

Table 1 Statistics of sequencing data quality control

Sample	Clean_Data(Gb)	HQ_Clean_Data(Gb)	Mean Depth	HQ_Q20(%)	HQ_Q30(%)	HQ_GC(%)	Total Read	Total Mapped
D1	26.45	25.58	10.44	24059097349(94.06%)	21830145913(85.34%)	10548200288(41.24%)	174285014	173022409-99.28%
D10	31.33	30.40	12.41	29304999383(96.41%)	27512012246(90.51%)	12712378640(41.82%)	206728992	205323332-99.32%
D2	28.88	27.96	11.41	27065545017(96.81%)	25590920990(91.54%)	11502317622(41.14%)	191013538	189661405-99.29%
D3	26.05	25.15	10.26	24288973785(96.58%)	22883790543(91.0%)	10496664464(41.74%)	172019792	170711399-99.24%
D4	28.66	27.74	11.32	26816586388(96.67%)	25316779997(91.27%)	11714139594(42.23%)	189388416	187810255-99.17%
D5	25.23	24.72	10.09	23117525943(93.53%)	20867765348(84.43%)	10440456233(42.24%)	166802806	165670467-99.32%
D6	31.47	30.49	12.44	29378485795(96.37%)	27554543897(90.38%)	12843649452(42.13%)	207794842	206352877-99.31%
D7	30.23	29.26	11.94	28456002951(97.25%)	27065252955(92.5%)	12303905876(42.05%)	199549666	198274660-99.36%
D8	23.01	22.12	9.03	21326416236(96.4%)	20061982895(90.69%)	9196861663(41.57%)	152183688	151067239-99.27%
D9	25.88	25.15	10.26	24231364410(96.37%)	22772923732(90.57%)	10588901284(42.11%)	171092790	169964477-99.34%

Table S2 summary of SNPs and INDELs(For the parental generation)

Sample name	SNP count	SNP_heterozygote	SNP_homozygote	INDEL count	INDEL_heterozygote	INDEL_homozygote
D1	3,740,793	1,916,991	1,823,802	987,026	507,599	479,427
D10	3,799,442	1,891,635	1,907,807	1,004,868	500,671	504,197
D2	3,814,457	1,944,581	1,869,876	1,025,755	524,562	501,193
D3	3,782,208	1,972,425	1,809,783	972,894	496,835	476,059
D4	4,321,672	2,881,169	1,440,503	1,110,331	720,460	389,871
D5	3,638,459	1,744,634	1,893,825	930,182	436,962	493,220
D6	3,841,188	2,034,478	1,806,710	1,000,057	518,636	481,421
D7	3,834,455	1,963,263	1,871,192	1,005,959	506,655	499,304
D8	3,571,096	1,743,070	1,828,026	909,247	439,219	470,028
D9	3,734,737	1,854,546	1,880,191	959,457	468,968	490,489

Table S3 Statistics of quality control for offspring reduced-representation genome sequencing data

Sample	Clean_Data(Gb)	HQ_Clean_Data(Gb)	HQ_Q20(%)	HQ_Q30(%)	HQ_GC(%)	Total Read	Total Mapped
D1-1	4.97	4.93	4769041079(96.68%)	4491532495(91.05%)	1972872376(39.97%)	33836130.00	33412534-98.75%
D1-2	3.55	3.53	3435786176(97.47%)	3274002845(92.88%)	1416701685(40.17%)	24182112.00	23965960-99.11%
D2-1	3.63	3.60	3501460874(97.32%)	3331548041(92.6%)	1449619157(40.27%)	24693822.00	24437696-98.96%
D2-2	3.86	3.79	3660313366(96.47%)	3451669226(90.97%)	1522434855(40.11%)	23441912.00	23108729-98.58%
D3-1	4.00	3.97	3867054502(97.36%)	3687125090(92.83%)	1583319949(39.84%)	27259516.00	26949280-98.86%
D3-2	2.97	2.95	2862406056(97.11%)	2717555131(92.2%)	1175865693(39.88%)	20232032.00	20031471-99.01%
D4-1	3.60	3.57	3470912073(97.18%)	3298966331(92.37%)	1428342735(39.97%)	24520352.00	24237167-98.85%
D4-2	3.77	3.75	3653933504(97.54%)	3489631972(93.15%)	1492886908(39.83%)	25713800.00	25473637-99.07%
D5-1	3.50	3.48	3376871875(97.15%)	3208264133(92.3%)	1386106644(39.86%)	23853648.00	23594088-98.91%
D5-2	3.90	3.87	3769851319(97.46%)	3592005306(92.86%)	1537623298(39.73%)	26554154.00	26343160-99.21%

Table S4 Summary of SNPs and INDELs(For the offspring)

Sample name	SNP count	SNP_heterozygote	SNP_homozygote	INDEL count	INDEL_heterozygote	INDEL_homozygote
D1-1	596,725	280,323	316,402	138,498	59,774	78,724
D1-2	522,080	236,238	285,842	116,737	48,458	68,279
D2-1	526,495	232,443	294,052	117,476	47,318	70,158
D2-2	495,292	197,383	297,909	114,930	43,020	71,910
D3-1	539,956	253,735	286,221	122,845	53,104	69,741
D3-2	475,657	207,236	268,421	105,988	42,407	63,581
D4-1	529,564	248,932	280,632	120,091	51,433	68,658
D4-2	534,038	260,154	273,884	123,601	55,213	68,388
D5-1	499,870	213,210	286,660	115,672	45,356	70,316
D5-2	525,456	235,167	290,289	124,370	51,548	72,822

Table S5 Chromosome-level restriction fragment (RF) quality control metrics for reduced-representation genome sequencing data

Chr	Chr length	All RF number	All RF coverage	Effective RF number	Effective RF coverage
1	122678785	67610	0.2067	49777	0.1522
2	85426708	44616	0.1959	33452	0.1468
3	91889043	51318	0.2094	38305	0.1563
4	88276631	49158	0.2088	36556	0.1553
5	88915250	44882	0.1893	33848	0.1428
6	77573801	40608	0.1963	30454	0.1472
7	80974532	45350	0.21	33613	0.1557
8	74330416	41146	0.2076	30512	0.1539
9	61074082	27598	0.1695	21342	0.131
10	69331447	36022	0.1948	27210	0.1472
11	74389097	42444	0.214	31286	0.1577
12	72498081	41704	0.2157	30784	0.1592
13	63241923	35200	0.2087	26104	0.1548
14	60966679	35688	0.2195	26089	0.1605
15	64190966	36036	0.2105	26738	0.1562
16	59632846	33052	0.2078	24418	0.1536
17	64289059	35148	0.205	26187	0.1527
18	55844845	28578	0.1919	21475	0.1442
19	53741614	31398	0.2191	23170	0.1617
20	58134056	28886	0.1863	21591	0.1393
21	50858623	28666	0.2114	21228	0.1565
22	61439934	36290	0.2215	26604	0.1624
23	52294480	30374	0.2178	22457	0.161
24	47698779	24292	0.191	18432	0.1449
25	51628933	28130	0.2043	21031	0.1528
26	38964690	18200	0.1752	14178	0.1365
27	45876710	25756	0.2105	19125	0.1563
28	41182112	21006	0.1913	15960	0.1453
29	41845238	25050	0.2245	18230	0.1634
30	40214260	22136	0.2064	16533	0.1542
31	39895921	22600	0.2124	16686	0.1568
32	38810281	23518	0.2272	17102	0.1652
33	31377067	17974	0.2148	13310	0.1591
34	42124431	23708	0.2111	17615	0.1568
35	26524999	14966	0.2116	10994	0.1554
36	30810995	18506	0.2252	13486	0.1641
37	30902991	17518	0.2126	12805	0.1554
38	23914537	13074	0.205	9822	0.154
MT	16727	8	0.1794	4	0.0897
X	123869142	69398	0.2101	51626	0.1563

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Table S6 Functional annotation of shared loci

Type	Number	Percent
3_prime_UTR_variant	19776	0.00713
5_prime_UTR_premature_start_cod	485	0.00017
5_prime_UTR_variant	4117	0.00149
bidirectional_gene_fusion	6	0
conservative_inframe_deletion	204	0.00007
conservative_inframe_insertion	205	0.00007
disruptive_inframe_deletion	254	0.00009
disruptive_inframe_insertion	131	0.00005
downstream_gene_variant	140581	0.05072
frameshift_variant	5870	0.00212
initiator_codon_variant	5	0
intergenic_region	782206	0.28221
intragenic_variant	68	0.00002
intron_variant	1626347	0.58676
missense_variant	18155	0.00655
non_coding_transcript_exon_variant	11792	0.00425
non_coding_transcript_variant	8	0
splice_acceptor_variant	526	0.00019
splice_donor_variant	642	0.00023
splice_region_variant	4576	0.00165
start_lost	46	0.00002
start_retained_variant	13	0
stop_gained	1105	0.0004
stop_lost	58	0.00002
stop_retained_variant	33	0.00001
synonymous_variant	14085	0.00508
upstream_gene_variant	140457	0.05067

Table S7 Functional annotation of stably inherited loci after filtering of parent-offspring shared loci

Type (alphabetical order)	Count	Percent
3_prime_UTR_variant	9,882	0.71%
5_prime_UTR_premature_start_codon_gain_variant	293	0.02%
5_prime_UTR_variant	2,080	0.15%
downstream_gene_variant	71,247	5.13%
initiator_codon_variant	3	0%
intergenic_region	384,995	27.73%
intragenic_variant	40	0.00%
intron_variant	820,235	59.09%
missense_variant	10,952	0.79%
non_coding_transcript_exon_variant	5,999	0.43%
splice_acceptor_variant	249	0.02%
splice_donor_variant	326	0.02%
splice_region_variant	2,266	0.16%
start_lost	12	0.00%
start_retained_variant	7	0.00%
stop_gained	536	0.04%
stop_lost	25	0.00%
stop_retained_variant	19	0.00%
synonymous_variant	8,501	0.61%
upstream_gene_variant	70,554	5.08%

Table S8 KEGG pathway enrichment analysis of genes harboring nonsynonymous (missense) variants.

Term	Database	ID	Input number	Background numl	P-Value	Corrected P-Value
Calcium signaling pathway	KEGG PATHWAY	cfa04020	42	191	1.45471E-09	4.55323E-07
Pathways in cancer	KEGG PATHWAY	cfa05200	74	525	7.42253E-08	8.47592E-06
Metabolic pathways	KEGG PATHWAY	cfa01100	152	1378	8.12388E-08	8.47592E-06
ABC transporters	KEGG PATHWAY	cfa02010	18	48	1.26237E-07	9.87807E-06
ECM-receptor interaction	KEGG PATHWAY	cfa04512	23	86	4.08564E-07	2.46323E-05
Dilated cardiomyopathy (DCM)	KEGG PATHWAY	cfa05414	24	94	4.72184E-07	2.46323E-05
Human papillomavirus infection	KEGG PATHWAY	cfa05165	51	328	6.12165E-07	2.73725E-05
Oxytocin signaling pathway	KEGG PATHWAY	cfa04921	31	151	7.10685E-07	2.78055E-05
Apelin signaling pathway	KEGG PATHWAY	cfa04371	29	136	8.23724E-07	2.86473E-05
Thyroid hormone signaling pathway	KEGG PATHWAY	cfa04919	26	116	1.3477E-06	3.95394E-05
cAMP signaling pathway	KEGG PATHWAY	cfa04024	37	209	1.50175E-06	3.95394E-05
Aldosterone synthesis and secretion	KEGG PATHWAY	cfa04925	23	94	1.51589E-06	3.95394E-05
PI3K-Akt signaling pathway	KEGG PATHWAY	cfa04151	52	355	2.30273E-06	5.54428E-05
Hypertrophic cardiomyopathy (HCM)	KEGG PATHWAY	cfa05410	22	91	3.00314E-06	6.71417E-05
Inositol phosphate metabolism	KEGG PATHWAY	cfa00562	19	72	4.77848E-06	9.97109E-05
MAPK signaling pathway	KEGG PATHWAY	cfa04010	44	289	5.64969E-06	0.000110522
Phosphatidylinositol signaling system	KEGG PATHWAY	cfa04070	22	97	7.2499E-06	0.000133484
Regulation of actin cytoskeleton	KEGG PATHWAY	cfa04810	35	213	1.19469E-05	0.000207744
Rap1 signaling pathway	KEGG PATHWAY	cfa04015	34	210	2.07045E-05	0.000324763
Glutamatergic synapse	KEGG PATHWAY	cfa04724	23	113	2.07516E-05	0.000324763

Table S9 Orthologous mapping of core ADME genes between Homo sapiens and Canis lupus familiaris

Gene stable ID	Gene stable ID version	Dog gene stable ID	Dog gene name	Dog homology type	Dog orthology confidence [0 low, 1 high]
ENSG00000132874	ENSG00000132874.15	ENSCAFG00845003594	SLC14A2	ortholog_one2one	0
ENSG00000125255	ENSG00000125255.7	ENSCAFG00845027780	SLC10A2	ortholog_one2one	0
ENSG00000141424	ENSG00000141424.13	ENSCAFG00845004735	SLC39A6	ortholog_one2one	1
ENSG00000236396	ENSG00000236396.8	ENSCAFG00845022564	SLC35G6	ortholog_one2many	0
ENSG00000141437	ENSG00000141437.10	ENSCAFG00845014022	SLC25A51	ortholog_one2many	0
ENSG00000160179	ENSG00000160179.21	ENSCAFG00845030427	ABCG1	ortholog_one2one	1
ENSG00000158296	ENSG00000158296.14	ENSCAFG00845019431	SLC13A3	ortholog_one2one	1
ENSG00000124140	ENSG00000124140.15	ENSCAFG00845017857	SLC12A5	ortholog_one2one	1
ENSG00000101438	ENSG00000101438.4	ENSCAFG00845029663	SLC32A1	ortholog_one2one	1
ENSG00000088386	ENSG00000088386.18	ENSCAFG00845020561	SLC15A1	ortholog_one2one	1
ENSG00000100191	ENSG00000100191.6	ENSCAFG00845027749	SLC5A4	ortholog_one2one	0
ENSG00000100036	ENSG00000100036.13	ENSCAFG00845020907	OSBP2	ortholog_one2one	0
ENSG00000102743	ENSG00000102743.17	ENSCAFG00845024008	SLC25A15	ortholog_one2one	0
ENSG00000147454	ENSG00000147454.14	ENSCAFG00845016130	SLC25A37	ortholog_one2one	1
ENSG00000102078	ENSG00000102078.16	ENSCAFG00845031040	SLC25A14	ortholog_one2one	1
ENSG00000151812	ENSG00000151812.15	ENSCAFG00845017859	SLC35F4	ortholog_one2one	1
ENSG00000140199	ENSG00000140199.13	ENSCAFG00845019004	SLC12A6	ortholog_one2one	1
ENSG00000197506	ENSG00000197506.8	ENSCAFG00845005455	SLC28A3	ortholog_one2one	1
ENSG00000147804	ENSG00000147804.10	ENSCAFG00845010735	SLC39A4	ortholog_one2one	1
ENSG00000165794	ENSG00000165794.10	ENSCAFG00845023563	SLC39A2	ortholog_one2one	1
ENSG00000187553	ENSG00000187553.10	ENSCAFG00845018303	CYP26C1	ortholog_one2one	1
ENSG00000095596	ENSG00000095596.12	ENSCAFG00845018365	CYP26A1	ortholog_one2one	1
ENSG00000140090	ENSG00000140090.18	ENSCAFG00845020809	SLC24A4	ortholog_one2one	1
ENSG00000198569	ENSG00000198569.10	ENSCAFG00845023641	SLC34A3	ortholog_one2one	1
ENSG00000136867	ENSG00000136867.11	ENSCAFG00845007306	SLC31A2	ortholog_one2one	1
ENSG00000151012	ENSG00000151012.13	ENSCAFG00845022942	SLC7A11	ortholog_one2one	1
ENSG00000145283	ENSG00000145283.8	ENSCAFG00845024905	SLC10A6	ortholog_one2one	1
ENSG00000165029	ENSG00000165029.17	ENSCAFG00845010374	ABCA1	ortholog_one2one	1
ENSG00000139514	ENSG00000139514.14	ENSCAFG00845022314	SLC7A1	ortholog_one2one	1
ENSG00000205359	ENSG00000205359.10	ENSCAFG00845001964	SLCO6A1	ortholog_one2one	1
ENSG00000177710	ENSG00000177710.6	ENSCAFG00845022564	SLC35G6	ortholog_one2many	0
ENSG00000164756	ENSG00000164756.13	ENSCAFG00845014466	SLC30A8	ortholog_one2one	1
ENSG00000063127	ENSG00000063127.16	ENSCAFG00845000203	SLC6A16	ortholog_one2one	1
ENSG00000100170	ENSG00000100170.11	ENSCAFG00845027277	SLC5A1	ortholog_one2one	1
ENSG00000066230	ENSG00000066230.12	ENSCAFG00845027782	SLC9A3	ortholog_one2one	1
ENSG00000197818	ENSG00000197818.13	ENSCAFG00845025485	SLC9A8	ortholog_one2one	1

ENSG00000187714	ENSG00000187714.7	ENSCAFG00845021729	SLC18A3	ortholog_one2one	1
ENSG00000188467	ENSG00000188467.11	ENSCAFG00845018687		ortholog_one2one	0
ENSG00000074803	ENSG00000074803.21	ENSCAFG00845019364	SLC12A1	ortholog_one2one	1
ENSG00000196376	ENSG00000196376.11	ENSCAFG00845006677	SLC35F1	ortholog_one2one	1
ENSG00000019186	ENSG00000019186.11	ENSCAFG00845028958	CYP24A1	ortholog_one2one	1
ENSG00000100156	ENSG00000100156.13	ENSCAFG00845025225	SLC16A8	ortholog_one2one	1
ENSG00000099960	ENSG00000099960.14	ENSCAFG00845023288	SLC7A4	ortholog_one2one	0
ENSG00000164175	ENSG00000164175.15	ENSCAFG00845001354	SLC45A2	ortholog_one2one	1
ENSG00000092068	ENSG00000092068.21	ENSCAFG00845003216	SLC7A8	ortholog_one2one	1
ENSG00000188991	ENSG00000188991.3	ENSCAFG00845019545	SLC15A5	ortholog_one2one	1
ENSG00000182747	ENSG00000182747.5	ENSCAFG00845006386	SLC35D3	ortholog_one2one	1
ENSG00000100372	ENSG00000100372.16	ENSCAFG00845019500	SLC25A17	ortholog_one2one	1
ENSG00000183032	ENSG00000183032.12	ENSCAFG00845002697	SLC25A21	ortholog_one2one	1
ENSG00000092096	ENSG00000092096.19	ENSCAFG00845003526	SLC22A17	ortholog_one2one	1
ENSG00000198246	ENSG00000198246.10	ENSCAFG00845004482	SLC29A3	ortholog_one2one	1
ENSG00000197119	ENSG00000197119.13	ENSCAFG00845004256	SLC25A29	ortholog_one2one	0
ENSG00000137266	ENSG00000137266.15	ENSCAFG00845017898	SLC22A23	ortholog_one2one	1
ENSG00000140107	ENSG00000140107.12	ENSCAFG00845004279	SLC25A47	ortholog_one2one	1
ENSG00000181240	ENSG00000181240.14	ENSCAFG00845010943	SLC25A41	ortholog_one2one	1
ENSG00000120329	ENSG00000120329.7	ENSCAFG00845003131	SLC25A2	ortholog_one2one	1
ENSG00000164933	ENSG00000164933.13	ENSCAFG00845008584	SLC25A32	ortholog_one2one	1
ENSG00000153291	ENSG00000153291.16	ENSCAFG00845012991	SLC25A27	ortholog_one2one	1
ENSG00000100075	ENSG00000100075.11	ENSCAFG00845030106	SLC25A1	ortholog_one2one	1
ENSG00000091664	ENSG00000091664.9	ENSCAFG00845023041	SLC17A6	ortholog_one2one	1
ENSG00000168065	ENSG00000168065.16	ENSCAFG00845030346	SLC22A11	ortholog_one2one	1
ENSG00000186335	ENSG00000186335.9	ENSCAFG00845005365	SLC36A2	ortholog_one2one	1
ENSG00000197891	ENSG00000197891.12	ENSCAFG00845030289	SLC22A12	ortholog_one2one	1
ENSG00000145248	ENSG00000145248.7	ENSCAFG00845009926	SLC10A4	ortholog_one2one	1
ENSG00000151475	ENSG00000151475.6	ENSCAFG00845017577	SLC25A31	ortholog_one2one	1
ENSG00000065923	ENSG00000065923.11	ENSCAFG00845029400	SLC9A7	ortholog_one2one	0
ENSG00000172940	ENSG00000172940.13	ENSCAFG00845029932	SLC22A13	ortholog_one2one	1
ENSG00000139508	ENSG00000139508.16	ENSCAFG00845022832	SLC46A3	ortholog_one2one	1
ENSG00000011083	ENSG00000011083.9	ENSCAFG00845008088	SLC6A7	ortholog_one2one	1
ENSG00000173610	ENSG00000173610.13	ENSCAFG00845009792		ortholog_one2one	0
ENSG00000174358	ENSG00000174358.16	ENSCAFG00845026397	SLC6A19	ortholog_one2one	1
ENSG00000164363	ENSG00000164363.10	ENSCAFG00845026287	SLC6A18	ortholog_one2one	1
ENSG00000160190	ENSG00000160190.15	ENSCAFG00845016674	SLC37A1	ortholog_one2one	1
ENSG00000102100	ENSG00000102100.17	ENSCAFG00845030973	SLC35A2	ortholog_one2one	1

ENSG00000176463	ENSG00000176463.14	ENSCAFG00845002864	SLCO3A1	ortholog_one2one	1
ENSG00000105641	ENSG00000105641.4	ENSCAFG00845024501	SLC5A5	ortholog_one2one	1
ENSG00000077713	ENSG00000077713.20	ENSCAFG00845020392	SLC25A43	ortholog_one2one	1
ENSG00000023839	ENSG00000023839.12	ENSCAFG00845030901	ABCC2	ortholog_one2one	1
ENSG00000088836	ENSG00000088836.15	ENSCAFG00845015025	SLC4A11	ortholog_one2one	1
ENSG00000176087	ENSG00000176087.17	ENSCAFG00845001883	SLC35A4	ortholog_one2one	1
ENSG00000182902	ENSG00000182902.15	ENSCAFG00845030703	SLC25A18	ortholog_one2one	1
ENSG00000180432	ENSG00000180432.6	ENSCAFG00845021247	CYP8B1	ortholog_one2one	1
ENSG00000196600	ENSG00000196600.13	ENSCAFG00845025787		ortholog_many2many	0
ENSG00000174032	ENSG00000174032.18	ENSCAFG00845009121	SLC25A30	ortholog_one2one	0
ENSG00000144452	ENSG00000144452.15	ENSCAFG00845020774	ABCA12	ortholog_one2one	1
ENSG00000167910	ENSG00000167910.4	ENSCAFG00845027730	CYP7A1	ortholog_one2one	1
ENSG00000144671	ENSG00000144671.11	ENSCAFG00845029969	SLC22A14	ortholog_one2one	1
ENSG00000162976	ENSG00000162976.13	ENSCAFG00845027286	SLC66A3	ortholog_one2one	0
ENSG00000241119	ENSG00000241119.2	ENSCAFG00845024767	UGT1A6	ortholog_one2many	1
ENSG00000112499	ENSG00000112499.13	ENSCAFG00845002163	SLC22A2	ortholog_one2one	1
ENSG00000165349	ENSG00000165349.13	ENSCAFG00845016597	SNX12	ortholog_one2one	1
ENSG00000133460	ENSG00000133460.21	ENSCAFG00845025001	SLC2A11	ortholog_one2one	1
ENSG00000137700	ENSG00000137700.19	ENSCAFG00845000912	SLC37A4	ortholog_one2one	1
ENSG00000126903	ENSG00000126903.17	ENSCAFG00845029316	SLC10A3	ortholog_one2one	1
ENSG00000180251	ENSG00000180251.5	ENSCAFG00845010292	SLC9A4	ortholog_one2one	1
ENSG00000173638	ENSG00000173638.20	ENSCAFG00845023388	SLC19A1	ortholog_one2one	0
ENSG00000157103	ENSG00000157103.13	ENSCAFG00845006668	SLC6A1	ortholog_one2one	1
ENSG00000003137	ENSG00000003137.9	ENSCAFG00845019592	CYP26B1	ortholog_one2one	1
ENSG00000100652	ENSG00000100652.6	ENSCAFG00845004225	SLC10A1	ortholog_one2one	1
ENSG00000111012	ENSG00000111012.12	ENSCAFG00845013886	CYP27B1	ortholog_one2one	1
ENSG00000006071	ENSG00000006071.16	ENSCAFG00845014269	ABCC8	ortholog_one2one	1
ENSG00000183780	ENSG00000183780.13	ENSCAFG00845003804	SLC35F3	ortholog_one2one	1
ENSG00000139974	ENSG00000139974.18	ENSCAFG00845022951	SLC38A6	ortholog_one2one	1
ENSG00000242366	ENSG00000242366.4	ENSCAFG00845024767	UGT1A6	ortholog_one2many	1
ENSG00000244122	ENSG00000244122.3	ENSCAFG00845024767	UGT1A6	ortholog_one2many	1
ENSG00000101276	ENSG00000101276.19	ENSCAFG00845019792	SLC52A3	ortholog_one2one	1
ENSG00000119457	ENSG00000119457.9	ENSCAFG00845006936	SLC46A2	ortholog_one2one	1
ENSG00000165970	ENSG00000165970.12	ENSCAFG00845021856	SLC6A5	ortholog_one2one	1
ENSG00000029364	ENSG00000029364.13	ENSCAFG00845004076	SLC39A9	ortholog_one2one	1
ENSG00000101187	ENSG00000101187.17	ENSCAFG00845017528	SLCO4A1	ortholog_one2one	1
ENSG00000122490	ENSG00000122490.20	ENSCAFG00845000033	SLC66A2	ortholog_one2one	0
ENSG00000013293	ENSG00000013293.6	ENSCAFG00845022955		ortholog_one2one	0

ENSG00000005022	ENSG00000005022.7	ENSCAFG00845020441	SLC25A5	ortholog_one2many	1
ENSG00000005022	ENSG00000005022.7	ENSCAFG00845029063		ortholog_one2many	0
ENSG00000064687	ENSG00000064687.13	ENSCAFG00845013692	ABCA7	ortholog_one2one	1
ENSG00000104154	ENSG00000104154.8	ENSCAFG00845030805	SLC30A4	ortholog_one2one	1
ENSG00000242515	ENSG00000242515.6	ENSCAFG00845024767	UGT1A6	ortholog_one2many	1
ENSG00000172139	ENSG00000172139.15	ENSCAFG00845029039	SLC9C1	ortholog_one2one	1
ENSG00000036565	ENSG00000036565.16	ENSCAFG00845029212	SLC18A1	ortholog_one2one	1
ENSG00000156222	ENSG00000156222.13	ENSCAFG00845003154		ortholog_one2one	0
ENSG00000120519	ENSG00000120519.17	ENSCAFG00845012862	SLC10A7	ortholog_one2one	1
ENSG00000169507	ENSG00000169507.10	ENSCAFG00845015767	SLC38A11	ortholog_one2one	1
ENSG00000125257	ENSG00000125257.17	ENSCAFG00845008054	ABCC4	ortholog_one2one	1
ENSG00000170385	ENSG00000170385.10	ENSCAFG00845003355	SLC30A1	ortholog_one2one	1
ENSG00000155886	ENSG00000155886.13	ENSCAFG00845014662	SLC24A2	ortholog_one2one	1
ENSG00000131269	ENSG00000131269.20	ENSCAFG00845030100	ABCB7	ortholog_one2one	1
ENSG00000125520	ENSG00000125520.15	ENSCAFG00845018815	SLC2A4RG	ortholog_one2one	0
ENSG00000140505	ENSG00000140505.8	ENSCAFG00845017565	CYP1A2	ortholog_one2one	1
ENSG00000197408	ENSG00000197408.11	ENSCAFG00845002728	CYP2B6	ortholog_one2one	0
ENSG00000083807	ENSG00000083807.11	ENSCAFG00845000308	ZBTB45	ortholog_one2one	0
ENSG00000145476	ENSG00000145476.17	ENSCAFG00845019580	CYP4V2	ortholog_one2one	1
ENSG00000255974	ENSG00000255974.9	ENSCAFG00845002826	CYP2A7	ortholog_many2many	0
ENSG00000255974	ENSG00000255974.9	ENSCAFG00845002875	CYP2A13	ortholog_many2many	0
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ENSG00000197838	ENSG00000197838.6	ENSCAFG00845002875	CYP2A13	ortholog_many2many	0
ENSG00000130649	ENSG00000130649.11	ENSCAFG00845027431	CYP2E1	ortholog_one2one	1
ENSG00000080189	ENSG00000080189.16	ENSCAFG00845018711	SLC35C2	ortholog_one2one	1
ENSG00000021488	ENSG00000021488.14	ENSCAFG00845000428	SLC7A9	ortholog_one2one	1
ENSG00000269743	ENSG00000269743.4	ENSCAFG00845024107	SLC25A53	ortholog_one2one	1
ENSG00000174607	ENSG00000174607.13	ENSCAFG00845028928	UGT8	ortholog_one2one	1
ENSG00000157593	ENSG00000157593.20	ENSCAFG00845011652	SLC35B2	ortholog_one2one	1
ENSG00000155850	ENSG00000155850.10	ENSCAFG00845008861	SLC26A2	ortholog_one2one	1
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ENSG00000170482	ENSG00000170482.18	ENSCAFG00845000694		ortholog_one2one	0
ENSG00000141469	ENSG00000141469.19	ENSCAFG00845003486	SLC14A1	ortholog_one2one	1
ENSG00000164037	ENSG00000164037.18	ENSCAFG00845026564	SLC9B1	ortholog_one2one	1
ENSG00000155016	ENSG00000155016.19	ENSCAFG00845028935	CYP2U1	ortholog_one2one	0
ENSG00000113073	ENSG00000113073.16	ENSCAFG00845001336	SLC4A9	ortholog_one2one	1
ENSG00000171954	ENSG00000171954.14	ENSCAFG00845016360	CYP4F22	ortholog_one2one	0
ENSG00000198691	ENSG00000198691.14	ENSCAFG00845015579	ABCA4	ortholog_one2one	1

ENSG00000197446	ENSG00000197446.10	ENSCAFG00845002936	CYP2F1	ortholog_one2one	0
ENSG00000146477	ENSG00000146477.7	ENSCAFG00845002183	SLC22A3	ortholog_one2one	1
ENSG00000173930	ENSG00000173930.10	ENSCAFG00845002027	SLCO4C1	ortholog_one2one	1
ENSG00000160870	ENSG00000160870.15	ENSCAFG00845003103	CYP3A26	ortholog_many2many	0
ENSG00000160870	ENSG00000160870.15	ENSCAFG00845023773	CYP3A12	ortholog_many2many	0
ENSG00000160870	ENSG00000160870.15	ENSCAFG00845025330	CYP3A26	ortholog_many2many	0
ENSG00000160870	ENSG00000160870.15	ENSCAFG00845023693		ortholog_many2many	0
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ENSG00000089057	ENSG00000089057.16	ENSCAFG00845028487	SLC23A2	ortholog_one2one	1
ENSG00000197901	ENSG00000197901.13	ENSCAFG00845007241	SLC22A6	ortholog_one2one	1
ENSG00000124568	ENSG00000124568.13	ENSCAFG00845024525	SLC17A1	ortholog_one2one	1
ENSG00000184999	ENSG00000184999.14	ENSCAFG00845006977	SLC22A10	ortholog_one2one	1
ENSG00000149742	ENSG00000149742.11	ENSCAFG00845006786	SLC22A9	ortholog_one2many	1
ENSG00000149742	ENSG00000149742.11	ENSCAFG00845007087		ortholog_one2many	0
ENSG00000004846	ENSG00000004846.17	ENSCAFG00845007641	ABCB5	ortholog_one2one	1
ENSG00000148942	ENSG00000148942.16	ENSCAFG00845024860	SLC5A12	ortholog_one2one	1
ENSG00000134538	ENSG00000134538.4	ENSCAFG00845015602	SLCO1B2	ortholog_one2many	1
ENSG00000136868	ENSG00000136868.12	ENSCAFG00845007669	SLC31A1	ortholog_one2one	1
ENSG00000164163	ENSG00000164163.12	ENSCAFG00845011788	ABCE1	ortholog_one2one	1
ENSG00000155465	ENSG00000155465.22	ENSCAFG00845002028	SLC7A7	ortholog_one2one	0
ENSG00000112394	ENSG00000112394.19	ENSCAFG00845016609	SLC16A10	ortholog_one2one	1
ENSG00000004939	ENSG00000004939.16	ENSCAFG00845008600	SLC4A1	ortholog_one2one	1
ENSG00000137968	ENSG00000137968.17	ENSCAFG00845004401	SLC44A5	ortholog_one2one	1
ENSG00000074621	ENSG00000074621.15	ENSCAFG00845026323	SLC24A1	ortholog_one2one	1
ENSG00000036530	ENSG00000036530.10	ENSCAFG00845004031	CYP46A1	ortholog_one2one	1
ENSG00000146233	ENSG00000146233.9	ENSCAFG00845012904	CYP39A1	ortholog_one2one	1
ENSG00000174640	ENSG00000174640.16	ENSCAFG00845030209	SLCO2A1	ortholog_one2one	1
ENSG00000174327	ENSG00000174327.7	ENSCAFG00845017438	SLC16A13	ortholog_one2one	1
ENSG00000132164	ENSG00000132164.11	ENSCAFG00845006781	SLC6A11	ortholog_one2one	1
ENSG00000145832	ENSG00000145832.17	ENSCAFG00845014130	SLC25A48	ortholog_one2one	1
ENSG00000140284	ENSG00000140284.12	ENSCAFG00845023230	SLC27A2	ortholog_one2one	1
ENSG00000022567	ENSG00000022567.11	ENSCAFG00845013083	SLC45A4	ortholog_one2one	1
ENSG00000179520	ENSG00000179520.12	ENSCAFG00845006328	SLC17A8	ortholog_one2one	1
ENSG00000175003	ENSG00000175003.16	ENSCAFG00845002132	SLC22A1	ortholog_one2one	1
ENSG00000154258	ENSG00000154258.17	ENSCAFG00845029565	ABCA9	ortholog_one2one	1
ENSG00000164209	ENSG00000164209.18	ENSCAFG00845003894	SLC25A46	ortholog_one2one	1
ENSG00000259224	ENSG00000259224.3	ENSCAFG00845022564	SLC35G6	ortholog_one2many	1

ENSG00000164729	ENSG00000164729.8	ENSCAFG00845022564	SLC35G6	ortholog_one2many	0
ENSG00000259803	ENSG00000259803.8	ENSCAFG00845002643	SLC22A31	ortholog_one2one	1
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ENSG00000123643	ENSG00000123643.15	ENSCAFG00845005291	SLC36A1	ortholog_one2one	1
ENSG00000121270	ENSG00000121270.16	ENSCAFG00845004630	ABCC11	ortholog_one2one	1
ENSG00000104635	ENSG00000104635.16	ENSCAFG00845023697	SLC39A14	ortholog_one2one	1
ENSG00000140798	ENSG00000140798.17	ENSCAFG00845004726	ABCC12	ortholog_one2one	1
ENSG00000168671	ENSG00000168671.11	ENSCAFG00845000393	UGT3A2	ortholog_one2one	1
ENSG00000105143	ENSG00000105143.14	ENSCAFG00845019363	SLC1A6	ortholog_one2one	1
ENSG00000163581	ENSG00000163581.15	ENSCAFG00845023320	SLC2A2	ortholog_one2one	1
ENSG00000089060	ENSG00000089060.13	ENSCAFG00845023423	SLC8B1	ortholog_one2one	1
ENSG00000111700	ENSG00000111700.14	ENSCAFG00845015602	SLCO1B2	ortholog_one2many	1
ENSG00000167600	ENSG00000167600.15	ENSCAFG00845002678	CYP2S1	ortholog_one2one	0
ENSG00000101194	ENSG00000101194.19	ENSCAFG00845018620	SLC17A9	ortholog_one2one	1
ENSG00000170615	ENSG00000170615.16	ENSCAFG00845019032	SLC26A5	ortholog_one2one	1
ENSG00000144741	ENSG00000144741.20	ENSCAFG00845011731	SLC25A26	ortholog_one2one	1
ENSG00000197658	ENSG00000197658.10	ENSCAFG00845025787		ortholog_many2many	0
ENSG00000164707	ENSG00000164707.17	ENSCAFG00845008899	SLC13A4	ortholog_one2one	1
ENSG00000163959	ENSG00000163959.11	ENSCAFG00845029919	SLC51A	ortholog_one2one	1
ENSG00000181804	ENSG00000181804.16	ENSCAFG00845029260	SLC9A9	ortholog_one2one	1
ENSG00000172350	ENSG00000172350.11	ENSCAFG00845000412	ABCG4	ortholog_one2one	1
ENSG00000183346	ENSG00000183346.10	ENSCAFG00845003174	CABCOC01	ortholog_one2one	1
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ENSG00000211584	ENSG00000211584.15	ENSCAFG00845025577	SLC48A1	ortholog_one2one	1
ENSG00000105281	ENSG00000105281.14	ENSCAFG00845003284	SLC1A5	ortholog_one2one	1
ENSG00000138821	ENSG00000138821.15	ENSCAFG00845025480	SLC39A8	ortholog_one2one	1
ENSG00000162753	ENSG00000162753.13	ENSCAFG00845011770	SLC9C2	ortholog_one2one	1
ENSG00000204385	ENSG00000204385.14	ENSCAFG00845013098	SLC44A4	ortholog_one2one	1
ENSG00000186104	ENSG00000186104.12	ENSCAFG00845022374		ortholog_one2many	0
ENSG00000186104	ENSG00000186104.12	ENSCAFG00845022957	CYP2R1	ortholog_one2many	0
ENSG00000064651	ENSG00000064651.15	ENSCAFG00845011539	SLC12A2	ortholog_one2one	1
ENSG00000188338	ENSG00000188338.16	ENSCAFG00845022782	SLC38A3	ortholog_one2one	1
ENSG00000221955	ENSG00000221955.12	ENSCAFG00845027740	SLC12A8	ortholog_one2one	1
ENSG00000050438	ENSG00000050438.18	ENSCAFG00845014661	SLC4A8	ortholog_one2one	1
ENSG00000073067	ENSG00000073067.14	ENSCAFG00845008739	CYP2W1	ortholog_one2one	1
ENSG00000119688	ENSG00000119688.22	ENSCAFG00845024787		ortholog_one2many	0
ENSG00000119688	ENSG00000119688.22	ENSCAFG00845014165	ABCD4	ortholog_one2many	0
ENSG00000142319	ENSG00000142319.20	ENSCAFG00845025384	SLC6A3	ortholog_one2one	1

ENSG00000185803	ENSG00000185803.13	ENSCAFG00845010218	SLC52A2	ortholog_one2many	1
ENSG00000172817	ENSG00000172817.5	ENSCAFG00845017776	CYP7B1	ortholog_one2one	1
ENSG00000103257	ENSG00000103257.11	ENSCAFG00845003789	SLC7A5	ortholog_one2one	1
ENSG00000146411	ENSG00000146411.7	ENSCAFG00845004951	SLC2A12	ortholog_one2one	1
ENSG00000130876	ENSG00000130876.12	ENSCAFG00845000168	SLC7A10	ortholog_one2one	1
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ENSG00000017483	ENSG00000017483.17	ENSCAFG00845030709	SLC38A5	ortholog_one2one	1
ENSG00000164889	ENSG00000164889.16	ENSCAFG00845009099	SLC4A2	ortholog_one2one	1
ENSG00000073734	ENSG00000073734.11	ENSCAFG00845020713	ABCB11	ortholog_one2one	1
ENSG00000103546	ENSG00000103546.20	ENSCAFG00845000709	SLC6A2	ortholog_one2one	1
ENSG00000004809	ENSG00000004809.15	ENSCAFG00845013113	SLC22A16	ortholog_one2one	1
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ENSG00000139209	ENSG00000139209.17	ENSCAFG00845026984	SLC38A4	ortholog_one2one	1
ENSG00000185052	ENSG00000185052.14	ENSCAFG00845029352	SLC24A3	ortholog_one2one	1
ENSG00000091138	ENSG00000091138.14	ENSCAFG00845025332	SLC26A3	ortholog_one2one	1
ENSG00000100197	ENSG00000100197.24	ENSCAFG00845014943	CYP2D6	ortholog_one2one	1
ENSG00000160868	ENSG00000160868.17	ENSCAFG00845003103	CYP3A26	ortholog_many2many	0
ENSG00000160868	ENSG00000160868.17	ENSCAFG00845023773	CYP3A12	ortholog_many2many	0
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ENSG00000160868	ENSG00000160868.17	ENSCAFG00845023693		ortholog_many2many	0
ENSG00000160868	ENSG00000160868.17	ENSCAFG00845025449		ortholog_many2many	0
ENSG00000070915	ENSG00000070915.11	ENSCAFG00845003721	SLC12A3	ortholog_one2one	1
ENSG00000113504	ENSG00000113504.22	ENSCAFG00845026600	SLC12A7	ortholog_one2one	1
ENSG00000177058	ENSG00000177058.13	ENSCAFG00845027599	SLC38A9	ortholog_one2one	1
ENSG00000143921	ENSG00000143921.10	ENSCAFG00845025922	ABCG8	ortholog_one2one	1
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ENSG00000021461	ENSG00000021461.19	ENSCAFG00845025330	CYP3A26	ortholog_many2many	0
ENSG00000021461	ENSG00000021461.19	ENSCAFG00845023693		ortholog_many2many	0
ENSG00000021461	ENSG00000021461.19	ENSCAFG00845025449		ortholog_many2many	0
ENSG00000138075	ENSG00000138075.15	ENSCAFG00845025776	ABCG5	ortholog_one2one	1
ENSG00000122696	ENSG00000122696.15	ENSCAFG00845014022	SLC25A51	ortholog_one2many	1
ENSG00000197150	ENSG00000197150.14	ENSCAFG00845010330	ABCB8	ortholog_one2one	1
ENSG00000084453	ENSG00000084453.18	ENSCAFG00845015426	SLCO1A2	ortholog_one2one	1
ENSG00000197496	ENSG00000197496.7	ENSCAFG00845019723	SLC2A10	ortholog_one2one	1
ENSG00000106258	ENSG00000106258.17	ENSCAFG00845003103	CYP3A26	ortholog_many2many	0
ENSG00000106258	ENSG00000106258.17	ENSCAFG00845023773	CYP3A12	ortholog_many2many	0
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ENSG00000106258	ENSG00000106258.17	ENSCAFG00845023693		ortholog_many2many	0
ENSG00000106258	ENSG00000106258.17	ENSCAFG00845025449		ortholog_many2many	0
ENSG00000165449	ENSG00000165449.13	ENSCAFG00845002335	SLC16A9	ortholog_one2one	1
ENSG00000213699	ENSG00000213699.10	ENSCAFG00845028914	SLC35F6	ortholog_one2one	1
ENSG00000091137	ENSG00000091137.15	ENSCAFG00845025602	SLC26A4	ortholog_one2one	1
ENSG00000147606	ENSG00000147606.10	ENSCAFG00845020813	SLC26A7	ortholog_one2one	1
ENSG00000186198	ENSG00000186198.5	ENSCAFG00845024623	SLC51B	ortholog_one2one	1
ENSG00000140459	ENSG00000140459.19	ENSCAFG00845029140	CYP11A1	ortholog_one2one	1
ENSG00000135929	ENSG00000135929.10	ENSCAFG00845028313	CYP27A1	ortholog_one2one	1
ENSG00000138079	ENSG00000138079.15	ENSCAFG00845026546	SLC3A1	ortholog_one2one	1
ENSG00000147100	ENSG00000147100.12	ENSCAFG00845029973	SLC16A2	ortholog_one2one	1
ENSG00000115616	ENSG00000115616.4	ENSCAFG00845010132	SLC9A2	ortholog_one2one	1
ENSG00000186684	ENSG00000186684.15	ENSCAFG00845022851	CYP27C1	ortholog_one2one	1
ENSG00000135740	ENSG00000135740.18	ENSCAFG00845009040	SLC9A5	ortholog_one2one	1
ENSG00000103061	ENSG00000103061.14	ENSCAFG00845011441	SLC7A6OS	ortholog_one2one	1
ENSG00000106688	ENSG00000106688.13	ENSCAFG00845002818	SLC1A1	ortholog_one2one	1
ENSG00000198689	ENSG00000198689.14	ENSCAFG00845026808	SLC9A6	ortholog_one2one	1
ENSG00000137869	ENSG00000137869.17	ENSCAFG00845024965	CYP19A1	ortholog_one2one	1
ENSG00000136856	ENSG00000136856.19	ENSCAFG00845006645	SLC2A8	ortholog_one2one	1
ENSG00000090020	ENSG00000090020.12	ENSCAFG00845011051	SLC9A1	ortholog_one2one	1
ENSG00000151729	ENSG00000151729.12	ENSCAFG00845022881	SLC25A4	ortholog_one2one	1
ENSG00000130958	ENSG00000130958.14	ENSCAFG00845003593	SLC35D2	ortholog_one2one	1
ENSG00000169100	ENSG00000169100.15	ENSCAFG00845021819	SLC25A6	ortholog_one2one	1
ENSG00000129353	ENSG00000129353.16	ENSCAFG00845024850	SLC44A2	ortholog_one2one	1
ENSG00000112473	ENSG00000112473.20	ENSCAFG00845020536	SLC39A7	ortholog_one2one	1
ENSG00000154262	ENSG00000154262.14	ENSCAFG00845005313	ABCA6	ortholog_one2one	1
ENSG00000163053	ENSG00000163053.12	ENSCAFG00845020077	SLC16A14	ortholog_one2one	1
ENSG00000152779	ENSG00000152779.15	ENSCAFG00845028413	SLC16A12	ortholog_one2one	0
ENSG00000174326	ENSG00000174326.16	ENSCAFG00845017537	SLC16A11	ortholog_one2one	1
ENSG00000174502	ENSG00000174502.20	ENSCAFG00845027703	SLC26A9	ortholog_one2one	1
ENSG00000140465	ENSG00000140465.16	ENSCAFG00845017370	CYP1A1	ortholog_one2one	1
ENSG00000101986	ENSG00000101986.13	ENSCAFG00845024327	ABCD1	ortholog_one2one	1
ENSG00000125648	ENSG00000125648.16	ENSCAFG00845010879	SLC25A23	ortholog_one2one	1
ENSG00000197106	ENSG00000197106.8	ENSCAFG00845002172	SLC6A17	ortholog_one2one	1
ENSG00000180638	ENSG00000180638.20	ENSCAFG00845016715	SLC47A2	ortholog_one2one	1
ENSG00000137571	ENSG00000137571.12	ENSCAFG00845025087	SLCO5A1	ortholog_one2one	1
ENSG00000162426	ENSG00000162426.17	ENSCAFG00845027552	SLC45A1	ortholog_one2one	1
ENSG00000075415	ENSG00000075415.16	ENSCAFG00845006609		ortholog_one2one	0

ENSG00000178537	ENSG00000178537.11	ENSCAFG00845029742	SLC25A20	ortholog_one2one	1
ENSG00000197375	ENSG00000197375.15	ENSCAFG00845010298	SLC22A5	ortholog_one2one	1
ENSG00000162695	ENSG00000162695.14	ENSCAFG00845012160	SLC30A7	ortholog_one2one	1
ENSG00000174669	ENSG00000174669.13	ENSCAFG00845013511	SLC29A2	ortholog_one2one	1
ENSG00000196660	ENSG00000196660.13	ENSCAFG00845028420	SLC30A10	ortholog_one2one	1
ENSG00000112053	ENSG00000112053.15	ENSCAFG00845007666	SLC26A8	ortholog_one2one	1
ENSG00000069431	ENSG00000069431.15	ENSCAFG00845014429	ABCC9	ortholog_one2one	1
ENSG00000116704	ENSG00000116704.9	ENSCAFG00845027306	SLC35D1	ortholog_one2one	1
ENSG00000183048	ENSG00000183048.13	ENSCAFG00845009761	SLC25A10	ortholog_one2one	1
ENSG00000134716	ENSG00000134716.12	ENSCAFG00845005961	CYP2J2	ortholog_one2one	1
ENSG00000117834	ENSG00000117834.14	ENSCAFG00845026902	SLC5A9	ortholog_one2one	1
ENSG00000196517	ENSG00000196517.14	ENSCAFG00845027651	SLC6A9	ortholog_one2one	1
ENSG00000124574	ENSG00000124574.17	ENSCAFG00845009128	ABCC10	ortholog_one2one	1
ENSG00000114544	ENSG00000114544.18	ENSCAFG00845011187		ortholog_one2one	0
ENSG00000003989	ENSG00000003989.19	ENSCAFG00845014791	SLC7A2	ortholog_one2one	1
ENSG00000114120	ENSG00000114120.15	ENSCAFG00845027764	SLC25A36	ortholog_one2one	1
ENSG00000167114	ENSG00000167114.14	ENSCAFG00845029005	SLC27A4	ortholog_one2one	1
ENSG00000139155	ENSG00000139155.10	ENSCAFG00845015737	SLCO1C1	ortholog_one2one	1
ENSG00000150967	ENSG00000150967.20	ENSCAFG00845020006	ABCB9	ortholog_one2one	1
ENSG00000149452	ENSG00000149452.17	ENSCAFG00845007168	SLC22A8	ortholog_one2one	0
ENSG00000091262	ENSG00000091262.18	ENSCAFG00845007273	ABCC6	ortholog_one2one	1
ENSG00000168575	ENSG00000168575.12	ENSCAFG00845005967	SLC20A2	ortholog_one2one	1
ENSG00000166558	ENSG00000166558.12	ENSCAFG00845016204	SLC38A8	ortholog_one2one	1
ENSG00000165646	ENSG00000165646.15	ENSCAFG00845031051	SLC18A2	ortholog_one2one	1
ENSG00000146409	ENSG00000146409.13	ENSCAFG00845004799	SLC18B1	ortholog_one2one	1
ENSG00000125434	ENSG00000125434.12	ENSCAFG00845000415	SLC25A35	ortholog_one2one	1
ENSG00000108528	ENSG00000108528.15	ENSCAFG00845003533	SLC25A11	ortholog_one2one	1
ENSG00000157765	ENSG00000157765.14	ENSCAFG00845006845	SLC34A2	ortholog_one2one	1
ENSG00000164414	ENSG00000164414.20	ENSCAFG00845005758	SLC35A1	ortholog_one2one	1
ENSG00000004864	ENSG00000004864.15	ENSCAFG00845021467	SLC25A13	ortholog_one2many	1
ENSG00000004864	ENSG00000004864.15	ENSCAFG00845009510		ortholog_one2many	0
ENSG00000108846	ENSG00000108846.17	ENSCAFG00845014515	ABCC3	ortholog_one2one	1
ENSG00000118160	ENSG00000118160.15	ENSCAFG00845002555	SLC8A2	ortholog_one2one	1
ENSG00000177542	ENSG00000177542.12	ENSCAFG00845018530	SLC25A22	ortholog_one2one	0
ENSG00000100678	ENSG00000100678.21	ENSCAFG00845004282	SLC8A3	ortholog_one2one	1
ENSG00000113396	ENSG00000113396.14	ENSCAFG00845007075	SLC27A6	ortholog_one2one	1
ENSG00000176273	ENSG00000176273.16	ENSCAFG00845020404	SLC35G1	ortholog_one2one	0
ENSG00000144659	ENSG00000144659.14	ENSCAFG00845016032	SLC25A38	ortholog_one2one	1

ENSG00000146039	ENSG00000146039.12	ENSCAFG00845024413	SLC17A4	ortholog_one2one	1
ENSG00000119899	ENSG00000119899.14	ENSCAFG00845012197	SLC17A5	ortholog_one2one	1
ENSG00000076351	ENSG00000076351.14	ENSCAFG00845007379	SLC46A1	ortholog_one2one	1
ENSG00000134294	ENSG00000134294.15	ENSCAFG00845027394	SLC38A2	ortholog_one2one	1
ENSG00000144136	ENSG00000144136.12	ENSCAFG00845011031	SLC20A1	ortholog_one2one	1
ENSG00000148795	ENSG00000148795.8	ENSCAFG00845025701	CYP17A1	ortholog_one2one	1
ENSG00000231852	ENSG00000231852.10	ENSCAFG00845014419	CYP21A2	ortholog_one2one	1
ENSG00000181035	ENSG00000181035.15	ENSCAFG00845018653	SLC25A42	ortholog_one2one	1
ENSG00000142494	ENSG00000142494.14	ENSCAFG00845017802	SLC47A1	ortholog_one2one	1
ENSG00000131389	ENSG00000131389.19	ENSCAFG00845024299	SLC6A6	ortholog_one2one	1
ENSG00000070214	ENSG00000070214.18	ENSCAFG00845010837	SLC44A1	ortholog_one2one	1
ENSG00000118777	ENSG00000118777.13	ENSCAFG00845016353	ABCG2	ortholog_one2one	1
ENSG00000080493	ENSG00000080493.20	ENSCAFG00845011607	SLC4A4	ortholog_one2one	1
ENSG00000181045	ENSG00000181045.17	ENSCAFG00845013151	SLC26A11	ortholog_one2one	1
ENSG00000145217	ENSG00000145217.15	ENSCAFG00845000968	SLC26A1	ortholog_one2one	0
ENSG00000079215	ENSG00000079215.16	ENSCAFG00845004230	SLC1A3	ortholog_one2one	1
ENSG00000141873	ENSG00000141873.12	ENSCAFG00845011490	SLC39A3	ortholog_one2one	1
ENSG00000014824	ENSG00000014824.15	ENSCAFG00845014338	SLC30A9	ortholog_one2one	1
ENSG00000127526	ENSG00000127526.16	ENSCAFG00845029814	SLC35E1	ortholog_one2one	1
ENSG00000169026	ENSG00000169026.14	ENSCAFG00845001507	SLC49A3	ortholog_one2one	1
ENSG00000157800	ENSG00000157800.19	ENSCAFG00845031071	SLC37A3	ortholog_one2one	1
ENSG00000157637	ENSG00000157637.14	ENSCAFG00845010883	SLC38A10	ortholog_one2one	1
ENSG00000141526	ENSG00000141526.19	ENSCAFG00845007246	SLC16A3	ortholog_one2one	1
ENSG00000139540	ENSG00000139540.13	ENSCAFG00845007132	SLC39A5	ortholog_one2one	1
ENSG00000103042	ENSG00000103042.10	ENSCAFG00845001448	SLC38A7	ortholog_one2one	1
ENSG00000141338	ENSG00000141338.16	ENSCAFG00845029488	ABCA8	ortholog_one2one	1
ENSG00000142973	ENSG00000142973.17	ENSCAFG00845018109	CYP4B1	ortholog_one2one	1
ENSG00000111371	ENSG00000111371.17	ENSCAFG00845027508	SLC38A1	ortholog_one2one	1
ENSG00000181830	ENSG00000181830.10	ENSCAFG00845029632	SLC35C1	ortholog_one2one	1
ENSG00000145740	ENSG00000145740.21	ENSCAFG00845011843	SLC30A5	ortholog_one2one	1
ENSG00000103222	ENSG00000103222.21	ENSCAFG00845007668	ABCC1	ortholog_one2one	1
ENSG00000144290	ENSG00000144290.18	ENSCAFG00845029772	SLC4A10	ortholog_one2one	1
ENSG00000109667	ENSG00000109667.13	ENSCAFG00845002932	SLC2A9	ortholog_one2one	1
ENSG00000155287	ENSG00000155287.13	ENSCAFG00845026169		ortholog_one2many	0
ENSG00000155287	ENSG00000155287.13	ENSCAFG00845030792	SLC25A28	ortholog_one2many	1
ENSG00000122912	ENSG00000122912.16	ENSCAFG00845002366	SLC25A16	ortholog_one2one	1
ENSG00000112759	ENSG00000112759.20	ENSCAFG00845011282	SLC29A1	ortholog_one2one	1
ENSG00000141485	ENSG00000141485.18	ENSCAFG00845002107	SLC13A5	ortholog_one2one	1

ENSG00000142583	ENSG00000142583.19	ENSCAFG00845028641	SLC2A5	ortholog_one2one	1
ENSG00000151229	ENSG00000151229.14	ENSCAFG00845030718	SLC2A13	ortholog_one2one	1
ENSG00000256870	ENSG00000256870.4	ENSCAFG00845007150	SLC5A8	ortholog_one2one	1
ENSG00000118596	ENSG00000118596.13	ENSCAFG00845007615	SLC16A7	ortholog_one2one	1
ENSG00000186115	ENSG00000186115.14	ENSCAFG00845015783		ortholog_one2one	0
ENSG00000158865	ENSG00000158865.14	ENSCAFG00845000710	SLC5A11	ortholog_one2one	1
ENSG00000148482	ENSG00000148482.13	ENSCAFG00845013563	SLC39A12	ortholog_one2one	1
ENSG00000124786	ENSG00000124786.14	ENSCAFG00845018313	SLC35B3	ortholog_one2one	1
ENSG00000134802	ENSG00000134802.19	ENSCAFG00845021319	SLC43A3	ortholog_one2one	1
ENSG00000164638	ENSG00000164638.12	ENSCAFG00845013927	SLC29A4	ortholog_one2one	1
ENSG00000164038	ENSG00000164038.17	ENSCAFG00845026669	SLC9B2	ortholog_one2one	1
ENSG00000081800	ENSG00000081800.10	ENSCAFG00845014948	SLC13A1	ortholog_one2one	1
ENSG00000167703	ENSG00000167703.16	ENSCAFG00845014401	SLC43A2	ortholog_one2one	1
ENSG00000133195	ENSG00000133195.13	ENSCAFG00845020256	SLC39A11	ortholog_one2one	1
ENSG00000103064	ENSG00000103064.16	ENSCAFG00845011484	SLC7A6	ortholog_one2one	1
ENSG00000158715	ENSG00000158715.7	ENSCAFG00845027228	SLC45A3	ortholog_one2one	1
ENSG00000198077	ENSG00000198077.12	ENSCAFG00845002826	CYP2A7	ortholog_many2many	0
ENSG00000198077	ENSG00000198077.12	ENSCAFG00845002875	CYP2A13	ortholog_many2many	0
ENSG00000110660	ENSG00000110660.16	ENSCAFG00845003658	SLC35F2	ortholog_one2one	1
ENSG00000138061	ENSG00000138061.14	ENSCAFG00845020438	CYP1B1	ortholog_one2one	1
ENSG00000121073	ENSG00000121073.16	ENSCAFG00845011328	SLC35B1	ortholog_one2one	1
ENSG00000124067	ENSG00000124067.18	ENSCAFG00845012245	SLC12A4	ortholog_one2one	1
ENSG00000114770	ENSG00000114770.18	ENSCAFG00845024339	ABCC5	ortholog_one2one	1
ENSG00000168917	ENSG00000168917.10	ENSCAFG00845022747	SLC35G2	ortholog_one2one	1
ENSG00000181856	ENSG00000181856.16	ENSCAFG00845020724	SLC2A4	ortholog_one2one	1
ENSG00000104888	ENSG00000104888.11	ENSCAFG00845024908	SLC17A7	ortholog_one2one	1
ENSG00000204574	ENSG00000204574.15	ENSCAFG00845007092	ABCF1	ortholog_one2one	1
ENSG00000173208	ENSG00000173208.5	ENSCAFG00845030727	ABCD2	ortholog_one2one	1
ENSG00000115665	ENSG00000115665.10	ENSCAFG00845008947	SLC5A7	ortholog_one2one	0
ENSG00000130304	ENSG00000130304.18	ENSCAFG00845027224	SLC27A1	ortholog_one2one	1
ENSG0000013306	ENSG0000013306.17	ENSCAFG00845013335		ortholog_one2one	0
ENSG00000136052	ENSG00000136052.11	ENSCAFG00845006325	SLC41A2	ortholog_one2one	1
ENSG00000115084	ENSG00000115084.16	ENSCAFG00845006783	SLC35F5	ortholog_one2one	0
ENSG00000225697	ENSG00000225697.14	ENSCAFG00845030951	SLC26A6	ortholog_one2one	1
ENSG00000167972	ENSG00000167972.15	ENSCAFG00845004382	ABCA3	ortholog_one2one	1
ENSG00000180773	ENSG00000180773.16	ENSCAFG00845023100	SLC36A4	ortholog_one2one	1
ENSG00000138459	ENSG00000138459.10	ENSCAFG00845029575	SLC35A5	ortholog_one2one	1
ENSG00000085563	ENSG00000085563.16	ENSCAFG00845007972	ABCB1	ortholog_one2one	1

ENSG00000139370	ENSG00000139370.13	ENSCAFG00845030274	SLC15A4	ortholog_one2one	1
ENSG00000007216	ENSG00000007216.17	ENSCAFG00845007453	SLC13A2	ortholog_one2one	1
ENSG00000138463	ENSG00000138463.10	ENSCAFG00845024853	SLC49A4	ortholog_one2one	1
ENSG00000143570	ENSG00000143570.20	ENSCAFG00845016459	SLC39A1	ortholog_one2one	1
ENSG00000125454	ENSG00000125454.13	ENSCAFG00845027026	SLC25A19	ortholog_one2one	1
ENSG00000010379	ENSG00000010379.17	ENSCAFG00845027058	SLC6A13	ortholog_one2one	1
ENSG00000135776	ENSG00000135776.6	ENSCAFG00845001468	ABCB10	ortholog_one2one	1
ENSG00000111181	ENSG00000111181.14	ENSCAFG00845026822	SLC6A12	ortholog_one2one	1
ENSG00000134955	ENSG00000134955.13	ENSCAFG00845011266	SLC37A2	ortholog_one2one	1
ENSG00000108932	ENSG00000108932.14	ENSCAFG00845029076	SLC16A6	ortholog_one2one	1
ENSG00000154265	ENSG00000154265.17	ENSCAFG00845005345	ABCA5	ortholog_one2one	1
ENSG00000110911	ENSG00000110911.18	ENSCAFG00845015776	SLC11A2	ortholog_one2one	1
ENSG00000183023	ENSG00000183023.20	ENSCAFG00845024998	SLC8A1	ortholog_one2one	1
ENSG00000169359	ENSG00000169359.17	ENSCAFG00845021734	SLC33A1	ortholog_one2one	1
ENSG00000001630	ENSG00000001630.19	ENSCAFG00845012499	CYP51A1	ortholog_one2one	1
ENSG00000163817	ENSG00000163817.18	ENSCAFG00845012394	SLC6A20	ortholog_one2one	1
ENSG00000108576	ENSG00000108576.11	ENSCAFG00845012358	SLC6A4	ortholog_one2one	1
ENSG00000158014	ENSG00000158014.16	ENSCAFG00845013235	SLC30A2	ortholog_one2one	0
ENSG00000033867	ENSG00000033867.19	ENSCAFG00845024476	SLC4A7	ortholog_one2one	1
ENSG00000163798	ENSG00000163798.15	ENSCAFG00845009475		ortholog_one2one	0
ENSG00000152683	ENSG00000152683.15	ENSCAFG00845013180	SLC30A6	ortholog_one2one	1
ENSG00000005471	ENSG00000005471.20	ENSCAFG00845007730	ABCB4	ortholog_one2one	1
ENSG00000072041	ENSG00000072041.19	ENSCAFG00845011599	SLC6A15	ortholog_one2one	1
ENSG00000137491	ENSG00000137491.16	ENSCAFG00845012322	SLCO2B1	ortholog_one2one	1
ENSG00000162241	ENSG00000162241.14	ENSCAFG00845024512	SLC25A45	ortholog_one2one	1
ENSG00000114923	ENSG00000114923.18	ENSCAFG00845030591	SLC4A3	ortholog_one2one	1
ENSG00000154025	ENSG00000154025.17	ENSCAFG00845019395	SLC5A10	ortholog_one2one	0
ENSG00000132517	ENSG00000132517.16	ENSCAFG00845010218	SLC52A2	ortholog_one2many	0
ENSG00000133065	ENSG00000133065.12	ENSCAFG00845027441	SLC41A1	ortholog_one2one	1
ENSG00000149150	ENSG00000149150.10	ENSCAFG00845020974	SLC43A1	ortholog_one2one	1
ENSG00000205060	ENSG00000205060.12	ENSCAFG00845014568	SLC35B4	ortholog_one2one	1
ENSG00000155380	ENSG00000155380.14	ENSCAFG00845030832		ortholog_one2many	0
ENSG00000155380	ENSG00000155380.14	ENSCAFG00845006291	SLC16A1	ortholog_one2many	1
ENSG00000085491	ENSG00000085491.18	ENSCAFG00845008970	SLC25A24	ortholog_one2one	1
ENSG00000165915	ENSG00000165915.15	ENSCAFG00845021469	SLC39A13	ortholog_one2one	1
ENSG00000163406	ENSG00000163406.12	ENSCAFG00845022167	SLC15A2	ortholog_one2one	1
ENSG00000075303	ENSG00000075303.14	ENSCAFG00845008642	SLC25A40	ortholog_one2one	1
ENSG00000119004	ENSG00000119004.18	ENSCAFG00845016438	CYP20A1	ortholog_one2one	1

ENSG00000196950	ENSG00000196950.15	ENSCAFG00845020786	SLC39A10	ortholog_one2one	1
ENSG00000162461	ENSG00000162461.9	ENSCAFG00845004977	SLC25A34	ortholog_one2one	1
ENSG00000033050	ENSG00000033050.10	ENSCAFG00845010733	ABCF2	ortholog_one2one	1
ENSG00000146828	ENSG00000146828.19	ENSCAFG00845000776	SLC12A9	ortholog_one2one	1
ENSG00000168003	ENSG00000168003.20	ENSCAFG00845007354	SLC3A2	ortholog_one2one	1
ENSG00000115657	ENSG00000115657.15	ENSCAFG00845029425	ABCB6	ortholog_one2one	1
ENSG00000161204	ENSG00000161204.13	ENSCAFG00845026753	ABCF3	ortholog_one2one	1
ENSG00000117620	ENSG00000117620.16	ENSCAFG00845013522	SLC35A3	ortholog_one2one	1
ENSG00000115840	ENSG00000115840.15	ENSCAFG00845028165	SLC25A12	ortholog_one2one	1
ENSG00000170190	ENSG00000170190.17	ENSCAFG00845027792	SLC16A5	ortholog_one2one	1
ENSG00000135917	ENSG00000135917.17	ENSCAFG00845016955	SLC19A3	ortholog_one2one	1
ENSG00000117479	ENSG00000117479.16	ENSCAFG00845002427	SLC19A2	ortholog_one2one	1
ENSG00000143554	ENSG00000143554.15	ENSCAFG00845001620	SLC27A3	ortholog_one2one	1
ENSG00000115194	ENSG00000115194.12	ENSCAFG00845006769	SLC30A3	ortholog_one2one	1
ENSG00000040487	ENSG00000040487.14	ENSCAFG00845003437	SLC66A1	ortholog_one2one	1
ENSG00000138074	ENSG00000138074.16	ENSCAFG00845005860		ortholog_one2one	0
ENSG00000189339	ENSG00000189339.13	ENSCAFG00845015563	SLC35E2B	ortholog_one2one	1
ENSG00000169241	ENSG00000169241.20	ENSCAFG00845013320	SLC50A1	ortholog_one2one	1
ENSG00000171612	ENSG00000171612.8	ENSCAFG00845028904	SLC25A33	ortholog_one2one	1
ENSG00000188687	ENSG00000188687.19	ENSCAFG00845021043	SLC4A5	ortholog_one2one	1
ENSG0000018280	ENSG0000018280.19	ENSCAFG00845027087	SLC11A1	ortholog_one2one	1
ENSG00000117394	ENSG00000117394.25	ENSCAFG00845015278		ortholog_one2one	0
ENSG00000143036	ENSG00000143036.18	ENSCAFG00845014574	SLC44A3	ortholog_one2one	1
ENSG00000160785	ENSG00000160785.15	ENSCAFG00845009963	SLC25A44	ortholog_one2one	1
ENSG00000115902	ENSG00000115902.12	ENSCAFG00845020925	SLC1A4	ortholog_one2one	1
ENSG00000168679	ENSG00000168679.19	ENSCAFG00845002060	SLC16A4	ortholog_one2one	1
ENSG00000186377	ENSG00000186377.9	ENSCAFG00845016805	CYP4X1	ortholog_one2one	1
ENSG00000138449	ENSG00000138449.12	ENSCAFG00845022980		ortholog_one2one	0
ENSG00000117528	ENSG00000117528.15	ENSCAFG00845014838	ABCD3	ortholog_one2one	1
ENSG00000163393	ENSG00000163393.14	ENSCAFG00845028198	SLC22A15	ortholog_one2one	1

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Table S10 Catalogue of putative loss-of-function (pLoF) variants classified as 'High Impact' in the SPF Beagle genome.

Chr	Position	Ref	Alt	Consequence	Impact	Gene Name	Gene ID	Transcript ID	Biotype
1	237069	C	T	stop_gained	HIGH	ENSCAFG00845000018	ENSCAFG00845000018	ENSCAFT00845000023.1	protein_coding
1	735473	C	T	stop_gained	HIGH	CTDP1	ENSCAFG00845000045	ENSCAFT00845000080.1	protein_coding
1	16900360	T	C	stop_gained	HIGH	SEC11C	ENSCAFG00845000586	ENSCAFT00845000966.1	protein_coding
1	32710584	G	A	stop_gained	HIGH	ENSCAFG00845010927	ENSCAFG00845010927	ENSCAFT00845019301.1	protein_coding
1	37383852	T	A	stop_gained	HIGH	GRM1	ENSCAFG00845013661	ENSCAFT00845024382.1	protein_coding
1	40514693	G	A	stop_gained	HIGH	PPIL4	ENSCAFG00845018247	ENSCAFT00845032278.1	protein_coding
1	42788201	T	A	stop_gained	HIGH	SYNE1	ENSCAFG00845000043	ENSCAFT00845000107.1	protein_coding
1	56009857	G	A	stop_gained	HIGH	SMOC2	ENSCAFG00845005168	ENSCAFT00845009278.1	protein_coding
1	64843214	C	T	stop_gained	HIGH	HEY2	ENSCAFG00845000089	ENSCAFT00845000151.1	protein_coding
1	90359821	C	T	stop_gained	HIGH	DMRT3	ENSCAFG00845002003	ENSCAFT00845003494.1	protein_coding
1	100897535	A	G	stop_gained	HIGH	ENSCAFG00845001059	ENSCAFG00845001059	ENSCAFT00845001822.1	protein_coding
1	102131853	G	A	stop_gained	HIGH	ENSCAFG00845000189	ENSCAFG00845000189	ENSCAFT00845000293.1	protein_coding
1	104564786	G	A	stop_gained	HIGH	ENSCAFG00845004413	ENSCAFG00845004413	ENSCAFT00845007922.1	protein_coding
1	104564988	G	T	stop_gained	HIGH	ENSCAFG00845004413	ENSCAFG00845004413	ENSCAFT00845007922.1	protein_coding
1	104565648	A	T	stop_gained	HIGH	ENSCAFG00845004413	ENSCAFG00845004413	ENSCAFT00845007922.1	protein_coding
1	110948484	T	A	stop_gained	HIGH	CLASRP	ENSCAFG00845006006	ENSCAFT00845010674.1	protein_coding
1	110948501	C	T	stop_gained	HIGH	CLASRP	ENSCAFG00845006006	ENSCAFT00845010674.1	protein_coding
1	110977422	G	A	stop_gained	HIGH	RELB	ENSCAFG00845006117	ENSCAFT00845010980.1	protein_coding
1	117270953	C	T	stop_gained	HIGH	CLIP3	ENSCAFG00845000488	ENSCAFT00845000790.1	protein_coding
2	35166644	C	A	stop_gained	HIGH	MZB1	ENSCAFG00845000734	ENSCAFT00845001209.1	protein_coding
2	40960760	G	A	stop_gained	HIGH	SH3RF2	ENSCAFG00845019659	ENSCAFT00845034680.1	protein_coding
2	51498313	C	A	stop_gained	HIGH	ADAMTS6	ENSCAFG00845009387	ENSCAFT00845016560.1	protein_coding
2	53146611	C	A	stop_gained	HIGH	CD180	ENSCAFG00845011648	ENSCAFT00845020654.1	protein_coding
2	56814412	A	T	stop_gained	HIGH	FOXD1	ENSCAFG00845000688	ENSCAFT00845001127.1	protein_coding
2	61001239	G	T	stop_gained	HIGH	LPCAT2	ENSCAFG00845000815	ENSCAFT00845001355.1	protein_coding
2	68513838	G	A	start_lost	HIGH	ZSCAN20	ENSCAFG00845004991	ENSCAFT00845008930.1	protein_coding
2	69544619	G	A	stop_gained	HIGH	EIF3I	ENSCAFG00845004989	ENSCAFT00845008920.1	protein_coding
2	70774166	A	G	stop_gained	HIGH	LAPTM5	ENSCAFG00845007384	ENSCAFT00845013024.1	protein_coding
2	79919505	G	A	stop_gained	HIGH	CAPZB	ENSCAFG00845003322	ENSCAFT00845005918.1	protein_coding
3	12769595	C	T	stop_gained	HIGH	ERAP1	ENSCAFG00845002563	ENSCAFT00845004540.1	protein_coding
3	27152066	G	A	stop_gained	HIGH	CMYA5	ENSCAFG00845006378	ENSCAFT00845011397.1	protein_coding
3	30915859	T	A	stop_gained	HIGH	HMGCR	ENSCAFG00845011849	ENSCAFT00845021051.1	protein_coding
3	33301778	C	T	stop_gained	HIGH	GABRG3	ENSCAFG00845017588	ENSCAFT00845031211.1	protein_coding
3	63452181	C	T	stop_gained	HIGH	ENSCAFG00845000600	ENSCAFG00845000600	ENSCAFT00845001008.1	protein_coding
3	65162589	T	A	stop_gained	HIGH	FBXL5	ENSCAFG00845001403	ENSCAFT00845002409.1	protein_coding
3	70242207	C	T	stop_gained	HIGH	SLC2A9	ENSCAFG00845002932	ENSCAFT00845005245.1	protein_coding
3	70559181	G	T	stop_gained	HIGH	NSG1	ENSCAFG00845003138	ENSCAFT00845005531.1	protein_coding
3	71937567	T	C	stop_gained	HIGH	C4orf50	ENSCAFG00845003740	ENSCAFT00845006684.1	protein_coding

3	75446306	G	A	stop_gained	HIGH	NWD2	ENSCAFG00845005206	ENSCAFT00845009311.1	protein_coding
4	2427075	G	A	stop_gained	HIGH	RYR2	ENSCAFG00845002388	ENSCAFT00845004266.1	protein_coding
4	13963128	C	G	start_lost	HIGH	CABCOC01	ENSCAFG00845003174	ENSCAFT00845005611.1	protein_coding
4	21772491	C	T	stop_gained	HIGH	PRF1	ENSCAFG00845004341	ENSCAFT00845007817.1	protein_coding
4	29699104	C	T	stop_gained	HIGH	SFTPD	ENSCAFG00845014766	ENSCAFT00845026394.1	protein_coding
4	40534367	C	T	stop_gained	HIGH	STK10	ENSCAFG00845001258	ENSCAFT00845002171.1	protein_coding
4	58984262	A	C	stop_gained	HIGH	SYNPO	ENSCAFG00845006489	ENSCAFT00845011510.1	protein_coding
5	8822428	A	G	stop_lost	HIGH	CHEK1	ENSCAFG00845010598	ENSCAFT00845018774.1	protein_coding
5	9331200	A	T	stop_gained	HIGH	SLC37A2	ENSCAFG00845011266	ENSCAFT00845020104.1	protein_coding
5	10098803	A	G	stop_gained	HIGH	OR8B60	ENSCAFG00845011472	ENSCAFT00845020330.1	protein_coding
5	19111972	T	C	stop_gained	HIGH	ZBTB16	ENSCAFG00845000220	ENSCAFT00845000341.1	protein_coding
5	21154265	G	A	stop_gained	HIGH	DIXDC1	ENSCAFG00845001790	ENSCAFT00845003169.1	protein_coding
5	22392492	A	G	stop_gained	HIGH	ARHGAP20	ENSCAFG00845002745	ENSCAFT00845004894.1	protein_coding
5	57490014	T	C	stop_lost	HIGH	RER1	ENSCAFG00845017296	ENSCAFT00845030627.1	protein_coding
5	68777409	T	C	start_lost	HIGH	HSBP1	ENSCAFG00845016653	ENSCAFT00845029511.1	protein_coding
6	8464111	G	A	stop_gained	HIGH	FIS1	ENSCAFG00845005056	ENSCAFT00845009057.1	protein_coding
6	8637513	A	C	stop_gained	HIGH	ENSCAFG00845000663	ENSCAFG00845000663	ENSCAFT00845001086.1	protein_coding
6	9300167	C	T	stop_gained	HIGH	GAL3ST4	ENSCAFG00845002407	ENSCAFT00845004251.1	protein_coding
6	10092292	G	A	stop_gained	HIGH	ENSCAFG00845003476	ENSCAFG00845003476	ENSCAFT00845006166.1	protein_coding
6	59017034	G	A	stop_gained	HIGH	ZNF326	ENSCAFG00845017298	ENSCAFT00845030633.1	protein_coding
6	64032034	G	A	stop_gained	HIGH	UOX	ENSCAFG00845001685	ENSCAFT00845002983.1	protein_coding
6	69367992	T	C	stop_gained	HIGH	GIPC2	ENSCAFG00845003104	ENSCAFT00845005501.1	protein_coding
6	76474732	G	A	stop_gained	HIGH	LRRC7	ENSCAFG00845013252	ENSCAFT00845023685.1	protein_coding
7	5307155	G	A	stop_gained	HIGH	ASPM	ENSCAFG00845001126	ENSCAFT00845001943.1	protein_coding
7	9534096	G	A	stop_gained	HIGH	TRAF5	ENSCAFG00845003309	ENSCAFT00845005885.1	protein_coding
7	18043906	C	T	stop_gained	HIGH	TRMT1L	ENSCAFG00845005028	ENSCAFT00845009031.1	protein_coding
7	28395384	C	T	stop_gained	HIGH	KIFAP3	ENSCAFG00845001773	ENSCAFT00845003124.1	protein_coding
7	44744857	C	T	stop_gained	HIGH	LOXHD1	ENSCAFG00845002851	ENSCAFT00845005373.1	protein_coding
7	45972432	G	A	stop_gained	HIGH	SETBP1	ENSCAFG00845003603	ENSCAFT00845006416.1	protein_coding
7	53901128	C	T	stop_gained	HIGH	FHOD3	ENSCAFG00845004472	ENSCAFT00845008059.1	protein_coding
7	54716767	C	A	stop_gained	HIGH	ZSCAN30	ENSCAFG00845006958	ENSCAFT00845012353.1	protein_coding
7	59824437	G	A	stop_gained	HIGH	ENSCAFG00845011983	ENSCAFG00845011983	ENSCAFT00845021321.1	protein_coding
7	64566853	C	T	stop_gained	HIGH	LAMA3	ENSCAFG00845013821	ENSCAFT00845026197.1	protein_coding
7	64589398	T	C	stop_gained	HIGH	LAMA3	ENSCAFG00845013821	ENSCAFT00845026197.1	protein_coding
7	74983806	C	T	stop_gained	HIGH	MTCL1	ENSCAFG00845004330	ENSCAFT00845007829.1	protein_coding
8	2419608	T	A	stop_gained	HIGH	ENSCAFG00845023209	ENSCAFG00845023209	ENSCAFT00845040949.1	protein_coding
8	9107774	T	A	stop_lost	HIGH	ENSCAFG00845009533	ENSCAFG00845009533	ENSCAFT00845017356.1	protein_coding
8	28478133	G	A	stop_gained	HIGH	NID2	ENSCAFG00845003626	ENSCAFT00845006474.1	protein_coding
8	41946377	G	A	stop_gained	HIGH	ZFYVE26	ENSCAFG00845003602	ENSCAFT00845006429.1	protein_coding
8	61824873	C	T	stop_gained	HIGH	TTC7B	ENSCAFG00845013189	ENSCAFT00845023504.1	protein_coding

8	62096659	A	C	stop_gained	HIGH	RPS6KA5	ENSCAFG00845013465	ENSCAFT00845024077.1	protein_coding
9	19799832	C	A	stop_gained	HIGH	SLC25A39	ENSCAFG00845008385	ENSCAFT00845014839.1	protein_coding
9	20081590	C	T	stop_gained	HIGH	PYY	ENSCAFG00845009862	ENSCAFT00845017370.1	protein_coding
9	20936104	G	A	stop_gained&	HIGH	CNTD1	ENSCAFG00845007621	ENSCAFT00845013422.1	protein_coding
9	24974258	C	T	stop_gained	HIGH	SP6	ENSCAFG00845015746	ENSCAFT00845028044.1	protein_coding
9	26815733	C	T	stop_gained	HIGH	DLX3	ENSCAFG00845011753	ENSCAFT00845020865.1	protein_coding
9	36725949	G	A	stop_gained&	HIGH	PPM1D	ENSCAFG00845028053	ENSCAFT00845049525.1	protein_coding
9	38734530	C	T	stop_gained	HIGH	GAS2L2	ENSCAFG00845009497	ENSCAFT00845016752.1	protein_coding
9	56512404	T	C	stop_lost	HIGH	FPGS	ENSCAFG00845005346	ENSCAFT00845009506.1	protein_coding
9	56639282	T	C	stop_gained	HIGH	STXBP1	ENSCAFG00845005773	ENSCAFT00845010262.1	protein_coding
10	24832605	T	C	stop_gained	HIGH	EP300	ENSCAFG00845018383	ENSCAFT00845032551.1	protein_coding
10	26036019	G	A	stop_gained	HIGH	ENTHD1	ENSCAFG00845021136	ENSCAFT00845037293.1	protein_coding
10	27519479	G	A	stop_gained	HIGH	MICALL1	ENSCAFG00845005328	ENSCAFT00845009491.1	protein_coding
10	47283551	G	A	stop_gained	HIGH	LRPPRC	ENSCAFG00845026058	ENSCAFT00845046019.1	protein_coding
10	65140680	C	T	stop_gained	HIGH	AFTPH	ENSCAFG00845020600	ENSCAFT00845036307.1	protein_coding
11	2610881	C	A	stop_gained	HIGH	ZFP2	ENSCAFG00845009219	ENSCAFT00845016224.1	protein_coding
11	29993910	G	A	stop_gained	HIGH	ENSCAFG00845026437	ENSCAFG00845026437	ENSCAFT00845048612.1	protein_coding
11	36618691	C	T	stop_gained	HIGH	ENSCAFG00845012408	ENSCAFG00845012408	ENSCAFT00845022052.1	protein_coding
11	55253612	A	T	stop_gained	HIGH	DCAF10	ENSCAFG00845013974	ENSCAFT00845024974.1	protein_coding
11	56329017	G	A	stop_gained	HIGH	HEMGN	ENSCAFG00845006327	ENSCAFT00845011206.1	protein_coding
11	59202936	C	T	stop_gained	HIGH	PLPPR1	ENSCAFG00845009012	ENSCAFT00845015900.1	protein_coding
11	61413011	A	G	stop_gained	HIGH	TOPORS�	ENSCAFG00845009721	ENSCAFT00845017132.1	protein_coding
11	63597229	C	T	stop_gained	HIGH	ZNF462	ENSCAFG00845011443	ENSCAFT00845020290.1	protein_coding
11	63600371	G	A	stop_gained	HIGH	ZNF462	ENSCAFG00845011443	ENSCAFT00845020290.1	protein_coding
11	71187031	C	T	stop_gained	HIGH	PAPPA	ENSCAFG00845011656	ENSCAFT00845020688.1	protein_coding
12	1657761	G	A	stop_gained	HIGH	ATF6B	ENSCAFG00845014557	ENSCAFT00845026165.1	protein_coding
12	2974899	G	A	stop_gained	HIGH	COL11A2	ENSCAFG00845019587	ENSCAFT00845034709.1	protein_coding
12	3455444	A	T	stop_gained	HIGH	LEMD2	ENSCAFG00845025993	ENSCAFT00845045906.1	protein_coding
12	15941229	C	A	stop_gained	HIGH	ENSCAFG00845013637	ENSCAFG00845013637	ENSCAFT00845024304.1	protein_coding
12	24379142	T	A	stop_gained	HIGH	DST	ENSCAFG00845012662	ENSCAFT00845023681.1	protein_coding
12	47607558	G	A	stop_gained	HIGH	GJB7	ENSCAFG00845005554	ENSCAFT00845009877.1	protein_coding
12	49760915	G	A	stop_gained	HIGH	MDN1	ENSCAFG00845007335	ENSCAFT00845013540.1	protein_coding
12	66533701	G	A	stop_gained	HIGH	FOXO3	ENSCAFG00845009586	ENSCAFT00845016873.1	protein_coding
12	67333075	A	T	stop_gained	HIGH	ENSCAFG00845012222	ENSCAFG00845012222	ENSCAFT00845021743.1	protein_coding
12	67333079	G	T	stop_gained	HIGH	ENSCAFG00845012222	ENSCAFG00845012222	ENSCAFT00845021743.1	protein_coding
13	10248191	T	A	stop_gained	HIGH	PKHD1L1	ENSCAFG00845011869	ENSCAFT00845023407.1	protein_coding
13	16799809	G	A	stop_gained	HIGH	ENSCAFG00845014379	ENSCAFG00845014379	ENSCAFT00845025723.1	protein_coding
13	23325773	C	T	stop_gained	HIGH	ZNF572	ENSCAFG00845011976	ENSCAFT00845021302.1	protein_coding
13	33873858	G	A	stop_gained	HIGH	FAM135B	ENSCAFG00845011345	ENSCAFT00845020107.1	protein_coding
13	62327455	C	T	stop_gained	HIGH	ADAMTS3	ENSCAFG00845012236	ENSCAFT00845021770.1	protein_coding

14	5395804	A	T	stop_gained	HIGH	MKLN1	ENSCAFG00845015885	ENSCAFT00845028632.1	protein_coding
14	18454988	A	T	stop_gained	HIGH	SAMD9L	ENSCAFG00845013275	ENSCAFT00845023637.1	protein_coding
14	27233536	G	T	stop_gained	HIGH	SCIN	ENSCAFG00845026419	ENSCAFT00845046751.1	protein_coding
14	31106510	C	T	stop_gained	HIGH	BZW2	ENSCAFG00845005705	ENSCAFT00845010112.1	protein_coding
14	59122746	G	A	stop_gained	HIGH	ING3	ENSCAFG00845010632	ENSCAFT00845018731.1	protein_coding
15	25385755	G	A	stop_gained	HIGH	TMTC2	ENSCAFG00845011393	ENSCAFT00845020191.1	protein_coding
15	35153595	A	C	stop_gained	HIGH	CEP83	ENSCAFG00845022275	ENSCAFT00845039307.1	protein_coding
15	36074332	C	A	stop_gained	HIGH	USP44	ENSCAFG00845023662	ENSCAFT00845041783.1	protein_coding
15	46697055	C	T	stop_gained	HIGH	PRMT9	ENSCAFG00845013422	ENSCAFT00845023920.1	protein_coding
15	48732716	G	A	stop_gained	HIGH	ENSCAFG00845013810	ENSCAFG00845013810	ENSCAFT00845024634.1	protein_coding
15	49800412	G	A	stop_gained	HIGH	SH3D19	ENSCAFG00845005957	ENSCAFT00845010703.1	protein_coding
16	6203277	T	C	stop_gained	HIGH	CLCN1	ENSCAFG00845016951	ENSCAFT00845030053.1	protein_coding
16	6612859	G	T	stop_gained	HIGH	TRPV6	ENSCAFG00845018322	ENSCAFT00845032409.1	protein_coding
16	14838514	A	T	stop_gained	HIGH	POLM	ENSCAFG00845006272	ENSCAFT00845011123.1	protein_coding
16	15853523	T	A	stop_gained	HIGH	ZNF786	ENSCAFG00845007981	ENSCAFT00845014058.1	protein_coding
16	16586031	C	T	stop_gained	HIGH	GIMAP2	ENSCAFG00845009569	ENSCAFT00845016847.1	protein_coding
16	22452820	G	A	stop_lost	HIGH	ESYT2	ENSCAFG00845014771	ENSCAFT00845026505.1	protein_coding
16	29173326	G	A	stop_gained	HIGH	DDHD2	ENSCAFG00845012916	ENSCAFT00845023092.1	protein_coding
16	33292652	G	T	stop_gained	HIGH	FUT10	ENSCAFG00845014634	ENSCAFT00845026182.1	protein_coding
16	56211089	G	T	stop_gained	HIGH	CBD130	ENSCAFG00845020898	ENSCAFT00845036865.1	protein_coding
17	34435108	T	A	stop_gained	HIGH	PKDCC	ENSCAFG00845025576	ENSCAFT00845045191.1	protein_coding
17	37584070	C	G	stop_gained	HIGH	CHCHD5	ENSCAFG00845011007	ENSCAFT00845019450.1	protein_coding
17	53304681	A	C	stop_gained	HIGH	CSDE1	ENSCAFG00845026694	ENSCAFT00845047196.1	protein_coding
17	55240286	G	T	stop_gained	HIGH	PTGFRN	ENSCAFG00845029002	ENSCAFT00845051304.1	protein_coding
17	55397367	A	T	stop_gained&	HIGH	ENSCAFG00845029291	ENSCAFG00845029291	ENSCAFT00845051843.1	protein_coding
17	57430017	C	A	stop_gained	HIGH	HSD3B2	ENSCAFG00845006351	ENSCAFT00845011264.1	protein_coding
18	6079788	C	T	stop_gained	HIGH	EGFR	ENSCAFG00845011396	ENSCAFT00845020269.1	protein_coding
18	12298486	C	T	stop_gained	HIGH	SFRP4	ENSCAFG00845022126	ENSCAFT00845039041.1	protein_coding
18	22034005	G	A	stop_gained	HIGH	CACNA2D1	ENSCAFG00845026601	ENSCAFT00845047024.1	protein_coding
18	38411606	C	T	stop_gained	HIGH	ZFP91	ENSCAFG00845018289	ENSCAFT00845032335.1	protein_coding
18	40067737	T	C	stop_gained	HIGH	OR5M12	ENSCAFG00845005943	ENSCAFT00845010512.1	protein_coding
18	51457347	G	A	stop_gained	HIGH	PC	ENSCAFG00845011738	ENSCAFT00845020879.1	protein_coding
18	53755669	C	T	stop_gained	HIGH	CCDC88B	ENSCAFG00845030464	ENSCAFT00845054049.1	protein_coding
18	53841300	C	A	stop_gained	HIGH	PLCB3	ENSCAFG00845030670	ENSCAFT00845054456.1	protein_coding
18	54435919	T	A	stop_gained	HIGH	PLAAT3	ENSCAFG00845006522	ENSCAFT00845011597.1	protein_coding
19	13254569	T	G	stop_lost	HIGH	SLC25A31	ENSCAFG00845017577	ENSCAFT00845031130.1	protein_coding
19	24426674	G	T	stop_gained	HIGH	IWS1	ENSCAFG00845022278	ENSCAFT00845039303.1	protein_coding
19	32399037	C	A	stop_gained	HIGH	MARCO	ENSCAFG00845029094	ENSCAFT00845051470.1	protein_coding
19	33382446	C	T	stop_gained	HIGH	ENSCAFG00845006053	ENSCAFG00845006053	ENSCAFT00845010706.1	protein_coding
19	44758960	T	C	stop_gained	HIGH	LRP1B	ENSCAFG00845011094	ENSCAFT00845020640.1	protein_coding

20	22751993	C	T	stop_gained	HIGH	EOGT	ENSCAFG00845010941	ENSCAFT00845019440.1	protein_coding
20	33099113	C	T	stop_gained	HIGH	DENND6A	ENSCAFG00845021689	ENSCAFT00845038355.1	protein_coding
20	33254554	G	A	stop_gained	HIGH	DNAH12	ENSCAFG00845022260	ENSCAFT00845040145.1	protein_coding
20	36027489	C	T	stop_gained	HIGH	CACNA2D3	ENSCAFG00845026635	ENSCAFT00845047020.1	protein_coding
20	37454239	G	A	stop_lost	HIGH	GNL3	ENSCAFG00845029903	ENSCAFT00845052956.1	protein_coding
20	46204220	C	A	stop_gained	HIGH	CPAMD8	ENSCAFG00845029496	ENSCAFT00845052236.1	protein_coding
20	51255457	C	T	stop_gained	HIGH	CDC37	ENSCAFG00845027375	ENSCAFT00845048202.1	protein_coding
20	52214715	A	T	start_lost	HIGH	OR1M1	ENSCAFG00845024226	ENSCAFT00845042767.1	protein_coding
20	55592500	C	T	stop_gained	HIGH	PLIN3	ENSCAFG00845014253	ENSCAFT00845025527.1	protein_coding
21	6650015	A	G	stop_gained	HIGH	MRE11	ENSCAFG00845020248	ENSCAFT00845035673.1	protein_coding
21	20287472	G	T	stop_gained	HIGH	ENSCAFG00845006537	ENSCAFG00845006537	ENSCAFT00845011656.1	protein_coding
21	26826589	C	T	stop_gained	HIGH	RRM1	ENSCAFG00845011642	ENSCAFT00845020658.1	protein_coding
21	28023135	G	T	stop_gained	HIGH	ENSCAFG00845019167	ENSCAFG00845019167	ENSCAFT00845033820.1	protein_coding
21	29052432	T	G	stop_gained	HIGH	OR51K2	ENSCAFG00845020889	ENSCAFT00845036834.1	protein_coding
21	41657952	C	T	stop_gained	HIGH	TPH1	ENSCAFG00845015143	ENSCAFT00845027067.1	protein_coding
22	52678718	G	A	stop_gained	HIGH	ENSCAFG00845027353	ENSCAFG00845027353	ENSCAFT00845048170.1	protein_coding
22	52804142	G	T	stop_gained	HIGH	ERCC5	ENSCAFG00845027609	ENSCAFT00845048699.1	protein_coding
22	58174763	A	G	stop_lost	HIGH	ENSCAFG00845028562	ENSCAFG00845028562	ENSCAFT00845050415.1	protein_coding
22	59186407	C	A	stop_gained	HIGH	COL4A1	ENSCAFG00845018797	ENSCAFT00845033606.1	protein_coding
23	23846422	C	T	stop_gained	HIGH	EFHB	ENSCAFG00845021296	ENSCAFT00845037597.1	protein_coding
23	23859395	G	A	stop_gained	HIGH	EFHB	ENSCAFG00845021296	ENSCAFT00845037597.1	protein_coding
23	24219436	G	A	stop_gained	HIGH	KCNH8	ENSCAFG00845021492	ENSCAFT00845037928.1	protein_coding
23	31757124	G	A	stop_gained	HIGH	ANAPC13	ENSCAFG00845030318	ENSCAFT00845053793.1	protein_coding
23	49041721	G	A	stop_gained	HIGH	DHX36	ENSCAFG00845020573	ENSCAFT00845036522.1	protein_coding
23	51276362	G	A	stop_gained	HIGH	CCNL1	ENSCAFG00845023534	ENSCAFT00845041643.1	protein_coding
24	7228460	G	A	stop_gained	HIGH	MACROD2	ENSCAFG00845021310	ENSCAFT00845037616.1	protein_coding
24	34395425	G	T	stop_gained	HIGH	ZNF334	ENSCAFG00845019229	ENSCAFT00845033908.1	protein_coding
24	35040748	T	C	stop_gained	HIGH	ZMYND8	ENSCAFG00845020959	ENSCAFT00845038714.1	protein_coding
24	47521475	C	T	stop_gained	HIGH	OGFR	ENSCAFG00845017856	ENSCAFT00845031663.1	protein_coding
25	9086944	C	T	stop_gained	HIGH	HSPH1	ENSCAFG00845021081	ENSCAFT00845037375.1	protein_coding
25	26497544	G	A	stop_gained	HIGH	BLK	ENSCAFG00845019394	ENSCAFT00845034333.1	protein_coding
25	37519161	T	C	stop_lost	HIGH	ENSCAFG00845029573	ENSCAFG00845029573	ENSCAFT00845052370.1	protein_coding
25	44681823	C	T	stop_gained	HIGH	GIGYF2	ENSCAFG00845026406	ENSCAFT00845046587.1	protein_coding
25	51400537	A	G	stop_lost	HIGH	PPP1R7	ENSCAFG00845022243	ENSCAFT00845039236.1	protein_coding
26	10660635	G	A	stop_gained	HIGH	OAS3	ENSCAFG00845022113	ENSCAFT00845039026.1	protein_coding
26	10823606	G	A	stop_gained	HIGH	IQCD	ENSCAFG00845023086	ENSCAFT00845040733.1	protein_coding
26	24628354	G	A	stop_gained	HIGH	PIK3IP1	ENSCAFG00845022796	ENSCAFT00845040251.1	protein_coding
26	29677977	A	T	stop_gained	HIGH	SMIM15	ENSCAFG00845022852	ENSCAFT00845040324.1	protein_coding
26	31782807	G	A	stop_gained	HIGH	ENSCAFG00845022358	ENSCAFG00845022358	ENSCAFT00845039484.1	protein_coding
26	32225900	G	A	stop_gained	HIGH	ENSCAFG00845025717	ENSCAFG00845025717	ENSCAFT00845045396.1	protein_coding

26	32227931	G	A	stop_gained	HIGH	ENSCAFG00845025717	ENSCAFG00845025717	ENSCAFT00845045396.1	protein_coding
27	65659	A	G	stop_gained	HIGH	OR6C6	ENSCAFG00845029997	ENSCAFT00845053141.1	protein_coding
27	208762	A	T	stop_gained	HIGH	OR9K2C	ENSCAFG00845015464	ENSCAFT00845027559.1	protein_coding
27	4443556	C	T	stop_gained	HIGH	ENSCAFG00845017048	ENSCAFG00845017048	ENSCAFT00845030170.1	protein_coding
27	25818874	G	A	stop_gained	HIGH	GOLT1B	ENSCAFG00845014813	ENSCAFT00845026539.1	protein_coding
28	11248509	G	A	stop_gained	HIGH	AVPI1	ENSCAFG00845030048	ENSCAFT00845053231.1	protein_coding
28	16763175	C	T	stop_gained	HIGH	SLK	ENSCAFG00845028335	ENSCAFT00845050024.1	protein_coding
28	30501711	C	A	stop_gained	HIGH	MCMBP	ENSCAFG00845017945	ENSCAFT00845031802.1	protein_coding
28	30552358	G	A	stop_gained	HIGH	SEC23IP	ENSCAFG00845018243	ENSCAFT00845032298.1	protein_coding
29	31505725	G	T	stop_gained	HIGH	ENSCAFG00845015800	ENSCAFG00845015800	ENSCAFT00845028322.1	protein_coding
29	31763362	T	G	stop_gained	HIGH	ENSCAFG00845016085	ENSCAFG00845016085	ENSCAFT00845028620.1	protein_coding
29	38992984	C	T	stop_gained	HIGH	PDP1	ENSCAFG00845014567	ENSCAFT00845026082.1	protein_coding
29	39537486	C	T	stop_gained	HIGH	ESRP1	ENSCAFG00845015323	ENSCAFT00845027396.1	protein_coding
29	40959845	G	A	stop_gained	HIGH	MTERF3	ENSCAFG00845016723	ENSCAFT00845029642.1	protein_coding
30	7098906	G	A	stop_gained	HIGH	FSIP1	ENSCAFG00845026703	ENSCAFT00845047052.1	protein_coding
30	35809877	C	T	stop_gained	HIGH	MYO9A	ENSCAFG00845023099	ENSCAFT00845040808.1	protein_coding
31	21157465	C	T	stop_gained	HIGH	MRPL39	ENSCAFG00845014739	ENSCAFT00845026352.1	protein_coding
31	24069007	C	T	stop_gained	HIGH	LTN1	ENSCAFG00845018360	ENSCAFT00845032470.1	protein_coding
31	37186771	G	A	stop_gained	HIGH	HSF2BP	ENSCAFG00845017775	ENSCAFT00845031506.1	protein_coding
32	3274335	G	A	stop_gained	HIGH	BMP2K	ENSCAFG00845016378	ENSCAFT00845029141.1	protein_coding
32	26355025	C	A	stop_gained	HIGH	TET2	ENSCAFG00845027576	ENSCAFT00845048702.1	protein_coding
33	14045350	C	T	stop_gained&	HIGH	DZIP3	ENSCAFG00845026061	ENSCAFT00845046216.1	protein_coding
33	17015227	G	A	stop_gained	HIGH	SLC9C1	ENSCAFG00845029039	ENSCAFT00845051395.1	protein_coding
33	25203065	G	A	stop_gained	HIGH	GOLGB1	ENSCAFG00845021329	ENSCAFT00845037854.1	protein_coding
34	3956111	G	A	stop_gained	HIGH	ATPCKMT	ENSCAFG00845021964	ENSCAFT00845038750.1	protein_coding
34	11968563	G	A	stop_gained&	HIGH	PLEKHG4B	ENSCAFG00845015302	ENSCAFT00845027312.1	protein_coding
34	13814128	C	T	stop_gained	HIGH	TTC14	ENSCAFG00845018663	ENSCAFT00845033015.1	protein_coding
34	34453224	G	A	stop_gained	HIGH	ACTRT3	ENSCAFG00845020716	ENSCAFT00845036511.1	protein_coding
35	24337886	C	T	stop_gained	HIGH	H2AC9	ENSCAFG00845026196	ENSCAFT00845046205.1	protein_coding
35	24741388	C	T	stop_gained	HIGH	ENSCAFG00845015324	ENSCAFG00845015324	ENSCAFT00845027334.1	protein_coding
35	25952195	C	G	stop_gained	HIGH	GPX5	ENSCAFG00845017417	ENSCAFT00845030890.1	protein_coding
36	5213428	G	A	stop_gained	HIGH	BAZ2B	ENSCAFG00845028154	ENSCAFT00845049714.1	protein_coding
36	5732568	C	T	stop_gained	HIGH	LY75	ENSCAFG00845028773	ENSCAFT00845050849.1	protein_coding
36	11672367	C	A	start_lost	HIGH	SCN7A	ENSCAFG00845018286	ENSCAFT00845032596.1	protein_coding
36	14440861	A	T	stop_gained	HIGH	PPIG	ENSCAFG00845023620	ENSCAFT00845041713.1	protein_coding
36	14567152	C	T	stop_gained	HIGH	ENSCAFG00845023945	ENSCAFG00845023945	ENSCAFT00845042270.1	protein_coding
36	22313522	T	A	stop_gained	HIGH	TTN	ENSCAFG00845023220	ENSCAFT00845041275.1	protein_coding
36	25937114	C	T	stop_gained	HIGH	DNAJC10	ENSCAFG00845015761	ENSCAFT00845028118.1	protein_coding
36	26266766	A	G	stop_gained	HIGH	ENSCAFG00845016301	ENSCAFG00845016301	ENSCAFT00845028959.1	protein_coding
36	27681836	A	T	stop_gained	HIGH	ZNF804A	ENSCAFG00845016901	ENSCAFT00845029935.1	protein_coding

37	5604466	G	A	stop_gained	HIGH	DNAH7	ENSCAFG00845021093	ENSCAFT00845037932.1	protein_coding
37	25882221	G	A	stop_gained	HIGH	ENSCAFG00845030088	ENSCAFG00845030088	ENSCAFT00845053316.1	protein_coding
38	2098963	T	C	start_lost	HIGH	ENSCAFG00845027204	ENSCAFG00845027204	ENSCAFT00845047933.1	protein_coding
38	2876430	A	G	stop_lost	HIGH	CFH	ENSCAFG00845029192	ENSCAFT00845052101.1	protein_coding
38	17048639	G	A	stop_gained	HIGH	FAM177B	ENSCAFG00845030578	ENSCAFT00845054237.1	protein_coding
X	11588776	G	C	stop_gained	HIGH	VEGFD	ENSCAFG00845029554	ENSCAFT00845052335.1	protein_coding
X	16068601	G	A	stop_gained	HIGH	RPS6KA3	ENSCAFG00845029219	ENSCAFT00845051805.1	protein_coding