

Supplementary Table S8. Overlap analysis with the Colombi essential gene sets reveal 71 genes in common

Human essential genes (This study)	Human entrez ID	Mouse Ortholog	Mouse entrez ID	Essential genes (Colombi <i>et al.</i>)
AGER	177	Ager	11596	✓
AP3M1	26985	Ap3m1	55946	✓
AP3M2	10947	Ap3m2	64933	✓
BID	637	Bid	12122	✓
CDK10	8558	Cdk10	234854	✓
CHRND	1144	Chrnd	11447	✓
COL1A1	1277	Col1a1	12842	✓
COPB2	9276	Copb2	50797	✓
COPE	11316	Cope	59042	✓
CYB561	1534	Cyb561	13056	✓
CYBB	1536	Cybb	13058	✓
CYP2E1	1571	Cyp2e1	13106	✓
DUSP21	63904	1700094E07Rik	73547	✓
DYNLL1	8655	Dynll1	56455	✓
EIF3G	8666	Eif3s4	53356	✓
EIF4A3	9775	Ddx48	192170	✓
FCRLA	84824	Fcrla	98752	✓
FLRT2	23768	Flrt2	399558	✓
GABARAPL1	23710	Gabarapl1	57436	✓
GRB14	2888	Grb14	50915	✓
HEY2	23493	Hey2	15214	✓
HFE	3077	Hfe	15216	✓
IGFBP2	3485	Igfbp2	16008	✓
IL4I1	259307	Il4i1	14204	✓
KPNA4	3840	Kpna4	16649	✓
KRR1	11103	Krr1	52705	✓
LAIR1	3903	Lair1	52855	✓
LGALS1	3956	Lgals1	16852	✓
LMBR1L	55716	Lmbr1l	74775	✓
LOC399942	10376	Tuba2	22143	✓
LRCH4	4034	Lrch4	231798	✓
LSM3	27258	Lsm3	67678	✓
LSM5	23658	Lsm5	66373	✓
LY6H	4062	Ly6h	23934	✓
MCM6	4175	Mcm6	17219	✓
ME1	4199	Mod1	17436	✓
MS4A3	932	Ms4a3	170813	✓
NRXN3	9369	Nrxn3	18191	✓
NUP93	9688	Nup93	71805	✓
PCLO	27445	Pclo	26875	✓
PCSK7	9159	Pcsk7	18554	✓
PHB2	11331	Phb2	12034	✓
POLR2A	5430	Polr2a	20020	✓
PSMB3	5691	Psmb3	26446	✓
PSMD7	5713	Psm7	17463	✓
QTRT1	81890	Qtrt1	60507	✓
RAN	5901	Ran	19384	✓
RIPK2	8767	Ripk2	192656	✓
ROR2	4920	Ror2	26564	✓
RPL10A	4736	Rpl10a	19896	✓
RPL17	6139	Rpl17	319195	✓
RPL18	6141	Rpl18	19899	✓

RPL3	6122	Rpl3	27367	✓
RPL31	6160	Rpl31	114641	✓
RPL37	6167	Rpl37	67281	✓
RPL4	6124	Rpl4	67891	✓
RPL6	6128	Rpl6	19988	✓
RPL9	6133	Rpl9	20005	✓
RUVBL2	10856	Ruvbl2	20174	✓
SELPLG	6404	Selpl	20345	✓
SEPT2	4735	Sept2	18000	✓
SF3B3	23450	Sf3b3	101943	✓
SNRPD2	6633	Snrpd2	107686	✓
SNRPE	6635	Snrpe	20643	✓
TRIP10	9322	Trip10	106628	✓
TXNDC12	51060	Txndc12	66073	✓
U2AF2	11338	U2af2	22185	✓
USO1	8615	Uso1	56041	✓
VTA1	51534	1110059P08Rik	66201	✓
WNT8B	7479	Wnt8b	22423	✓
YWHAE	7531	Ywhae	22627	✓
AADAACL1	57552	Nceh1	320024	X
ABCB1	5243	Abcb1a	18671	X
ABCB5	340273	Abcb5	77706	X
ABCB7	22	Abcb7	11306	X
ABCB8	11194	Abcb8	74610	X
ABCC1	4363	Abcc1	17250	X
ABCC10	89845	Abcc10	224814	X
ABCC8	6833	Abcc8	20927	X
ABCD2	225	Abcd2	26874	X
ABCD3	5825	Abcd3	19299	X
ABCG8	64241	Abcg8	67470	X
ABHD3	171586	Abhd3	106861	X
ABLIM1	3983	Ablim1	226251	X
ACF	29974	A1cf	69865	X
ACP5	54	Acp5	11433	X
ACTL6A	86	Actl6a	56456	X
ACYP1	97	Acyp1	66204	X
ADAMDEC1	27299	Adamdec1	58860	X
ADAMTS4	9507	Adamts4	240913	X
ADIPOR1	51094	Adipor1	72674	X
ADORA2B	136	Adora2b	11541	X
AFM	173	Afm	280662	X
AGPAT1	10554	Agpat1	55979	X
AGPAT2	10555	Agpat2	67512	X
AGTRAP	57085	Agtrap	11610	X
AIFL	150209	Aifm3	72168	X
AIFM1	9131	Aifm1	26926	X
AIFM2	84883	Aifm2	71361	X
ALB	213	Alb	11657	X
ALDH16A1	126133	Aldh16a1	69748	X
ALF	11036	Gtf2a1l	71828	X
ALG8	79053	Alg8	381903	X
ALKBH2	121642	Alkbh2	231642	X
ALKBH3	221120	Alkbh3	69113	X
ALOXE3	59344	Aloxe3	23801	X
ANK2	287	Ank2	109676	X

ANKFY1	51479	Ankfy1	11736	X
ANKH	56172	Ank	11732	X
ANKRD37	353322	Ankrd37	654824	X
ANKRD49	54851	Ankrd49	56503	X
ANTXR1	84168	Antxr1	69538	X
ANTXR2	118429	Antxr2	71914	X
AP1B1	162	Ap1b1	11764	X
AP1G1	164	Ap1g1	11765	X
AP1G2	8906	Ap1g2	11766	X
AP1M1	8907	Ap1m1	11767	X
AP1S3	130340	Ap1s3	252903	X
AP2A1	160	Ap2a1	11771	X
AP2A2	161	Ap2a2	11772	X
AP3B1	8546	Ap3b1	11774	X
AP3D1	8943	Ap3d1	11776	X
APBB1IP	54518	Apbb1ip	54519	X
API5	8539	Api5	11800	X
APOB	338	Apob	238055	X
APOM	55937	Apom	55938	X
APOO	79135	Apoo	68316	X
APPBP2	10513	Appbp2	66884	X
AQP2	359	Aqp2	11827	X
AQP5	362	Aqp5	11830	X
AQP8	343	Aqp8	11833	X
ARCN1	372	Arcn1	213827	X
ARD1A	8260	Naa10	56292	X
ARFIP2	23647	Arfip2	76932	X
ARHGEF9	23229	Arhgef9	236915	X
ARL13B	200894	Arl13b	68146	X
ARL9	132946	Arl9	384185	X
ASGR2	433	Asgr2	11890	X
ATIC	471	Atic	108147	X
ATP4A	495	Atp4a	11944	X
ATRN	8455	Atrn	11990	X
ATRNL1	26033	Atrnl1	226255	X
AUP1	550	Aup1	11993	X
B3GAT3	26229	B3gat3	72727	X
B3GNT2	10678	B3gnt2	53625	X
B4GALT1	2683	B4galt1	14595	X
B4GALT7	11285	B4galt7	218271	X
BAG5	9529	Bag5	70369	X
BBOX1	8424	Bbox1	170442	X
BCAT2	587	Bcat2	12036	X
BCDO2	83875	Bco2	170752	X
BCMO1	53630	Bcmo1	63857	X
BDNF	627	Bdnf	12064	X
BICD2	23299	Bicd2	76895	X
BIRC6	57448	Birc6	12211	X
BMP6	654	Bmp6	12161	X
BMP8A	353500	Bmp8a	12163	X
BRE	9577	Bre	107976	X
BRWD1	54014	Brwd1	93871	X
BTN1A1	696	Btn1a1	12231	X
BTN3A2	11118	Btnl4	632126	X
BTNL3	10917	Btnl1	100038862	X

BZRAP1	9256	Bzrap1	207777	X
C10ORF33	84795	Pyroxd2	74580	X
C11ORF71	54494	Gm5617	434402	X
C12ORF24	29902	1500011H22Rik	68948	X
C13ORF1	57213	6330409N04Rik	66674	X
C14ORF108	55745	Mudeng	74385	X
C16ORF61	56942	2310061C15Rik	66531	X
C18ORF24	220134	Ska1	66468	X
C19ORF61	56006	1500002O20Rik	71997	X
C1ORF103	55791	4933421E11Rik	321000	X
C1ORF141	400757	4921539E11Rik	70941	X
C1ORF183	55924	6530418L21Rik	109050	X
C1ORF41	51668	Hspb11	72938	X
C1ORF9	51430	Al848100	226551	X
C1QB	713	C1qb	12260	X
C6	729	C6	12274	X
C6ORF192	116843	1110021L09Rik	76306	X
C7	730	C7	109828	X
C7ORF16	10842	Ppp1r17	19051	X
C8G	733	C8g	69379	X
C8ORF13	83648	Fam167a	219148	X
C9ORF131	138724	1700022111Rik	67317	X
CABP2	51475	Cabp2	29866	X
CALN1	83698	Caln1	140904	X
CAPNS2	84290	Capns2	69543	X
CASC3	22794	Casc3	192160	X
CASP8AP2	9994	Casp8ap2	26885	X
CAT	847	Cat	12359	X
CBLN1	869	Cbln1	12404	X
CBX1	10951	Cbx1	12412	X
CBX5	23468	Cbx5	12419	X
CC2D1A	54862	Cc2d1a	212139	X
CCAR1	55749	Ccar1	67500	X
CCDC28A	25901	Ccdc28a	215814	X
CCDC5	115106	Haus1	225745	X
CCDC76	54482	Ccdc76	229780	X
CCDC93	54520	Ccdc93	70829	X
CCL11	6356	Ccl11	20292	X
CCL25	6370	Ccl25	20300	X
CCL27	10850	Ccl27a	20301	X
CCL3	6348	Ccl3	20302	X
CCL7	6354	Ccl7	20306	X
CCT6A	908	Cct6a	12466	X
CD151	977	Cd151	12476	X
CD160	11126	Cd160	54215	X
CD164	8763	Cd164	53599	X
CD2	914	Cd2	12481	X
CD200	4345	Cd200	17470	X
CD22	933	Cd22	12483	X
CD226	10666	Cd226	225825	X
CD247	919	Cd247	12503	X
CD2BP2	10421	Cd2bp2	70233	X
CD300C	10871	Cd300c	387565	X
CD33	945	Cd33	12489	X
CD3D	915	Cd3d	12500	X

CD3G	917	Cd3g	12502	X
CD40LG	959	Cd40lg	21947	X
CD44	960	Cd44	12505	X
CD46	4179	Cd46	17221	X
CD5	921	Cd5	12507	X
CD52	1043	Cd52	23833	X
CD59	966	Cd59b	333883	X
CD5L	922	Cd5l	11801	X
CD72	971	Cd72	12517	X
CD80	941	Cd80	12519	X
CD81	975	Cd81	12520	X
CD84	8832	Cd84	12523	X
CD8B	926	Cd8b1	12526	X
CDCA4	55038	Cdca4	71963	X
CDCP2	200008	Cdcp2	242603	X
CDK2AP1	8099	Cdk2ap1	13445	X
CENPA	1058	Cenpa	12615	X
CENPF	1063	Cenpf	108000	X
CENPJ	55835	Cenpj	219103	X
CEP250	11190	Cep250	16328	X
CEP55	55165	Cep55	74107	X
CEP78	84131	Cep78	208518	X
CEPT1	10390	Cept1	99712	X
CFD	1675	Cfd	11537	X
CHAT	1103	Chat	12647	X
CHRD	8646	Chrd	12667	X
CHRNA1	1134	Chrna1	11435	X
CHRNA10	57053	Chrna10	504186	X
CHRNA2	1135	Chrna2	110902	X
CHRNA6	8973	Chrna6	11440	X
CHRNA7	1139	Chrna7	11441	X
CHRNA9	55584	Chrna9	231252	X
CHRN1	1140	Chrn1	11443	X
CHRN4	1143	Chrn4	108015	X
CIRH1A	84916	Cirh1a	21771	X
CKAP5	9793	Ckap5	75786	X
CKLF	51192	Ckif	75458	X
CLEC11A	6320	Clec11a	20256	X
CLEC12A	160364	Clec12a	232413	X
CLEC1A	51267	Clec1a	243653	X
CLEC1B	51266	Clec1b	56760	X
CLEC2D	29121	Clec2i	93675	X
CLEC3B	7123	Clec3b	21922	X
CLEC4G	339390	Clec4g	75863	X
CNOT6	57472	Cnot6	104625	X
CNTF	1270	Cntf	12803	X
CNTNAP1	8506	Cntnap1	53321	X
COG2	22796	Cog2	76332	X
COLEC10	10584	Colec10	239447	X
COPA	1314	Copa	12847	X
COPS6	10980	Cops6	26893	X
COPZ1	22818	Copz1	56447	X
COPZ2	51226	Copz2	56358	X
COQ2	27235	Coq2	71883	X
COQ6	51004	Coq6	217707	X

CPT1B	1375	Cpt1b	12895	X
CRAT	1384	Crat	12908	X
CRLF3	51379	Crlf3	54394	X
CRYL1	51084	Cryl1	68631	X
CSDC2	27254	Csdc2	105859	X
CSF1	1435	Csf1	12977	X
CSF3R	1441	Csf3r	12986	X
CSNK1E	1454	Csnk1e	27373	X
CTF1	1489	Ctf1	13019	X
CTHRC1	115908	Cthrc1	68588	X
CTNNA1	1495	Ctnna1	12385	X
CTNS	1497	Ctns	83429	X
CTR9	9646	Ctr9	22083	X
CTSA	5476	Ctsa	19025	X
CTSZ	1522	Ctsz	64138	X
CXADR	1525	Cxadr	13052	X
CXCL1	2919	Cxcl1	14825	X
CXCL11	6373	Cxcl11	56066	X
CXCL14	9547	Cxcl14	57266	X
CYB561D1	284613	Cyb561d1	72023	X
CYB5A	1528	Cyb5	109672	X
CYB5B	80777	Cyb5b	66427	X
CYBA	1535	Cyba	13057	X
CYBASC3	220002	Cybasc3	225912	X
CYCS	54205	Cycs	13063	X
CYLC2	1539	Cylc2	74914	X
CYP11A1	1583	Cyp11a1	13070	X
CYP11B1	1584	Cyp11b1	110115	X
CYP11B2	1585	Cyp11b2	13072	X
CYP17A1	1586	Cyp17a1	13074	X
CYP19A1	1588	Cyp19a1	13075	X
CYP1A1	1543	Cyp1a1	13076	X
CYP1A2	1544	Cyp1a2	13077	X
CYP1B1	1545	Cyp1b1	13078	X
CYP20A1	57404	Cyp20a1	77951	X
CYP21A2	1589	Cyp21a2-ps	632302	X
CYP24A1	1591	Cyp24a1	13081	X
CYP26A1	1592	Cyp26a1	13082	X
CYP26B1	56603	Cyp26b1	232174	X
CYP26C1	340665	Cyp26c1	546726	X
CYP27A1	1593	Cyp27a1	104086	X
CYP27B1	1594	Cyp27b1	13115	X
CYP2A13	1553	Cyp2a4	13086	X
CYP2B6	1555	Cyp2b10	13088	X
CYP2C18	1562	Cyp2c50	107141	X
CYP2C19	1557	Cyp2c65	72303	X
CYP2C8	1558	Cyp2c29	13095	X
CYP2C9	1559	Cyp2c55	72082	X
CYP2D6	1565	Cyp2d22	56448	X
CYP2F1	1572	Cyp2f2	13107	X
CYP2J2	1573	Cyp2j6	13110	X
CYP2R1	120227	Cyp2r1	244209	X
CYP2U1	113612	Cyp2u1	71519	X
CYP2W1	54905	Cyp2w1	545817	X
CYP39A1	51302	Cyp39a1	56050	X

CYP3A43	64816	Cyp3a57	622127	X
CYP3A5	1577	Cyp3a41a	53973	X
CYP4B1	1580	Cyp4b1	13120	X
CYP4F11	57834	Cyp4f40	631304	X
CYP4F12	66002	Cyp4f14	64385	X
CYP4F2	8529	Cyp4f18	72054	X
CYP4F22	126410	Cyp4f39	320997	X
CYP4F3	4051	Cyp4f13	170716	X
CYP4X1	260293	Cyp4x1	81906	X
CYP51A1	1595	Cyp51	13121	X
CYP7A1	1581	Cyp7a1	13122	X
CYP7B1	9420	Cyp7b1	13123	X
CYP8B1	1582	Cyp8b1	13124	X
CYTH1	9267	Cyth1	19157	X
CYTH2	9266	Cyth2	19158	X
DAB1	1600	Dab1	13131	X
DBI	1622	Dbi	13167	X
DBN1	1627	Dbn1	56320	X
DCBLD2	131566	Dcbld2	73379	X
DCLRE1B	64858	Dclre1b	140917	X
DCTN1	1639	Dctn1	13191	X
DDIT4	54541	Ddit4	74747	X
DDOST	1650	Ddost	13200	X
DEGS1	8560	Degs1	13244	X
DEPDC1B	55789	Depdc1b	218581	X
DERL1	79139	Derl1	67819	X
DGAT2L3	158833	Awat1	245533	X
DGKE	8526	Dgke	56077	X
DHRS13	147015	Dhrs13	70451	X
DHX34	9704	Dhx34	71723	X
DIABLO	56616	Diablo	66593	X
DLEU2	8847	Dleu2	668253	X
DLGAP5	9787	Dlgap5	218977	X
DNAJC16	23341	Dnajc16	214063	X
DOCK5	80005	Dock5	68813	X
DPM2	8818	Dpm2	13481	X
DSCAM	1826	Dscam	13508	X
DUS2L	54920	Dus2l	66369	X
DUSP12	11266	Dusp12	80915	X
DYNLT1	6993	Dynlt1b	21648	X
E2F5	1875	E2f5	13559	X
EARS2	124454	Ears2	67417	X
EBAG9	9166	Ebag9	55960	X
EBI3	10148	Ebi3	50498	X
EBNA1BP2	10969	Ebna1bp2	69072	X
EDA	1896	Eda	13607	X
EEF1E1	9521	Eef1e1	66143	X
EFHD1	80303	Efhd1	98363	X
EFNA2	1943	Efna2	13637	X
EFNA3	1944	Efna3	13638	X
EFNA4	1945	Efna4	13639	X
EFNA5	1946	Efna5	13640	X
EFNB2	1948	Efnb2	13642	X
EHHADH	1962	Ehhadh	74147	X
EIF1	10209	Eif1	20918	X

EIF1AX	1964	Eif1a	13664	X
EIF4B	1975	Eif4b	75705	X
EIF4E	1977	Eif4e	13684	X
EIF4EBP1	1978	Eif4ebp1	13685	X
EIF4EBP3	8637	Eif4ebp3	108112	X
EIF5A	1984	Eif5a	276770	X
EIF5B	9669	Eif5b	226982	X
EMP2	2013	Emp2	13731	X
ENC1	8507	Enc1	13803	X
EPB41L4B	54566	Epb4.1l4b	54357	X
EPOR	2057	Epor	13857	X
EPS8L3	79574	Eps8l3	99662	X
ERAP1	51752	Erap1	80898	X
ERBB2IP	55914	Erb2ip	59079	X
ERGIC1	57222	Ergic1	67458	X
ERLIN1	10613	Erlin1	226144	X
ETAA1	54465	Etaa1	68145	X
ETFA	2108	Etfa	110842	X
ETFB	2109	Etfb	110826	X
EXOC5	10640	Exoc5	105504	X
EXOC6	54536	Exoc6	107371	X
EXOSC2	23404	Exosc2	227715	X
EXOSC4	54512	Exosc4	109075	X
EYA4	2070	Eya4	14051	X
F11R	50848	F11r	16456	X
F3	2152	F3	14066	X
FABP3	2170	Fabp3	14077	X
FABP5	2171	Fabp5	16592	X
FABP6	2172	Fabp6	16204	X
FADS1	3992	Fads1	76267	X
FADS2	9415	Fads2	56473	X
FADS3	3995	Fads3	60527	X
FADS6	283985	Fads6	328035	X
FAHD1	81889	Fahd1	68636	X
FAM33A	348235	Fam33a	66140	X
FAM64A	54478	Fam64a	109212	X
FAM89B	23625	Fam89b	17826	X
FAT	2195	Fat1	14107	X
FBXL19	54620	Fbxl19	233902	X
FCAMR	83953	Fcamr	64435	X
FCER1G	2207	Fcer1g	14127	X
FCGBP	8857	Fcgbp	215384	X
FCRL3	115352	Fcrl5	329693	X
FDPS	2224	Fdps	110196	X
FEM1A	55527	Fem1a	14154	X
FEM1B	10116	Fem1b	14155	X
FEZ1	9638	Fez1	235180	X
FEZ2	9637	Fez2	225020	X
FGF1	2246	Fgf1	14164	X
FGF10	2255	Fgf10	14165	X
FGF13	2258	Fgf13	14168	X
FGF21	26291	Fgf21	56636	X
FGF22	27006	Fgf22	67112	X
FGF23	8074	Fgf23	64654	X
FGF5	2250	Fgf5	14176	X

FGF8	2253	Fgf8	14179	X
FKBP3	2287	Fkbp3	30795	X
FLJ10404	54540	Fam193b	212483	X
FLJ20152	54463	Fam134b	66270	X
FLJ20323	54468	Mios	252875	X
FLJ20674	54621	Vsig10	231668	X
FLJ38482	201931	Tmem192	73067	X
FLNA	2316	Flna	192176	X
FLNB	2317	Flnb	286940	X
FLNC	2318	Flnc	68794	X
FLVCR1	28982	Mfsd7b	226844	X
FMO1	2326	Fmo1	14261	X
FMO2	2327	Fmo2	55990	X
FMO3	2328	Fmo3	14262	X
FMO4	2329	Fmo4	226564	X
FMO5	2330	Fmo5	14263	X
FOLR2	2350	Folr2	14276	X
FOXF1	2294	Foxf1a	15227	X
FOXRED2	80020	Foxred2	239554	X
FRAT1	10023	Frat1	14296	X
FRS3	10817	Frs3	107971	X
FST	10468	Fst	14313	X
FUT11	170384	Fut11	73068	X
FUT8	2530	Fut8	53618	X
GABPB1	2553	Gabpb1	14391	X
GABRB1	2560	Gabrb1	14400	X
GABRG3	2567	Gabrg3	14407	X
GABRP	2568	Gabrp	216643	X
GABRQ	55879	Gabrq	57249	X
GABRR1	2569	Gabrr1	14408	X
GABRR2	2570	Gabrr2	14409	X
GDF15	9518	Gdf15	23886	X
GDF2	2658	Gdf2	12165	X
GDF3	9573	Gdf3	14562	X
GDF5	8200	Gdf5	14563	X
GDF9	2661	Gdf9	14566	X
GFOD2	81577	Gfod2	70575	X
GFRA2	2675	Gfra2	14586	X
GFRA4	64096	Gfra4	14588	X
GGA2	23062	Gga2	74105	X
GGA3	23163	Gga3	260302	X
GH1	2688	Gh	14599	X
GJA3	2700	Gja3	14611	X
GJA4	2701	Gja4	14612	X
GJB1	2705	Gjb1	14618	X
GJB2	2706	Gjb2	14619	X
GLRA3	8001	Glra3	110304	X
GLRX	2745	Glrx	93692	X
GLRX2	51022	Glrx2	69367	X
GLRX3	10539	Glrx3	30926	X
GNG8	94235	Gng8	14709	X
GOLGA4	2803	Golga4	54214	X
GP6	51206	Gp6	243816	X
GPA33	10223	Gpa33	59290	X
GPBAR1	151306	Gpbar1	227289	X

GPR107	57720	Gpr107	277463	X
GPR119	139760	Gpr119	236781	X
GPR152	390212	Gpr152	269053	X
GPR153	387509	Gpr153	100129	X
GPR158	57512	Gpr158	241263	X
GPR180	160897	Gpr180	58245	X
GRASP	160622	Grasp	56149	X
GRB10	2887	Grb10	14783	X
GRB7	2886	Grb7	14786	X
GRID1	2894	Grid1	14803	X
GRID2	2895	Grid2	14804	X
GRIK1	2897	Grik1	14805	X
GRIK2	2898	Grik2	14806	X
GRIK3	2899	Grik3	14807	X
GRIK4	2900	Grik4	110637	X
GRIK5	2901	Grik5	14809	X
GRIN1	2902	Grin1	14810	X
GRIN2A	2903	Grin2a	14811	X
GRIN2B	2904	Grin2b	14812	X
GRIN2C	2905	Grin2c	14813	X
GRIN2D	2906	Grin2d	14814	X
GRIN3A	116443	Grin3a	242443	X
GRINA	2907	Grina	66168	X
GUCA1A	2978	Guca1a	14913	X
GUCY1A3	2982	Gucy1a3	60596	X
GUCY1B3	2983	Gucy1b3	54195	X
H2AFZ	3015	H2afz	51788	X
H3F3B	3021	H3f3b	15081	X
HAAO	23498	HaaO	107766	X
HBE1	3046	Hbb-y	15135	X
HBEGF	1839	Hbegf	15200	X
HBQ1	3049	Hbq1a	216635	X
HDAC1	3065	Hdac1	433759	X
HEMK1	51409	Hemk1	69536	X
HEPH	9843	Heph	15203	X
HERPUD2	64224	Herpud2	80517	X
HERV-FRD	405754	Synb	239167	X
HGFAC	3083	Hgfac	54426	X
HINT2	84681	Hint2	68917	X
HLA-B	3106	H2-Q1	15006	X
HLA-C	3107	H2-D1	14964	X
HLA-DMA	3108	H2-DMa	14998	X
HLA-DMB	3109	H2-DMb1	14999	X
HLA-DOA	3111	H2-Oa	15001	X
HLA-DPA1	3113	H2-Pa	15003	X
HLA-DQB1	3119	H2-Ab1	14961	X
HLA-DRA	3122	H2-Ea-ps	100504404	X
HLA-E	3133	C920025E04Rik	667803	X
HMGCLL1	54511	Hmgcll1	208982	X
HN1L	90861	Hn1l	52009	X
HNRNPA1	3178	Hnrnpa1	15382	X
HNRNPK	3190	Hnrnpk	15387	X
HNRNPM	4670	Hnrnpm	76936	X
HOXD3	3232	Hoxd3	15434	X
HPD	3242	Hpd	15445	X

HRAS	3265	Hras1	15461	X
HRC	3270	Hrc	15464	X
HS6ST1	9394	Hs6st1	50785	X
HSDL2	84263	Hsdl2	72479	X
HSPC111	51491	Nop16	28126	X
HSPE1	3336	Hspe1	15528	X
HTR1D	3352	Htr1d	15552	X
HTR6	3362	Htr6	15565	X
HYAL1	3373	Hyal1	15586	X
HYAL2	8692	Hyal2	15587	X
HYAL3	8372	Hyal3	109685	X
HYLS1	219844	Hyls1	76832	X
ICK	22858	Ick	56542	X
ICOSLG	23308	Icosl	50723	X
IFNAR2	3455	Ifnar2	15976	X
IFNGR1	3459	Ifngr1	15979	X
IFNK	56832	Ifnk	387510	X
IFRD2	7866	Ifrd2	15983	X
IFT57	55081	Ift57	73916	X
IGF2	3481	Igf2	16002	X
IGFBP3	3486	Igfbp3	16009	X
IGFBP4	3487	Igfbp4	16010	X
IGFBP5	3488	Igfbp5	16011	X
IGFBP6	3489	Igfbp6	16012	X
IGSF10	285313	Igsf10	242050	X
IL10RA	3587	Il10ra	16154	X
IL12A	3592	Il12a	16159	X
IL12RB2	3595	Il12rb2	16162	X
IL13RA1	3597	Il13ra1	16164	X
IL13RA2	3598	Il13ra2	16165	X
IL15	3600	Il15	16168	X
IL16	3603	Il16	16170	X
IL17C	27189	Il17c	234836	X
IL17F	112744	Il17f	257630	X
IL17RE	132014	Il17re	57890	X
IL18	3606	Il18	16173	X
IL18BP	10068	Il18bp	16068	X
IL19	29949	Il19	329244	X
IL1F6	27179	Il1f6	54448	X
IL1F9	56300	Il1f9	215257	X
IL1R2	7850	Il1r2	16178	X
IL1RAP	3556	Il1rap	16180	X
IL1RAPL1	11141	Il1rapl1	331461	X
IL1RL2	8808	Il1rl2	107527	X
IL2	3558	Il2	16183	X
IL23R	149233	Il23r	209590	X
IL24	11009	Il24	93672	X
IL27	246778	Il27	246779	X
IL27RA	9466	Il27ra	50931	X
IL28A	282616	Il28a	330496	X
IL2RA	3559	Il2ra	16184	X
IL3	3562	Il3	16187	X
IL4	3565	Il4	16189	X
IL5RA	3568	Il5ra	16192	X
IL6ST	3572	Il6st	16195	X

IL7	3574	Il7	16196	X
IL7R	3575	Il7r	16197	X
IL9R	3581	Il9r	16199	X
IMP4	92856	Imp4	27993	X
IMPG2	50939	Impg2	224224	X
INA	9118	Ina	226180	X
INHA	3623	Inha	16322	X
INHBB	3625	Inhbb	16324	X
IPO4	79711	Ipo4	75751	X
IRF2BP2	359948	Irf2bp2	270110	X
IRS4	8471	Irs4	16370	X
ISCU	23479	Iscu	66383	X
ITGAE	3682	Itgae	16407	X
ITIH1	3697	Itih1	16424	X
ITM2B	9445	Itm2b	16432	X
ITPR3	3710	Itp3	16440	X
IYD	389434	Iyd	70337	X
JPH4	84502	Jph4	319984	X
JTV1	7965	Aimp2	231872	X
KDELR1	10945	Kdelr1	68137	X
KDELR2	11014	Kdelr2	66913	X
KDELR3	11015	Kdelr3	105785	X
KIAA0090	23065	C230096C10Rik	230866	X
KIAA0195	9772	2310067B10Rik	71947	X
KIAA0701	23074	Uhrf1bp1l	75089	X
KIAA1128	54462	Gcap14	72972	X
KIAA1333	55632	G2e3	217558	X
KIAA1344	57544	Txndc16	70561	X
KIF5A	3798	Kif5a	16572	X
KIR3DL2	3812	Kir3dl2	245615	X
KLHL2	11275	Klhl2	77113	X
KLRB1	3820	Klrb1	100043861	X
KLRC1	3821	Klrc1	16641	X
KLRC2	3822	Klrc2	16642	X
KLRC3	3823	Klrc3	58179	X
KLRG1	10219	Klrg1	50928	X
KMO	8564	Kmo	98256	X
KPNA1	3836	Kpna1	16646	X
KPNA2	3838	Kpna2	16647	X
KPNA3	3839	Kpna3	16648	X
KRAS	3845	Kras	16653	X
KRT1	3848	Krt1	16678	X
KRT19	3880	Krt19	16669	X
KRT8	3856	Krt8	16691	X
KSR1	8844	Ksr1	16706	X
KTN1	3895	Ktn1	16709	X
L1CAM	3897	L1cam	16728	X
L1TD1	54596	L1td1	381591	X
L2HGDH	79944	L2hgdh	217666	X
LAX1	54900	Lax1	240754	X
LAYN	143903	Layn	244864	X
LCK	3932	Lck	16818	X
LCN10	414332	Lcn10	332578	X
LCP1	3936	Lcp1	18826	X
LDLR	3949	Ldlr	16835	X

LDLRAP1	26119	Ldlrap1	100017	X
LENG8	114823	Leng8	232798	X
LENG9	94059	Leng9	243813	X
LEP	3952	Lep	16846	X
LEPR	3953	Lepr	16847	X
LEPREL1	55214	Leprel1	210530	X
LGALS4	3960	Lgals4	16855	X
LGALS9	3965	Lgals9	16859	X
LGI1	9211	Lgi1	56839	X
LGR6	59352	Lgr6	329252	X
LGTN	1939	Eif2d	16865	X
LILRA5	353514	Lilra5	232801	X
LMAN1	3998	Lman1	70361	X
LMNA	4000	Lmna	16905	X
LMNB2	84823	Lmnb2	16907	X
LOC342897	342897	Nccrp1	233038	X
LOC389465	6741	Ssb	20823	X
LRP10	26020	Lrp10	65107	X
LRP3	4037	Lrp3	435965	X
LRRC40	55631	Lrrc40	67144	X
LSAMP	4045	Lsamp	268890	X
LSM4	25804	Lsm4	50783	X
LSM6	11157	Lsm6	78651	X
LTBR	4055	Ltbr	17000	X
LY75	4065	Ly75	17076	X
LY96	23643	Ly96	17087	X
LYAR	55646	Lyar	17089	X
LYRM1	57149	Lyrm1	73919	X
LYRM2	57226	Lyrm2	108755	X
LYRM4	57128	Lyrm4	380840	X
LYRM5	144363	Lyrm5	67636	X
LYRM7	90624	Lyrm7	75530	X
MAGOHB	55110	Magohb	66441	X
MAGT1	84061	Magt1	67075	X
MAP3K7IP1	10454	Tab1	66513	X
MAPK15	225689	Mapk15	332110	X
MAPRE1	22919	Mapre1	13589	X
MARVELD2	153562	Marveld2	218518	X
MBNL1	4154	Mbnl1	56758	X
MCF2	4168	Mcf2	109904	X
MCTS1	28985	Mcts1	68995	X
MDK	4192	Mdk	17242	X
ME2	4200	Me2	107029	X
MECR	51102	Mecr	26922	X
MED30	90390	Med30	69790	X
METRNL	79006	Metrn	70083	X
MFSD1	64747	Mfsd1	66868	X
MGAT4B	11282	Mgat4b	103534	X
MGC19604	112812	Fdx1l	68165	X
MGC4172	79154	Dhrs11	192970	X
MICALL1	85377	Micall1	27008	X
MICB	4277	Mill2	243864	X
MIER3	166968	Mier3	218613	X
MIST	116449	Clnk	27278	X
MKRN1	23608	Mkrn1	54484	X

MLC1	23209	Mlc1	170790	X
MLF1IP	79682	Mlf1ip	71876	X
MMD	23531	Mmd	67468	X
MMD2	221938	Mmd2	75104	X
MOBP	4336	Mobp	17433	X
MPL	4352	Mpl	17480	X
MPPED2	744	Mpped2	77015	X
MR1	3140	Mr1	15064	X
MRPL12	6182	Mrpl12	56282	X
MRPL37	51253	Mrpl37	56280	X
MRPS16	51021	Mrps16	66242	X
MS4A10	341116	Ms4a10	69826	X
MS4A5	64232	Ms4a5	269063	X
MS4A6A	64231	Ms4a6d	68774	X
MS4A8B	83661	Ms4a8a	64381	X
MSI1	4440	Msi1	17690	X
MSN	4478	Msn	17698	X
MSR1	4481	Msr1	20288	X
MSRB3	253827	Msrb3	320183	X
MT3	4504	Mt3	17751	X
MTO1	25821	Mto1	68291	X
MTSS1	9788	Mtss1	211401	X
MTUS1	57509	Mtus1	102103	X
MTX1	4580	Mtx1	17827	X
MYO18A	399687	Myo18a	360013	X
NARF	26502	Narf	67608	X
NCBP2	22916	Ncbp2	68092	X
NCF4	4689	Ncf4	17972	X
NCL	4691	Ncl	17975	X
NCLN	56926	Ncln	103425	X
NCOA7	135112	Ncoa7	211329	X
NCOR2	9612	Ncor2	20602	X
NCR1	9437	Ncr1	17086	X
NCR3	259197	Ncr3-ps	667612	X
NDST4	64579	Ndst4	64580	X
NDUFA12	55967	Ndufa12	66414	X
NDUFA13	51079	Ndufa13	67184	X
NDUFAF2	91942	Ndufaf2	75597	X
NDUFB2	4708	Ndufb2	68198	X
NDUFS1	4719	Ndufs1	227197	X
NEIL2	252969	Neil2	382913	X
NETO1	81832	Neto1	246317	X
NEURL	9148	Neurl1a	18011	X
NEUROG1	4762	Neurog1	18014	X
NGB	58157	Ngb	64242	X
NGF	4803	Ngf	18049	X
NGFR	4804	Ngfr	18053	X
NGFRAP1	27018	Ngfrap1	12070	X
NHLRC2	374354	Nhlrc2	66866	X
NODAL	4838	Nodal	18119	X
NOG	9241	Nog	18121	X
NOLA2	55651	Nhp2	52530	X
N-PAC	84656	Glyr1	74022	X
NPM1	4869	Npm1	18148	X
NPSR1	387129	Npsr1	319239	X

NPTN	27020	Nptn	20320	X
NPTXR	23467	Nptxr	73340	X
NR2F2	7026	Nr2f2	11819	X
NRAS	4893	Nras	18176	X
NRBF2	29982	Nrbf2	641340	X
NRG1	3084	Nrg1	211323	X
NRG2	9542	Nrg2	100042150	X
NRIP2	83714	Nrip2	60345	X
NRP1	8829	Nrp1	18186	X
NRP2	8828	Nrp2	18187	X
NT5C2	22978	Nt5c2	76952	X
NTF3	4908	Ntf3	18205	X
NTF4	4909	Ntf5	78405	X
NUDT13	25961	Nudt13	67725	X
NUMBL	9253	Numbl	18223	X
NUP205	23165	Nup205	70699	X
NUP35	129401	Nup35	69482	X
NUP85	79902	Nup85	445007	X
NXN	64359	Nxn	18230	X
NXNL1	115861	Nxn1	234404	X
OGFOD2	79676	Ogfod2	66627	X
OGFR	11054	Ogfr	72075	X
OMA1	115209	Oma1	67013	X
OPRS1	10280	Sigmar1	18391	X
OR10R2	343406	Olfr1406	258758	X
OR10S1	219873	Olfr982	258853	X
OR10X1	128367	Olfr417	258238	X
OR13A1	79290	Olfr211	258914	X
OR13D1	286365	Olfr270	258600	X
OR1B1	347169	Olfr362	259053	X
OR1S1	219959	Olfr1496	258991	X
OR2C3	81472	Olfr225	257886	X
OR2D3	120775	Olfr707	194433	X
OR2K2	26248	Olfr267	258922	X
OR2T1	26696	Olfr31	18330	X
OR2T4	127074	Olfr329-ps	259148	X
OR4C3	256144	Olfr140	57272	X
OR4D1	26689	Olfr464	258407	X
OR4D11	219986	Olfr1423	258675	X
OR51D1	390038	Olfr557	258358	X
OR51V1	283111	Olfr624	258189	X
OR52B2	255725	Olfr691	259063	X
OR52B6	340980	Olfr618	259049	X
OR52L1	338751	Olfr685	258160	X
OR56B1	387748	Olfr657	258309	X
OR5C1	392391	Olfr368	258371	X
OR5M1	390168	Olfr1023	258580	X
OR5M10	390167	Olfr1022	258582	X
OR8G5	219865	Olfr935	258741	X
OR9Q2	219957	Olfr1497	258736	X
ORM2	5005	Orm2	18406	X
OSCAR	126014	Oscar	232790	X
OSMR	9180	Osmr	18414	X
P4HA3	283208	P4ha3	320452	X
PAEP	5047	Paep	110645	X
PAFAH1B1	5048	Pafah1b1	18472	X
PAN2	9924	Pan2	103135	X
PAQR5	54852	Paqr5	74090	X

PAQR6	79957	Paqr6	68957	X
PCDH1	5097	Pcdh1	75599	X
PCDHGA8	9708	Pcdhga8	93716	X
PDAP1	11333	Pdap1	231887	X
PDC	5132	Pdc	20028	X
PDCD1LG2	80380	Pdcd1lg2	58205	X
PDCL	5082	Pdcl	67466	X
PDE5A	8654	Pde5a	242202	X
PDGFD	80310	Pdgfd	71785	X
PDILT	204474	Pdilt	71830	X
PDZK1	5174	Pdzk1	59020	X
PEA15	8682	Pea15a	18611	X
PECAM1	5175	Pecam1	18613	X
PFDN6	10471	H2-Ke2	14976	X
PHKG1	5260	Phkg1	18682	X
PIAS1	8554	Pias1	56469	X
PIB5PA	27124	Inpp5j	170835	X
PIGX	54965	Pigx	72084	X
PILRA	29992	Pilra	231805	X
PITPNA	5306	Pitpna	18738	X
PITPNM2	57605	Pitpnm2	19679	X
PITPNM3	83394	Pitpnm3	327958	X
PKD2L1	9033	Pkd2l1	329064	X
PLA2R1	22925	Pla2r1	18779	X
PLCL1	5334	Plcl1	227120	X
PLG	5340	Plg	18815	X
PLK1	5347	Plk1	18817	X
PLOD1	5351	Plod1	18822	X
PLOD3	8985	Plod3	26433	X
PLXDC1	57125	Plxdc1	72324	X
PLXDC2	84898	Plxdc2	67448	X
PLXNA1	5361	Plxna1	18844	X
PLXND1	23129	Plxnd1	67784	X
PNN	5411	Pnn	18949	X
PNRC1	10957	Pnrc1	108767	X
PNRC2	55629	Pnrc2	52830	X
POFUT1	23509	Pofut1	140484	X
POLA1	5422	Pola1	18968	X
POLG	5428	Polg	18975	X
POLR2I	5438	Polr2i	69920	X
POM121	9883	Pom121	107939	X
PPP2R2D	55844	Ppp2r2d	52432	X
PPP3R2	5535	Ppp3r2	19059	X
PPRC1	23082	Pprc1	226169	X
PRDX2	7001	Prdx2	21672	X
PRIM2	5558	Prim2	19076	X
PRKCZ	5590	Prkcz	18762	X
PRKD3	23683	Prkd3	75292	X
PROCR	10544	Procr	19124	X
PROM1	8842	Prom1	19126	X
PROS1	5627	Pros1	19128	X
PRPF18	8559	Prpf18	67229	X
PSMA2	5683	Psma2	19166	X
PSMB5	5693	Psmb5	19173	X
PSMD1	5707	Psm1	70247	X
PSMD11	5717	Psm11	69077	X
PSMD12	5718	Psm12	66997	X
PSMD13	5719	Psm13	23997	X
PSMD3	5709	Psm3	22123	X
PSMD4	5710	Psm4	19185	X
PSMD6	9861	Psm6	66413	X
PSME1	5720	Psme1	19186	X
PSME3	10197	Psme3	19192	X

PTCRA	171558	Ptcra	19208	X
PTDSR	23210	Jmid6	107817	X
PTGFRN	5738	Ptgfrn	19221	X
PTPRM	5797	Ptprm	19274	X
PVALB	5816	Pvalb	19293	X
PVR	5817	Pvr	52118	X
PVRL1	5818	Pvrl1	58235	X
PVRL2	5819	Pvrl2	19294	X
PYCARD	29108	Pycard	66824	X
PYROXD1	79912	Pyroxd1	232491	X
QSOX1	5768	Qsox1	104009	X
QSOX2	169714	Qsox2	227638	X
RAB33A	9363	Rab33a	19337	X
RAB43	339122	Rab43	69834	X
RAC1	5879	Rac1	19353	X
RAMP2	10266	Ramp2	54409	X
RARRES1	5918	Rarres1	109222	X
RARRES2	5919	Rarres2	71660	X
RASA2	5922	Rasa2	114713	X
RASA4	10156	Rasa4	54153	X
RBMX	27316	Rbmx	19655	X
RBMXL1	494115	Rbmxl1	19656	X
RBP1	5947	Rbp1	19659	X
RBP2	5948	Rbp2	19660	X
RDX	5962	Rdx	19684	X
REEP4	80346	Reep4	72549	X
REG1A	5967	Reg1	19692	X
RETSAT	54884	Retsat	67442	X
RFC3	5983	Rfc3	69263	X
RFESD	317671	Rfesd	218341	X
RFFL	117584	Rffl	67338	X
RHBDF1	64285	Rhbdf1	13650	X
RHBG	57127	Rhbg	58176	X
RHCG	51458	Rhcg	56315	X
RHO	6010	Rho	212541	X
RIMS3	9783	Rims3	242662	X
RIN2	54453	Rin2	74030	X
RNF135	84282	Rnf135	71956	X
RNF144B	255488	Rnf144b	218215	X
RNFT2	84900	Rnft2	269695	X
ROBO1	6091	Robo1	19876	X
ROBO3	64221	Robo3	19649	X
ROBO4	54538	Robo4	74144	X
ROD1	9991	Rod1	230257	X
ROPN1	54763	Ropn1	76378	X
RP11-45J16.2	116123	Fmo9	240894	X
RPL5	6125	Rpl5	100503670	X
RPN1	6184	Rpn1	103963	X
RPS18	6222	Rps18	20084	X
RPS6	6194	Rps6	20104	X
RRAGD	58528	Rragd	52187	X
RTN4R	65078	Rtn4r	65079	X
RTN4RL1	146760	Rtn4rl1	237847	X
RWDD3	25950	Rwdd3	66568	X
S100A14	57402	S100a14	66166	X
SALL1	6299	Sall1	58198	X
SASH3	54440	Sash3	74131	X
SBN01	55206	Sbno1	243272	X
SCARA3	51435	Scara3	219151	X
SCARF1	8578	Scarf1	380713	X
SCYL1	57410	Scyl1	78891	X
SDC1	6382	Sdc1	20969	X
SEC13L1	6396	Sec13	110379	X

SEC14L3	266629	Sec14l3	380683	X
SEC22A	26984	Sec22a	317717	X
SEC22C	9117	Sec22c	215474	X
SEC23A	10484	Sec23a	20334	X
SEC23IP	11196	Sec23ip	207352	X
SELL	6402	Sell	20343	X
SELS	55829	H47	109815	X
SEMA3C	10512	Sema3c	20348	X
SEMA3D	223117	Sema3d	108151	X
SEMA4C	54910	Sema4c	20353	X
SEMA4D	10507	Sema4d	20354	X
SEMA5A	9037	Sema5a	20356	X
SEMA5B	54437	Sema5b	20357	X
SEMA6B	10501	Sema6b	20359	X
SEMA6D	80031	Sema6d	214968	X
SENP5	205564	Senp5	320213	X
SENP7	57337	Senp7	66315	X
SEPT3	55964	Sept3	24050	X
SERGEF	26297	Sergef	27414	X
SET	6418	Set	56086	X
SEZ6L2	26470	Sez6l2	233878	X
SFRP1	6422	Sfrp1	20377	X
SFRS4	6429	Srsf4	57317	X
SFTPA1	6435	Sftpa1	20387	X
SGCB	6443	Sgcb	24051	X
SH3BP5L	80851	Sh3bp5l	79566	X
SH3TC1	54436	Sh3tc1	231147	X
SHMT1	6470	Shmt1	20425	X
SIAH1	6477	Siah1a	20437	X
SIGLEC5	8778	Siglec5	233186	X
SIGLEC8	27181	Siglece	83382	X
SKAP1	8631	Skap1	78473	X
SLAMF9	89886	Slamf9	98365	X
SLC22A3	6581	Slc22a3	20519	X
SLC35A1	10559	Slc35a1	24060	X
SMC1A	8243	Smc1a	24061	X
SMC2	10592	Smc2	14211	X
SNAPIN	23557	Snapin	20615	X
SNED1	25992	Sned1	208777	X
SNRPA1	6627	Snrpa1	68981	X
SNRPB	6628	Snrpb	20638	X
SNRPC	6631	Snrpc	20630	X
SNX15	29907	Snx15	69024	X
SNX2	6643	Snx2	67804	X
SORCS2	57537	Sorcs2	81840	X
SORCS3	22986	Sorcs3	66673	X
SORL1	6653	Sorl1	20660	X
SOX30	11063	Sox30	214105	X
SPIN2	54466	Spin2	278240	X
SPINK1	6690	Spink3	20730	X
SPINK4	27290	Spink4	20731	X
SPNS1	83985	Spns1	73658	X
SPRY3	10251	Spry3	236576	X
SRGAP3	9901	Srgap3	259302	X
SRPR	6734	Srpr	67398	X
SRPRB	58477	Srprb	20818	X
SSR2	6746	Ssr2	66256	X
SSR3	6747	Ssr3	67437	X
ST13	6767	St13	70356	X
ST6GALNAC6	30815	St6galnac6	50935	X
ST8SIA1	6489	St8sia1	20449	X
ST8SIA2	8128	St8sia2	20450	X
STAP1	26228	Stap1	56792	X

STC2	8614	Stc2	20856	X
STEAP2	261729	Steap2	74051	X
STEAP3	55240	Steap3	68428	X
STEAP4	79689	Steap4	117167	X
STIL	6491	Stil	20460	X
STK16	8576	Stk16	20872	X
STON2	85439	Ston2	108800	X
STRN4	29888	Strn4	97387	X
STX11	8676	Stx11	74732	X
STX12	23673	Stx12	100226	X
STX19	415117	Stx19	68159	X
STX1A	6804	Stx1a	20907	X
STX1B	112755	Stx1b	56216	X
STX2	2054	Stx2	13852	X
STX3	6809	Stx3	20908	X
STX4	6810	Stx4a	20909	X
STX6	10228	Stx6	58244	X
STX7	8417	Stx7	53331	X
STX8	9482	Stx8	55943	X
STXBP2	6813	Stxbp2	20911	X
SUPV3L1	6832	Supv3l1	338359	X
SURF1	6834	Surf1	20930	X
SV2A	9900	Sv2a	64051	X
SYNE2	23224	Syne2	319565	X
SYTL2	54843	Sytl2	83671	X
TAPBPL	55080	Tapbpl	213233	X
TAS2R38	5726	Tas2r138	387513	X
TAS2R42	353164	Tas2r131	387356	X
TAS2R49	259295	Tas2r120	387348	X
TBC1D16	125058	Tbc1d16	207592	X
TCEA3	6920	Tcea3	21401	X
TDGF1	6997	Tdgf1	21667	X
TDO2	6999	Tdo2	56720	X
TEX101	83639	Tex101	56746	X
TEX14	56155	Tex14	83560	X
TFR2	7036	Tfr2	50765	X
TGFBI	7045	Tgfbi	21810	X
TGM1	7051	Tgm1	21816	X
TGM6	343641	Tgm6	241636	X
THADA	63892	Thada	240174	X
THPO	7066	Thpo	21832	X
TIMM50	92609	Timm50	66525	X
TIMM8A	1678	Timm8a1	30058	X
TIPARP	25976	Tiparp	99929	X
TLR3	7098	Tlr3	142980	X
TLR4	7099	Tlr4	21898	X
TLR9	54106	Tlr9	81897	X
TM7SF2	7108	Tm7sf2	73166	X
TM9SF1	10548	Tm9sf1	74140	X
TM9SF4	9777	Tm9sf4	99237	X
TMCO1	54499	Tmco1	68944	X
TMED1	11018	Tmed1	17083	X
TMED2	10959	Tmed2	56334	X
TMED3	23423	Tmed3	66111	X
TMED5	50999	Tmed5	73130	X
TMED6	146456	Tmed6	66269	X
TMED7	51014	Tmed7	66676	X
TMED8	283578	Tmed8	382620	X
TMEM1	7109	Trappc10	216131	X
TMEM48	55706	Tmem48	72787	X
TMEM9	252839	Tmem9	66241	X
TNFAIP3	7128	Tnfaip3	21929	X
TNFRSF18	8784	Tnfrsf18	21936	X

TNFRSF1A	7132	Tnfrsf1a	21937	X
TNFRSF21	27242	Tnfrsf21	94185	X
TNFRSF25	8718	Tnfrsf25	85030	X
TNFSF12	8742	Tnfsf12	21944	X
TNFSF13B	10673	Tnfsf13b	24099	X
TNFSF14	8740	Tnfsf14	50930	X
TNFSF15	9966	Tnfsf15	326623	X
TNFSF4	7292	Tnfsf4	22164	X
TNFSF8	944	Tnfsf8	21949	X
TNXB	7148	Tnxb	81877	X
TOLLIP	54472	Tollip	54473	X
TOM1L2	146691	Tom1l2	216810	X
TOMM22	56993	Tomm22	223696	X
TP53BP2	7159	Trp53bp2	209456	X
TPI1	7167	Tpi1	21991	X
TPM1	7168	Tpm1	22003	X
TPM2	7169	Tpm2	22004	X
TPR	7175	Tpr	108989	X
TPRKB	51002	Tprkb	69786	X
TRAF1	7185	Traf1	22029	X
TRAF3IP1	26146	Traf3ip1	74019	X
TRAM1	23471	Tram1	72265	X
TRAPPC1	58485	Trappc1	245828	X
TRAPPC2L	51693	Trappc2l	59005	X
TRAT1	50852	Trat1	77647	X
TREML2	79865	Trem12	328833	X
TREML4	285852	Trem14	224840	X
TRIB1	10221	Trib1	211770	X
TRIB3	57761	Trib3	228775	X
TRIM14	9830	Trim14	74735	X
TRIM59	286827	Trim59	66949	X
TROAP	10024	Troap	78733	X
TSEN34	79042	Tsen34	66078	X
TSPO	706	Tspo	12257	X
TSTA3	7264	Tsta3	22122	X
TTR	7276	Ttr	22139	X
TUBA1C	84790	Tuba1c	22146	X
TUBA4A	7277	Tuba4a	22145	X
TUBG1	7283	Tubg1	103733	X
TXN	7295	Txn1	22166	X
TXN2	25828	Txn2	56551	X
TXNDC13	56255	Tmx4	52837	X
TXNDC14	51075	Tmx2	66958	X
TXNDC15	79770	Txndc15	69672	X
TXNDC17	84817	Txndc17	52700	X
TXNDC3	51314	Nme8	73412	X
TXNDC4	23071	Erp44	76299	X
TXNDC5	81567	Txndc5	105245	X
TXNDC6	347736	NME9	623534	X
TXNDC9	10190	Txndc9	98258	X
TXNL1	9352	Txn1	53382	X
TXNL4A	10907	Txn14a	27366	X
TYMP	1890	Tymp	72962	X
U2AF1	7307	U2af1	108121	X
UAP1	6675	Uap1	107652	X
UBE3C	9690	Ube3c	100763	X
UCP1	7350	Ucp1	22227	X
UCP2	7351	Ucp2	22228	X
UCP3	7352	Ucp3	22229	X
UHRF1BP1	54887	Uhrf1bp1	224648	X
UIMC1	51720	Uimc1	20184	X
ULBP1	80329	Ulb1	77777	X
UNC5D	137970	Unc5d	210801	X

UQCRQ	27089	Uqcrq	22272	X
USP34	9736	Usp34	17847	X
VAMP7	6845	Vamp7	20955	X
VIL2	7430	Ezr	22350	X
VPS26A	9559	Vps26a	30930	X
VPS26B	112936	Vps26b	69091	X
VPS28	51160	Vps28	66914	X
WDR44	54521	Wdr44	72404	X
WDR54	84058	Wdr54	75659	X
WDR86	349136	Wdr86	269633	X
WDR88	126248	Wdr88	384605	X
WNT5A	7474	Wnt5a	22418	X
WNT6	7475	Wnt6	22420	X
WNT7A	7476	Wnt7a	22421	X
WNT7B	7477	Wnt7b	22422	X
WSB2	55884	Wsb2	59043	X
XKR6	286046	Xkr6	219149	X
XPOT	11260	Xpot	73192	X
ZCCHC17	51538	Zcchc17	619605	X
ZEB1	6935	Zeb1	21417	X
ZIC2	7546	Zic2	22772	X
ZNF342	162979	Zfp296	63872	X
ZP2	7783	Zp2	22787	X
ZP3	7784	Zp3	22788	X
ZWILCH	55055	Zwilch	68014	X
ABCC11	85320	Unknown	X	X
ABCC13	150000	Unknown	X	X
CCL14	6358	Unknown	X	X
CCL15	6359	Unknown	X	X
CCL16	6360	Unknown	X	X
CCL4L1	9560	Unknown	X	X
CCL8	6355	Unknown	X	X
CD163L1	283316	Unknown	X	X
CD1B	910	Unknown	X	X
CEACAM6	4680	Unknown	X	X
CEACAM8	1088	Unknown	X	X
CHRFAM7A	89832	Unknown	X	X
CYP2A6	1548	Unknown	X	X
CYP2A7	1549	Unknown	X	X
CYP2D7P1	1564	Unknown	X	X
CYP3A4	1576	Unknown	X	X
CYP3A7	1551	Unknown	X	X
CYP4Z1	199974	Unknown	X	X
D2HGDH	257054	Unknown	X	X
DKFZP434A0131	54441	Unknown	X	X
DLEU1	10301	Unknown	X	X
EMR4	326342	Unknown	X	X
ERVWE1	30816	Unknown	X	X
FCRL4	83417	Unknown	X	X
FCRL5	83416	Unknown	X	X
GNRHR2	114814	Unknown	X	X
HBG2	3048	Unknown	X	X
HLA-DQB2	3120	Unknown	X	X
HLA-DRB3	3125	Unknown	X	X
HLA-DRB4	3126	Unknown	X	X
HLA-DRB5	3127	Unknown	X	X
HLA-G	3135	Unknown	X	X
HTR1E	3354	Unknown	X	X
HTR3C	170572	Unknown	X	X
IL1F7	27178	Unknown	X	X
IL26	55801	Unknown	X	X
KIR2DL1	3802	Unknown	X	X
KIR2DL2	3803	Unknown	X	X

KIR2DL3	3804	Unknown	X	X
KIR2DS5	3810	Unknown	X	X
KIR3DL3	115653	Unknown	X	X
KLRC4	8302	Unknown	X	X
KLRF1	51348	Unknown	X	X
KPNA5	3841	Unknown	X	X
KRTAP13-4	284827	Unknown	X	X
LAT1-3TM	81893	Unknown	X	X
LILRA3	11026	Unknown	X	X
LILRA4	23547	Unknown	X	X
LILRP2	79166	Unknown	X	X
LOC339483	339483	Unknown	X	X
LOC339879	339879	Unknown	X	X
MICA	4276	Unknown	X	X
MKRN4	7682	Unknown	X	X
MRTO4	51154	Unknown	X	X
MS4A6E	245802	Unknown	X	X
MT1F	4494	Unknown	X	X
NCF1	4687	Unknown	X	X
NCR2	9436	Unknown	X	X
NOTCH2NL	388677	Unknown	X	X
OR14A16	284532	Unknown	X	X
OR1S2	219958	Unknown	X	X
OR2G2	81470	Unknown	X	X
OR2G3	81469	Unknown	X	X
OR2L3	391192	Unknown	X	X
OR2T27	403239	Unknown	X	X
OR2T5	401993	Unknown	X	X
OR4K17	390436	Unknown	X	X
OR6B3	150681	Unknown	X	X
OR6V1	346517	Unknown	X	X
OR8S1	341568	Unknown	X	X
PAGE4	9506	Unknown	X	X
PCDH11Y	83259	Unknown	X	X
PXDNL	137902	Unknown	X	X
RARRES3	5920	Unknown	X	X
RBP5	83758	Unknown	X	X
RHCE	6006	Unknown	X	X
SIGLEC6	946	Unknown	X	X
SIGLEC7	27036	Unknown	X	X
TAS2R50	259296	Unknown	X	X
TLR10	81793	Unknown	X	X
TNFRSF6B	8771	Unknown	X	X
TUBA3C	7278	Unknown	X	X
UNK	440802	Unknown	X	X
UNK	391661	Unknown	X	X
UNK	401897	Unknown	X	X
ZBED1	9189	Unknown	X	X
ZNF626	199777	Unknown	X	X