
ENSG00000111885	MAN1A1	Mannosidase alpha class 1A member 1	0.041852
ENSG00000273213	H3-2	H3.2 histone (putative)	0.041852
ENSG00000125630	POLR1B	RNA polymerase I subunit B	0.042323
ENSG00000091436	MAP3K20	Mitogen-activated protein kinase kinase kinase 20	0.042589
ENSG00000106366	SERPINE1	Serpin family E member 1	0.042589
ENSG00000106399	RPA3	Replication protein A3	0.042756
ENSG00000105676	ARMC6	Armadillo repeat containing 6	0.043089
ENSG00000170854	RIOX2	Ribosomal oxygenase 2	0.043089
ENSG00000071282	LMCD1	LIM and cysteine rich domains 1	0.043221
ENSG00000167552	TUBA1A	Tubulin alpha 1a	0.043221
ENSG00000177192	PUS1	Pseudouridine synthase 1	0.043517
ENSG00000181938	GINS3	GINS complex subunit 3	0.043517
ENSG00000184207	PGP	Phosphoglycolate phosphatase	0.043517
ENSG00000169683	LRRC45	Leucine rich repeat containing 45	0.043682
ENSG00000285130	AL358113.1	Novel protein	0.044011
ENSG00000213390	ARHGAP19	Rho gtpase activating protein 19	0.044339
ENSG00000125266	EFNB2	Ephrin B2	0.04483
ENSG00000120708	TGFB1	Transforming growth factor beta induced	0.044957
ENSG00000084774	CAD	Carbamoyl-phosphate synthetase 2, aspartate transcarbamylase, and dihydroorotase	0.045246
ENSG00000086848	ALG9	ALG9 alpha-1,2-mannosyltransferase	0.045246
ENSG00000128510	CPA4	Carboxypeptidase A4	0.045246
ENSG00000147050	KDM6A	Lysine demethylase 6A	0.045373
ENSG00000151835	SACS	Sacsin molecular chaperone	0.045373
ENSG00000141556	TBCD	Tubulin folding cofactor D	0.045499
ENSG00000169684	CHRNA5	Cholinergic receptor nicotinic alpha 5 subunit	0.045499
ENSG00000168003	SLC3A2	Solute carrier family 3 member 2	0.045857
ENSG00000119599	DCAF4	DDB1 and CUL4 associated factor 4	0.046142
ENSG00000143554	SLC27A3	Solute carrier family 27 member 3	0.046142
ENSG00000138772	ANXA3	Annexin A3	0.046302
ENSG00000019549	SNAI2	Snail family transcriptional repressor 2	0.046477
ENSG00000182197	EXT1	Exostosin glycosyltransferase 1	0.046477
ENSG00000137656	BUD13	BUD13 homolog	0.0466
ENSG00000130810	PPAN	Peter pan homolog	0.046759
ENSG00000143314	MRPL24	Mitochondrial ribosomal protein L24	0.047076
ENSG00000182240	BACE2	Beta-secretase 2	0.047392
ENSG00000163110	PDLIM5	PDZ and LIM domain 5	0.047549
ENSG00000141858	SAMD1	Sterile alpha motif domain containing 1	0.048222
ENSG00000186603	HPDL	4-hydroxyphenylpyruvate dioxygenase like	0.048222
ENSG00000204856	FAM216A	Family with sequence similarity 216 member A	0.048222

ENSG00000050344	NFE2L3	Nuclear factor, erythroid 2 like 3	0.048497
ENSG00000198796	ALPK2	Alpha kinase 2	0.048962
ENSG00000038295	TLL1	Tolloid like 1	0.049079
ENSG00000117395	EBNA1BP2	EBNA1 binding protein 2	0.049233
ENSG00000101464	PIGU	Phosphatidylinositol glycan anchor biosynthesis class U	0.049772
ENSG00000247077	PGAM5	PGAM family member 5, mitochondrial serine/threonine protein phosphatase	0.049772
ENSG00000138668	HNRNPD	Heterogeneous nuclear ribonucleoprotein D	0.049887
ENSG00000197977	ELOVL2	ELOVL fatty acid elongase 2	0.049887