

Supporting Information

Nano-Hydroxyapatite Stimulation of Gene Expression Requires Fgf Receptor, Phosphate Transporter, and Erk1/2 Signaling.

*Shin-Woo Ha[†], Jonathan Park[†], Mark M Habib[‡], and George R. Beck Jr^{†, ‡, §, *}*

[‡] The Atlanta Department of Veterans Affairs Medical Center, Decatur, Georgia 30033, United States.

[†] Department of Medicine, Division of Endocrinology, Emory University, Atlanta, Georgia 30322, United States.

[§] The Winship Cancer Institute, Emory University School of Medicine, Atlanta, Georgia 30322, United States.

***Corresponding Author:** George R. Beck Jr., Ph.D., 101 Woodruff Circle, 1026 WMRB, Atlanta, Georgia 30322-0001, Tel: (404) 727-1340, Fax (404) 727-1300, E-Mail: george.beck@emory.edu

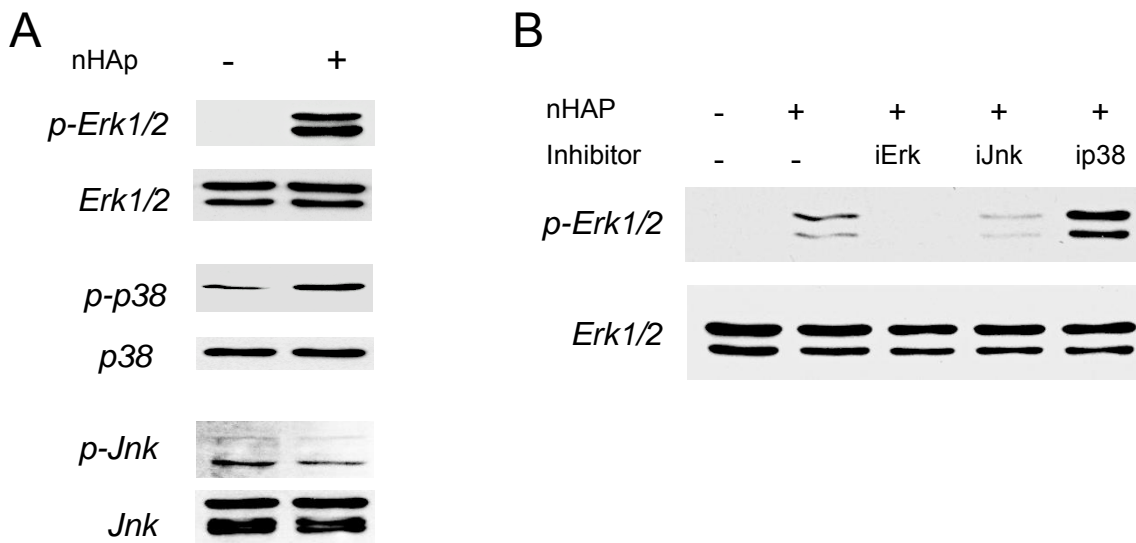
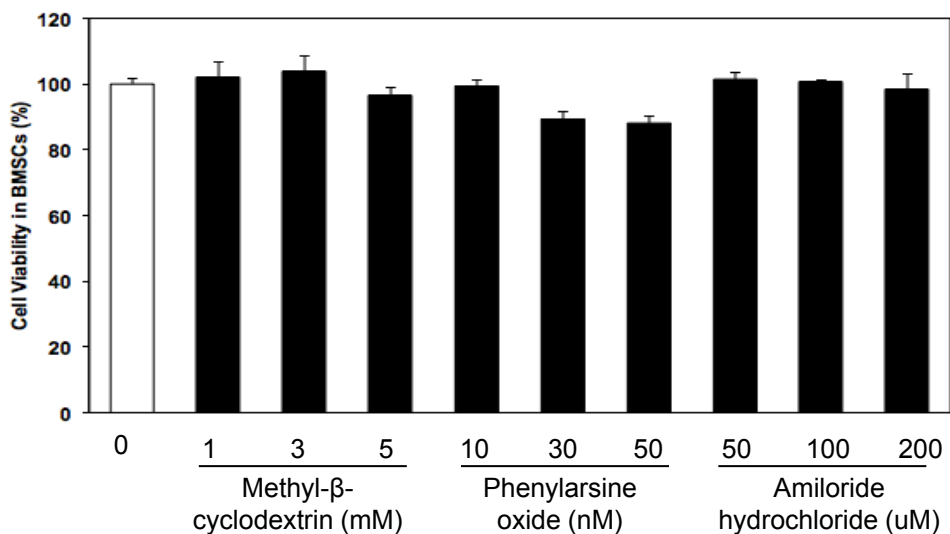


Figure S1: (A) nHAp stimulates phosphorylation of Erk1/2 (p-Erk1/2) in the absence of serum. BMCS were plated in standard growth medium and changed to serum free medium 1hr prior to treatment or not with nHAp for 15 minutes. The resulting lysate was analyzed by Western blotting and probed as indicated. **(B) nHAp stimulates phosphorylation of Erk1/2 (p-Erk1/2) in pre-osteoblasts.** MC3T3-E1 cells were pre-treated with inhibitors for Erk1/2 (30 μ M of U0126), Jnk (10 μ M of SP600125), and p38 (10 μ M of SB203580) for 1 hour followed by treatment with or without nHAp for 15 minutes. The resulting lysate was analyzed by Western blotting and probed as indicated.

A



B

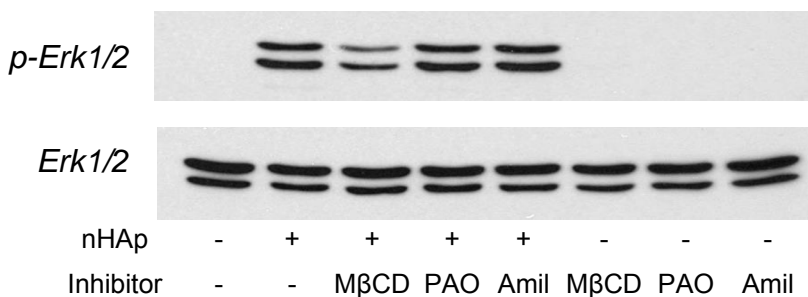


Figure S2: (A) Viability study. BMCS were plated in 96-well plates and treated with inhibitors as indicated for 24 hrs. Cell viability was measured by XTT assay. **(B) Inhibition of endocytosis does not block nHAp generated signals.** BMSCs were pretreated with inhibitors of lipid rafts/caveolae (5 mM of MβCD, methyl-β-cyclodextrin), Clathrin-mediated (50 nM of PAO, phenylarsine oxide) and Macropinocytosis (200 μM of Amiloride) for 1 hour. Cells were harvested 15 minutes after treatment with nHAp (25 μg/ml) and analyzed by Western blotting and probed with antibodies as indicated.

Table S1: Primers used for qRT-PCR

Gene	Forward	Reverse
18S (control)	5'-TTGACGGAAGGGCACCACCAG-3'	5'-GCACCACCACCCACGGAATCG-3'
Alp (<i>Alpl</i>)	5'-ACAGACCCTCCCCACGAGT-3'	5'-TGTACCCTGAGATTTCGTCCC-3'
Opn (<i>Spp1</i>)	5'-ATTTGCTTTTGCCTGTTTGG-3'	5'-TGGCTATAGGATCTGGGTGC-3'
Vdr	5'-AGCCCTAAGCACGGGAAG-3'	5'-GCTCTCCTGGGAAGACTCAC-3'
Lcn2	5'-AATGTCACCTCCATCCTGGT-3'	5'-ATTTCCCAGAGTGAAGTGGC-3'
Nr4a1	5'-GCTAGAAGGACTGCGGAGC-3'	5'-ATTGAGCTTGAATACAGGGCA-3'
Igf1	5'-TGGATGCTCTTCAGTTCGTG-3'	5'-CACTCATCCACAATGCCTGT-3'
Igf2	5'-CTTCTCCTCCGATCCTCCTG-3'	5'-TGAGAAGCACCAACATCGAC-3'
Saa3	5'-TCCATTGCCATCATTCTTTG-3'	5'-AGTAGGCTCGCCACATGTCT-3'
Dmp1	5'-TTCGCTGAGGTTTTGACCTT-3'	5'-CCCAAAGGAACACAAGGAGA-3'
Ank	5'-CACTACTGGCCCCTGATCC-3'	5'-ACTGCATCCTCCTTGACTGC-3'
Ctsk	5'-CTTCCAATACGTGCAGCAGA-3'	5'-GCCGTGGCGTTATACATACA-3'
Fgfr1	5'-TCACAGCCACTCTCTGCACT-3'	5'-GTGGACCAGGAGAGACTCCA
Fgfr2	5'-ACCACACCTACCACCTCGAT-3'	5'-GACAAACTCCACATCCCCTC-3'
Fgfr3	5'-TCGTGGCTGGAGCTACTTC-3'	5'-CTCCTGCTGGCTAGGTTCAG-3'
Fgfr4	5'-CAGAGGCCTTTGGTATGGAT-3'	5'-CAGGTCTGCCAAATCCTTGT-3'
Slc20A1	5'-ATTCTTCCTTGTTTCGTGCGT-3'	5'-TGGAAAAGAGGTTGATTCCG-3'
Slc20a2	5'-GACCTCGCCTTCGTCACCTT-3'	5'-CCATAGTTTTTCTCCCAGGC-3'
Slc34a1	5'-GGGATGAGTCCCTGAGGAAT-3'	5'-ATGGCCTCTACCCTGGACAT-3'
Slc34a2	5'-CTCCTGCTGTCCCTTACCTG-3'	5'-CGATGAATTTACCGGGGT-3'
Slc34a3	5'-CAGCCCTGCAGACATGTTAAT-3'	5'-AGACAGGCACCAGGTACCAC-3'

4604	17209359	---				---	2.58	2.58	1.31	0	1
23807	17392821	NM_198655 // 4921509C19Rik // RIKEN cDNA 4921509C19 gene // 2 G3 2 // 381393 /// ENSMUS	4921509C19Rik	NM_198655	2.57	2.57	2.57	2.57	2.88	0	1
26099	17415375	NR_033533 // Gm12603 // predicted gene 12603 // 4 C4 4 // 100040617 /// ENSMUST00000146	Gm12603	NR_033533	2.57	2.57	2.57	2.57	9.16	0	1
813	17201631	---				---	2.57	2.57	2.33	1.42E-14	1
2804	17205679	---				---	2.57	2.57	4.04	0	1
5103	17210369	---				---	2.57	2.57	4.35	0	1
22139	17375396	NM_146126 // Sord // sorbitol dehydrogenase // 2 E5 2 60.59 cM // 20322 /// ENSMUST0000	Sord	NM_146126	2.57	2.57	2.57	2.57	6.68	0	1
1226	17202469	---				---	2.56	2.56	6.76	0	1
588	17201173	---				---	2.56	2.56	1.36	0	1
1660	17203349	---				---	2.56	2.56	1.31	0	1
5287	17210745	---				---	2.56	2.56	8.60	0	1
15421	17308952	ENSMUST00000158641 // Gm22891 // predicted gene, 22891 // --- // ---	Gm22891	VSMUST0000015864	2.56	2.56	2.56	2.56	0.96	5.68E-14	1
564	17201125	---				---	2.56	2.56	2.19	2.84E-14	1
19599	17350916	NM_001033767 // Gm4951 // predicted gene 4951 // 18 D3 18 // 240327 /// ENSMUST00000031	Gm4951	NM_001033767	2.56	2.56	2.56	2.56	1.47	1.14E-13	1
32237	17476666	NM_001099329 // Scgb1b24 // secretoglobin, family 1B, member 24 // 7 B1 7 // 100043860	Scgb1b24	NM_001099329	2.56	2.56	2.56	2.56	2.72	0	1
282	17200555	---				---	2.56	2.56	4.59	2.84E-14	1
69	17200123	---				---	2.56	2.56	4.69	8.53E-14	1
1765	17203567	---				---	2.55	2.55	1.80	2.84E-14	1
2992	17206063	---				---	2.55	2.55	1.91	0	1
36219	17514928	NM_146527 // Olfr849 // olfactory receptor 849 // 9 A2-A5 9 // 258520 /// ENSMUST000000	Olfr849	NM_146527	2.55	2.55	2.55	2.55	1.10	0	1
32574	17480205	NM_029494 // Rab30 // RAB30, member RAS oncogene family // 7 E1 7 // 75985 /// ENSMUSTO	Rab30	NM_029494	2.54	2.54	2.54	2.54	3.99	0	1
30310	17459306	ENSMUST00000103309 // Igkv17-127 // immunoglobulin kappa variable 17-127 // --- // ---	Igkv17-127	VSMUST0000010330	2.54	2.54	2.54	2.54	114.66	0	1
356	17200703	---				---	2.54	2.54	2.49	0	1
18116	17336502	NM_010382 // H2-Eb1 // histocompatibility 2, class II antigen E beta // 17 B1 17 17.98	H2-Eb1	NM_010382	2.54	2.54	2.54	2.54	20.72	1.14E-13	1
32470	17479160	ENSMUST00000158776 // Gm24880 // predicted gene, 24880 // --- // ---	Gm24880	VSMUST0000015877	2.54	2.54	2.54	2.54	3.51	0	1
30839	17464099	ENSMUST00000173695 // Gm20400 // predicted gene 20400 // --- // ---	Gm20400	VSMUST0000017369	2.53	2.53	2.53	2.53	5.21	4.26E-14	1
31018	17465824	NM_173375 // Fam180a // family with sequence similarity 180, member A // 6 B1 6 // 2081	Fam180a	NM_173375	2.53	2.53	2.53	2.53	7.72	1.42E-13	1
809	17201623	---				---	2.53	2.53	1.07	0	1
26279	17417407	NM_181585 // Pik3r3 // phosphatidylinositol 3 kinase, regulatory subunit, polypeptide 3	Pik3r3	NM_181585	2.53	2.53	2.53	2.53	19.87	5.68E-14	1
782	17201567	---				---	2.53	2.53	1.17	0	1
5026	17210209	---				---	2.53	2.53	1.98	5.68E-14	1
3534	17207171	---				---	2.53	2.53	1.70	0	1
3571	17207247	---				---	2.53	2.53	1.61	0	1
19483	17349894	NM_053134 // Pcdhb9 // protocadherin beta 9 // 18 B3 18 // 93880 /// ENSMUST00000057228	Pcdhb9	NM_053134	2.53	2.53	2.53	2.53	3.87	0	1
4501	17209149	---				---	2.53	2.53	1.79	0	1
34209	17494803	ENSMUST00000078933 // Olfr502 // olfactory receptor 502 // 7 E3 7 // 258734 /// BC11923	Olfr502	VSMUST0000007893	2.52	2.52	2.52	2.52	1.38	0	1
14203	17298899	NM_175008 // 4930474N05Rik // RIKEN cDNA 4930474N05 gene // 14 B 14 // 218921 /// ENSMU	4930474N05Rik	NM_175008	2.52	2.52	2.52	2.52	2.10	1.42E-14	1
7320	17232235	NM_010217 // Ctgf // connective tissue growth factor // 10 A3-B1 10 11.84 cM // 14219 /	Ctgf	NM_010217	2.52	2.52	2.52	2.52	3.53	2.27E-13	1
39783	17547505	---				---	2.52	2.52	23.54	5.68E-14	1
1616	17203261	---				---	2.51	2.51	4.42	0	1
3146	17206375	---				---	2.51	2.51	3.27	0	1
12946	17287022	ENSMUST00000157288 // Gm24915 // predicted gene, 24915 // --- // ---	Gm24915	VSMUST0000015728	2.51	2.51	2.51	2.51	3.09	0	1
13546	17291881	NM_001166391 // F13a1 // coagulation factor XIII, A1 subunit // 13 A3.3 13 // 74145 ///	F13a1	NM_001166391	2.51	2.51	2.51	2.51	8.40	0	1
23002	17384569	BC119215 // Olfr358 // olfactory receptor 358 // 2 B 2 // 227789 /// BC119217 // Olfr35	Olfr358	BC119215	2.51	2.51	2.51	2.51	1.96	0	1
3458	17207019	---				---	2.51	2.51	5.84	0	1
4966	17210087	---				---	2.51	2.51	11.38	8.53E-14	1
4963	17210081	---				---	2.51	2.51	5.11	8.53E-14	1
1089	17202193	---				---	2.50	2.50	4.19	7.11E-15	1
25815	17412728	ENSMUST00000157714 // Gm22850 // predicted gene, 22850 // --- // ---	Gm22850	VSMUST0000015771	2.50	2.50	2.50	2.50	2.94	0	1
20988	17364208	ENSMUST00000087321 // Ppp1r3c // protein phosphatase 1, regulatory (inhibitor) subunit	Ppp1r3c	VSMUST0000008732	2.50	2.50	2.50	2.50	2.49	0	1
15658	17311519	NM_010930 // Nov // nephroblastoma overexpressed gene // 15 D1 15 21.49 cM // 18133 ///	Nov	NM_010930	2.49	2.49	2.49	2.49	62.79	0	1
4791	17209735	---				---	2.49	2.49	6.02	2.84E-14	1
19779	17352824	NM_145492 // Zfp521 // zinc finger protein 521 // 18 A1 18 7.68 cM // 225207 /// ENSMUS	Zfp521	NM_145492	2.49	2.49	2.49	2.49	15.21	0	1
25538	17409826	NM_001190156 // Snx7 // sorting nexin 7 // 3 3 G2 // 76561 /// NM_029655 // Snx7 // sor	Snx7	NM_001190156	2.49	2.49	2.49	2.49	33.60	2.27E-13	1
4283	17208703	---				---	2.49	2.49	1.61	2.84E-14	1
5415	17211562	ENSMUST00000158125 // Gm24901 // predicted gene, 24901 // --- // ---	Gm24901	VSMUST0000015812	2.48	2.48	2.48	2.48	1.24	0	1
34152	17494503	NM_028444 // Prkcdpb // protein kinase C, delta binding protein // 7 7 F1 // 109042 ///	Prkcdpb	NM_028444	2.48	2.48	2.48	2.48	18.61	5.68E-14	1
18947	17344434	ENSMUST00000177607 // Gm23864 // predicted gene, 23864 // --- // ---	Gm23864	VSMUST0000017760	2.48	2.48	2.48	2.48	3.28	5.68E-14	1
23340	17387997	ENSMUST00000111523 // Olfr1254 // olfactory receptor 1254 // 2 E1 2 // 258468	Olfr1254	VSMUST0000011152	2.48	2.48	2.48	2.48	1.04	0	1
568	17201133	---				---	2.48	2.48	2.96	5.68E-14	1
6797	17226600	ENSMUST00000082803 // Gm23056 // predicted gene, 23056 // --- // ---	Gm23056	VSMUST0000008280	2.47	2.47	2.47	2.47	2.54	0	1
919	17201845	---				---	2.47	2.47	1.26	0	1
33792	17491634	ENSMUST00000104584 // Gm22373 // predicted gene, 22373 // --- // ---	Gm22373	VSMUST0000010458	2.47	2.47	2.47	2.47	1.73	4.26E-14	1
303	17200597	---				---	2.47	2.47	2.52	2.84E-14	1
5333	17210839	---				---	2.47	2.47	5.22	5.68E-14	1
1857	17203757	---				---	2.47	2.47	1.54	2.84E-14	1
1512	17203051	---				---	2.46	2.46	1.31	1.42E-13	1
16972	17325321	ENSMUST00000077110 // Gm10092 // predicted gene 10092 // --- // ---	Gm10092	VSMUST0000007711	2.46	2.46	2.46	2.46	1.42	0	1
1754	17203545	---				---	2.46	2.46	0.88	0	1
23325	17387940	NM_146790 // Olfr1238 // olfactory receptor 1238 // 2 E1 2 // 258786 /// ENSMUST0000009	Olfr1238	NM_146790	2.46	2.46	2.46	2.46	1.63	0	1
1824	17203691	---				---	2.46	2.46	1.06	0	1
24356	17398285	ENSMUST00000157223 // Gm25621 // predicted gene, 25621 // --- // ---	Gm25621	VSMUST0000015722	2.46	2.46	2.46	2.46	1.31	0	1
17164	17326964	NM_015755 // Hunk // hormonally upregulated Neu-associated kinase // 16 C3.3 16 51.71 c	Hunk	NM_015755	2.46	2.46	2.46	2.46	3.29	2.27E-13	1
21881	17372828	NM_146297 // Olfr1115 // olfactory receptor 1115 // 2 E1 2 // 258294 /// ENSMUST0000008	Olfr1115	NM_146297	2.46	2.46	2.46	2.46	1.29	0	1
9901	17257639	XM_006534098 // 1810010H24Rik // RIKEN cDNA 1810010H24 gene // 11 E1 11 // 69066 ///	1810010H24Rik	XM_006534098	2.46	2.46	2.46	2.46	2.65	7.11E-15	1
23293	17387841	ENSMUST00000090702 // Olfr1187-ps1 // olfactory receptor 1187, pseudogene 1 // --- // -	Olfr1187-ps1	VSMUST0000009070	2.46	2.46	2.46	2.46	1.23	2.84E-14	1
476	17200947	---				---	2.46	2.46	4.66	0	1
2173	17204397	---				---	2.46	2.46	5.60	0	1
13856	17294736	ENSMUST00000175608 // Gm26120 // predicted gene, 26120 // --- // ---	Gm26120	VSMUST0000017560	2.46	2.46	2.46	2.46	1.85	2.84E-14	1
33411	17488076	XM_006544161 // LOC101055953 // 39S ribosomal protein L41, mitochondrial-like // --- //	LOC101055953	XM_006544161	2.46	2.46	2.46	2.46	2.37	0	1
4881	17209915	---				---	2.46	2.46	17.93	2.84E-14	1
4914	17209981	---				---	2.45	2.45	3.33	2.84E-14	1
2380	17204819	---				---	2.45	2.45	3.39	1.42E-14	1
2858	17205791	---				---	2.45	2.45	2.34	0	1
9170	17249980	NM_018738 // Igtp // interferon gamma induced GTPase // 11 B1.3 11 36.01 cM // 16145 //	Igtp	NM_018738	2.45	2.45	2.45	2.45	5.88	5.68E-14	1
16191	17317056	NM_001136077 // Enpp2 // ectonucleotide pyrophosphatase/phosphodiesterase 2 // 15 15 D2	Enpp2	NM_001136077	2.45	2.45	2.45	2.45	10.91	5.68E-14	1
1099	17202213	---				---	2.45	2.45	1.64	2.84E-14	1
38512	17537975	XM_006528659 // Gm15026 // predicted gene 15026 // X X 59.1 cM // 100862124 /// ENSMUST	Gm15026	XM_006528659	2.45	2.45	2.45	2.45	1.50	0	1
5215	17210595	---				---	2.45	2.45	2.23	1.42E-14	1
806	17201617	---				---	2.45	2.45	1.11	0	1
3264	17206621	---				---	2.45	2.45	1.95	0	1
7670	17235511	NM_008655 // Gadd45b // growth arrest and DNA-damage-inducible 45 beta // 10 C1 10 39.7	Gadd45b	NM_008655	2.45	2.45	2.45	2.45	1.98	0	1
28279	17438571	---				---	2.44	2.44	2.68	0	1
4701	17209553	---				---	2.44	2.44	12.97	5.68E-14	1
29153	17448235	NR_045078 // Gm3716 // predicted gene 3716 // 5 C3.1 5 // 100042198	Gm3716	NR_045078	2.44	2.44	2.44	2.44	8.58	0	1

15579	17310797	ENSMUST00000157211 // Gm23956 // predicted gene, 23956 // --- // ---	Gm23956	VSMUST000001572:	2.44	2.44	1.11	0	1
9053	17248896	NM_053166 // Trim7 // tripartite motif-containing 7 // 11 B1.2 11 // 94089 /// XM_00653	Trim7	NM_053166	2.44	2.44	2.01	5.68E-14	1
5243	17210653	---	---	---	2.44	2.44	3.59	2.84E-14	1
2067	17204185	---	---	---	2.44	2.44	7.26	0	1
33850	17492018	NM_201639 // Synm // synemin, intermediate filament protein // 7 C 7 // 233335 /// NM_2	Synm	NM_201639	2.44	2.44	3.17	5.68E-14	1
3067	17206217	---	---	---	2.44	2.44	1.77	2.84E-14	1
14942	17304336	ENSMUST00000158057 // Gm23999 // predicted gene, 23999 // --- // ---	Gm23999	VSMUST0000015805:	2.43	2.43	0.96	0	1
12661	17284652	ENSMUST00000163670 // Ighv1-78 // immunoglobulin heavy variable 1-78 // --- // ---	Ighv1-78	VSMUST000001636:	2.43	2.43	159.53	5.68E-14	1
13444	17291098	ENSMUST00000073728 // Vmn1r211 // vomeronasal 1 receptor 211 // 13 A3.1 13 // 171277 //	Vmn1r211	VSMUST000000737:	2.43	2.43	1.03	0	1
34723	17499962	NM_008872 // Plat // plasminogen activator, tissue // 8 A2 8 11.42 cM // 18791 /// ENSM	Plat	NM_008872	2.42	2.42	13.11	0	1
2030	17204111	---	---	---	2.42	2.42	10.88	0	1
23379	17388435	NM_183180 // Tspan18 // tetraspanin 18 // 2 E1 2 // 241556 /// XM_006499474 // Tspan18	Tspan18	NM_183180	2.42	2.42	2.26	0	1
25664	17411172	ENSMUST00000157372 // Gm25056 // predicted gene, 25056 // --- // ---	Gm25056	VSMUST000001573:	2.42	2.42	2.27	0	1
21884	17372837	BC119117 // Olfr1120 // olfactory receptor 1120 // 2 E1 2 // 259031 /// BC119143 // Olf	Olfr1120	BC119117	2.42	2.42	1.43	0	1
35647	17509433	ENSMUST00000104397 // Gm24375 // predicted gene, 24375 // --- // ---	Gm24375	VSMUST000001043:	2.42	2.42	2.02	0	1
29349	17449530	---	---	---	2.42	2.42	2.31	5.68E-14	1
12593	17284469	ENSMUST00000103476 // Ighv3-3 // immunoglobulin heavy variable V3-3 // --- // ---	Ighv3-3	VSMUST000001034:	2.42	2.42	31.35	0	1
3629	17207375	---	---	---	2.42	2.42	4.78	0	1
16802	17323587	ENSMUST00000170279 // Rpl26-ps4 // ribosomal protein L26, pseudogene 4 // --- // ---	Rpl26-ps4	VSMUST000001702:	2.42	2.42	1.33	0	1
8542	17243761	ENSMUST00000070435 // Fabp3-ps1 // fatty acid binding protein 3, muscle and heart, pseu	Fabp3-ps1	VSMUST000000704:	2.41	2.41	3.61	0	1
1189	17202395	---	---	---	2.41	2.41	2.17	1.71E-13	1
35500	17507945	NM_139221 // Defb11 // defensin beta 11 // 8 A2 8 // 246081	Defb11	NM_139221	2.41	2.41	1.93	4.26E-14	1
712	17201425	---	---	---	2.41	2.41	1.21	0	1
24844	17403237	NM_001289492 // Gbp3 // guanylate binding protein 3 // 3 H1 3 // 55932 /// NM_001289493	Gbp3	NM_001289492	2.41	2.41	2.06	1.71E-13	1
8877	17247389	NM_007912 // Egfr // epidermal growth factor receptor // 11 A1-A4 11 9.41 cM // 13649 /	Egfr	NM_007912	2.41	2.41	11.27	1.71E-13	1
743	17201487	---	---	---	2.41	2.41	1.22	0	1
21650	17370596	---	---	---	2.41	2.41	0.92	0	1
37434	17527661	NM_001195431 // Islr // immunoglobulin superfamily containing leucine-rich repeat // 9	Islr	NM_001195431	2.41	2.41	6.97	1.14E-13	1
2063	17204177	---	---	---	2.41	2.41	7.63	2.84E-14	1
35370	17506882	ENSMUST00000116866 // Gm22197 // predicted gene, 22197 // --- // ---	Gm22197	VSMUST000001168:	2.40	2.40	1.84	0	1
4194	17208523	---	---	---	2.40	2.40	2.88	5.68E-14	1
8301	17241032	NM_029083 // Ddit4 // DNA-damage-inducible transcript 4 // 10 10 B3 // 74747 /// ENSMUS	Ddit4	NM_029083	2.40	2.40	1.79	0	1
31832	17473423	NM_173008 // Ssc5d // scavenger receptor cysteine rich domain containing (5 domains) //	Ssc5d	NM_173008	2.40	2.40	13.18	5.68E-14	1
32661	17481167	NM_147053 // Olfr582 // olfactory receptor 582 // 7 E3 7 // 259055 /// ENSMUST000000982	Olfr582	NM_147053	2.40	2.40	1.22	0	1
4291	17208719	---	---	---	2.40	2.40	2.52	0	1
14261	17299258	XR_383402 // LOC102638002 // uncharacterized LOC102638002 // --- // 102638002 /// XR_39	LOC102638002	XR_383402	2.40	2.40	4.97	0	1
3258	17206609	---	---	---	2.40	2.40	1.20	0	1
2388	17204835	---	---	---	2.40	2.40	1.40	2.84E-14	1
40620	17549288	---	---	---	2.40	2.40	4.16	0	1
20506	17359466	NM_023418 // Pgam1 // phosphoglycerate mutase 1 // 19 C3 19 // 18648 /// ENSMUST0000001	Pgam1	NM_023418	2.39	2.39	3.89	5.68E-14	1
6679	17225259	ENSMUST00000158988 // Gm23504 // predicted gene, 23504 // --- // ---	Gm23504	VSMUST000001589:	2.39	2.39	2.40	5.68E-14	1
906	17201819	---	---	---	2.39	2.39	1.25	2.84E-14	1
992	17201995	---	---	---	2.39	2.39	1.25	2.84E-14	1
25886	17413352	ENSMUST00000030183 // Car9 // carbonic anhydrase 9 // 4 B1 4 // 230099 /// NM_139305 //	Car9	VSMUST000000301:	2.39	2.39	15.94	1.14E-13	1
12954	17287081	NM_031166 // Id4 // inhibitor of DNA binding 4 // 13 B 13 24.71 cM // 15904 /// ENSMUST	Id4	NM_031166	2.39	2.39	16.71	2.84E-13	1
38991	17541875	NM_152801 // Arhgef6 // Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6 // X A5 X	Arhgef6	NM_152801	2.38	2.38	3.55	0	1
15621	17311191	NM_026778 // Cthrc1 // collagen triple helix repeat containing 1 // 15 15 C // 68588 //	Cthrc1	NM_026778	2.38	2.38	3.79	2.27E-13	1
3213	17206515	---	---	---	2.38	2.38	1.41	0	1
3162	17206407	---	---	---	2.38	2.38	1.37	1.42E-14	1
34040	17493912	NM_019915 // Art2b // ADP-ribosyltransferase 2b // 7 E3 7 54.61 cM // 11872 /// XM_0065	Art2b	NM_019915	2.38	2.38	96.77	5.68E-14	1
2365	17204789	---	---	---	2.38	2.38	3.70	1.71E-13	1
9070	17248984	NM_207574 // Olfr1383 // olfactory receptor 1383 // 11 B1.2 11 // 404337 /// ENSMUST000	Olfr1383	NM_207574	2.38	2.38	2.51	0	1
31253	17467516	ENSMUST00000103377 // Igvk6-32 // immunoglobulin kappa variable 6-32 // --- // ---	Igvk6-32	VSMUST000001033:	2.38	2.38	94.15	0	1
2972	17206019	---	---	---	2.38	2.38	4.78	0	1
20903	17363370	ENSMUST00000157745 // Gm22880 // predicted gene, 22880 // --- // ---	Gm22880	VSMUST000001577:	2.38	2.38	15.99	0	1
6064	17219208	NM_001081275 // 1700009P17Rik // RIKEN cDNA 1700009P17 gene // 1 H3 1 // 75472 /// XM_0	1700009P17Rik	NM_001081275	2.38	2.38	2.58	0	1
31750	17472443	NM_130861 // Slco1a5 // solute carrier organic anion transporter family, member 1a5 //	Slco1a5	NM_130861	2.37	2.37	1.00	0	1
656	17201311	---	---	---	2.37	2.37	5.32	0	1
30298	17459248	NM_134165 // Vmn1r37 // vomeronasal 1 receptor 37 // 6 C1 6 // 171183 /// ENSMUST000000	Vmn1r37	NM_134165	2.37	2.37	1.88	0	1
19841	17353405	ENSMUST00000157876 // Gm22788 // predicted gene, 22788 // --- // ---	Gm22788	VSMUST000001578:	2.37	2.37	2.18	2.13E-14	1
3607	17207331	---	---	---	2.37	2.37	3.32	2.84E-14	1
35473	17507834	ENSMUST00000066416 // Defb38 // defensin beta 38 // 8 A1.3 8 // 360212 /// AJ575424 //	Defb38	VSMUST000000664:	2.37	2.37	1.06	1.07E-14	1
2735	17205539	---	---	---	2.37	2.37	9.54	1.42E-14	1
4304	17208745	---	---	---	2.37	2.37	2.67	1.71E-13	1
17416	17329631	NM_028973 // Lrrc15 // leucine rich repeat containing 15 // 16 B2 16 // 74488 /// ENSMU	Lrrc15	NM_028973	2.36	2.36	10.26	5.68E-14	1
2509	17205079	---	---	---	2.36	2.36	2.34	0	1
4561	17209269	---	---	---	2.36	2.36	2.34	0	1
2610	17205285	---	---	---	2.36	2.36	1.15	0	1
4662	17209475	---	---	---	2.36	2.36	1.15	0	1
22037	17374174	XM_006499567 // Olfr1280 // olfactory receptor 1280 // 2 E3 2 // 258910 /// BC119051 //	Olfr1280	XM_006499567	2.36	2.36	1.63	0	1
3875	17207873	---	---	---	2.36	2.36	3.02	0	1
19626	17351224	---	---	---	2.35	2.35	2.34	5.68E-14	1
25663	17411163	ENSMUST00000029670 // Ptgr // prostaglandin F receptor // 3 H3 3 76.96 cM // 19220 ///	Ptgr	VSMUST000000296:	2.35	2.35	24.73	2.84E-13	1
10105	17259831	NM_001159284 // Smtn // smoothelin // 11 11 A2-A3 // 29856 /// NM_001284427 // Smtn //	Smtn	NM_001159284	2.35	2.35	14.33	2.84E-13	1
5133	17210429	---	---	---	2.35	2.35	1.67	0	1
31068	17466421	NM_001011528 // Olfr456 // olfactory receptor 456 // 6 B2.1 6 // 259144 /// BC139108 //	Olfr456	NM_001011528	2.35	2.35	1.84	0	1
2008	17204067	---	---	---	2.35	2.35	7.60	0	1
7504	17233792	---	---	---	2.35	2.35	0.94	2.84E-14	1
40880	17549820	---	---	---	2.35	2.35	4.72	0	1
18078	17336062	XR_397419 // LOC102642015 // zinc finger protein 14-like // --- // 102642015	LOC102642015	XR_397419	2.35	2.35	1.00	5.68E-14	1
2244	17204543	---	---	---	2.34	2.34	3.98	2.84E-14	1
29415	17449816	---	---	---	2.34	2.34	1.14	0	1
30755	17463493	NR_073569 // Klr1b-ps1 // killer cell lectin-like receptor subfamily B member 1, pseudo	Klr1b-ps1	NR_073569	2.34	2.34	0.88	0	1
33808	17491714	ENSMUST00000175256 // Gm23917 // predicted gene, 23917 // --- // ---	Gm23917	VSMUST000001752:	2.34	2.34	0.80	0	1
32563	17480044	ENSMUST00000032858 // 1700019G06Rik // RIKEN cDNA 1700019G06 gene // --- // --- /// ENS	1700019G06Rik	VSMUST000000328:	2.34	2.34	15.92	1.71E-13	1
38400	17537088	NM_008828 // Ppk1 // phosphoglycerate kinase 1 // X C-D X 47.36 cM // 18655 /// ENSMUST	Ppk1	NM_008828	2.34	2.34	4.84	1.14E-13	1
2294	17204645	---	---	---	2.33	2.33	2.50	5.68E-14	1
8254	17240621	NM_172393 // Aim1 // absent in melanoma 1 // 10 B2 10 23.14 cM // 11630 /// ENSMUST0000	Aim1	NM_172393	2.33	2.33	2.81	0	1
4745	17209641	---	---	---	2.33	2.33	10.26	2.84E-14	1
5436	17211850	NM_009942 // Cox5b // cytochrome c oxidase subunit Vb // 1 B 1 // 12859 /// ENSMUST0000	Cox5b	NM_009942	2.33	2.33	1.24	5.68E-14	1
271	17200533	---	---	---	2.32	2.32	1.40	0	1
5025	17210207	---	---	---	2.32	2.32	3.22	0	1
9331	17251677	NM_026991 // Sat2 // spermidine/spermine N1-acetyl transferase 2 // 11 11 B4 // 69215 /	Sat2	NM_026991	2.32	2.32	6.21	1.99E-13	1
998	17202007	---	---	---	2.32	2.32	1.98		

2503	17205067	---		---		2.32	2.32	1.14	2.84E-14	1
4555	17209257	---		---		2.32	2.32	1.14	2.84E-14	1
8518	17243493	ENSMUST00000065815 // Glt8d2 // glycosyltransferase 8 domain containing 2 // 10 C1 10 /	Glt8d2	VSMUST0000006581		2.32	2.32	10.91	0	1
32741	17481556	NM_001163557 // Ppfpb2 // PTPRF interacting protein, binding protein 2 (liprin beta 2)	Ppfpb2	NM_001163557		2.32	2.32	0.97	5.68E-14	1
3543	17207189	---		---		2.32	2.32	1.64	0	1
32399	17478195	NM_011314 // Saa2 // serum amyloid A 2 // 7 B4 7 30.56 cM // 20209 /// ENSMUST000000759	Saa2	NM_011314		2.32	2.32	1.55	0	1
17540	17330861	ENSMUST00000080694 // Gm5407 // predicted gene 5407 // --- // ---	Gm5407	VSMUST0000008069		2.32	2.32	1.10	2.84E-14	1
5187	17210539	---		---		2.32	2.32	1.66	0	1
5317	17210805	---		---		2.31	2.31	5.24	5.68E-14	1
3029	17206139	---		---		2.31	2.31	1.22	0	1
15348	17308456	---		---		2.31	2.31	1.39	5.68E-14	1
30910	17464706	NM_010056 // Dlx5 // distal-less homeobox 5 // 6 A1 6 2.83 cM // 13395 /// NM_198854 //	Dlx5	NM_010056		2.31	2.31	38.34	2.27E-13	1
30316	17459324	ENSMUST00000103317 // Igkv1-117 // immunoglobulin kappa variable 1-117 // 6 C1 6 31.07	Igkv1-117	VSMUST0000010331		2.31	2.31	152.55	1.14E-13	1
19939	17354359	ENSMUST00000082886 // Gm25739 // predicted gene, 25739 // --- // ---	Gm25739	VSMUST0000008288		2.31	2.31	1.27	2.84E-14	1
3549	17207201	---		---		2.31	2.31	4.21	0	1
13399	17290938	---		---		2.30	2.30	2.40	0	1
18772	17342642	NM_013642 // Dusp1 // dual specificity phosphatase 1 // 17 A2-C 17 13.28 cM // 19252 //	Dusp1	NM_013642		2.30	2.30	1.18	0	1
18180	17337118	ENSMUST00000172979 // H2-Q5 // histocompatibility 2, Q region locus 5 // 17 B1 17 19.17	H2-Q5	VSMUST0000017297		2.30	2.30	12.06	0	1
24143	17396056	NM_001272097 // Fabp5 // fatty acid binding protein 5, epidermal // 3 A1-A3 3 // 16592	Fabp5	NM_001272097		2.30	2.30	15.90	0	1
5129	17210421	---		---		2.30	2.30	3.60	2.84E-14	1
4870	17209893	---		---		2.30	2.30	8.82	2.84E-14	1
3829	17207781	---		---		2.30	2.30	1.91	5.68E-14	1
1647	17203323	---		---		2.30	2.30	1.62	0	1
32572	17480190	ENSMUST00000158646 // Gm24552 // predicted gene, 24552 // --- // ---	Gm24552	VSMUST0000015864		2.30	2.30	0.82	1.42E-14	1
5917	17217596	NM_053106 // Lmod1 // leiomodoin 1 (smooth muscle) // 1 F1 1 // 93689 /// ENSMUST00000059	Lmod1	NM_053106		2.30	2.30	4.60	2.27E-13	1
3711	17207543	---		---		2.30	2.30	1.99	4.97E-14	1
23160	17387131	NM_001025576 // Ccdc141 // coiled-coil domain containing 141 // 2 C3 2 // 545428 /// EN	Ccdc141	NM_001025576		2.30	2.30	3.27	2.27E-13	1
2169	17204389	---		---		2.29	2.29	1.98	1.14E-13	1
19839	17353370	NM_001109989 // Nrep // neuronal regeneration related protein // 18 B1 18 // 27528 //	Nrep	NM_001109989		2.29	2.29	8.44	0	1
25797	17412636	ENSMUST00000158789 // Gm22010 // predicted gene, 22010 // --- // ---	Gm22010	VSMUST0000015878		2.29	2.29	4.59	0	1
16961	17325159	AK162008 // Mylk // myosin, light polypeptide kinase // 16 B3 16 // 107589 /// AY237726	Mylk	AK162008		2.28	2.28	6.78	1.71E-13	1
3750	17207621	---		---		2.28	2.28	3.71	2.84E-14	1
3702	17207525	---		---		2.28	2.28	1.26	8.53E-14	1
29505	17450904	NM_001104625 // Vmn2r14 // vomeronasal 2, receptor 14 // 5 F1 5 // 231591 /// ENSMUST000	Vmn2r14	NM_001104625		2.28	2.28	1.10	1.07E-14	1
38403	17537118	NM_172435 // P2ry10 // purinergic receptor P2Y, G-protein coupled 10 // X D X // 78826	P2ry10	NM_172435		2.28	2.28	43.23	0	1
17598	17331266	NM_146994 // Olfr201 // olfactory receptor 201 // 16 C2 16 // 258996 /// ENSMUST0000009	Olfr201	NM_146994		2.28	2.28	0.99	0	1
12603	17284498	ENSMUST00000103492 // Ighv10-1 // immunoglobulin heavy variable 10-1 // --- // ---	Ighv10-1	VSMUST0000010349		2.28	2.28	133.01	5.68E-14	1
583	17201163	---		---		2.28	2.28	2.10	1.42E-14	1
36639	17518809	NR_045748 // Gm19299 // predicted gene, 19299 // 9 9 36.34 cM // 100502636	Gm19299	NR_045748		2.28	2.28	5.80	0	1
28586	17441759	NR_003507 // Oas1b // 2-5 oligoadenylate synthetase 1B // 5 F1 5 60.64 cM // 23961 /// E	Oas1b	NR_003507		2.28	2.28	4.39	0	1
3285	17206665	---		---		2.28	2.28	3.59	0	1
2251	17204557	---		---		2.27	2.27	3.08	2.84E-14	1
184	17200357	---		---		2.27	2.27	3.74	0	1
24401	17398721	ENSMUST00000082938 // Gm23376 // predicted gene, 23376 // --- // ---	Gm23376	VSMUST0000008293		2.27	2.27	0.88	0	1
32599	17480485	NM_001113379 // Lrrc32 // leucine rich repeat containing 32 // 7 E2 7 53.86 cM // 43421	Lrrc32	NM_001113379		2.27	2.27	0.77	5.68E-14	1
12358	17282743	NM_009368 // Tgfb3 // transforming growth factor, beta 3 // 12 D2 12 40.09 cM // 21809	Tgfb3	NM_009368		2.27	2.27	18.53	0	1
27281	17427476	NM_172872 // Kank4 // KN motif and ankyrin repeat domains 4 // 4 C6 4 // 242553 /// ENS	Kank4	NM_172872		2.27	2.27	1.24	1.14E-13	1
1211	17202439	---		---		2.26	2.26	10.65	5.68E-14	1
317	17200625	---		---		2.26	2.26	0.96	0	1
3917	17207959	---		---		2.26	2.26	1.04	0	1
38733	17539536	NM_010216 // Figf // c-fos induced growth factor // X F5 X 76.35 cM // 14205 /// XM_006	Figf	NM_010216		2.26	2.26	15.03	1.71E-13	1
4962	17210079	---		---		2.26	2.26	4.36	1.42E-14	1
20591	17359966	---		---		2.26	2.26	1.54	0	1
3479	17207061	---		---		2.26	2.26	1.03	0	1
34370	17496547	NM_001102563 // Prrt2 // proline-rich transmembrane protein 2 // 7 F3 7 // 69017 /// EN	Prrt2	NM_001102563		2.26	2.26	1.42	0	1
1108	17202231	---		---		2.26	2.26	1.59	1.42E-14	1
27198	17426884	ENSMUST00000082775 // Gm22509 // predicted gene, 22509 // --- // --- /// ENSMUST0000008	Gm22509	VSMUST0000008275		2.26	2.26	2.01	0	1
4307	17208751	---		---		2.25	2.25	1.27	0	1
766	17201535	---		---		2.25	2.25	0.79	0	1
17030	17325904	NM_026439 // Ccdc80 // coiled-coil domain containing 80 // 16 16 B5 // 67896 /// ENSMUS	Ccdc80	NM_026439		2.25	2.25	14.43	8.53E-14	1
23188	17387512	NR_029544 // Mir130a // microRNA 130a // 2 2 // 387149 /// ENSMUST00000083550 // Mir130	Mir130a	NR_029544		2.25	2.25	5.72	0	1
38532	17538186	ENSMUST00000158812 // Gm23199 // predicted gene, 23199 // --- // ---	Gm23199	VSMUST0000015881		2.25	2.25	2.31	0	1
20542	17359816	NM_178929 // Kazald1 // Kazal-type serine peptidase inhibitor domain 1 // 19 C3 19 // 1	Kazald1	NM_178929		2.25	2.25	5.07	0	1
5147	17210457	---		---		2.25	2.25	1.06	2.84E-14	1
1946	17203939	---		---		2.25	2.25	2.29	0	1
36500	17517282	ENSMUST00000175224 // Gm22242 // predicted gene, 22242 // --- // ---	Gm22242	VSMUST0000017522		2.25	2.25	1.12	0	1
27242	17427162	ENSMUST00000178089 // Gm25244 // predicted gene, 25244 // --- // ---	Gm25244	VSMUST0000017808		2.25	2.25	2.01	1.71E-13	1
1094	17202203	---		---		2.25	2.25	1.08	1.42E-14	1
30015	17456841	NM_029742 // Klhdc10 // kelch domain containing 10 // 6 6 A3 // 76788 /// ENSMUST000000	Klhdc10	NM_029742		2.25	2.25	6.68	0	1
28321	17438969	NM_019932 // Pf4 // platelet factor 4 // 5 E1 5 // 56744 /// ENSMUST00000031320 // Pf4	Pf4	NM_019932		2.25	2.25	3.08	5.68E-14	1
13429	17291057	NM_178186 // Hist1h2ag // histone cluster 1, H2ag // 13 A2-A3 13 // 319167 /// ENSMUST0	Hist1h2ag	NM_178186		2.25	2.25	3.39	5.68E-14	1
19981	17354791	NR_029557 // Mir145a // microRNA 145a // 18 18 // 387163 /// ENSMUST00000083658 // Mir1	Mir145a	NR_029557		2.25	2.25	37.99	5.68E-14	1
16071	17315860	NM_148938 // Slc1a3 // solute carrier family 1 (glial high affinity glutamate transport	Slc1a3	NM_148938		2.25	2.25	21.20	5.68E-14	1
21009	17364474	NM_016861 // Pdlim1 // PDZ and LIM domain 1 (elfin) // 19 19 D1 // 54132 /// ENSMUST000	Pdlim1	NM_016861		2.25	2.25	0.94	0	1
16644	17322219	NM_130458 // Sp7 // Sp7 transcription factor 7 // 15 F3 15 // 170574 /// ENSMUST0000007	Sp7	NM_130458		2.24	2.24	6.30	0	1
11180	17270848	NM_133199 // Scn4a // sodium channel, voltage-gated, type IV, alpha // 11 E1 11 68.91 c	Scn4a	NM_133199		2.24	2.24	0.90	1.42E-13	1
19592	17350853	ENSMUST00000181838 // Gm26507 // predicted gene, 26507 // --- // ---	Gm26507	VSMUST0000018183		2.24	2.24	1.57	0	1
16376	17319091	NM_025622 // Lgals2 // lectin, galactose-binding, soluble 2 // 15 E1 15 // 107753 /// E	Lgals2	NM_025622		2.24	2.24	7.83	0	1
11546	17275301	ENSMUST00000082866 // Gm24948 // predicted gene, 24948 // --- // ---	Gm24948	VSMUST0000008286		2.24	2.24	0.81	0	1
18642	17341477	ENSMUST00000171996 // Vmn2r117 // vomeronasal 2, receptor 117 // 17 A3.3 17 // 619788 /	Vmn2r117	VSMUST0000017199		2.24	2.24	1.06	2.84E-14	1
18095	17336228	NM_001025313 // Tapbp // TAP binding protein // 17 B1 17 17.98 cM // 21356 /// NM_00931	Tapbp	NM_001025313		2.24	2.24	0.83	2.27E-13	1
7430	17233317	ENSMUST00000157697 // Gm25664 // predicted gene, 25664 // --- // ---	Gm25664	VSMUST0000015769		2.23	2.23	0.89	3.55E-14	1
2536	17205133	---		---		2.23	2.23	1.13	0	1
4588	17209323	---		---		2.23	2.23	1.13	0	1
29263	17448811	---		---		2.23	2.23	3.92	0	1
3625	17207367	---		---		2.23	2.23	2.37	4.26E-14	1
1905	17203855	---		---		2.23	2.23	3.18	0	1
38969	17541715	NR_030498 // Mir450b // microRNA 450b // X X // 751532 /// ENSMUST00000102095 // Mir450	Mir450b	NR_030498		2.23	2.23	8.79	2.13E-14	1
20130	17356322	---		---		2.23	2.23	0.74	2.84E-14	1
3152	17206387	---		---		2.23	2.23	1.25	1.42E-13	1
8933	17247944	NR_029797 // Mir216a // microRNA 216a // 11 11 // 387212 /// ENSMUST00000083605 // Mir2	Mir216a	NR_029797		2.23	2.23	0.82	0	1
4357	17208851	---		---		2.23	2.23	0.75	0	1
4047	17208225	---		---		2.22	2.22	1.60	1.71E-13	1
27086	17425399	ENSMUST00000104447 // Gm22150 // predicted gene, 22150 // --- // ---	Gm22150	VSMUST0000010444		2.22	2.22	0.98	0	1
14738	17302429	NM_201529 // Lmo7 // LIM domain only 7 // 14 E2.3 14 50.9 cM // 380928 /// XM_006519180	Lmo7	NM_201529		2.22	2.22	19.96	2.27E-13	1

1393	17202807	---			---	2.22	2.22	4.94	1.71E-13	1
23799	17392785	ENSMUST00000157808 // Gm24199 // predicted gene, 24199 // --- // ---	Gm24199	VSMUST0000015780	2.22	2.22	2.22	1.65	0	1
1222	17202461	---		---	2.22	2.22	2.22	4.54	2.84E-14	1
36119	17514135	NM_053207 // EglN1 // egl-9 family hypoxia-inducible factor 1 // 8 E2 8 // 112405 // // E	EglN1	NM_053207	2.22	2.22	2.22	2.75	0	1
35458	17507691	ENSMUST00000157686 // Gm26184 // predicted gene, 26184 // --- // ---	Gm26184	VSMUST0000015768	2.22	2.22	2.22	1.38	7.11E-15	1
6794	17226591	ENSMUST00000157807 // Gm25384 // predicted gene, 25384 // --- // ---	Gm25384	VSMUST0000015780	2.22	2.22	2.22	2.25	0	1
2864	17205803	---		---	2.22	2.22	2.22	2.02	0	1
12498	17283944	---		---	2.22	2.22	2.22	1.07	0	1
554	17201105	---		---	2.22	2.22	2.22	3.40	1.71E-13	1
38302	17536206	ENSMUST00000083813 // Gm25006 // predicted gene, 25006 // --- // ---	Gm25006	VSMUST000000838:	2.22	2.22	2.22	1.97	0	1
16573	17321474	NM_011653 // Tuba1a // tubulin, alpha 1A // 15 F1 15 55.29 cM // 22142 // ENSMUST000000	Tuba1a	NM_011653	2.22	2.22	2.22	6.63	2.27E-13	1
29970	17456304	ENSMUST00000083768 // Gm22828 // predicted gene, 22828 // --- // ---	Gm22828	VSMUST0000008376	2.21	2.21	2.21	1.04	0	1
27958	17434675	ENSMUST00000170260 // Gm8879 // predicted gene 8879 // --- // ---	Gm8879	VSMUST0000017026	2.21	2.21	2.21	2.05	7.11E-14	1
5040	17210239	---		---	2.21	2.21	2.21	3.71	2.84E-14	1
12590	17284460	ENSMUST00000103473 // LOC544905 // Ig heavy chain V region // 12 F2 12 // 544905	LOC544905	VSMUST000001034:	2.21	2.21	2.21	145.13	1.14E-13	1
14629	17301452	AF248058 // Clu // clusterin // 14 D1 14 34.36 cM // 12759 // // L08235 // Clu // cluster	Clu	AF248058	2.21	2.21	2.21	0.79	0	1
290	17200571	---		---	2.21	2.21	2.21	1.21	1.14E-13	1
28848	17444961	NM_009663 // Alox5ap // arachidonate 5-lipoxygenase activating protein // 5 G3 5 // 116	Alox5ap	NM_009663	2.20	2.20	2.20	4.60	0	1
20673	17360912	ENSMUST00000092094 // Gm6020 // predicted gene 6020 // --- // --- // AB010317 // Gm602	Gm6020	VSMUST000000920:	2.20	2.20	2.20	27.38	2.84E-14	1
2064	17204179	---		---	2.20	2.20	2.20	3.62	2.84E-14	1
20584	17359958	---		---	2.20	2.20	2.20	1.76	0	1
18894	17343789	XM_006537281 // PsmB9 // proteasome (prosome, macropain) subunit, beta type 9 (large mu	PsmB9	XM_006537281	2.20	2.20	2.20	4.72	0	1
23456	17389269	NM_146907 // Olfr1282 // olfactory receptor 1282 // 2 E3 2 // 258909 // ENSMUST0000009	Olfr1282	NM_146907	2.20	2.20	2.20	1.80	0	1
41022	17550302	---		---	2.20	2.20	2.20	1.12	2.84E-14	1
11448	17274344	---		---	2.20	2.20	2.20	1.91	1.14E-13	1
34625	17499212	NM_010172 // F7 // coagulation factor VII // 8 A1.1 8 5.73 cM // 14068 // ENSMUST000000	F7	NM_010172	2.20	2.20	2.20	1.12	2.84E-14	1
29545	17451431	ENSMUST00000067853 // Tmem119 // transmembrane protein 119 // 5 F 5 // 231633 // NM_14	Tmem119	VSMUST000000678:	2.20	2.20	2.20	3.67	1.71E-13	1
4103	17208339	---		---	2.20	2.20	2.20	2.11	0	1
5919	17217610	NM_007791 // Csrp1 // cysteine and glycine-rich protein 1 // 1 E4 1 // 13007 // ENSMUS	Csrp1	NM_007791	2.20	2.20	2.20	2.86	0	1
12157	17280804	---		---	2.20	2.20	2.20	1.41	0	1
39245	17544271	ENSMUST00000158845 // Gm25366 // predicted gene, 25366 // --- // ---	Gm25366	VSMUST000001588:	2.20	2.20	2.20	1.52	0	1
19024	17344943	NM_009639 // Crisp3 // cysteine-rich secretory protein 3 // 17 B2 17 19.45 cM // 11572	Crisp3	NM_009639	2.20	2.20	2.20	5.35	0	1
19484	17349898	NM_053135 // Pcdhb10 // protocadherin beta 10 // 18 B3 18 // 93881 // ENSMUST000000511	Pcdhb10	NM_053135	2.19	2.19	2.19	1.86	0	1
26056	17415010	ENSMUST00000158784 // Gm24884 // predicted gene, 24884 // --- // ---	Gm24884	VSMUST000001587:	2.19	2.19	2.19	0.79	2.84E-14	1
21590	17370209	NM_001206367 // Gsn // gelsolin // 2 B 2 23.5 cM // 227753 // NM_001206369 // Gsn // g	Gsn	NM_001206367	2.19	2.19	2.19	5.50	0	1
19826	17353256	ENSMUST00000165131 // Gm6665 // predicted gene 6665 // --- // ---	Gm6665	VSMUST000001651:	2.19	2.19	2.19	19.94	5.68E-14	1
2165	17204381	---		---	2.19	2.19	2.19	2.32	0	1
20383	17358138	NM_001033759 // Tmem2 // transmembrane protein 2 // 19 B 19 // 83921 // NM_031997 // T	Tmem2	NM_001033759	2.19	2.19	2.19	13.75	0	1
13102	17288338	NM_028402 // Zfp493 // zinc finger protein 493 // 13 B3 13 // 72958 // ENSMUST00000164	Zfp493	NM_028402	2.19	2.19	2.19	0.87	0	1
12	17200009	---		---	2.19	2.19	2.19	1.76	0	1
23210	17387626	ENSMUST00000082871 // Gm24037 // predicted gene, 24037 // --- // ---	Gm24037	VSMUST000000828:	2.19	2.19	2.19	0.89	0	1
15540	17310259	NM_001253782 // Prlr // prolactin receptor // 15 A1 15 5.23 cM // 19116 // NM_011169 /	Prlr	NM_001253782	2.19	2.19	2.19	0.73	2.84E-14	1
901	17201809	---		---	2.19	2.19	2.19	0.93	1.71E-13	1
987	17201985	---		---	2.19	2.19	2.19	0.93	1.71E-13	1
24783	17402539	ENSMUST00000083314 // Gm22293 // predicted gene, 22293 // --- // ---	Gm22293	VSMUST000000833:	2.19	2.19	2.19	1.64	0	1
33071	17485462	ENSMUST00000033386 // Mrgprf // MAS-related GPR, member F // 7 F5 7 // 211577 // ENSMU	Mrgprf	VSMUST000000333:	2.19	2.19	2.19	1.33	2.27E-13	1
384	17200759	---		---	2.18	2.18	2.18	2.45	0	1
8663	17245169	---		---	2.18	2.18	2.18	0.77	0	1
32580	17480237	---		---	2.18	2.18	2.18	2.03	0	1
21106	17365656	ENSMUST00000083209 // Gm25644 // predicted gene, 25644 // --- // ---	Gm25644	VSMUST000000832:	2.18	2.18	2.18	1.44	0	1
14098	17297551	NM_009502 // Vcl // vinculin // 14 A3 14 11.53 cM // 22330 // ENSMUST00000022369 // Vc	Vcl	NM_009502	2.18	2.18	2.18	11.93	0	1
31146	17467104	ENSMUST00000104123 // Gm24709 // predicted gene, 24709 // --- // ---	Gm24709	VSMUST000001041:	2.18	2.18	2.18	0.70	7.11E-15	1
1370	17202761	---		---	2.18	2.18	2.18	1.78	0	1
19336	17348435	NM_001146287 // Cables1 // CDK5 and Abl enzyme substrate 1 // 18 18 A2 // 63955 // NM_	Cables1	NM_001146287	2.18	2.18	2.18	3.07	0	1
4825	17209803	---		---	2.18	2.18	2.18	12.30	0	1
622	17201241	---		---	2.18	2.18	2.18	1.42	0	1
36600	17518314	ENSMUST00000082984 // Gm22571 // predicted gene, 22571 // --- // ---	Gm22571	VSMUST000000829:	2.18	2.18	2.18	4.33	1.14E-13	1
4939	17210033	---		---	2.17	2.17	2.17	9.61	2.84E-14	1
6694	17225413	NM_001243008 // Col6a3 // collagen, type VI, alpha 3 // 1 D 1 45.53 cM // 12835 // NM_	Col6a3	NM_001243008	2.17	2.17	2.17	33.93	0	1
23279	17387800	NM_001011835 // Olfr1162 // olfactory receptor 1162 // 2 D 2 // 258105 // ENSMUST000000	Olfr1162	NM_001011835	2.17	2.17	2.17	2.00	5.68E-14	1
6840	17227089	NM_007570 // Btg2 // B cell translocation gene 2, anti-proliferative // 1 E4 1 58.1 cM	Btg2	NM_007570	2.17	2.17	2.17	3.65	0	1
4155	17208445	---		---	2.17	2.17	2.17	2.45	1.14E-13	1
28778	17444106	NM_008494 // Lfng // LFNG O-fucosylpeptide 3-beta-N-acetylglucosaminyltransferase // 5	Lfng	NM_008494	2.17	2.17	2.17	9.94	0	1
2192	17204435	---		---	2.17	2.17	2.17	9.18	5.68E-14	1
4219	17208575	---		---	2.17	2.17	2.17	0.75	5.68E-14	1
704	17201409	---		---	2.17	2.17	2.17	1.07	0	1
37482	17528214	ENSMUST00000158711 // Gm24347 // predicted gene, 24347 // --- // ---	Gm24347	VSMUST000001587:	2.17	2.17	2.17	2.47	1.42E-14	1
3377	17206855	---		---	2.17	2.17	2.17	2.28	0	1
38473	17537592	NM_001083895 // Srpx2 // sushi-repeat-containing protein, X-linked 2 // X E3 X // 68792	Srpx2	NM_001083895	2.17	2.17	2.17	7.05	2.56E-13	1
7379	17232912	NM_001013370 // Sesn1 // sestrin 1 // 10 B2 10 22.77 cM // 140742 // NM_001162908 // S	Sesn1	NM_001013370	2.17	2.17	2.17	0.90	0	1
37533	17528744	ENSMUST00000158905 // Gm25163 // predicted gene, 25163 // --- // ---	Gm25163	VSMUST000001589:	2.17	2.17	2.17	1.34	0	1
29061	17447218	NM_010753 // Mxd4 // Max dimerization protein 4 // 5 B2 5 17.84 cM // 17122 // ENSMUST	Mxd4	NM_010753	2.17	2.17	2.17	0.93	0	1
2574	17205213	---		---	2.16	2.16	2.16	2.35	0	1
4626	17209403	---		---	2.16	2.16	2.16	2.35	0	1
18874	17343679	---		---	2.16	2.16	2.16	1.42	0	1
7253	17231682	ENSMUST00000116869 // Gm22194 // predicted gene, 22194 // --- // ---	Gm22194	VSMUST000001168:	2.16	2.16	2.16	1.80	0	1
24298	17397708	NM_001111052 // Dclk1 // doublecortin-like kinase 1 // 3 3 D // 13175 // NM_001111053	Dclk1	NM_001111052	2.16	2.16	2.16	16.28	1.14E-13	1
3011	17206101	---		---	2.16	2.16	2.16	0.92	0	1
1029	17202069	---		---	2.16	2.16	2.16	0.71	2.84E-14	1
3042	17206165	---		---	2.16	2.16	2.16	1.35	0	1
6071	17219284	ENSMUST00000157122 // Gm25151 // predicted gene, 25151 // --- // ---	Gm25151	VSMUST000001571:	2.16	2.16	2.16	1.51	0	1
3717	17207555	---		---	2.16	2.16	2.16	1.77	0	1
5667	17214823	ENSMUST00000083121 // n-R5s213 // nuclear encoded rRNA 5S 213 // --- // ---	n-R5s213	VSMUST000000831:	2.15	2.15	2.15	2.01	0	1
31424	17468900	NM_173775 // Ccdc37 // coiled-coil domain containing 37 // 6 D1 6 // 243538 // ENSMUST	Ccdc37	NM_173775	2.15	2.15	2.15	0.83	0	1
394	17200779	---		---	2.15	2.15	2.15	3.00	0	1
24822	17402996	NM_030143 // Ddit4l // DNA-damage-inducible transcript 4-like // 3 G3 3 // 73284 // EN	Ddit4l	NM_030143	2.15	2.15	2.15	3.69	0	1
8465	17243019	---		---	2.15	2.15	2.15	1.50	1.71E-13	1
29462	17450387	NM_010097 // Sparcl1 // SPARC-like 1 // 5 E4 5 50.55 cM // 13602 // ENSMUST00000031249	Sparcl1	NM_010097	2.15	2.15	2.15	21.93	1.71E-13	1
4302	17208741	---		---	2.15	2.15	2.15	1.30	0	1
19633	17351280	ENSMUST00000158431 // Gm23016 // predicted gene, 23016 // --- // ---	Gm23016	VSMUST000001584:	2.15	2.15	2.15	1.10	0	1
31901	17473941	NM_009286 // Sult2a2 // sulfotransferase family 2A, dehydroepiandrosterone (DHEA)-prefe	Sult2a2	NM_009286	2.15	2.15	2.15	1.43	0	1
26325	17417842	ENSMUST00000158966 // Gm24352 // predicted gene, 24352 // --- // ---	Gm24352	VSMUST000001589:	2.15	2.15	2.15	0.81	0	1
24691	17401563	NM_146136 // Slc16a4 // solute carrier family 16 (monocarboxylic acid transporters), me	Slc16a4	NM_146136	2.15	2.15	2.15	3.21	0	1
34206	17494797	NM_146498 // Olfr490 // olfactory receptor 490 // 7 E3 7 // 258491 // ENSMUST000000745	Olfr490	NM_146498	2.15	2.15	2.15	1.26	0	1
3043	17206167	---		---	2.15	2.15	2.15	1.04	1.14E-13	1

23668	17391483	---				2.15	2.15	10.28	0	1
6827	17226951	ENSMUST00000158286 // Gm22609 // predicted gene, 22609 // --- // ---	Gm22609	VSMUST00000158286		2.15	2.15	0.94	1.42E-14	1
31136	17466996	NM_153573 // Fkbp14 // FK506 binding protein 14 // 6 B3 6 // 231997 /// XR_377439 // Fk	Fkbp14	NM_153573		2.14	2.14	17.28	5.68E-14	1
34832	17500994	ENSMUST00000158936 // Gm24669 // predicted gene, 24669 // --- // ---	Gm24669	VSMUST00000158936		2.14	2.14	1.13	0	1
62	17200109	---				2.14	2.14	1.47	0	1
31207	17467384	ENSMUST00000103328 // Igkv10-96 // immunoglobulin kappa variable 10-96 // 6 C1 6 // 692	Igkv10-96	VSMUST00000103328		2.14	2.14	129.27	1.14E-13	1
20087	17355844	ENSMUST00000083812 // Gm25005 // predicted gene, 25005 // --- // ---	Gm25005	VSMUST00000083812		2.14	2.14	2.44	0	1
1333	17202687	---				2.14	2.14	4.17	0	1
20376	17358092	ENSMUST00000158282 // Gm25437 // predicted gene, 25437 // --- // ---	Gm25437	VSMUST00000158282		2.14	2.14	0.98	1.42E-14	1
29803	17454574	NM_175274 // Ttyh3 // tweety homolog 3 (Drosophila) // 5 G2 5 // 78339 /// XM_006504768	Ttyh3	NM_175274		2.14	2.14	2.12	1.14E-13	1
4417	17208981	---				2.14	2.14	2.19	2.84E-14	1
1248	17202513	---				2.14	2.14	3.91	0	1
6849	17227221	NM_007955 // Ptpvr // protein tyrosine phosphatase, receptor type, V // 1 1 // 13924 //	Ptpvr	NM_007955		2.13	2.13	3.68	5.68E-14	1
39225	17544073	NM_199468 // Zcchc5 // zinc finger, CCHC domain containing 5 // X D X // 213436 /// ENS	Zcchc5	NM_199468		2.13	2.13	16.80	0	1
2566	17205197	---				2.13	2.13	1.13	5.68E-14	1
4618	17209387	---				2.13	2.13	1.13	5.68E-14	1
7442	17233384	NM_021272 // Fabp7 // fatty acid binding protein 7, brain // 10 B4 10 // 12140 /// ENSM	Fabp7	NM_021272		2.13	2.13	2.76	2.84E-14	1
9648	17255260	NM_007742 // Col1a1 // collagen, type I, alpha 1 // 11 D 11 59.01 cM // 12842 /// ENSMU	Col1a1	NM_007742		2.13	2.13	62.60	0	1
4398	17208941	---				2.13	2.13	2.05	0	1
23041	17385063	ENSMUST00000158989 // Gm23505 // predicted gene, 23505 // --- // ---	Gm23505	VSMUST00000158989		2.13	2.13	1.27	7.11E-15	1
25566	17410122	ENSMUST00000157101 // Gm26275 // predicted gene, 26275 // --- // ---	Gm26275	VSMUST00000157101		2.13	2.13	0.91	0	1
38983	17541806	NM_001291748 // Xlr // X-linked lymphocyte-regulated // X A5 X // 22441 /// ENSMUST0000	Xlr	NM_001291748		2.13	2.13	5.06	0	1
32546	17479929	NM_001105184 // Vmn2r71 // vomeronasal 2, receptor 71 // 7 D3 7 // 233445 /// ENSMUST00	Vmn2r71	NM_001105184		2.13	2.13	0.89	0	1
2594	17205253	---				2.13	2.13	1.66	2.84E-14	1
4646	17209443	---				2.13	2.13	1.66	2.84E-14	1
33527	17489420	NM_019503 // Fxyd1 // FXYD domain-containing ion transport regulator 1 // 7 7 B1 // 561	Fxyd1	NM_019503		2.13	2.13	6.75	2.56E-13	1
4114	17208363	---				2.12	2.12	0.75	0	1
2580	17205225	---				2.12	2.12	1.26	4.26E-14	1
4632	17209415	---				2.12	2.12	1.26	4.26E-14	1
36678	17519345	ENSMUST00000122776 // Gm24141 // predicted gene, 24141 // --- // ---	Gm24141	VSMUST00000122776		2.12	2.12	0.93	0	1
28894	17445605	ENSMUST00000158774 // Gm23312 // predicted gene, 23312 // --- // ---	Gm23312	VSMUST00000158774		2.12	2.12	1.10	0	1
36153	17514447	NM_009808 // Casp12 // caspase 12 // 9 A1 9 2.46 cM // 12364 /// ENSMUST0000027009 //	Casp12	NM_009808		2.12	2.12	21.24	0	1
19323	17348280	ENSMUST00000158371 // Gm22765 // predicted gene, 22765 // --- // ---	Gm22765	VSMUST00000158371		2.12	2.12	0.90	2.84E-14	1
20876	17363132	NM_146701 // Olfr1448 // olfactory receptor 1448 // 19 C1 19 // 258696 /// ENSMUST00000	Olfr1448	NM_146701		2.12	2.12	1.41	0	1
18151	17336944	---				2.12	2.12	1.39	2.84E-14	1
18275	17337816	NM_001285947 // Cyp39a1 // cytochrome P450, family 39, subfamily a, polypeptide 1 // 17	Cyp39a1	NM_001285947		2.12	2.12	1.79	1.14E-13	1
27365	17428278	NM_177864 // Skint9 // selection and upkeep of intraepithelial T cells 9 // 4 D1 4 // 3	Skint9	NM_177864		2.12	2.12	0.82	0	1
2196	17204443	---				2.12	2.12	11.77	0	1
29404	17449710	NM_008599 // Cxcl9 // chemokine (C-X-C motif) ligand 9 // 5 E2 5 46.51 cM // 17329 ///	Cxcl9	NM_008599		2.12	2.12	2.29	1.14E-13	1
31868	17473688	NM_001013765 // Zscan4c // zinc finger and SCAN domain containing 4C // 7 A1 7 // 24510	Zscan4c	NM_001013765		2.12	2.12	1.66	0	1
18150	17336942	---				2.12	2.12	1.78	0	1
4912	17209977	---				2.11	2.11	9.74	2.84E-14	1
32852	17482826	---				2.11	2.11	1.04	0	1
11003	17269181	NM_001126320 // Gm11563 // predicted gene 11563 // 11 D 11 // 100040248 /// ENSMUST0000	Gm11563	NM_001126320		2.11	2.11	0.64	0	1
6274	17220974	BC068155 // Plxna2 // plexin A2 // 1 H6 1 // 18845 /// NM_008882 // Plxna2 // plexin A2	Plxna2	BC068155		2.11	2.11	17.68	1.14E-13	1
25361	17407829	NM_144899 // Adamts14 // ADAMTS-like 4 // 3 F2.1 3 // 229595 /// ENSMUST0000015994 //	Adamts14	NM_144899		2.11	2.11	3.92	0	1
17587	17331238	NM_146321 // Olfr186 // olfactory receptor 186 // 16 C2 16 // 258318 /// ENSMUST0000006	Olfr186	NM_146321		2.11	2.11	0.67	0	1
2736	17205541	---				2.11	2.11	5.95	1.14E-13	1
39418	17545543	NM_001097980 // Gm16390 // predicted gene 16390 // X F3 X // 100040937 /// ENSMUST00000	Gm16390	NM_001097980		2.11	2.11	2.59	0	1
717	17201435	---				2.11	2.11	1.72	0	1
30960	17465227	ENSMUST00000104008 // Gm22267 // predicted gene, 22267 // --- // ---	Gm22267	VSMUST00000104008		2.11	2.11	0.85	3.55E-15	1
7994	17238685	ENSMUST00000157522 // Gm24717 // predicted gene, 24717 // --- // ---	Gm24717	VSMUST00000157522		2.11	2.11	1.46	0	1
30340	17459392	ENSMUST00000103397 // Igkv3-10 // immunoglobulin kappa variable 3-10 // --- // ---	Igkv3-10	VSMUST00000103397		2.11	2.11	78.24	0	1
2436	17204931	---				2.11	2.11	2.32	0	1
7612	17234861	NM_147041 // Olfr57 // olfactory receptor 57 // 10 C1 10 // 18357 /// ENSMUST000008224	Olfr57	NM_147041		2.10	2.10	0.76	0	1
1434	17202893	---				2.10	2.10	0.91	1.71E-13	1
31178	17467265	---				2.10	2.10	1.47	0	1
24185	17396383	NM_009425 // Tnfrsf10 // tumor necrosis factor (ligand) superfamily, member 10 // 3 A3 3	Tnfrsf10	NM_009425		2.10	2.10	4.30	1.14E-13	1
17099	17326563	ENSMUST00000157663 // Gm23591 // predicted gene, 23591 // --- // ---	Gm23591	VSMUST00000157663		2.10	2.10	0.99	0	1
16565	17321336	NM_011718 // Wnt10b // wingless-type MMTV integration site family, member 10B // 15 F1	Wnt10b	NM_011718		2.10	2.10	3.64	8.53E-14	1
13391	17290928	---				2.10	2.10	2.95	8.53E-14	1
13432	17291064	BC150715 // Vmn1r189 // vomeronasal 1 receptor 189 // 13 A3.1 13 // 252906	Vmn1r189	BC150715		2.10	2.10	1.86	0	1
4920	17209993	---				2.10	2.10	5.85	2.84E-14	1
791	17201585	---				2.10	2.10	2.55	1.42E-14	1
1864	17203771	---				2.10	2.10	0.82	0	1
3242	17206577	---				2.10	2.10	0.90	2.84E-14	1
2481	17205023	---				2.10	2.10	0.98	8.53E-14	1
4533	17209213	---				2.10	2.10	0.98	8.53E-14	1
24506	17399883	NM_011474 // Sprr2h // small proline-rich protein 2H // 3 F1 3 40.14 cM // 20762 /// EN	Sprr2h	NM_011474		2.10	2.10	1.80	0	1
6546	17223659	ENSMUST00000147177 // Gm11610 // predicted gene 11610 // --- // ---	Gm11610	VSMUST00000147177		2.10	2.10	0.70	0	1
15549	17310368	NM_175501 // Adamts12 // a disintegrin-like and metalloprotease (repolysin type) with	Adamts12	NM_175501		2.10	2.10	13.72	1.71E-13	1
15033	17305439	NM_006519825 // Gm8094 // predicted gene 8094 // 14 C1 14 // 666420 /// ENSMUST00000165	Gm8094	NM_006519825		2.10	2.10	2.64	0	1
28388	17439532	ENSMUST00000112956 // Gm11111 // predicted gene 11111 // --- // ---	Gm11111	VSMUST00000112956		2.10	2.10	1.50	1.14E-13	1
4213	17208563	---				2.10	2.10	1.18	2.84E-14	1
17287	17328238	ENSMUST00000131985 // Gm15738 // predicted gene 15738 // --- // --- /// ENSMUST00000140	Gm15738	VSMUST00000131985		2.10	2.10	0.68	0	1
36097	17513963	---				2.10	2.10	1.12	0	1
5225	17210615	---				2.10	2.10	4.13	2.84E-14	1
3617	17207351	---				2.09	2.09	0.69	1.14E-13	1
26158	17415932	NM_001177602 // Ak4 // adenylate kinase 4 // 4 C6 4 46.84 cM // 11639 /// XM_006502684	Ak4	NM_001177602		2.09	2.09	3.75	0	1
20697	17361178	---				2.09	2.09	0.70	0	1
30904	17464654	NM_013743 // Pdk4 // pyruvate dehydrogenase kinase, isoenzyme 4 // 6 A1 6 2.06 cM // 27	Pdk4	NM_013743		2.09	2.09	39.71	2.27E-13	1
24592	17400599	NM_001009935 // Txnip // thioredoxin interacting protein // 3 F2.2 3 41.93 cM // 56338	Txnip	NM_001009935		2.09	2.09	31.09	0	1
1710	17203451	---				2.09	2.09	2.94	0	1
1028	17202067	---				2.09	2.09	0.97	2.84E-14	1
13984	17296344	NM_008046 // Fst // follistatin // 13 D2.2 13 // 14313 /// ENSMUST0000022287 // Fst //	Fst	NM_008046		2.09	2.09	20.70	1.71E-13	1
31693	17471920	NM_198669 // Prb1 // proline-rich protein BstNI subfamily 1 // 6 G1 6 // 381833 /// ENS	Prb1	NM_198669		2.09	2.09	0.74	5.68E-14	1
23632	17391442	---				2.09	2.09	5.76	0	1
11218	17271399	NM_147220 // Abca9 // ATP-binding cassette, sub-family A (ABC1), member 9 // 11 E1 11 /	Abca9	NM_147220		2.09	2.09	11.74	0	1
4760	17209671	---				2.09	2.09	1.95	1.42E-14	1
2733	17205535	---				2.09	2.09	3.72	5.68E-14	1
5488	17212442	ENSMUST00000160854 // Gulp1 // GULP, engulfment adaptor PTB domain containing 1 // 1 1	Gulp1	VSMUST00000160854		2.09	2.09	30.47	5.68E-14	1
17235	17327737	NM_175347 // Srl // sarcalumenin // 16 A1 16 // 106393 /// ENSMUST0000023161 // Srl //	Srl	NM_175347		2.09	2.09	1.47	5.68E-14	1
927	17201861	---				2.09	2.09	0.78	1.14E-13	1
12777	17285742	NM_175665 // Hist1h2bk // histone cluster 1, H2bk // 13 A2-A3 13 // 319184 /// ENSMUST0	Hist1h2bk	NM_175665		2.09	2.09	1.76	0	1
605	17201207	---				2.09	2.09	0.87	0	1

25518	17409575	ENSMUST0000067980 // Amy1 // amylase 1, salivary // 3 F3 3 49.35 cM // 11722 /// NM_00	Amy1	VSMUST000006798	2.09	2.09	1.46	1.42E-14	1
2975	17206025	---		---	2.09	2.09	0.94	0	1
6837	17227077	NM_054077 // Prelp // proline arginine-rich end leucine-rich repeat // 1 E4 1 58.02 cM	Prelp	NM_054077	2.08	2.08	30.08	0	1
2834	17205739	---		---	2.08	2.08	5.31	0	1
143	17200273	---		---	2.08	2.08	2.46	3.55E-14	1
12553	17284358	ENSMUST00000103429 // Ighj2 // immunoglobulin heavy joining 2 // --- // ---	Ighj2	VSMUST0000010342	2.08	2.08	49.97	0	1
3086	17206255	---		---	2.08	2.08	9.68	0	1
31196	17467345	NM_144548 // IL23r // interleukin 23 receptor // 6 C1 6 // 209590 /// ENSMUST0000011836	IL23r	NM_144548	2.08	2.08	1.43	0	1
13418	17291005	NM_020034 // Hist1h1b // histone cluster 1, H1b // 13 13 A2-A3 // 56702 /// ENSMUST0000	Hist1h1b	NM_020034	2.08	2.08	1.88	2.84E-14	1
20578	17359952	---		---	2.08	2.08	2.98	0	1
4005	17208137	---		---	2.08	2.08	1.00	0	1
34805	17500735	NM_026840 // Pdgfrl // platelet-derived growth factor receptor-like // 8 A4 8 // 68797	Pdgfrl	NM_026840	2.08	2.08	5.49	0	1
39174	17543560	ENSMUST00000157489 // Gm24061 // predicted gene, 24061 // --- // ---	Gm24061	VSMUST0000015748	2.08	2.08	0.86	0	1
21546	17369787	NR_029811 // Mir199b // microRNA 199b // 2 2 // 387239 /// ENSMUST00000175066 // Mir199	Mir199b	NR_029811	2.08	2.08	16.23	0	1
14444	17300133	ENSMUST00000167781 // Traj60 // T cell receptor alpha joining 60 // --- // ---	Traj60	VSMUST0000016778	2.08	2.08	0.69	7.11E-15	1
1419	17202861	---		---	2.08	2.08	3.32	5.68E-14	1
33746	17491511	ENSMUST00000178642 // Gm25934 // predicted gene, 25934 // --- // ---	Gm25934	VSMUST0000017864	2.08	2.08	1.19	0	1
531	17201059	---		---	2.08	2.08	2.66	5.68E-14	1
28922	17445807	ENSMUST00000157188 // Gm22490 // predicted gene, 22490 // --- // ---	Gm22490	VSMUST0000015718	2.08	2.08	1.46	0	1
3315	17206731	---		---	2.08	2.08	11.84	0	1
1654	17203337	---		---	2.07	2.07	0.91	0	1
5706	17215240	XR_387203 // Efh1 // EF hand domain containing 1 // 1 D 1 // 98363 /// ENSMUST00000118	Efh1	XR_387203	2.07	2.07	4.24	0	1
6311	17221235	---		---	2.07	2.07	2.66	1.14E-13	1
10596	17265026	NM_153143 // Kctd11 // potassium channel tetramerisation domain containing 11 // 11 B3	Kctd11	NM_153143	2.07	2.07	5.21	2.27E-13	1
5768	17216031	NM_145519 // Farp2 // FERM, RhoGEF and pleckstrin domain protein 2 // 1 D 1 // 227377 /	Farp2	NM_145519	2.07	2.07	6.11	0	1
24857	17403363	NM_027770 // Col24a1 // collagen, type XXIV, alpha 1 // 3 3 H3 // 71355 /// ENSMUST0000	Col24a1	NM_027770	2.07	2.07	4.63	2.27E-13	1
19514	17350086	ENSMUST00000157986 // Gm22483 // predicted gene, 22483 // --- // ---	Gm22483	VSMUST0000015798	2.07	2.07	0.73	2.84E-14	1
37855	17532433	ENSMUST00000180685 // Gm26797 // predicted gene, 26797 // --- // ---	Gm26797	VSMUST0000018068	2.07	2.07	4.84	2.84E-14	1
12630	17284568	ENSMUST00000103520 // Ighv8-5 // immunoglobulin heavy variable V8-5 // --- // ---	Ighv8-5	VSMUST0000010352	2.07	2.07	109.80	0	1
2680	17205429	---		---	2.07	2.07	3.43	0	1
23259	17387742	NM_146770 // Olfr259 // olfactory receptor 259 // 2 E1 2 // 258766 /// ENSMUST000000998	Olfr259	NM_146770	2.07	2.07	0.64	2.84E-14	1
38084	17534249	---		---	2.07	2.07	1.14	0	1
4179	17208493	---		---	2.07	2.07	0.97	0	1
23866	17393353	ENSMUST00000124586 // BC029722 // cDNA sequence BC029722 // 2 H1 2 // 613262 /// NR_015	BC029722	VSMUST0000012458	2.07	2.07	1.36	0	1
39840	17547624	---		---	2.07	2.07	1.13	1.42E-14	1
19976	17354755	NR_029879 // Mir378a // microRNA 378a // 18 18 // 723889	Mir378a	NR_029879	2.07	2.07	1.12	0	1
4991	17210139	---		---	2.07	2.07	5.66	0	1
1737	17203509	---		---	2.07	2.07	4.82	0	1
11634	17276139	NM_001190466 // Dact1 // dapper homolog 1, antagonist of beta-catenin (xenopus) // 12 C	Dact1	NM_001190466	2.06	2.06	17.82	0	1
30936	17464963	ENSMUST00000139701 // Gm4876 // predicted gene 4876 // 6 A2 6 // 232599 /// AK047082 //	Gm4876	VSMUST0000013970	2.06	2.06	1.72	0	1
34823	17500919	ENSMUST00000127040 // Gm16352 // predicted gene 16352 // --- // --- ENSMUST00000136	Gm16352	VSMUST0000012704	2.06	2.06	6.39	0	1
13832	17294475	ENSMUST00000104467 // Gm23319 // predicted gene, 23319 // --- // ---	Gm23319	VSMUST0000010446	2.06	2.06	1.11	1.07E-14	1
28410	17439687	NM_011204 // Ptpn13 // protein tyrosine phosphatase, non-receptor type 13 // 5 E-F 5 50	Ptpn13	NM_011204	2.06	2.06	5.51	5.68E-14	1
10861	17267766	ENSMUST00000157395 // Gm22762 // predicted gene, 22762 // --- // ---	Gm22762	VSMUST0000015739	2.06	2.06	1.65	0	1
23900	17393764	ENSMUST00000104797 // Gm23134 // predicted gene, 23134 // --- // ---	Gm23134	VSMUST0000010479	2.06	2.06	3.42	0	1
16103	17316197	NM_001242423 // Fam105a // family with sequence similarity 105, member A // 15 B1 15 //	Fam105a	NM_001242423	2.06	2.06	3.16	0	1
16054	17315656	ENSMUST00000116945 // Gm22031 // predicted gene, 22031 // --- // ---	Gm22031	VSMUST0000011694	2.06	2.06	0.66	0	1
15601	17311058	ENSMUST00000158508 // Gm24771 // predicted gene, 24771 // --- // ---	Gm24771	VSMUST0000015850	2.06	2.06	3.93	0	1
1035	17202081	---		---	2.06	2.06	0.92	1.14E-13	1
20715	17361435	NM_153553 // Npas4 // neuronal PAS domain protein 4 // 19 A 19 // 225872 /// XM_0065317	Npas4	NM_153553	2.06	2.06	1.63	1.14E-13	1
16826	17323822	ENSMUST00000103984 // Gm25762 // predicted gene, 25762 // --- // ---	Gm25762	VSMUST0000010398	2.06	2.06	2.64	0	1
27434	17428883	---		---	2.05	2.05	3.60	2.84E-14	1
23248	17387714	ENSMUST00000130722 // Gm13723 // predicted gene 13723 // --- // ---	Gm13723	VSMUST0000013072	2.05	2.05	1.35	0	1
34906	17501516	ENSMUST00000098716 // Gm10663 // predicted gene 10663 // --- // ---	Gm10663	VSMUST0000009871	2.05	2.05	1.89	0	1
23404	17388725	NM_010218 // Fjx1 // four jointed box 1 (Drosophila) // 2 E 2 // 14221 /// ENSMUST0000	Fjx1	NM_010218	2.05	2.05	2.64	0	1
3927	17207979	---		---	2.05	2.05	1.49	2.84E-14	1
4176	17208487	---		---	2.05	2.05	0.92	0	1
15401	17308772	NM_172488 // Lacc1 // laccase (multicopper oxidoreductase) domain containing 1 // 14 D3	Lacc1	NM_172488	2.05	2.05	8.26	5.68E-14	1
20122	17356216	NM_001162946 // Pcx // pyruvate carboxylase // 19 A 19 4.07 cM // 18563 /// NM_008797 /	Pcx	NM_001162946	2.05	2.05	8.19	2.27E-13	1
4993	17210143	---		---	2.05	2.05	12.82	0	1
39211	17543889	ENSMUST00000158335 // Gm22090 // predicted gene, 22090 // --- // ---	Gm22090	VSMUST0000015833	2.05	2.05	1.48	0	1
1900	17203845	---		---	2.05	2.05	6.32	0	1
2529	17205119	---		---	2.05	2.05	2.71	2.84E-14	1
4581	17209309	---		---	2.05	2.05	2.71	2.84E-14	1
38766	17539824	NR_029574 // Mir188 // microRNA 188 // X X // 387183 /// ENSMUST00000083464 // Mir188 /	Mir188	NR_029574	2.05	2.05	0.58	1.14E-13	1
3270	17206635	---		---	2.05	2.05	2.09	0	1
16265	17317799	ENSMUST00000179578 // Gm24390 // predicted gene, 24390 // --- // ---	Gm24390	VSMUST0000017957	2.04	2.04	1.34	0	1
40752	17549560	---		---	2.04	2.04	0.63	0	1
4971	17210097	---		---	2.04	2.04	4.90	0	1
37348	17526657	ENSMUST00000082739 // Gm22805 // predicted gene, 22805 // --- // ---	Gm22805	VSMUST0000008273	2.04	2.04	1.83	1.42E-14	1
6265	17220904	XR_399286 // Gm15867 // predicted gene 15867 // 1 1 97.55 cM // 100503471 /// ENSMUST00	Gm15867	XR_399286	2.04	2.04	3.06	0	1
18795	17342829	NM_001098226 // Tead3 // TEA domain family member 3 // 17 A3.3 17 14.66 cM // 21678 ///	Tead3	NM_001098226	2.04	2.04	5.44	1.71E-13	1
473	17200941	---		---	2.04	2.04	0.86	0	1
32177	17476188	ENSMUST00000032803 // Zfp30 // zinc finger protein 30 // 7 B1 7 17.26 cM // 22693 /// E	Zfp30	VSMUST0000003280	2.03	2.03	3.13	0	1
16180	17316977	NR_035444 // Mir1907 // microRNA 1907 // 15 15 19.19 cM // 100316685 /// ENSMUST0000012	Mir1907	NR_035444	2.03	2.03	4.97	1.71E-13	1
13640	17292722	NM_028870 // Cltb // clathrin, light polypeptide (Lcb) // 13 B1 13 // 74325 /// ENSMUST	Cltb	NM_028870	2.03	2.03	0.57	5.68E-14	1
11068	17269748	NM_008986 // Ptrf // polymerase I and transcript release factor // 11 D 11 63.95 cM //	Ptrf	NM_008986	2.03	2.03	7.31	0	1
4932	17210019	---		---	2.03	2.03	4.96	5.68E-14	1
9414	17252710	NM_207224 // Olfr384 // olfactory receptor 384 // 11 B4 11 // 193053 /// ENSMUST0000007	Olfr384	NM_207224	2.03	2.03	1.13	0	1
13705	17293313	NM_008086 // Gas1 // growth arrest specific 1 // 13 B3-C2 13 31.92 cM // 14451 /// ENSM	Gas1	NM_008086	2.03	2.03	19.10	0	1
18152	17336946	---		---	2.03	2.03	6.78	0	1
29978	17456414	NM_080847 // Asb15 // ankyrin repeat and SOCS box-containing 15 // 6 A3.1 6 // 78910 //	Asb15	NM_080847	2.03	2.03	1.13	0	1
8727	17245900	ENSMUST00000158744 // Gm23819 // predicted gene, 23819 // --- // ---	Gm23819	VSMUST0000015874	2.03	2.03	0.69	0	1
14094	17297495	ENSMUST00000175013 // 6230400D17Rik // RIKEN cDNA 6230400D17 gene // 14 14 // 76133 ///	6230400D17Rik	VSMUST0000017501	2.03	2.03	1.05	5.68E-14	1
27208	17426942	ENSMUST00000082753 // Gm25811 // predicted gene, 25811 // --- // ---	Gm25811	VSMUST0000008275	2.03	2.03	0.69	2.84E-14	1
4309	17208755	---		---	2.03	2.03	1.39	5.68E-14	1
6505	17223138	NM_001163314 // Pgap1 // post-GPI attachment to proteins 1 // 1 C1.1 1 // 241062 /// EN	Pgap1	NM_001163314	2.03	2.03	3.33	0	1
31591	17470792	NR_029554 // Mir141 // microRNA 141 // 6 6 // 387159 /// ENSMUST00000083540 // Mir141 /	Mir141	NR_029554	2.03	2.03	1.02	0	1
4822	17209797	---		---	2.03	2.03	3.56	0	1
2866	17205807	---		---	2.03	2.03	1.90	2.84E-14	1
37148	17524746	NR_035496 // Mir1946b // microRNA 1946b // 9 9 7.84 cM // 100316714 /// ENSMUST00000157	Mir1946b	NR_035496	2.02	2.02	0.78	7.11E-15	1
3123	17206329	---		---	2.02	2.02	0.71	0	1
75	17200135	---		---	2.02	2.02	2.90	1.71E-13	1
3890	17207903	---		---	2.02	2.02	4.97	0	1
12176	17280932	ENSMUST00000158400 // Gm25015 // predicted gene, 25015 // --- // ---	Gm25015	VSMUST0000015840	2.02	2.02	0.72	0	1

1680	17203391	---	---	---	---	2.02	2.02	3.09	0	1
575	17201147	---	---	---	---	2.02	2.02	4.62	2.84E-14	1
25097	17405627	ENSMUST00000176568 // Vmn2r-ps11 // vomeronasal 2, receptor, pseudogene 11 // --- // --	---	Vmn2r-ps11	VSMUST00000176568	2.02	2.02	1.02	7.11E-15	1
6559	17223787	NR_038009 // 281040811Rik // RIKEN cDNA 281040811 gene // 1 1 // 69941 // ENSMUST000	---	281040811Rik	NR_038009	2.02	2.02	1.10	1.42E-14	1
13314	17290205	NM_001037925 // BC147527 // cDNA sequence BC147527 // 13 13 // 625360 // XM_006517732	---	BC147527	NM_001037925	2.02	2.02	6.21	0	1
38803	17540188	NM_016911 // Srpx // sushi-repeat-containing protein // X X A1.2 // 51795 // ENSMUST000	---	Srpx	NM_016911	2.02	2.02	29.63	5.68E-14	1
12655	17284638	ENSMUST00000081809 // lghv1-73 // immunoglobulin heavy variable 1-73 // --- // ---	---	lghv1-73	VSMUST00000081809	2.02	2.02	64.15	0	1
7077	17229965	ENSMUST00000104064 // Gm26077 // predicted gene, 26077 // --- // ---	---	Gm26077	VSMUST00000104064	2.02	2.02	0.67	0	1
32339	17477428	NM_001034115 // Shank1 // SH3/ankyrin domain gene 1 // 7 B4 7 // 243961 // XM_00654086	---	Shank1	NM_001034115	2.02	2.02	1.23	0	1
4935	17210025	---	---	---	---	2.02	2.02	1.80	2.84E-14	1
26254	17417115	ENSMUST00000083113 // Gm24045 // predicted gene, 24045 // --- // ---	---	Gm24045	VSMUST00000083113	2.02	2.02	5.31	0	1
25415	17408352	NM_008293 // Hsd3b1 // hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta	---	Hsd3b1	NM_008293	2.02	2.02	0.64	0	1
30103	17457697	ENSMUST00000103271 // Trbv13-3 // T cell receptor beta, variable 13-3 // --- // --- // ---	---	Trbv13-3	VSMUST00000103271	2.02	2.02	32.58	0	1
2942	17205959	---	---	---	---	2.02	2.02	2.24	0	1
5110	17210383	---	---	---	---	2.02	2.02	2.32	2.84E-14	1
12945	17287005	BC050752 // Cap2 // CAP, adenylate cyclase-associated protein, 2 (yeast) // 13 A5 13 //	---	Cap2	BC050752	2.01	2.01	4.87	2.27E-13	1
9768	17256429	XR_389044 // LOC102636037 // uncharacterized LOC102636037 // --- // 102636037 // XR_38	---	LOC102636037	XR_389044	2.01	2.01	0.99	0	1
40278	17548567	---	---	---	---	2.01	2.01	1.09	2.84E-14	1
25442	17408648	ENSMUST00000029440 // Olfm13 // olfactomedin-like 3 // 3 F2.2 3 // 99543 // ENSMUST000	---	Olfm13	VSMUST00000029440	2.01	2.01	4.88	0	1
39385	17545287	ENSMUST00000132626 // Gm15104 // predicted gene 15104 // X F3 X // 333588 // BC099570	---	Gm15104	VSMUST00000132626	2.01	2.01	2.09	0	1
31897	17473912	ENSMUST00000157736 // Gm23499 // predicted gene, 23499 // --- // ---	---	Gm23499	VSMUST00000157736	2.01	2.01	0.66	0	1
38744	17539653	XR_406499 // LOC102641779 // uncharacterized LOC102641779 // --- // 102641779 // ENSMU	---	LOC102641779	XR_406499	2.01	2.01	0.65	0	1
11028	17269252	NM_001195383 // 2300003K06Rik // RIKEN cDNA 2300003K06 gene // 11 11 // 100502865 // E	---	2300003K06Rik	NM_001195383	2.01	2.01	1.27	0	1
9599	17254809	NM_172448 // Rnf43 // ring finger protein 43 // 11 C 11 // 207742 // XM_006536449 // R	---	Rnf43	NM_172448	2.01	2.01	0.97	0	1
11908	17278795	XR_394816 // LOC102642047 // uncharacterized LOC102642047 // --- // 102642047 // XR_39	---	LOC102642047	XR_394816	2.01	2.01	1.42	0	1
31959	17474480	NM_011383 // Six5 // sine oculis-related homeobox 5 // 7 A3 7 9.46 cM // 20475 // XM_0	---	Six5	NM_011383	2.01	2.01	4.07	2.27E-13	1
12864	17286308	ENSMUST00000070258 // Gm5447 // predicted gene 5447 // 13 A3.2 13 // 432743 // AK07731	---	Gm5447	VSMUST00000070258	2.01	2.01	0.65	1.42E-14	1
4413	17208971	---	---	---	---	2.01	2.01	3.45	0	1
30665	17462608	NR_027619 // Mug-ps1 // murinoglobulin, pseudogene 1 // 6 F1 6 // 17835	---	Mug-ps1	NR_027619	2.01	2.01	0.63	2.84E-14	1
38508	17537934	ENSMUST00000158239 // Gm23068 // predicted gene, 23068 // --- // ---	---	Gm23068	VSMUST00000158239	2.01	2.01	0.68	1.42E-14	1
9060	17248957	NM_146470 // Olfr1392 // olfactory receptor 1392 // 11 B1 11 // 258462 // BC120614 //	---	Olfr1392	NM_146470	2.01	2.01	2.76	3.55E-14	1
2514	17205089	---	---	---	---	2.01	2.01	1.53	0	1
4566	17209279	---	---	---	---	2.01	2.01	1.53	0	1
51	17200087	---	---	---	---	2.00	2.00	1.01	0	1
35912	17512149	ENSMUST00000157360 // Gm22223 // predicted gene, 22223 // --- // ---	---	Gm22223	VSMUST00000157360	2.00	2.00	0.84	4.26E-14	1
12859	17286254	NM_153546 // Mboat1 // membrane bound O-acyltransferase domain containing 1 // 13 A3.2	---	Mboat1	NM_153546	2.00	2.00	1.13	0	1
31958	17474454	NM_001190491 // Dmpk // dystrophin myotonia-protein kinase // 7 A3 7 9.46 cM // 13400	---	Dmpk	NM_001190491	2.00	2.00	1.25	0	1
3527	17207157	---	---	---	---	2.00	2.00	2.33	0	1
2241	17204537	---	---	---	---	2.00	2.00	6.65	0	1
734	17201469	---	---	---	---	2.00	2.00	1.07	0	1
546	17201089	---	---	---	---	2.00	2.00	2.23	1.14E-13	1
8006	17238736	ENSMUST00000158767 // Gm23023 // predicted gene, 23023 // --- // ---	---	Gm23023	VSMUST00000158767	2.00	2.00	0.59	2.13E-14	1
39389	17545353	NM_001199246 // Maged2 // melanoma antigen, family D, 2 // X X F2 // 80884 // NM_03070	---	Maged2	NM_001199246	2.00	2.00	7.00	0	1
8850	17247078	ENSMUST00000104336 // n-R5s67 // nuclear encoded rRNA 5S 67 // --- // ---	---	n-R5s67	VSMUST00000104336	2.00	2.00	2.01	1.42E-14	1
41114	17550504	NR_033430 // Gm2694 // predicted gene 2694 // 8 C3 8 // 100040294 // ENSMUST0000018080	---	Gm2694	NR_033430	2.00	2.00	0.86	0	1
18806	17342991	ENSMUST00000122683 // Gm23887 // predicted gene, 23887 // --- // ---	---	Gm23887	VSMUST00000122683	2.00	2.00	8.14	5.68E-14	1
31893	17473854	NM_134226 // Vmn1r89 // vomeronasal 1 receptor 89 // 7 A1 7 // 171260 // XM_006539587	---	Vmn1r89	NM_134226	0.50	-2.00	0.97	2.84E-14	1
39561	17546563	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000	---	LOC102635000	XM_006542015	0.50	-2.00	1.25	0	1
39579	17546635	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000	---	LOC102635000	XM_006542015	0.50	-2.00	1.25	0	1
39611	17546753	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 // XM	---	LOC102635000	XM_006542015	0.50	-2.00	1.24	0	1
2528	17205117	---	---	---	---	0.50	-2.00	5.99	5.68E-14	1
4580	17209307	---	---	---	---	0.50	-2.00	5.99	5.68E-14	1
39740	17547380	---	---	---	---	0.50	-2.00	0.89	0	1
856	17201717	---	---	---	---	0.50	-2.00	2.21	0	1
942	17201893	---	---	---	---	0.50	-2.00	2.21	0	1
24299	17397738	ENSMUST00000082970 // Gm25404 // predicted gene, 25404 // --- // ---	---	Gm25404	VSMUST00000082970	0.50	-2.00	0.73	4.26E-14	1
26686	17421413	---	---	---	---	0.50	-2.00	2.89	0	1
30932	17464941	ENSMUST00000104146 // Gm23013 // predicted gene, 23013 // --- // ---	---	Gm23013	VSMUST00000104146	0.50	-2.00	0.94	0	1
29260	17448807	---	---	---	---	0.50	-2.00	12.70	0	1
1564	17203155	---	---	---	---	0.50	-2.00	0.94	5.68E-14	1
9485	17253476	---	---	---	---	0.50	-2.01	6.35	0	1
40947	17549974	---	---	---	---	0.50	-2.01	6.35	0	1
2190	17204431	---	---	---	---	0.50	-2.01	6.52	5.68E-14	1
10588	17264946	NM_009601 // Chrn1 // cholinergic receptor, nicotinic, beta polypeptide 1 (muscle) //	---	Chrn1	NM_009601	0.50	-2.01	2.47	2.84E-14	1
5820	17216525	ENSMUST00000158066 // Gm22331 // predicted gene, 22331 // --- // ---	---	Gm22331	VSMUST00000158066	0.50	-2.01	1.82	2.84E-14	1
28329	17439021	NM_007950 // Ereg // ephrin A2 // 5 E1 5 // 13874 // ENSMUST00000031324 // Ereg // ep	---	Ereg	NM_007950	0.50	-2.01	7.68	1.14E-13	1
2032	17204115	---	---	---	---	0.50	-2.01	5.83	5.68E-14	1
4355	17208847	---	---	---	---	0.50	-2.01	0.67	0	1
40220	17548436	NM_001122661 // Speer4e // spermatogenesis associated glutamate (E)-rich protein 4e //	---	Speer4e	NM_001122661	0.50	-2.01	1.62	0	1
4770	17209691	---	---	---	---	0.50	-2.01	2.95	0	1
7557	17234433	---	---	---	---	0.50	-2.01	3.00	2.27E-13	1
294	17200579	---	---	---	---	0.50	-2.01	3.50	0	1
41012	17550244	---	---	---	---	0.50	-2.01	1.31	2.84E-14	1
28983	17446524	ENSMUST00000155721 // Speer4b // spermatogenesis associated glutamate (E)-rich protein	---	Speer4b	VSMUST00000155721	0.50	-2.01	1.63	0	1
1468	17202961	---	---	---	---	0.50	-2.01	1.55	0	1
1543	17203113	---	---	---	---	0.50	-2.02	0.82	5.68E-14	1
37826	17532106	NR_033303 // Slc22a13b-ps // solute carrier family 22 (organic cation transporter), mem	---	Slc22a13b-ps	NR_033303	0.50	-2.02	0.98	5.68E-14	1
39679	17547170	NM_001037748 // Gm20736 // predicted gene, 20736 // Y A1 Y // 380994 // NR_038299 // G	---	Gm20736	NM_001037748	0.50	-2.02	9.85	4.26E-14	1
39723	17547333	NM_001037748 // Gm20736 // predicted gene, 20736 // Y A1 Y // 380994 // NR_038299 // G	---	Gm20736	NM_001037748	0.50	-2.02	9.85	4.26E-14	1
10097	17259745	ENSMUST00000146218 // Gm12735 // predicted gene 12735 // --- // ---	---	Gm12735	VSMUST00000146218	0.50	-2.02	2.86	1.42E-13	1
35006	17502525	NR_039551 // Mir28b // microRNA 28b // 8 8 35.08 cM // 100628574 // ENSMUST00000175399	---	Mir28b	NR_039551	0.50	-2.02	4.07	1.14E-13	1
2656	17205379	---	---	---	---	0.50	-2.02	1.70	2.84E-14	1
13748	17293695	NM_025370 // Aaed1 // AhpC/TSA antioxidant enzyme domain containing 1 // 13 B3 13 // 66	---	Aaed1	NM_025370	0.50	-2.02	1.02	0	1
5128	17210419	---	---	---	---	0.50	-2.02	2.68	0	1
8075	17239005	NM_001170800 // Ipcef1 // interaction protein for cytohesin exchange factors 1 // 10 A1	---	Ipcef1	NM_001170800	0.50	-2.02	22.50	0	1
33320	17487529	NM_001166836 // Vmn1r101 // vomeronasal 1 receptor 101 // 7 A3 7 // 100042968 // NM_00	---	Vmn1r101	NM_001166836	0.50	-2.02	1.64	2.84E-14	1
368	17200727	---	---	---	---	0.49	-2.02	1.80	2.84E-14	1
33313	17487513	NM_001166723 // Vmn1r94 // vomeronasal 1 receptor 94 // 7 A3 7 // 620537 // ENSMUST000	---	Vmn1r94	NM_001166723	0.49	-2.02	0.84	0	1
5976	17218321	NM_011267 // Rgs16 // regulator of G-protein signaling 16 // 1 G3 1 65.43 cM // 19734 //	---	Rgs16	NM_011267	0.49	-2.02	2.80	1.42E-13	1
3030	17206141	---	---	---	---	0.49	-2.03	2.41	0	1
30609	17461921	ENSMUST00000158509 // Gm24767 // predicted gene, 24767 // --- // ---	---	Gm24767	VSMUST00000158509	0.49	-2.03	0.60	1.42E-14	1
5955	17218040	ENSMUST00000157698 // Gm25663 // predicted gene, 25663 // --- // ---	---	Gm25663	VSMUST00000157698	0.49	-2.03	0.98	0	1
1030	17202071	---	---	---	---	0.49	-2.03	5.78	2.84E-14	1
12497	17283942	---	---	---	---	0.49	-2.03	1.62	0	1
3611	17207339	---	---	---	---	0.49	-2.03	4.04	0	1

21427	17367947	ENSMUST00000157546 // Gm25220 // predicted gene, 25220 // --- // ---	Gm25220	VSMUST0000015754	0.49	-2.03	2.50	0	1
33076	17485510	NM_177363 // Tarm1 // T cell-interacting, activating receptor on myeloid cells 1 // 7 A	Tarm1	NM_177363	0.49	-2.03	2.87	5.68E-14	1
3894	17207911	---	---	---	0.49	-2.03	2.69	1.71E-13	1
1523	17203073	---	---	---	0.49	-2.03	1.18	0	1
15633	17311329	---	---	---	0.49	-2.03	0.85	0	1
39774	17547475	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 /// XM	LOC102635000	XM_006542015	0.49	-2.03	1.22	5.68E-14	1
22425	17378327	---	---	---	0.49	-2.03	1.17	0	1
30200	17458345	NM_001077410 // Gimap8 // GTPase, IMAP family member 8 // 6 B2.3 6 // 243374 /// NM_001	Gimap8	NM_001077410	0.49	-2.03	26.65	0	1
29949	17456069	XM_006544050 // Gm725 // predicted gene 725 // 6 A1 6 // 277899	Gm725	XM_006544050	0.49	-2.03	0.62	0	1
39727	17547344	XM_006542396 // LOC102640767 // Y-linked testis-specific protein 1-like // --- // 10264	LOC102640767	XM_006542396	0.49	-2.03	3.08	2.84E-14	1
33314	17487515	NM_001166743 // Vmn1r117 // vomeronasal 1 receptor 117 // 7 A3 7 // 667262 /// ENSMUSTO	Vmn1r117	NM_001166743	0.49	-2.03	1.91	0	1
33351	17487609	NM_001166743 // Vmn1r117 // vomeronasal 1 receptor 117 // 7 A3 7 // 667262 /// ENSMUSTO	Vmn1r117	NM_001166743	0.49	-2.03	1.91	0	1
1251	17202519	---	---	---	0.49	-2.03	2.79	8.53E-14	1
11531	17275123	---	---	---	0.49	-2.04	2.15	0	1
39733	17547360	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUSTO000009684	Gm20738	NM_207162	0.49	-2.04	1.10	0	1
1873	17203789	---	---	---	0.49	-2.04	3.18	0	1
3421	17206945	---	---	---	0.49	-2.04	0.66	0	1
5342	17210869	NM_001159750 // Tcea1 // transcription elongation factor A (Slit) 1 // 1 A1 1 // 21399 /	Tcea1	NM_001159750	0.49	-2.04	2.93	0	1
84	17200155	---	---	---	0.49	-2.04	2.00	0	1
21624	17370437	ENSMUST00000132692 // Dennd1a // DENN/MADD domain containing 1A // 2 B 2 // 227801	Dennd1a	VSMUST0000013269	0.49	-2.04	2.82	2.84E-14	1
35598	17508949	NM_019734 // Asah1 // N-acylsphingosine amidohydrolase 1 // 8 A4 8 // 11886 /// ENSMUST	Asah1	NM_019734	0.49	-2.04	6.34	0	1
2223	17204501	---	---	---	0.49	-2.04	6.86	2.84E-14	1
33187	17486461	---	---	---	0.49	-2.04	1.38	0	1
38447	17537414	XM_006528430 // LOC102634222 // serine/arginine repetitive matrix protein 1-like // ---	LOC102634222	XM_006528430	0.49	-2.05	1.32	2.84E-14	1
38449	17537428	XM_006528430 // LOC102634222 // serine/arginine repetitive matrix protein 1-like // ---	LOC102634222	XM_006528430	0.49	-2.05	1.32	2.84E-14	1
38458	17537493	XM_006528430 // LOC102634222 // serine/arginine repetitive matrix protein 1-like // ---	LOC102634222	XM_006528430	0.49	-2.05	1.32	2.84E-14	1
29887	17455554	NM_133898 // N4bp2l1 // NEDD4 binding protein 2-like 1 // 5 G3 5 // 100637 /// ENSMUSTO	N4bp2l1	NM_133898	0.49	-2.05	4.71	0	1
25392	17408088	ENSMUST00000077278 // Rpl21-ps11 // ribosomal protein L21, pseudogene 11 // --- // ---	Rpl21-ps11	VSMUST0000007727:	0.49	-2.05	0.77	0	1
3356	17206813	---	---	---	0.49	-2.05	1.55	2.84E-14	1
6112	17219475	---	---	---	0.49	-2.05	1.50	0	1
2227	17204509	---	---	---	0.49	-2.05	5.13	0	1
38655	17538833	---	---	---	0.49	-2.05	0.78	0	1
2098	17204247	---	---	---	0.49	-2.05	10.76	0	1
27128	17425978	NM_001199995 // Mup12 // major urinary protein 12 // 4 B3 4 // 100039054 /// ENSMUSTO000	Mup12	NM_001199995	0.49	-2.05	0.61	0	1
1466	17202957	---	---	---	0.49	-2.05	1.36	0	1
31681	17471828	NM_001170851 // Klra2 // killer cell lectin-like receptor, subfamily A, member 2 // 6 F	Klra2	NM_001170851	0.49	-2.05	6.75	0	1
20334	17357904	NM_146692 // Olfr1454 // olfactory receptor 1454 // 19 C1 19 // 258687 /// ENSMUST000000	Olfr1454	NM_146692	0.49	-2.05	1.86	0	1
39342	17545051	NM_001033600 // Acsl4 // acyl-CoA synthetase long-chain family member 4 // X F2 X // 50	Acsl4	NM_001033600	0.49	-2.05	1.74	0	1
17737	17332345	---	---	---	0.49	-2.05	1.28	0	1
39474	17546080	ENSMUST00000102416 // Gm22368 // predicted gene, 22368 // --- // ---	Gm22368	VSMUST0000010241:	0.49	-2.06	1.65	0	1
14995	17305167	NM_001199122 // Ghitm // growth hormone inducible transmembrane protein // 14 B 14 21.2	Ghitm	NM_001199122	0.49	-2.06	2.07	0	1
7209	17231301	NM_013499 // Cr1 // complement component (3b/4b) receptor 1-like // 1 H6 1 98.43 cM //	Cr1	NM_013499	0.49	-2.06	0.87	0	1
39356	17545225	ENSMUST00000122472 // Gm25107 // predicted gene, 25107 // --- // ---	Gm25107	VSMUST0000012247:	0.49	-2.06	5.18	0	1
39671	17547141	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 /// XM	LOC102635000	XM_006542015	0.49	-2.06	1.37	5.68E-14	1
39621	17546903	ENSMUST00000104605 // Gm25565 // predicted gene, 25565 // --- // ---	Gm25565	VSMUST0000010460:	0.48	-2.06	0.65	0	1
15404	17308794	ENSMUST00000158740 // Gm23823 // predicted gene, 23823 // --- // ---	Gm23823	VSMUST0000015874:	0.48	-2.06	3.39	0	1
38426	17537324	NM_001276396 // Ube2dn1 // ubiquitin-conjugating enzyme E2D N-terminal like 1 // X E1	Ube2dn1	NM_001276396	0.48	-2.06	1.91	2.84E-14	1
33754	17491537	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33755	17491539	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33758	17491566	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33760	17491570	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33761	17491572	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33762	17491574	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33763	17491576	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33764	17491578	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33765	17491580	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33766	17491582	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33767	17491584	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33768	17491586	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33769	17491588	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33770	17491590	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33771	17491592	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
33772	17491594	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.48	-2.06	5.39	0	1
2097	17204245	---	---	---	0.48	-2.06	9.55	5.68E-14	1
39776	17547484	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 /// XM	LOC102635000	XM_006542015	0.48	-2.07	1.24	0	1
18746	17342306	ENSMUST00000180010 // Gm22645 // predicted gene, 22645 // --- // ---	Gm22645	VSMUST000001800:	0.48	-2.07	7.79	4.26E-14	1
33311	17487509	ENSMUST00000079099 // Gm16451 // predicted pseudogene 16451 // 7 A3 7 // 100043033 ///	Gm16451	VSMUST000000790:	0.48	-2.07	1.24	0	1
33348	17487603	ENSMUST00000079099 // Gm16451 // predicted pseudogene 16451 // 7 A3 7 // 100043033 ///	Gm16451	VSMUST000000790:	0.48	-2.07	1.24	0	1
4997	17210151	---	---	---	0.48	-2.07	4.19	1.14E-13	1
29691	17453130	---	---	---	0.48	-2.07	1.60	1.14E-13	1
9890	17257565	---	---	---	0.48	-2.07	2.09	1.14E-13	1
39707	17547271	BC087891 // Gm20852 // predicted gene, 20852 // Y Y // 100040786 /// NM_001017394 // Gm	Gm20852	BC087891	0.48	-2.07	4.46	0	1
16186	17317031	NM_177225 // Samd12 // sterile alpha motif domain containing 12 // 15 C-D 15 // 320679	Samd12	NM_177225	0.48	-2.07	1.76	0	1
41099	17550474	AK037717 // A130040M12Rik // RIKEN cDNA A130040M12 gene // 11 C 11 // 319269	A130040M12Rik	AK037717	0.48	-2.07	24.79	1.14E-13	1
1602	17203233	---	---	---	0.48	-2.07	0.73	2.84E-14	1
28387	17439530	ENSMUST00000104236 // Gm24279 // predicted gene, 24279 // --- // ---	Gm24279	VSMUST000001042:	0.48	-2.07	6.01	0	1
4339	17208815	---	---	---	0.48	-2.07	3.30	0	1
26018	17414738	NM_013623 // Orm3 // orosomuoid 3 // 4 C1 4 33.96 cM // 18407 /// ENSMUST0000006687 //	Orm3	NM_013623	0.48	-2.07	1.80	0	1
822	17201649	---	---	---	0.48	-2.07	1.11	0	1
1888	17203819	---	---	---	0.48	-2.07	8.86	8.53E-14	1
10350	17262337	---	---	---	0.48	-2.08	2.63	0	1
25688	17411420	NM_145953 // Cth // cystathionase (cystathionine gamma-lyase) // 3 H4 3 // 107869 /// E	Cth	NM_145953	0.48	-2.08	5.72	1.71E-13	1
12555	17284362	ENSMUST00000178909 // Ighd5-8 // immunoglobulin heavy diversity 5-8 // --- // ---	Ighd5-8	VSMUST000001789:	0.48	-2.08	2.04	0	1
4508	17209163	---	---	---	0.48	-2.08	2.85	0	1
651	17201301	---	---	---	0.48	-2.08	1.88	2.84E-14	1
4360	17208857	---	---	---	0.48	-2.08	2.73	1.42E-14	1
25934	17413940	ENSMUST00000158724 // Gm22670 // predicted gene, 22670 // --- // ---	Gm22670	VSMUST000001587:	0.48	-2.08	0.81	0	1
6800	17226618	XR_398829 // LOC102641333 // uncharacterized LOC102641333 // --- // 102641333 /// ENSMU	LOC102641333	XR_398829	0.48	-2.08	12.82	0	1
3758	17207639	---	---	---	0.48	-2.08	3.28	5.68E-14	1
38628	17538805	---	---	---	0.48	-2.08	1.03	0	1
39570	17546597	XM_006542344 // Gm20736 // predicted gene, 20736 // Y A1 Y // 380994 /// NM_001037748 //	Gm20736	XM_006542344	0.48	-2.08	2.86	0	1
1149	17202315	---	---	---	0.48	-2.08	1.92	0	1
35421	17507321	NM_010111 // Efnb2 // ephrin B2 // 8 A1.1 8 3.42 cM // 13642 /// ENSMUST00000001319 //	Efnb2	NM_010111	0.48	-2.08	2.95	0	1
38455	17537464	XM_006528462 // LOC102637761 // serine/arginine repetitive matrix protein 1-like // ---	LOC102637761	XM_006528462	0.48	-2.08	2.61	0	1
10422	17262836	ENSMUST00000135903 // Cdc42e2 // CDC42 small effector 2 // 11 B1.3 11 // 72729 /// ENS	Cdc42e2	VSMUST000001359:	0.48	-2.08	5.87	0	1

16661	17322355	NM_030720 // Gpr84 // G protein-coupled receptor 84 // 15 F3 15 // 80910 /// XM_0065215	Gpr84	NM_030720	0.48	-2.09	1.03	2.84E-14	1
2178	17204407	---	---	---	0.48	-2.09	4.08	0	1
29985	17456478	ENSMUST00000157766 // Gm26310 // predicted gene, 26310 // --- // ---	Gm26310	VSMUST0000015776	0.48	-2.09	0.89	0	1
39426	17545595	NM_001291865 // Sat1 // spermidine/spermine N1-acetyl transferase 1 // X F3-F4 X 72.38	Sat1	NM_001291865	0.48	-2.09	1.49	0	1
36140	17514349	ENSMUST00000099056 // Gm10717 // predicted gene 10717 // --- // --- ENSMUST00000179	Gm10717	VSMUST0000009905	0.48	-2.09	1.37	0	1
39259	17544316	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.48	-2.09	6.10	7.11E-14	1
29417	17449827	---	---	---	0.48	-2.09	0.88	2.84E-14	1
26683	17421392	ENSMUST00000123460 // Gm13235 // predicted gene 13235 // --- // ---	Gm13235	VSMUST0000012346	0.48	-2.09	1.20	0	1
33196	17486515	XR_391308 // Gm6929 // predicted gene 6929 // 7 A1 7 // 628898	Gm6929	XR_391308	0.48	-2.09	0.86	0	1
4876	17209905	---	---	---	0.48	-2.09	7.40	2.84E-14	1
40612	17549272	---	---	---	0.48	-2.09	3.27	5.68E-14	1
1571	17203169	---	---	---	0.48	-2.09	1.40	0	1
3311	17206721	---	---	---	0.48	-2.09	0.95	2.84E-14	1
773	17201549	---	---	---	0.48	-2.09	1.01	0	1
18962	17344578	---	---	---	0.48	-2.09	1.17	5.68E-14	1
18185	17337152	---	---	---	0.48	-2.09	8.75	5.68E-14	1
3333	17206767	---	---	---	0.48	-2.10	1.91	0	1
33857	17492064	ENSMUST00000103978 // Gm24120 // predicted gene, 24120 // --- // ---	Gm24120	VSMUST0000010397	0.48	-2.10	1.31	7.11E-15	1
1760	17203557	---	---	---	0.48	-2.10	5.69	2.84E-14	1
29849	17455193	---	---	---	0.48	-2.10	0.92	0	1
33330	17487554	NM_001166743 // Vmn1r117 // vomeronasal 1 receptor 117 // 7 A3 7 // 667262 /// ENSMUST0	Vmn1r117	NM_001166743	0.48	-2.10	2.04	2.84E-14	1
35685	17509758	NM_001252623 // Csgalnact1 // chondroitin sulfate N-acetylgalactosaminyltransferase 1 /	Csgalnact1	NM_001252623	0.48	-2.10	4.81	1.99E-13	1
5989	17218427	---	---	---	0.48	-2.10	1.20	2.84E-14	1
5211	17210587	---	---	---	0.48	-2.10	4.33	1.71E-13	1
32002	17474765	NM_001166739 // Vmn1r128 // vomeronasal 1 receptor 128 // 7 A3 7 // 667199 /// NM_00116	Vmn1r128	NM_001166739	0.48	-2.10	2.13	0	1
32013	17474801	NM_001166739 // Vmn1r128 // vomeronasal 1 receptor 128 // 7 A3 7 // 667199 /// NM_00116	Vmn1r128	NM_001166739	0.48	-2.10	2.13	0	1
5126	17210415	---	---	---	0.48	-2.10	3.62	0	1
36137	17514340	ENSMUST00000099046 // Gm10718 // predicted gene 10718 // --- // ---	Gm10718	VSMUST0000009904	0.48	-2.10	1.56	0	1
2906	17205887	---	---	---	0.48	-2.10	1.29	2.84E-14	1
26217	17416753	---	---	---	0.48	-2.10	2.70	0	1
32689	17481252	NM_147118 // Olfr635 // olfactory receptor 635 // 7 E3 7 // 259122 /// ENSMUST000000981	Olfr635	NM_147118	0.48	-2.11	1.31	0	1
29976	17456379	ENSMUST00000180080 // Gm25942 // predicted gene, 25942 // --- // ---	Gm25942	VSMUST0000018008	0.47	-2.11	1.84	1.42E-14	1
2812	17205695	---	---	---	0.47	-2.11	8.40	2.84E-14	1
32111	17475429	ENSMUST00000180343 // Gm25947 // predicted gene, 25947 // --- // ---	Gm25947	VSMUST0000018034	0.47	-2.11	1.17	1.14E-13	1
7919	17237978	NM_001290183 // Ddit3 // DNA-damage inducible transcript 3 // 10 D3 10 // 13198 /// NM_	Ddit3	NM_001290183	0.47	-2.11	12.42	5.68E-14	1
21297	17366894	NR_030572 // Mir467d // microRNA 467d // 2 2 // 100124447 /// ENSMUST00000103833 // Mir	Mir467d	NR_030572	0.47	-2.11	2.34	0	1
3185	17206457	---	---	---	0.47	-2.11	2.40	0	1
20210	17357220	---	---	---	0.47	-2.11	1.32	0	1
36081	17513713	NM_001037298 // Piezo1 // piezo-type mechanosensitive ion channel component 1 // 8 E1 8	Piezo1	NM_001037298	0.47	-2.11	2.58	0	1
1476	17202977	---	---	---	0.47	-2.11	2.06	1.14E-13	1
140	17200267	---	---	---	0.47	-2.11	1.16	7.11E-15	1
1294	17202607	---	---	---	0.47	-2.11	4.13	0	1
32323	17477306	NM_010116 // Klk1b9 // kallikrein 1-related peptidase b9 // 7 B4 7 28.45 cM // 13648 //	Klk1b9	NM_010116	0.47	-2.11	0.77	0	1
1978	17204007	---	---	---	0.47	-2.11	9.26	1.42E-14	1
398	17200787	---	---	---	0.47	-2.11	3.50	5.68E-14	1
148	17200283	---	---	---	0.47	-2.12	0.76	0	1
10358	17262345	---	---	---	0.47	-2.12	2.32	0	1
35527	17508170	NM_026931 // 1810011010Rik // RIKEN cDNA 1810011010 gene // 8 A2 8 // 69068 /// ENSMUST	1810011010Rik	NM_026931	0.47	-2.12	14.22	5.68E-14	1
39768	17547456	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_001025241	Gm20815	NM_001017394	0.47	-2.12	3.94	0	1
4990	17210137	---	---	---	0.47	-2.12	4.90	1.42E-14	1
30479	17460580	---	---	---	0.47	-2.12	1.03	5.68E-14	1
3394	17206889	---	---	---	0.47	-2.12	4.45	2.84E-14	1
4951	17210057	---	---	---	0.47	-2.12	9.25	1.42E-14	1
40828	17549714	---	---	---	0.47	-2.12	3.95	4.26E-14	1
25943	17414038	ENSMUST00000104229 // Gm23746 // predicted gene, 23746 // --- // ---	Gm23746	VSMUST000001042;	0.47	-2.12	1.72	0	1
15424	17308963	ENSMUST00000082473 // Gm23926 // predicted gene, 23926 // --- // ---	Gm23926	VSMUST000000824;	0.47	-2.13	1.05	2.84E-14	1
2156	17204363	---	---	---	0.47	-2.13	2.68	5.68E-14	1
39696	17547229	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.47	-2.13	3.86	2.84E-14	1
39763	17547443	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.47	-2.13	3.86	2.84E-14	1
39765	17547450	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.47	-2.13	3.86	2.84E-14	1
37462	17527977	NM_033320 // Glce // glucuronyl C5-epimerase // 9 C-D 9 // 93683 /// ENSMUST00000034785	Glce	NM_033320	0.47	-2.13	4.78	0	1
39719	17547315	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 /// XM	LOC102635000	XM_006542015	0.47	-2.13	1.88	1.14E-13	1
1582	17203191	---	---	---	0.47	-2.13	1.54	0	1
21368	17367446	ENSMUST00000158847 // Gm25368 // predicted gene, 25368 // --- // ---	Gm25368	VSMUST0000015884	0.47	-2.13	0.90	5.68E-14	1
39700	17547246	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.47	-2.13	3.62	0	1
404	17200799	---	---	---	0.47	-2.13	3.07	2.84E-14	1
1414	17202851	---	---	---	0.47	-2.13	2.93	0	1
39218	17543974	NM_001190409 // Magt1 // magnesium transporter 1 // X D X // 67075 /// NM_025952 // Mag	Magt1	NM_001190409	0.47	-2.13	1.13	0	1
24172	17396260	NM_001276248 // Cp // ceruloplasmin // 3 3 D // 12870 /// NM_001276250 // Cp // cerulop	Cp	NM_001276248	0.47	-2.13	45.12	2.84E-13	1
12377	17282932	---	---	---	0.47	-2.13	0.89	0	1
1084	17202183	---	---	---	0.47	-2.13	2.17	2.13E-14	1
4872	17209897	---	---	---	0.47	-2.13	17.04	2.84E-14	1
9732	17256101	NM_021347 // Gsdma // gasdermin A // 11 D 11 // 57911 /// XM_006533850 // Gsdma // gasd	Gsdma	NM_021347	0.47	-2.13	0.82	0	1
12615	17284530	ENSMUST00000103505 // Ighv1-19 // immunoglobulin heavy variable V1-19 // 12 F2 12 // 38	Ighv1-19	VSMUST0000010350	0.47	-2.13	99.41	2.27E-13	1
234	17200459	---	---	---	0.47	-2.14	1.36	8.53E-14	1
200	17200391	---	---	---	0.47	-2.14	1.27	0	1
11500	17274775	NM_008482 // Lamb1 // laminin B1 // 12 A2-A3 12 13.39 cM // 16777 /// ENSMUST0000000297	Lamb1	NM_008482	0.47	-2.14	29.82	2.27E-13	1
39711	17547283	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.47	-2.14	4.16	0	1
9095	17249260	ENSMUST00000073543 // Olfr1375-ps1 // olfactory receptor 1375, pseudogene 1 // --- // -	Olfr1375-ps1	VSMUST0000007354	0.47	-2.14	1.01	0	1
39667	17547124	ENSMUST00000180074 // LOC101056195 // uncharacterized LOC101056195 // --- // 101056195	LOC101056195	VSMUST0000018007	0.47	-2.14	1.76	5.68E-14	1
4223	17208583	---	---	---	0.47	-2.14	5.69	4.26E-14	1
24256	17397373	ENSMUST00000158626 // Gm25714 // predicted gene, 25714 // --- // ---	Gm25714	VSMUST000001586;	0.47	-2.14	1.26	1.42E-14	1
1895	17203835	---	---	---	0.47	-2.14	7.36	4.26E-14	1
4949	17210053	---	---	---	0.47	-2.14	5.18	2.84E-14	1
5151	17210465	---	---	---	0.47	-2.15	0.95	0	1
31370	17468524	---	---	---	0.47	-2.15	1.24	0	1
1461	17202947	---	---	---	0.46	-2.15	2.06	5.68E-14	1
5331	17210835	---	---	---	0.46	-2.15	1.32	0	1
4922	17209997	---	---	---	0.46	-2.15	3.70	0	1
4711	17209573	---	---	---	0.46	-2.15	4.44	8.53E-14	1
7732	17236182	NM_011595 // Timp3 // tissue inhibitor of metalloproteinase 3 // 10 C1-D1 10 42.83 cM /	Timp3	NM_011595	0.46	-2.15	57.37	4.55E-13	1
2407	17204873	---	---	---	0.46	-2.15	4.61	2.13E-14	1
17384	17329298	NM_023794 // Etv5 // ets variant 5 // 16 B1 16 // 104156 /// ENSMUST00000079601 // Etv5	Etv5	NM_023794	0.46	-2.16	2.46	0	1
4937	17210029	---	---	---	0.46	-2.16	2.23	0	1
33165	17486292	ENSMUST00000166499 // Vmn2r44 // vomeronasal 2, receptor 44 // 7 A1 7 // 434113	Vmn2r44	VSMUST0000016649	0.46	-2.16	3.28	7.11E-14	1

34076	17494168	NM_146314 // Olfr601 // olfactory receptor 601 // 7 E3 7 // 258311 /// ENSMUST00000804	Olfr601	NM_146314	0.46	-2.16	0.73	0	1
618	17201233	---			0.46	-2.16	1.95	5.68E-14	1
39396	17545418	ENSMUST0000082731 // Gm24460 // predicted gene, 24460 // --- // ---	Gm24460	VSMUST0000082731	0.46	-2.16	2.06	0	1
33683	17490953	---			0.46	-2.16	0.93	0	1
24240	17397170	NM_011896 // Spry1 // sprouty homolog 1 (Drosophila) // 3 B 3 // 24063 /// XM_006535464	Spry1	NM_011896	0.46	-2.16	3.24	5.68E-14	1
2026	17204103	---			0.46	-2.16	2.35	0	1
12491	17283936	---			0.46	-2.16	2.39	0	1
5251	17210671	---			0.46	-2.16	2.97	5.68E-14	1
27184	17426695	---			0.46	-2.16	2.11	2.84E-14	1
2822	17205715	---			0.46	-2.16	2.03	2.84E-14	1
3094	17206271	---			0.46	-2.16	2.83	1.42E-13	1
39750	17547402	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.46	-2.16	3.59	0	1
17784	17333036	ENSMUST0000097423 // Rsph3a // radial spoke 3A homolog (Chlamydomonas) // 17 A1 17 //	Rsph3a	VSMUST0000097423	0.46	-2.16	0.73	5.68E-14	1
16744	17323057	NR_040574 // Pla2g10os // phospholipase A2, group X, opposite strand // 16 16 // 76684	Pla2g10os	NR_040574	0.46	-2.16	6.37	0	1
4762	17209675	---			0.46	-2.17	2.47	5.68E-14	1
7560	17234448	---			0.46	-2.17	3.26	7.11E-14	1
11575	17275594	ENSMUST00000103989 // Gm25760 // predicted gene, 25760 // --- // ---	Gm25760	VSMUST00000103989	0.46	-2.17	0.98	0	1
39694	17547223	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.46	-2.17	7.12	2.84E-14	1
39726	17547341	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.46	-2.17	7.12	2.84E-14	1
39738	17547375	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.46	-2.17	7.12	2.84E-14	1
39751	17547407	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.46	-2.17	7.12	2.84E-14	1
39752	17547410	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.46	-2.17	7.12	2.84E-14	1
29695	17453134	---			0.46	-2.17	0.92	5.68E-14	1
500	17200995	---			0.46	-2.17	1.89	1.42E-14	1
4305	17208747	---			0.46	-2.17	1.01	0	1
23527	17389936	ENSMUST0000082788 // Gm25857 // predicted gene, 25857 // --- // ---	Gm25857	VSMUST0000082788	0.46	-2.17	2.28	1.71E-13	1
25134	17405838	NR_040556 // Gm6634 // predicted gene 6634 // 3 E2 3 // 625901 /// ENSMUST00000180497 /	Gm6634	NR_040556	0.46	-2.17	2.41	1.71E-13	1
28469	17440335	NM_001104628 // Vmn2r17 // vomeronasal 2, receptor 17 // 5 F 5 // 384221 /// ENSMUST000	Vmn2r17	NM_001104628	0.46	-2.17	1.04	4.26E-14	1
18279	17337852	NM_172621 // Clic5 // chloride intracellular channel 5 // 17 17 C // 224796 /// XM_0065	Clic5	NM_172621	0.46	-2.17	0.79	0	1
3393	17206887	---			0.46	-2.17	1.59	1.14E-13	1
41139	17550556	ENSMUST0000082387 // mt-Tf // mitochondrially encoded tRNA phenylalanine // --- // ---	mt-Tf	VSMUST0000082387	0.46	-2.17	1.43	0	1
39607	17546743	---			0.46	-2.17	1.71	0	1
17439	17329864	NM_001145874 // Muc20 // mucin 20 // 16 B3 16 // 224116 /// NM_146071 // Muc20 // mucin	Muc20	NM_001145874	0.46	-2.18	1.21	2.84E-14	1
3165	17206413	---			0.46	-2.18	2.27	0	1
931	17201871	---			0.46	-2.18	4.13	1.42E-14	1
14927	17304155	NM_001270503 // Plac9b // placenta specific 9b // 14 A3 14 // 100039246 /// NM_207229 /	Plac9b	NM_001270503	0.46	-2.18	2.11	1.14E-13	1
14929	17304170	NM_001270503 // Plac9b // placenta specific 9b // 14 A3 14 // 100039246 /// NM_207229 /	Plac9b	NM_001270503	0.46	-2.18	2.11	1.14E-13	1
14180	17298654	ENSMUST00000104424 // Gm25498 // predicted gene, 25498 // --- // ---	Gm25498	VSMUST00000104424	0.46	-2.18	0.80	0	1
12179	17280978	ENSMUST00000158721 // Gm22663 // predicted gene, 22663 // --- // ---	Gm22663	VSMUST00000158721	0.46	-2.18	1.64	0	1
27783	17432749	---			0.46	-2.18	6.05	4.26E-14	1
29097	17447696	ENSMUST00000104085 // Gm22779 // predicted gene, 22779 // --- // ---	Gm22779	VSMUST00000104085	0.46	-2.18	1.54	5.68E-14	1
36135	17514333	ENSMUST0000099049 // Gm10719 // predicted gene 10719 // --- // ---	Gm10719	VSMUST0000099049	0.46	-2.19	1.96	0	1
39663	17547101	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 /// XM	LOC102635000	XM_006542015	0.46	-2.19	1.86	2.84E-14	1
39180	17543625	NM_009910 // Cxcr3 // chemokine (C-X-C motif) receptor 3 // X D X 44.58 cM // 12766 ///	Cxcr3	NM_009910	0.46	-2.19	11.19	0	1
2505	17205071	---			0.46	-2.19	3.00	0	1
2779	17205629	---			0.46	-2.19	2.92	2.84E-14	1
4557	17209261	---			0.46	-2.19	3.00	0	1
4181	17208497	---			0.46	-2.19	1.54	5.68E-14	1
38445	17537401	XM_006528462 // LOC102637761 // serine/arginine repetitive matrix protein 1-like // ---	LOC102637761	XM_006528462	0.46	-2.19	2.61	0	1
38451	17537442	XM_006528462 // LOC102637761 // serine/arginine repetitive matrix protein 1-like // ---	LOC102637761	XM_006528462	0.46	-2.19	2.61	0	1
5727	17215576	NM_001037136 // Agap1 // ArfGAP with GTPase domain, ankyrin repeat and PH domain 1 // 1	Agap1	NM_001037136	0.46	-2.19	6.16	0	1
14021	17296723	ENSMUST00000112787 // Gm3099 // predicted gene 3099 // 14 A1 14 // 100041019	Gm3099	VSMUST00000112787	0.46	-2.19	1.13	0	1
28148	17437213	NM_007646 // Cd38 // CD38 antigen // 5 B3 5 23.85 cM // 12494 /// ENSMUST0000030964 //	Cd38	NM_007646	0.46	-2.19	10.61	5.68E-14	1
3705	17207531	---			0.46	-2.19	1.30	0	1
2836	17205743	---			0.46	-2.19	3.51	1.14E-13	1
2908	17205891	---			0.46	-2.19	0.69	1.42E-14	1
38746	17539658	NM_001287530 // Arhgap6 // Rho GTPase activating protein 6 // X F5 X // 11856 /// NM_00	Arhgap6	NM_001287530	0.46	-2.19	2.67	1.14E-13	1
29240	17448784	---			0.46	-2.20	7.06	0	1
31988	17474726	NM_001166738 // Vmn1r104 // vomeronasal 1 receptor 104 // 7 A3 7 // 667135 /// NM_00116	Vmn1r104	NM_001166738	0.45	-2.20	2.01	0	1
15854	17313583	NM_010006 // Cyp2d9 // cytochrome P450, family 2, subfamily d, polypeptide 9 // 15 E1 1	Cyp2d9	NM_010006	0.45	-2.20	2.83	7.11E-15	1
1504	17203033	---			0.45	-2.21	1.70	5.68E-14	1
2019	17204089	---			0.45	-2.21	14.19	0	1
12547	17284334	ENSMUST00000103418 // Ighg2b // immunoglobulin heavy constant gamma 2B // --- // --- //	Ighg2b	VSMUST00000103418	0.45	-2.21	107.31	2.27E-13	1
4240	17208617	---			0.45	-2.21	1.81	5.68E-14	1
33319	17487527	NM_001166715 // Vmn1r120 // vomeronasal 1 receptor 120 // 7 A3 7 // 435953 /// ENSMUST0	Vmn1r120	NM_001166715	0.45	-2.21	2.07	2.84E-14	1
33355	17487617	NM_001166715 // Vmn1r120 // vomeronasal 1 receptor 120 // 7 A3 7 // 435953 /// ENSMUST0	Vmn1r120	NM_001166715	0.45	-2.21	2.07	2.84E-14	1
1055	17202123	---			0.45	-2.21	3.08	2.84E-14	1
23585	17390997	NM_177608 // Secisbp2l // SECIS binding protein 2-like // 2 F1 2 // 70354 /// ENSMUST00	Secisbp2l	NM_177608	0.45	-2.21	1.47	0	1
40989	17550136	---			0.45	-2.21	2.81	0	1
19244	17347440	NR_033463 // 4930429F11Rik // RIKEN cDNA 4930429F11 gene // 17 E3 17 // 74622	4930429F11Rik	NR_033463	0.45	-2.21	0.73	0	1
39252	17544290	ENSMUST00000180281 // Astx6 // amplified spermatogenic transcripts X encoded 6 // --- /	Astx6	VSMUST00000180281	0.45	-2.21	0.86	0	1
31375	17468530	---			0.45	-2.22	0.92	0	1
39736	17547368	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_023546 //	Gm20815	NM_001017394	0.45	-2.22	5.16	2.84E-14	1
39756	17547420	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_023546 //	Gm20815	NM_001017394	0.45	-2.22	5.16	2.84E-14	1
3368	17206837	---			0.45	-2.22	2.41	0	1
8767	17246388	NM_001085477 // Olfr765 // olfactory receptor 765 // 10 D3 10 // 544748 /// ENSMUST0000	Olfr765	NM_001085477	0.45	-2.22	0.82	0	1
1305	17202629	---			0.45	-2.22	0.82	0	1
23574	17390823	NM_001290993 // Slc30a4 // solute carrier family 30 (zinc transporter), member 4 // 2 E	Slc30a4	NM_001290993	0.45	-2.22	17.48	5.68E-14	1
26246	17417059	---			0.45	-2.22	1.19	0	1
40671	17549398	---			0.45	-2.23	1.14	2.84E-14	1
40862	17549784	---			0.45	-2.23	1.14	2.84E-14	1
857	17201719	---			0.45	-2.23	2.39	0	1
943	17201895	---			0.45	-2.23	2.39	0	1
10356	17262343	---			0.45	-2.23	0.74	5.68E-14	1
672	17201343	---			0.45	-2.23	0.88	0	1
11380	17273562	ENSMUST00000134226 // Gm12590 // predicted gene 12590 // --- // ---	Gm12590	VSMUST00000134226	0.45	-2.23	0.83	0	1
4368	17208873	---			0.45	-2.23	1.38	0	1
5196	17210557	---			0.45	-2.23	1.00	0	1
1508	17203041	---			0.45	-2.23	0.74	5.68E-14	1
10957	17268808	ENSMUST00000158598 // Gm25048 // predicted gene, 25048 // --- // ---	Gm25048	VSMUST00000158598	0.45	-2.23	1.32	0	1
36139	17514346	ENSMUST0000099042 // Gm10717 // predicted gene 10717 // --- // ---	Gm10717	VSMUST0000099042	0.45	-2.24	1.07	0	1
33672	17490878	NM_008654 // Ppp1r15a // protein phosphatase 1, regulatory (inhibitor) subunit 15A // 7	Ppp1r15a	NM_008654	0.45	-2.24	2.55	5.68E-14	1
24898	17403846	ENSMUST0000082576 // Gm22458 // predicted gene, 22458 // --- // ---	Gm22458	VSMUST0000082576	0.45	-2.24	2.60	0	1
29885	17455550	ENSMUST00000180345 // Gm25284 // predicted gene, 25284 // --- // ---	Gm25284	VSMUST00000180345	0.45	-2.24	1.17	0	1
36552	17517812	NM_011352 // Sema7a // sema domain, immunoglobulin domain (Ig), and GPI membrane anchor	Sema7a	NM_011352	0.45	-2.24	1.41	1.71E-13	1

4486	17209119	---			---	0.45	-2.24	2.12	5.68E-14	1
18005	17335129	NM_001166537 // Hmga1 // high mobility group AT-hook 1 // 17 A3.3 17 14.5 cM // 15361 /	Hmga1	NM_001166537	0.45	-2.24	2.23	0		1
3997	17208121	---		---	0.45	-2.24	1.21	5.68E-14	1	1
29451	17450196	ENSMUST00000142871 // Agpat9 // 1-acylglycerol-3-phosphate O-acyltransferase 9 // 5 E4	Agpat9	VSMUST0000014287	0.45	-2.24	1.84	0		1
3202	17206493	---		---	0.45	-2.25	4.88	5.68E-14	1	1
11158	17270607	---		---	0.45	-2.25	1.66	5.68E-14	1	1
40952	17549988	---		---	0.45	-2.25	1.66	5.68E-14	1	1
1581	17203189	---		---	0.44	-2.25	0.83	0		1
10353	17262340	---		---	0.44	-2.25	1.62	0		1
2123	17204297	---		---	0.44	-2.25	7.57	8.53E-14	1	1
3288	17206673	---		---	0.44	-2.25	2.61	2.84E-14	1	1
15058	17305599	ENSMUST00000168000 // Gm17173 // predicted gene 17173 // --- // ---	Gm17173	VSMUST0000016800	0.44	-2.25	3.88	0		1
13520	17291651	ENSMUST00000083909 // Gm25186 // predicted gene, 25186 // --- // ---	Gm25186	VSMUST0000008390	0.44	-2.25	2.66	2.84E-14	1	1
1421	17202865	---		---	0.44	-2.25	2.82	5.68E-14	1	1
1687	17203405	---		---	0.44	-2.25	7.74	0		1
31200	17467368	ENSMUST00000103306 // Igkv1-131 // immunoglobulin kappa variable 1-131 // --- // ---	Igkv1-131	VSMUST0000010330	0.44	-2.25	8.59	5.68E-14	1	1
4484	17209115	---		---	0.44	-2.25	1.46	0		1
3961	17208049	---		---	0.44	-2.25	1.62	0		1
14468	17300181	ENSMUST00000103706 // Traj35 // T cell receptor alpha joining 35 // --- // --- DQ18	Traj35	VSMUST0000010370	0.44	-2.26	48.09	0		1
10364	17262352	---		---	0.44	-2.26	3.03	1.14E-13	1	1
39710	17547281	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.44	-2.26	3.49	2.84E-14	1	1
32951	17484095	---		---	0.44	-2.26	5.46	0		1
33323	17487535	ENSMUST00000173886 // Gm8677 // predicted gene 8677 // 7 A3 7 // 667512 /// ENSMUST0000	Gm8677	VSMUST0000017388	0.44	-2.26	1.84	0		1
33359	17487625	ENSMUST00000173886 // Gm8677 // predicted gene 8677 // 7 A3 7 // 667512 /// ENSMUST0000	Gm8677	VSMUST0000017388	0.44	-2.26	1.84	0		1
1561	17203149	---		---	0.44	-2.26	3.15	1.42E-14	1	1
3714	17207549	---		---	0.44	-2.26	1.96	2.84E-14	1	1
477	17200949	---		---	0.44	-2.27	1.88	5.68E-14	1	1
22323	17377454	NM_001142410 // Gm14124 // predicted gene 14124 // 2 G3 2 // 100216455 /// ENSMUST00000	Gm14124	NM_001142410	0.44	-2.27	7.57	0		1
2395	17204849	---		---	0.44	-2.27	1.57	5.68E-14	1	1
17118	17326706	ENSMUST00000169531 // Gm17333 // predicted gene, 17333 // --- // ---	Gm17333	VSMUST0000016953	0.44	-2.27	0.76	7.11E-15	1	1
22145	17375503	ENSMUST00000047498 // AA467197 // expressed sequence AA467197 // 2 E5 2 // 433470 /// N	AA467197	VSMUST0000004749	0.44	-2.27	12.94	2.84E-13	1	1
22289	17377164	ENSMUST00000145579 // Gm14093 // predicted gene 14093 // --- // ---	Gm14093	VSMUST0000014557	0.44	-2.27	2.16	0		1
2037	17204125	---		---	0.44	-2.27	3.98	5.68E-14	1	1
2689	17205447	---		---	0.44	-2.27	3.72	0		1
11472	17274492	ENSMUST00000102225 // Gm24938 // predicted gene, 24938 // --- // --- ENSMUST0000010	Gm24938	VSMUST0000010222	0.44	-2.27	4.80	0		1
11473	17274494	ENSMUST00000102225 // Gm24938 // predicted gene, 24938 // --- // --- ENSMUST0000010	Gm24938	VSMUST0000010222	0.44	-2.27	4.80	0		1
32289	17477016	ENSMUST00000102225 // Gm24938 // predicted gene, 24938 // --- // --- ENSMUST0000010	Gm24938	VSMUST0000010222	0.44	-2.27	4.80	0		1
1172	17202361	---		---	0.44	-2.27	9.79	0		1
465	17200925	---		---	0.44	-2.28	3.45	1.14E-13	1	1
26692	17421462	---		---	0.44	-2.28	2.74	2.84E-14	1	1
407	17200805	---		---	0.44	-2.28	6.58	1.42E-14	1	1
12441	17283546	---		---	0.44	-2.28	1.50	0		1
15899	17314049	ENSMUST00000082547 // Gm23737 // predicted gene, 23737 // --- // ---	Gm23737	VSMUST0000008254	0.44	-2.28	2.14	1.14E-13	1	1
29916	17455722	ENSMUST00000165454 // Gm7963 // predicted gene 7963 // 5 E3 5 // 666169 /// ENSMUST0000	Gm7963	VSMUST0000016545	0.44	-2.28	3.14	2.84E-14	1	1
1473	17202971	---		---	0.44	-2.28	2.32	0		1
12496	17283941	---		---	0.44	-2.28	1.60	0		1
14884	17303685	XM_006519206 // Gm5458 // predicted gene 5458 // 14 A3 14 // 432825 /// ENSMUST00000163	Gm5458	XM_006519206	0.44	-2.29	1.99	0		1
36051	17513399	---		---	0.44	-2.29	1.56	0		1
2797	17205665	---		---	0.44	-2.29	5.42	5.68E-14	1	1
3065	17206213	---		---	0.44	-2.29	1.84	0		1
18274	17337796	BC010726 // Pla2g7 // phospholipase A2, group VII (platelet-activating factor acetylhyd	Pla2g7	BC010726	0.44	-2.29	6.01	5.68E-14	1	1
13857	17294738	NM_001081249 // Vcan // versican // 13 C3 13 45.5 cM // 13003 /// NM_001134474 // Vcan	Vcan	NM_001081249	0.44	-2.30	25.36	0		1
17530	17330769	XM_006543335 // LOC102643284 // adenosylhomocysteinase-like // --- // 102643284 /// ENS	LOC102643284	XM_006543335	0.44	-2.30	1.10	5.68E-14	1	1
3675	17207471	---		---	0.44	-2.30	2.08	0		1
24155	17396162	NM_009801 // Car2 // carbonic anhydrase 2 // 3 A1 3 3.23 cM // 12349 /// XM_006530050 /	Car2	NM_009801	0.44	-2.30	50.67	5.68E-14	1	1
4381	17208903	---		---	0.43	-2.30	1.37	0		1
2819	17205709	---		---	0.43	-2.30	3.60	0		1
1598	17203223	---		---	0.43	-2.30	6.16	2.84E-14	1	1
32453	17478956	ENSMUST00000089593 // Gm7551 // predicted gene 7551 // --- // ---	Gm7551	VSMUST0000008959	0.43	-2.30	0.91	0		1
25768	17412229	ENSMUST00000158184 // Gm24078 // predicted gene, 24078 // --- // ---	Gm24078	VSMUST0000015818	0.43	-2.30	2.23	2.84E-14	1	1
5028	17210213	---		---	0.43	-2.30	1.79	2.84E-14	1	1
1156	17202329	---		---	0.43	-2.31	4.34	5.68E-14	1	1
39695	17547226	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.43	-2.31	6.46	2.84E-14	1	1
39728	17547346	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.43	-2.31	6.46	2.84E-14	1	1
3742	17207605	---		---	0.43	-2.31	1.31	0		1
13190	17289160	ENSMUST00000143025 // Gm15622 // predicted gene 15622 // --- // --- AK016283 // Gm1	Gm15622	VSMUST0000014302	0.43	-2.31	0.84	2.84E-14	1	1
39744	17547389	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.43	-2.31	1.54	0		1
19949	17354430	ENSMUST00000117021 // Gm23335 // predicted gene, 23335 // --- // ---	Gm23335	VSMUST0000011702	0.43	-2.31	2.19	0		1
12492	17283937	---		---	0.43	-2.31	2.74	0		1
4673	17209497	---		---	0.43	-2.32	2.96	0		1
5564	17213548	NM_001077403 // Nrp2 // neuropilin 2 // 1 C2 1 // 18187 /// NM_001077404 // Nrp2 // neu	Nrp2	NM_001077403	0.43	-2.32	26.41	3.98E-13	1	1
3156	17206395	---		---	0.43	-2.32	3.05	2.84E-14	1	1
26000	17414507	ENSMUST00000156693 // Gm13773 // predicted gene 13773 // --- // ---	Gm13773	VSMUST0000015669	0.43	-2.32	1.05	0		1
1882	17203807	---		---	0.43	-2.32	0.99	2.84E-14	1	1
39526	17546450	NM_001025241 // Gm20747 // predicted gene, 20747 // Y A1 Y // 434960 /// ENSMUST0000018	Gm20747	NM_001025241	0.43	-2.32	5.24	0		1
39703	17547261	NM_001025241 // Gm20747 // predicted gene, 20747 // Y A1 Y // 434960 /// ENSMUST0000018	Gm20747	NM_001025241	0.43	-2.32	5.24	0		1
39746	17547394	NM_001025241 // Gm20747 // predicted gene, 20747 // Y A1 Y // 434960 /// ENSMUST0000018	Gm20747	NM_001025241	0.43	-2.32	5.24	0		1
3938	17208003	---		---	0.43	-2.32	1.35	2.84E-14	1	1
691	17201381	---		---	0.43	-2.32	0.97	5.68E-14	1	1
2734	17205537	---		---	0.43	-2.32	4.04	0		1
3093	17206269	---		---	0.43	-2.32	1.29	1.14E-13	1	1
4372	17208881	---		---	0.43	-2.32	3.18	0		1
31324	17468143	NM_008638 // Mthfd2 // methylenetetrahydrofolate dehydrogenase (NAD+ dependent), methen	Mthfd2	NM_008638	0.43	-2.32	3.08	0		1
3215	17206521	---		---	0.43	-2.33	1.25	7.11E-15	1	1
23241	17387700	NM_146590 // Olfr1085 // olfactory receptor 1085 // 2 E1 2 // 258583 /// ENSMUST0000009	Olfr1085	NM_146590	0.43	-2.33	1.15	0		1
1413	17202849	---		---	0.43	-2.33	2.89	0		1
39722	17547327	XM_006542015 // LOC102635000 // uncharacterized LOC102635000 // --- // 102635000 /// XM	LOC102635000	XM_006542015	0.43	-2.33	1.77	0		1
14446	17300137	ENSMUST00000103687 // Traj58 // T cell receptor alpha joining 58 // --- // ---	Traj58	VSMUST0000010368	0.43	-2.33	12.14	0		1
33773	17491596	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1
33774	17491598	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1
33776	17491602	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1
33777	17491604	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1
33779	17491608	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1
33780	17491610	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1
33781	17491612	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0		1

33782	17491614	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33783	17491616	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33784	17491618	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33785	17491620	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33786	17491622	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33787	17491624	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33789	17491628	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
33790	17491630	NR_002895 // Snord116 // small nucleolar RNA, C/D box 116 // 7 C 7 29.0 cM // 64243 ///	Snord116	NR_002895	0.43	-2.33	4.49	0	1
10293	17261838	---	---	---	0.43	-2.33	1.12	4.26E-14	1
30830	17463971	ENSMUST00000083948 // n-R5s168 // nuclear encoded rRNA 5S 168 // --- // ---	n-R5s168	VSMUST0000008394	0.43	-2.34	2.92	0	1
2586	17205237	---	---	---	0.43	-2.34	1.20	5.68E-14	1
4638	17209427	---	---	---	0.43	-2.34	1.20	5.68E-14	1
5468	17212252	NM_010553 // Il18rap // interleukin 18 receptor accessory protein // 1 B 1 // 16174 ///	Il18rap	NM_010553	0.43	-2.34	5.80	0	1
22812	17382357	ENSMUST00000083864 // Gm25518 // predicted gene, 25518 // --- // ---	Gm25518	VSMUST0000008386	0.43	-2.34	1.84	2.84E-14	1
3979	17208085	---	---	---	0.43	-2.34	3.09	5.68E-14	1
12595	17284474	---	---	---	0.43	-2.34	36.01	0	1
2010	17204071	---	---	---	0.43	-2.34	6.80	2.84E-14	1
38021	17533778	ENSMUST00000082725 // Gm26131 // predicted gene, 26131 // --- // ---	Gm26131	VSMUST0000008272	0.43	-2.34	1.06	0	1
39753	17547413	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_001025241	Gm20815	NM_001017394	0.43	-2.34	3.55	0	1
32252	17476750	ENSMUST00000157682 // Gm24505 // predicted gene, 24505 // --- // ---	Gm24505	VSMUST0000015768	0.43	-2.34	2.74	0	1
4952	17210059	---	---	---	0.43	-2.34	4.40	0	1
5078	17210319	---	---	---	0.43	-2.34	2.51	2.27E-13	1
12485	17283930	NM_001164314 // Wars // tryptophanyl-tRNA synthetase // 12 12 F2 // 22375 /// NM_001164	Wars	NM_001164314	0.43	-2.35	1.87	0	1
15464	17309302	ENSMUST00000104531 // Gm25724 // predicted gene, 25724 // --- // ---	Gm25724	VSMUST0000010453	0.43	-2.35	1.98	0	1
25709	17411630	ENSMUST00000127180 // Gm11795 // predicted gene 11795 // --- // ---	Gm11795	VSMUST0000012718	0.43	-2.35	1.06	0	1
33130	17486039	NM_030739 // Vmn1r58 // vomeronasal 1 receptor 58 // 7 A 7 // 81014 /// ENSMUST0000010	Vmn1r58	NM_030739	0.43	-2.35	1.08	0	1
254	17200499	---	---	---	0.43	-2.35	2.51	8.53E-14	1
14447	17300139	ENSMUST00000103688 // Traj57 // T cell receptor alpha joining 57 // --- // ---	Traj57	VSMUST0000010368	0.43	-2.35	11.61	0	1
12162	17280842	NM_013562 // Ifrd1 // interferon-related developmental regulator 1 // 12 B 12 18.06 cM	Ifrd1	NM_013562	0.43	-2.35	3.36	0	1
252	17200495	---	---	---	0.43	-2.35	1.23	1.14E-13	1
36141	17514352	ENSMUST00000099051 // Gm10717 // predicted gene 10717 // --- // --- /// ENSMUST00000178	Gm10717	VSMUST0000009905	0.42	-2.35	1.59	0	1
529	17201055	---	---	---	0.42	-2.35	1.94	0	1
2794	17205659	---	---	---	0.42	-2.36	8.03	5.68E-14	1
5247	17210661	---	---	---	0.42	-2.36	3.29	0	1
34408	17496857	NM_009943 // Cox6a2 // cytochrome c oxidase subunit VIa polypeptide 2 // 7 F3 7 70.04 c	Cox6a2	NM_009943	0.42	-2.36	2.89	5.68E-14	1
2016	17204083	---	---	---	0.42	-2.36	7.23	5.68E-14	1
20859	17363058	NM_146681 // Olfr1424 // olfactory receptor 1424 // 19 C 19 // 258676 /// ENSMUST00000	Olfr1424	NM_146681	0.42	-2.36	1.66	0	1
39587	17546668	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.42	-2.36	6.45	2.84E-14	1
2772	17205615	---	---	---	0.42	-2.36	5.33	0	1
1951	17203949	---	---	---	0.42	-2.37	7.42	2.84E-14	1
12084	17280179	XR_381327 // 3110053B16Rik // RIKEN cDNA 3110053B16 gene // 12 A1.2 12 // 382686 /// EN	3110053B16Rik	XR_381327	0.42	-2.37	2.13	2.84E-14	1
1354	17202729	---	---	---	0.42	-2.37	6.76	2.84E-14	1
7305	17232162	NM_011704 // Vnn1 // vanin 1 // 10 10 A1-B2 // 22361 /// ENSMUST0000041416 // Vnn1 //	Vnn1	NM_011704	0.42	-2.37	3.26	2.84E-14	1
1960	17203967	---	---	---	0.42	-2.37	8.03	8.53E-14	1
4207	17208551	---	---	---	0.42	-2.37	1.75	0	1
15321	17308132	NM_026331 // Slc25a37 // solute carrier family 25, member 37 // 14 D2 14 // 67712 /// X	Slc25a37	NM_026331	0.42	-2.37	1.94	0	1
22404	17378301	---	---	---	0.42	-2.37	4.69	5.68E-14	1
39535	17546469	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001025241 /	Gm21943	NM_001017393	0.42	-2.37	4.40	0	1
8529	17243629	---	---	---	0.42	-2.37	1.19	0	1
3561	17207225	---	---	---	0.42	-2.37	3.38	0	1
39545	17546502	NM_001160135 // Gm20806 // predicted gene, 20806 // Y Y // 100039574 /// ENSMUST0000017	Gm20806	NM_001160135	0.42	-2.38	4.01	2.84E-14	1
3848	17207819	---	---	---	0.42	-2.38	2.24	5.68E-14	1
37717	17530782	NM_029103 // Manf // mesencephalic astrocyte-derived neurotrophic factor // 9 F1 9 57.9	Manf	NM_029103	0.42	-2.38	1.72	5.68E-14	1
1802	17203647	---	---	---	0.42	-2.39	3.55	5.68E-14	1
33324	17487537	ENSMUST00000174364 // Gm4201 // predicted gene 4201 // 7 A3 7 // 100043061 /// ENSMUST0	Gm4201	VSMUST0000017436	0.42	-2.39	2.33	2.84E-14	1
33360	17487627	ENSMUST00000174364 // Gm4201 // predicted gene 4201 // 7 A3 7 // 100043061 /// ENSMUST0	Gm4201	VSMUST0000017436	0.42	-2.39	2.33	2.84E-14	1
39524	17546444	NM_001103152 // Gm20831 // predicted gene, 20831 // Y Y // 100040223 /// NM_009220 // S	Gm20831	NM_001103152	0.42	-2.39	1.53	0	1
33317	17487523	NM_001166708 // Vmn1r119 // vomeronasal 1 receptor 119 // 7 A3 7 // 384696 /// ENSMUST0	Vmn1r119	NM_001166708	0.42	-2.39	1.76	0	1
33353	17487613	NM_001166708 // Vmn1r119 // vomeronasal 1 receptor 119 // 7 A3 7 // 384696 /// ENSMUST0	Vmn1r119	NM_001166708	0.42	-2.39	1.76	0	1
4264	17208665	---	---	---	0.42	-2.39	3.53	1.71E-13	1
25562	17410067	NM_031186 // Ndst3 // N-deacetylase/N-sulfotransferase (heparan glucosaminyl) 3 // 3 3	Ndst3	NM_031186	0.42	-2.39	1.50	0	1
1724	17203483	---	---	---	0.42	-2.40	6.63	2.84E-14	1
1570	17203167	---	---	---	0.42	-2.40	1.46	1.14E-13	1
1499	17203023	---	---	---	0.42	-2.40	3.61	1.71E-13	1
7976	17238646	NM_207620 // Olfr774 // olfactory receptor 774 // 10 D3 10 // 258232 /// ENSMUST0000009	Olfr774	NM_207620	0.42	-2.40	1.26	1.42E-14	1
16886	17324546	NM_198112 // Ostin // osteocrin // 16 B2 16 // 239790 /// XM_006522114 // Ostin // osteoc	Ostin	NM_198112	0.42	-2.41	1.75	0	1
19774	17352731	NM_008720 // Npc1 // Niemann-Pick type C1 // 18 A1 18 6.15 cM // 18145 /// ENSMUST00000	Npc1	NM_008720	0.42	-2.41	3.80	0	1
3418	17206939	---	---	---	0.41	-2.41	4.46	5.68E-14	1
33836	17491851	ENSMUST00000175471 // Gm25249 // predicted gene, 25249 // --- // ---	Gm25249	VSMUST0000017547	0.41	-2.41	2.38	5.68E-14	1
41016	17550278	ENSMUST00000175471 // Gm25249 // predicted gene, 25249 // --- // ---	Gm25249	VSMUST0000017547	0.41	-2.41	2.38	5.68E-14	1
30512	17460760	NM_053225 // Vmn1r50 // vomeronasal 1 receptor 50 // 6 D1 6 // 113852 /// ENSMUST000000	Vmn1r50	NM_053225	0.41	-2.41	1.01	4.26E-14	1
36158	17514515	NM_010809 // Mmp3 // matrix metalloproteinase 3 // 9 A1 9 2.46 cM // 17392 /// ENSMUST00	Mmp3	NM_010809	0.41	-2.41	4.91	2.84E-14	1
17653	17331720	NM_011782 // Adams5 // a disintegrin-like and metalloproteinase (reprolysin type) with	Adams5	NM_011782	0.41	-2.42	15.65	0	1
21159	17366213	---	---	---	0.41	-2.42	3.88	2.84E-14	1
39714	17547291	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_001025241	Gm20815	NM_001017394	0.41	-2.42	4.79	5.68E-14	1
16855	17324305	NM_001190804 // Dnajb11 // Dnaj (Hsp40) homolog, subfamily B, member 11 // 16 B1 16 //	Dnajb11	NM_001190804	0.41	-2.42	2.11	0	1
39537	17546476	NR_038299 // Gm20871 // Sycp3 like Y-linked pseudogene // Y Y // 100041346 /// ENSMUST0	Gm20871	NR_038299	0.41	-2.42	6.69	5.68E-14	1
21967	17373550	NM_001025246 // Trp53i11 // transformation related protein 53 inducible protein 11 // 2	Trp53i11	NM_001025246	0.41	-2.43	16.04	5.68E-14	1
6933	17228291	ENSMUST00000082926 // n-R5s220 // nuclear encoded rRNA 5S 220 // --- // ---	n-R5s220	VSMUST0000008292	0.41	-2.43	2.36	0	1
27972	17434875	---	---	---	0.41	-2.43	2.08	0	1
1530	17203087	---	---	---	0.41	-2.43	0.96	5.68E-14	1
3936	17207999	---	---	---	0.41	-2.43	3.96	1.42E-14	1
22288	17377144	NM_053195 // Slc24a3 // solute carrier family 24 (sodium/potassium/calcium exchanger),	Slc24a3	NM_053195	0.41	-2.43	10.34	5.68E-14	1
17109	17326638	ENSMUST00000157767 // Gm26307 // predicted gene, 26307 // --- // ---	Gm26307	VSMUST0000015776	0.41	-2.43	1.19	0	1
4175	17208485	---	---	---	0.41	-2.43	1.99	2.84E-14	1
39660	17547076	---	---	---	0.41	-2.44	3.23	5.68E-14	1
37170	17525007	NM_172920 // Dpy19l1 // dpy-19-like 1 (C. elegans) // 9 A4 9 // 244745 /// XM_006510296	Dpy19l1	NM_172920	0.41	-2.44	2.15	0	1
41152	17550582	ENSMUST00000082423 // mt-Tp // mitochondrially encoded tRNA proline // --- // ---	mt-Tp	VSMUST0000008242	0.41	-2.44	3.11	1.14E-13	1
1467	17202959	---	---	---	0.41	-2.44	2.46	0	1
36755	17520156	ENSMUST00000181449 // Gm26611 // predicted gene, 26611 // --- // ---	Gm26611	VSMUST0000018144	0.41	-2.45	2.33	0	1
3015	17206109	---	---	---	0.41	-2.45	1.57	0	1
17300	17328422	---	---	---	0.41	-2.45	1.22	7.11E-15	1
788	17201579	---	---	---	0.41	-2.45	2.96	0	1
2021	17204093	---	---	---	0.41	-2.45	5.20	5.68E-14	1

21282	17366864	ENSMUST00000116826 // Gm25316 // predicted gene, 25316 // --- // ---	Gm25316	VSMUST000001168:	0.41	-2.45	3.18	0	1
36138	17514343	ENSMUST00000075573 // Gm10717 // predicted gene 10717 // --- // ---	Gm10717	VSMUST000000755:	0.41	-2.46	1.50	0	1
14784	17302724	NM_008929 // Dnajc3 // Dnaj (Hsp40) homolog, subfamily C, member 3 // 14 E4 14 // 10003	Dnajc3	NM_008929	0.41	-2.46	1.43	0	1
28174	17437490	ENSMUST00000037618 // Rbpj // recombination signal binding protein for immunoglobulin k	Rbpj	VSMUST000000376:	0.41	-2.46	4.89	0	1
2458	17204975	---	---	---	0.41	-2.47	2.81	2.84E-14	1
39544	17546498	NM_001025241 // Gm20747 // predicted gene, 20747 // Y A1 Y // 434960 /// NM_001160135 /	Gm20747	NM_001025241	0.40	-2.47	4.08	0	1
23391	17388599	NM_183106 // Ttc17 // tetratricopeptide repeat domain 17 // 2 E1 2 51.69 cM // 74569 //	Ttc17	NM_183106	0.40	-2.47	1.63	0	1
1683	17203397	---	---	---	0.40	-2.47	4.47	5.68E-14	1
4812	17209777	---	---	---	0.40	-2.47	9.51	5.68E-14	1
1933	17203913	---	---	---	0.40	-2.47	8.40	2.84E-14	1
38461	17537513	XM_006528646 // LOC102640642 // uncharacterized LOC102640642 // --- // 102640642 /// EN	LOC102640642	XM_006528646	0.40	-2.48	7.77	2.84E-14	1
39864	17547674	XM_006516435 // LOC102636530 // ubiquitin-like protein 5-like // --- // 102636530	LOC102636530	XM_006516435	0.40	-2.48	1.20	0	1
38650	17538828	---	---	---	0.40	-2.48	1.38	0	1
169	17200325	---	---	---	0.40	-2.48	1.75	0	1
1485	17202995	---	---	---	0.40	-2.48	1.71	1.71E-13	1
5297	17210765	---	---	---	0.40	-2.48	4.90	8.53E-14	1
39760	17547436	---	---	---	0.40	-2.48	2.23	0	1
3896	17207915	---	---	---	0.40	-2.48	2.80	1.42E-14	1
914	17201835	---	---	---	0.40	-2.48	1.25	0	1
2833	17205737	---	---	---	0.40	-2.48	5.09	8.53E-14	1
5242	17210651	---	---	---	0.40	-2.48	2.65	1.14E-13	1
3247	17206587	---	---	---	0.40	-2.48	1.51	0	1
1641	17203311	---	---	---	0.40	-2.48	3.14	0	1
3077	17206237	---	---	---	0.40	-2.49	3.77	2.13E-14	1
1548	17203123	---	---	---	0.40	-2.49	1.16	0	1
5012	17210181	---	---	---	0.40	-2.49	1.86	1.14E-13	1
5192	17210549	---	---	---	0.40	-2.49	2.49	1.71E-13	1
27395	17428712	---	---	---	0.40	-2.49	1.90	1.42E-14	1
12488	17283933	---	---	---	0.40	-2.49	2.56	0	1
40624	17549296	---	---	---	0.40	-2.50	41.08	0	1
4813	17209779	---	---	---	0.40	-2.50	2.64	2.84E-14	1
22411	17378310	---	---	---	0.40	-2.50	1.19	5.68E-14	1
2795	17205661	---	---	---	0.40	-2.50	5.04	2.84E-14	1
3946	17208019	---	---	---	0.40	-2.51	1.43	0	1
15347	17308455	---	---	---	0.40	-2.51	1.34	0	1
2488	17205037	---	---	---	0.40	-2.51	3.76	0	1
4540	17209227	---	---	---	0.40	-2.51	3.76	0	1
36435	17516564	NM_021395 // Hyou1 // hypoxia up-regulated 1 // 9 9 B // 12282 /// ENSMUST00000066601 /	Hyou1	NM_021395	0.40	-2.51	2.54	0	1
29898	17455639	XM_006536388 // LOC624931 // PRAME family member 12-like // 5 5 // 624931 /// XM_006536	LOC624931	XM_006536388	0.40	-2.51	3.02	0	1
3262	17206617	---	---	---	0.40	-2.51	6.39	0	1
39713	17547288	ENSMUST00000181549 // Gm20854 // predicted gene, 20854 // Y Y // 100040911 /// BC087891	Gm20854	VSMUST0000018154	0.40	-2.51	6.64	0	1
39734	17547362	ENSMUST00000181549 // Gm20854 // predicted gene, 20854 // Y Y // 100040911 /// BC087891	Gm20854	VSMUST0000018154	0.40	-2.51	6.64	0	1
37903	17532653	ENSMUST00000082423 // mt-Tp // mitochondrially encoded tRNA proline // --- // ---	mt-Tp	VSMUST000000824:	0.40	-2.51	3.87	5.68E-14	1
4198	17208531	---	---	---	0.40	-2.52	1.85	2.84E-14	1
13535	17291787	NM_001033167 // Slc22a23 // solute carrier family 22, member 23 // 13 A3.3 13 // 73102	Slc22a23	NM_001033167	0.40	-2.52	2.51	0	1
9842	17257066	---	---	---	0.40	-2.52	2.32	1.14E-13	1
38211	17535298	NM_001164190 // Mtm1 // X-linked myotubular myopathy gene 1 // X A7.2 X 36.55 cM // 177	Mtm1	NM_001164190	0.40	-2.52	1.71	1.71E-13	1
4036	17208201	---	---	---	0.40	-2.53	1.97	5.68E-14	1
39680	17547172	ENSMUST00000178332 // Gm21882 // predicted gene, 21882 // --- // ---	Gm21882	VSMUST000001783:	0.40	-2.53	3.03	0	1
12487	17283932	---	---	---	0.40	-2.53	2.78	0	1
13296	17290083	NM_010330 // Emb // embigin // 13 D2.3 13 // 13723 /// ENSMUST0000022242 // Emb // emb	Emb	NM_010330	0.40	-2.53	3.31	0	1
5148	17210459	---	---	---	0.39	-2.53	2.41	5.68E-14	1
19343	17348455	---	---	---	0.39	-2.53	1.08	0	1
14208	17298923	ENSMUST00000104118 // Gm22469 // predicted gene, 22469 // --- // ---	Gm22469	VSMUST000001041:	0.39	-2.54	2.30	2.84E-14	1
28405	17439622	ENSMUST00000092990 // Agpat9 // 1-acylglycerol-3-phosphate O-acyltransferase 9 // 5 E4	Agpat9	VSMUST000000929:	0.39	-2.54	3.06	1.42E-13	1
25441	17408646	ENSMUST00000122559 // Gm25325 // predicted gene, 25325 // --- // ---	Gm25325	VSMUST000001225:	0.39	-2.54	1.50	0	1
33350	17487607	NM_001166723 // Vmn1r94 // vomeronasal 1 receptor 94 // 7 A3 7 // 620537 /// NM_0011667	Vmn1r94	NM_001166723	0.39	-2.54	2.48	2.84E-14	1
39529	17546457	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001017394 /	Gm21943	NM_001017393	0.39	-2.54	4.16	0	1
39531	17546461	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.39	-2.54	2.11	0	1
39532	17546463	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.39	-2.54	2.11	0	1
39533	17546465	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.39	-2.54	2.11	0	1
39754	17547415	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001017394 /	Gm21943	NM_001017393	0.39	-2.54	4.16	0	1
4863	17209879	---	---	---	0.39	-2.54	13.76	0	1
2850	17205775	---	---	---	0.39	-2.54	5.36	5.68E-14	1
21749	17371800	NM_008397 // Itga6 // integrin alpha 6 // 2 C2-C3 2 42.79 cM // 16403 /// NM_001277970	Itga6	NM_008397	0.39	-2.54	2.43	1.14E-13	1
39634	17546984	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_001017393	Gm20815	NM_001017394	0.39	-2.54	4.60	0	1
31989	17474728	NM_001166844 // Vmn1r100 // vomeronasal 1 receptor 100 // 7 A3 7 // 100043536 /// NM_03	Vmn1r100	NM_001166844	0.39	-2.55	2.60	2.84E-14	1
4843	17209839	---	---	---	0.39	-2.55	6.37	5.68E-14	1
15575	17310673	NM_020332 // Ank // progressive ankylosis // 15 B1 15 10.23 cM // 11732 /// ENSMUST0000	Ank	NM_020332	0.39	-2.55	2.91	0	1
1481	17202987	---	---	---	0.39	-2.55	2.17	1.42E-14	1
1157	17202331	---	---	---	0.39	-2.55	2.04	2.84E-14	1
36134	17514330	ENSMUST00000143083 // Gm10721 // predicted gene 10721 // --- // --- /// ENSMUST00000178	Gm10721	VSMUST000001430:	0.39	-2.55	1.63	0	1
4677	17209505	---	---	---	0.39	-2.55	1.42	0	1
720	17201441	---	---	---	0.39	-2.55	1.14	2.84E-14	1
31992	17474736	NM_001166750 // Vmn1r143 // vomeronasal 1 receptor 143 // 7 A3 7 // 667469 /// NM_00116	Vmn1r143	NM_001166750	0.39	-2.55	2.50	0	1
32010	17474795	NM_001166750 // Vmn1r143 // vomeronasal 1 receptor 143 // 7 A3 7 // 667469 /// NM_00116	Vmn1r143	NM_001166750	0.39	-2.55	2.50	0	1
4700	17209551	---	---	---	0.39	-2.56	2.52	2.84E-14	1
2862	17205799	---	---	---	0.39	-2.56	1.37	2.84E-14	1
13750	17293706	NM_009984 // Ctsl // cathepsin L // 13 B3 13 33.26 cM // 13039 /// XM_006517081 // Ctsl	Ctsl	NM_009984	0.39	-2.56	22.26	5.68E-14	1
15501	17309664	NR_033325 // Gm5089 // predicted gene 5089 // 14 E5 14 // 328479 /// ENSMUST00000081580	Gm5089	NR_033325	0.39	-2.56	1.31	0	1
32000	17474759	NM_001166744 // Vmn1r116 // vomeronasal 1 receptor 116 // 7 A3 7 // 667268 /// NM_00116	Vmn1r116	NM_001166744	0.39	-2.56	2.54	0	1
32004	17474774	NM_001166744 // Vmn1r116 // vomeronasal 1 receptor 116 // 7 A3 7 // 667268 /// NM_00116	Vmn1r116	NM_001166744	0.39	-2.56	2.54	0	1
32015	17474807	NM_001166744 // Vmn1r116 // vomeronasal 1 receptor 116 // 7 A3 7 // 667268 /// NM_00116	Vmn1r116	NM_001166744	0.39	-2.56	2.54	0	1
1599	17203225	---	---	---	0.39	-2.56	1.77	0	1
16525	17320842	ENSMUST00000158935 // Gm24668 // predicted gene, 24668 // --- // ---	Gm24668	VSMUST000001589:	0.39	-2.57	1.65	1.07E-14	1
36978	17522812	ENSMUST00000116759 // Mir467h // microRNA 467h // --- // ---	Mir467h	VSMUST000001167:	0.39	-2.57	2.46	1.14E-13	1
1043	17202097	---	---	---	0.39	-2.57	2.77	0	1
12494	17283939	---	---	---	0.39	-2.57	2.17	0	1
4319	17208775	---	---	---	0.39	-2.57	4.08	5.68E-14	1
33123	17486008	NM_009028 // Rasl2-9 // RAS-like, family 2, locus 9 // 7 A1 7 // 19428 /// ENSMUST000000	Rasl2-9	NM_009028	0.39	-2.58	1.00	0	1
4444	17209035	---	---	---	0.39	-2.59	5.60	0	1
39635	17546989	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001017394 /	Gm21943	NM_001017393	0.39	-2.59	5.44	2.84E-14	1
3903	17207929	---	---	---	0.39	-2.59	5.31	0	1
39698	17547235	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.39	-2.59	1.96	0	1
39732	17547355	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.39	-2.59	1.96	0	1

1941	17203929	---	---	---	---	0.39	-2.59	8.82	5.68E-14	1	
2704	17205477	---	---	---	---	0.39	-2.59	7.88	1.14E-13	1	
2522	17205105	---	---	---	---	0.39	-2.60	2.05	0	1	
4574	17209295	---	---	---	---	0.39	-2.60	2.05	0	1	
18613	17341303	NM_177316 // Fpr-rs6 // formyl peptide receptor, related sequence 6 // 17 A3.2 17 // 32	Fpr-rs6	NM_177316	0.38	-2.60	1.35	7.11E-15	1	1	
17732	17332340	---	---	---	---	0.38	-2.60	2.49	0	1	
3821	17207765	---	---	---	---	0.38	-2.60	2.66	0	1	
17318	17328625	NM_022324 // Sdf2l1 // stromal cell-derived factor 2-like 1 // 16 A3 16 // 64136 /// EN	Sdf2l1	NM_022324	0.38	-2.61	3.53	0	1	1	
898	17201803	---	---	---	---	0.38	-2.61	1.99	2.84E-14	1	
984	17201979	---	---	---	---	0.38	-2.61	1.99	2.84E-14	1	
1409	17202841	---	---	---	---	0.38	-2.61	3.64	5.68E-14	1	
144	17200275	---	---	---	---	0.38	-2.61	1.95	0	1	
39773	17547468	---	---	---	---	0.38	-2.62	1.88	0	1	
39547	17546509	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.38	-2.62	5.73	2.84E-14	1	1	
4482	17209111	---	---	---	---	0.38	-2.62	4.60	0	1	
4804	17209761	---	---	---	---	0.38	-2.62	15.54	2.84E-14	1	
21213	17366724	NR_030469 // Mir669b // microRNA 669b // 2 2 // 735255 /// ENSMUST00000102172 // Mir669	Mir669b	NR_030469	0.38	-2.62	1.21	0	1	1	
701	17201403	---	---	---	---	0.38	-2.63	2.42	2.84E-14	1	
12350	17282664	NM_001271705 // Pgf // placental growth factor // 12 D 12 39.58 cM // 18654 /// NM_0088	Pgf	NM_001271705	0.38	-2.63	9.47	0	1	1	
15154	17306419	---	---	---	---	0.38	-2.63	3.56	8.53E-14	1	
153	17200293	---	---	---	---	0.38	-2.63	5.45	5.68E-14	1	
38446	17537409	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.38	-2.63	6.78	2.84E-14	1	1	
38452	17537450	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.38	-2.63	6.78	2.84E-14	1	1	
38457	17537488	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.38	-2.63	6.78	2.84E-14	1	1	
7805	17236900	NM_013598 // Kitl // kit ligand // 10 D1 10 51.4 cM // 17311 /// ENSMUST00000020129 //	Kitl	NM_013598	0.38	-2.63	30.84	5.68E-14	1	1	
4174	17208483	---	---	---	---	0.38	-2.64	1.40	1.42E-14	1	
32070	17475198	---	---	---	---	0.38	-2.64	1.92	2.84E-14	1	
2632	17205329	---	---	---	---	0.38	-2.64	6.50	0	1	
2232	17204519	---	---	---	---	0.38	-2.64	15.74	8.53E-14	1	
11714	17277134	NM_134188 // Acot2 // acyl-CoA thioesterase 2 // 12 12 D3 // 171210 /// ENSMUST000000021	Acot2	NM_134188	0.38	-2.64	9.29	1.14E-13	1	1	
39558	17546550	NR_038299 // Gm20871 // Sycp3 like Y-linked pseudogene // Y Y // 100041346 /// ENSMUST0	Gm20871	NR_038299	0.38	-2.65	6.34	5.68E-14	1	1	
12562	17284379	ENSMUST00000103444 // Ighv5-4 // immunoglobulin heavy variable 5-4 // --- // --- AK	Ighv5-4	VSMUST0000010344	0.38	-2.65	99.28	2.27E-13	1	1	
13083	17288225	XR_382577 // Gm17353 // zinc finger protein 845-like // 13 13 34.5 cM // 100502941 ///	Gm17353	XR_382577	0.38	-2.65	1.45	1.78E-14	1	1	
24561	17400365	NM_007802 // Ctsk // cathepsin K // 3 F2.1 3 40.74 cM // 13038 /// ENSMUST00000015664 /	Ctsk	NM_007802	0.38	-2.65	48.62	3.41E-13	1	1	
786	17201575	---	---	---	---	0.38	-2.65	2.73	2.84E-14	1	
32008	17474789	NM_001166738 // Vmn1r104 // vomeronasal 1 receptor 104 // 7 A3 7 // 667135 /// NM_00116	Vmn1r104	NM_001166738	0.38	-2.65	2.45	2.84E-14	1	1	
31990	17474730	NM_001166738 // Vmn1r104 // vomeronasal 1 receptor 104 // 7 A3 7 // 667135 /// NM_00116	Vmn1r104	NM_001166738	0.38	-2.66	2.44	2.84E-14	1	1	
41142	17550562	ENSMUST00000082403 // mt-Ts1 // mitochondrially encoded tRNA serine 1 // --- // ---	mt-Ts1	VSMUST0000008240	0.38	-2.66	2.44	0	1	1	
39541	17546488	ENSMUST00000177552 // LOC101056195 // uncharacterized LOC101056195 // --- // 101056195	LOC101056195	VSMUST0000017755	0.38	-2.66	3.54	0	1	1	
2655	17205377	---	---	---	---	0.38	-2.66	2.58	0	1	
39586	17546666	ENSMUST00000179309 // Gm21732 // predicted gene, 21732 // --- // --- /// ENSMUST0000017	Gm21732	VSMUST0000017930	0.38	-2.66	8.74	0	1	1	
2726	17205521	---	---	---	---	0.38	-2.66	8.42	0	1	
36133	17514328	---	---	---	---	0.38	-2.66	2.09	0	1	
4062	17208255	---	---	---	---	0.37	-2.67	1.38	0	1	
2627	17205319	---	---	---	---	0.37	-2.67	2.38	2.84E-14	1	
363	17200717	---	---	---	---	0.37	-2.67	6.12	8.53E-14	1	
31079	17466505	ENSMUST00000182751 // Rbpsuh-rs3 // recombining binding protein suppressor of hairless	Rbpsuh-rs3	VSMUST0000018275	0.37	-2.67	8.28	0	1	1	
33358	17487623	NM_001166712 // Vmn1r151 // vomeronasal 1 receptor 151 // 7 A3 7 // 435947 /// NM_00116	Vmn1r151	NM_001166712	0.37	-2.68	2.60	0	1	1	
73	17200131	---	---	---	---	0.37	-2.68	5.14	8.53E-14	1	
29317	17449332	---	---	---	---	0.37	-2.68	1.94	1.42E-14	1	
1488	17203001	---	---	---	---	0.37	-2.68	1.67	1.14E-13	1	
35029	17502811	ENSMUST00000182279 // Gm4891 // predicted gene 4891 // --- // ---	Gm4891	VSMUST0000018227	0.37	-2.68	2.18	3.55E-15	1	1	
38448	17537423	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.37	-2.68	6.97	2.84E-14	1	1	
38450	17537437	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.37	-2.68	6.97	2.84E-14	1	1	
38456	17537483	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.37	-2.68	6.97	2.84E-14	1	1	
38459	17537502	XM_006528435 // Astx // amplified spermatogenic transcripts X encoded // --- // 1001133	Astx	XM_006528435	0.37	-2.68	6.97	2.84E-14	1	1	
39699	17547238	---	---	---	---	0.37	-2.68	2.88	1.42E-14	1	
12489	17283934	---	---	---	---	0.37	-2.68	1.82	5.68E-14	1	
22133	17375327	NM_001205369 // Casc4 // cancer susceptibility candidate 4 // 2 E5 2 // 319996 /// NM_0	Casc4	NM_001205369	0.37	-2.69	13.96	0	1	1	
1728	17203491	---	---	---	---	0.37	-2.69	3.36	0	1	
4172	17208479	---	---	---	---	0.37	-2.69	2.78	0	1	
12546	17284327	ENSMUST00000103416 // Ighg2c // immunoglobulin heavy constant gamma 2C // --- // ---	Ighg2c	VSMUST0000010341	0.37	-2.69	10.36	5.68E-14	1	1	
1004	17202019	---	---	---	---	0.37	-2.69	2.27	0	1	
32297	17477073	NM_172900 // Siglecg // sialic acid binding Ig-like lectin G // 7 B4 7 // 243958 /// XM	Siglecg	NM_172900	0.37	-2.70	10.52	0	1	1	
20224	17357234	---	---	---	---	0.37	-2.70	1.36	2.84E-14	1	
27173	17426563	ENSMUST00000104124 // Gm24170 // predicted gene, 24170 // --- // ---	Gm24170	VSMUST0000010412	0.37	-2.70	1.31	0	1	1	
2253	17204561	---	---	---	---	0.37	-2.70	3.09	0	1	
3362	17206825	---	---	---	---	0.37	-2.70	2.90	2.84E-14	1	
4753	17209657	---	---	---	---	0.37	-2.70	11.19	1.14E-13	1	
8382	17241981	NM_001277132 // Gm867 // predicted gene 867 // 10 C1 10 // 333670 /// NM_008606 // Mmp1	Gm867	NM_001277132	0.37	-2.71	10.05	5.68E-14	1	1	
2459	17204977	---	---	---	---	0.37	-2.71	5.01	5.68E-14	1	
630	17201259	---	---	---	---	0.37	-2.71	2.66	1.71E-13	1	
3902	17207927	---	---	---	---	0.37	-2.71	1.81	0	1	
31239	17467471	ENSMUST00000103363 // Igvk4-50 // immunoglobulin kappa variable 4-50 // --- // ---	Igvk4-50	VSMUST0000010336	0.37	-2.72	97.66	5.68E-14	1	1	
12495	17283940	---	---	---	---	0.37	-2.72	2.07	0	1	
4978	17210111	---	---	---	---	0.37	-2.72	12.33	0	1	
33739	17491493	ENSMUST00000104168 // Gm26288 // predicted gene, 26288 // --- // ---	Gm26288	VSMUST0000010416	0.37	-2.72	2.68	0	1	1	
2818	17205707	---	---	---	---	0.37	-2.73	1.94	5.68E-14	1	
15573	17310661	NM_177597 // March11 // membrane-associated ring finger (C3HC4) 11 // 15 B1 15 // 21114	11-Mar	NM_177597	0.37	-2.73	15.46	0	1	1	
660	17201319	---	---	---	---	0.37	-2.73	1.87	0	1	
1565	17203157	---	---	---	---	0.37	-2.73	2.40	0	1	
33753	17491535	ENSMUST00000180342 // Gm23862 // predicted gene, 23862 // --- // ---	Gm23862	VSMUST0000018034	0.37	-2.74	4.51	0	1	1	
6905	17227828	NM_008869 // Pla2g4a // phospholipase A2, group IVA (cytosolic, calcium-dependent) // 1	Pla2g4a	NM_008869	0.36	-2.74	15.92	2.84E-13	1	1	
3164	17206411	---	---	---	---	0.36	-2.76	5.97	0	1	
38045	17533946	NM_001168337 // Gm2825 // predicted gene 2825 // X A3.1 X // 100040533 /// ENSMUST00000	Gm2825	NM_001168337	0.36	-2.77	1.48	0	1	1	
25790	17412539	NM_027491 // Rragd // Ras-related GTP binding D // 4 A5 4 14.57 cM // 52187 /// ENSMUST	Rragd	NM_027491	0.36	-2.78	2.41	2.56E-13	1	1	
39657	17547065	ENSMUST00000177878 // Gm21788 // predicted gene, 21788 // --- // --- /// XR_406179 // S	Gm21788	VSMUST0000017787	0.36	-2.78	5.17	0	1	1	
5840	17216751	---	---	---	---	0.36	-2.78	3.94	8.53E-14	1	
5903	17217440	NM_028057 // Cyb5r1 // cytochrome b5 reductase 1 // 1 E4 1 // 72017 /// ENSMUST00000027	Cyb5r1	NM_028057	0.36	-2.79	8.13	5.68E-14	1	1	
1588	17203203	---	---	---	---	0.36	-2.80	2.19	0	1	
35704	17509962	ENSMUST00000158489 // Gm25906 // predicted gene, 25906 // --- // ---	Gm25906	VSMUST0000015848	0.36	-2.80	1.52	5.68E-14	1	1	
3820	17207763	---	---	---	---	0.36	-2.80	1.32	0	1	
7085	17230014	ENSMUST00000090406 // BC094916 // cDNA sequence BC094916 // 1 H3 1 // 545384 /// ENSMUS	BC094916	VSMUST0000009040	0.36	-2.81	29.33	0	1	1	
9076	17249034	ENSMUST00000175153 // Gm23813 // predicted gene, 23813 // --- // ---	Gm23813	VSMUST0000017515	0.36	-2.81	2.74	0	1	1	
395	17200781	---	---	---	---	0.36	-2.81	10.41	5.68E-14	1	1

1721	17203477	---	---	0.36	-2.82	9.81	0	1	
1451	17202927	---	---	0.35	-2.82	1.60	2.84E-14	1	
37693	17530406	NM_019807 // Acpp // acid phosphatase, prostate // 9 F1 9 // 56318 /// NM_207668 // Acp	Acpp	NM_019807	0.35	-2.83	8.41	5.68E-14	1
34902	17501502	ENSMUST00000157507 // Gm22586 // predicted gene, 22586 // --- // ---	Gm22586	VSMUST0000015750	0.35	-2.83	1.49	0	1
5181	17210527	---	---	0.35	-2.83	2.44	2.84E-14	1	
1092	17202199	---	---	0.35	-2.84	2.82	2.84E-14	1	
7088	17230034	NM_001204910 // Al607873 // expressed sequence Al607873 // 1 H3 1 // 226691 /// ENSMUST	Al607873	NM_001204910	0.35	-2.84	3.52	2.84E-14	1
36767	17520254	NM_001003911 // Adamts7 // a disintegrin-like and metallopeptidase (reprolysins type) wi	Adamts7	NM_001003911	0.35	-2.84	2.39	0	1
15646	17311457	ENSMUST00000104564 // Gm23530 // predicted gene, 23530 // --- // ---	Gm23530	VSMUST0000010456	0.35	-2.84	3.73	5.68E-14	1
1471	17202967	---	---	0.35	-2.84	1.92	5.68E-14	1	
39758	17547428	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001017394 /	Gm21943	NM_001017393	0.35	-2.84	5.68	0	1
2274	17204603	---	---	0.35	-2.85	4.87	2.84E-14	1	
255	17200501	---	---	0.35	-2.85	3.34	5.68E-14	1	
39697	17547231	NM_001017394 // Gm20815 // predicted gene, 20815 // Y B Y // 100039753 /// NM_001025241	Gm20815	NM_001017394	0.35	-2.85	5.35	0	1
12591	17284463	ENSMUST00000103461 // Igh-VS107 // immunoglobulin heavy chain (S107 family) // 12 F1 12	Igh-VS107	VSMUST0000010346	0.35	-2.86	103.44	5.68E-14	1
2631	17205327	---	---	0.35	-2.86	5.68	2.84E-14	1	
39517	17546423	NM_001103152 // Gm20831 // predicted gene, 20831 // Y Y // 100040223 /// NM_009220 // S	Gm20831	NM_001103152	0.35	-2.88	2.65	0	1
4419	17208985	---	---	0.35	-2.88	10.88	2.84E-14	1	
2754	17205577	---	---	0.35	-2.88	4.56	2.84E-14	1	
35671	17509687	ENSMUST00000175101 // Gm24333 // predicted gene, 24333 // --- // ---	Gm24333	VSMUST0000017510	0.35	-2.88	2.16	0	1
35764	17510585	---	---	0.35	-2.88	3.25	0	1	
24141	17396047	ENSMUST00000180874 // C030034L19Rik // RIKEN cDNA C030034L19 gene // --- // --- /// AKO	C030034L19Rik	VSMUST0000018087	0.35	-2.88	5.41	5.68E-14	1
13356	17290695	---	---	0.35	-2.88	2.64	1.71E-13	1	
12579	17284432	ENSMUST00000103463 // Ighv14-1 // immunoglobulin heavy variable 14-1 // --- // --- ///	Ighv14-1	VSMUST0000010346	0.35	-2.88	68.01	5.68E-14	1
25	17200035	---	---	0.35	-2.89	2.11	0	1	
649	17201297	---	---	0.35	-2.89	1.44	1.42E-14	1	
10455	17263154	NM_001011861 // Olfr331 // olfactory receptor 331 // 11 B1.3 11 // 100502887 /// ENSMUS	Olfr331	NM_001011861	0.35	-2.89	2.95	2.84E-14	1
31874	17473726	NM_134206 // Vmn1r74 // vomeronasal 1 receptor 74 // 7 A1 7 // 171240 /// ENSMUST000000	Vmn1r74	NM_134206	0.35	-2.90	1.31	0	1
32069	17475197	---	---	0.35	-2.90	5.29	2.13E-14	1	
526	17201049	---	---	0.34	-2.90	3.91	2.84E-14	1	
1601	17203231	---	---	0.34	-2.90	1.76	0	1	
537	17201071	---	---	0.34	-2.90	3.00	0	1	
29316	17449330	ENSMUST00000102029 // Gm24121 // predicted gene, 24121 // --- // --- /// ENSMUST0000017	Gm24121	VSMUST0000010202	0.34	-2.90	2.09	0	1
12277	17281922	---	---	0.34	-2.91	4.35	1.14E-13	1	
5214	17210593	---	---	0.34	-2.91	5.61	5.68E-14	1	
7907	17237833	ENSMUST00000175420 // Gm22183 // predicted gene, 22183 // --- // ---	Gm22183	VSMUST0000017542	0.34	-2.91	1.56	5.68E-14	1
39701	17547251	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000017766	Gm20738	NM_207162	0.34	-2.91	6.29	1.42E-14	1
20974	17364111	NM_009890 // Ch25h // cholesterol 25-hydroxylase // 19 C1 19 // 12642 /// ENSMUST000000	Ch25h	NM_009890	0.34	-2.92	38.40	2.27E-13	1
5226	17210617	---	---	0.34	-2.92	4.65	2.84E-14	1	
13237	17289547	NM_007960 // Etv1 // ets variant 1 // 12 A3-B1 12 17.99 cM // 14009 /// XM_006514965 //	Etv1	NM_007960	0.34	-2.93	14.62	5.68E-14	1
2018	17204087	---	---	0.34	-2.93	7.59	8.53E-14	1	
1357	17202735	---	---	0.34	-2.93	4.29	2.84E-14	1	
4960	17210075	---	---	0.34	-2.94	11.30	0	1	
16641	17322163	NM_013566 // Itgb7 // integrin beta 7 // 15 F3 15 57.39 cM // 16421 /// ENSMUST00000001	Itgb7	NM_013566	0.34	-2.94	23.17	0	1
2007	17204065	---	---	0.34	-2.95	9.29	0	1	
3834	17207791	---	---	0.34	-2.95	2.48	1.14E-13	1	
3374	17206849	---	---	0.34	-2.95	4.16	5.68E-14	1	
33321	17487531	NM_001166837 // Vmn1r114 // vomeronasal 1 receptor 114 // 7 A3 7 // 100042996 /// NM_00	Vmn1r114	NM_001166837	0.34	-2.96	2.65	0	1
33357	17487621	NM_001166837 // Vmn1r114 // vomeronasal 1 receptor 114 // 7 A3 7 // 100042996 /// NM_00	Vmn1r114	NM_001166837	0.34	-2.96	2.65	0	1
28879	17445440	NM_027399 // Steap1 // six transmembrane epithelial antigen of the prostate 1 // 5 A1 5	Steap1	NM_027399	0.34	-2.96	16.42	0	1
36132	17514326	ENSMUST00000151376 // Gm10722 // predicted gene 10722 // --- // ---	Gm10722	VSMUST0000015137	0.34	-2.96	3.31	5.68E-14	1
2188	17204427	---	---	0.34	-2.97	11.25	0	1	
4758	17209667	---	---	0.34	-2.97	11.91	5.68E-14	1	
6324	17221250	---	---	0.34	-2.97	2.49	0	1	
2093	17204237	---	---	0.34	-2.98	13.47	0	1	
1284	17202585	---	---	0.34	-2.98	6.55	0	1	
27978	17434973	NM_013657 // Sema3c // sema domain, immunoglobulin domain (Ig), short basic domain, sec	Sema3c	NM_013657	0.34	-2.98	38.28	1.71E-13	1
1918	17203881	---	---	0.34	-2.98	9.98	1.14E-13	1	
39518	17546425	ENSMUST00000179900 // Srsy // serine-rich, secreted, Y-linked // Y A1 Y // 385550 /// E	Srsy	VSMUST0000017990	0.34	-2.98	5.81	0	1
31993	17474738	NM_001122682 // Vmn1r132 // vomeronasal 1 receptor 132 // 7 A3 7 // 100043604 /// NM_00	Vmn1r132	NM_001122682	0.33	-2.99	2.79	0	1
21972	17373594	ENSMUST00000104819 // Gm23487 // predicted gene, 23487 // --- // ---	Gm23487	VSMUST0000010481	0.33	-2.99	1.47	5.68E-14	1
13350	17290666	NM_011118 // Prl2c3 // prolactin family 2, subfamily c, member 3 // 13 A1 13 // 18812 /	Prl2c3	NM_011118	0.33	-2.99	4.83	2.84E-14	1
1996	17204043	---	---	0.33	-3.01	7.37	2.84E-14	1	
22290	17377168	ENSMUST00000158086 // Gm22731 // predicted gene, 22731 // --- // ---	Gm22731	VSMUST0000015808	0.33	-3.01	3.59	0	1
39764	17547445	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001017394 /	Gm21943	NM_001017393	0.33	-3.01	5.31	0	1
1415	17202853	---	---	0.33	-3.02	9.15	2.84E-14	1	
28899	17445627	ENSMUST00000158619 // Gm24054 // predicted gene, 24054 // --- // ---	Gm24054	VSMUST0000015861	0.33	-3.03	3.25	5.68E-14	1
39702	17547256	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001017394 /	Gm21943	NM_001017393	0.33	-3.03	6.14	1.42E-14	1
25039	17405082	NM_011990 // Slc7a11 // solute carrier family 7 (cationic amino acid transporter, y+ sy	Slc7a11	NM_011990	0.33	-3.03	4.49	2.84E-14	1
33525	17489399	ENSMUST00000161684 // Fxyd5 // FXYD domain-containing ion transport regulator 5 // 7 B1	Fxyd5	VSMUST0000016168	0.33	-3.05	3.98	0	1
3775	17207673	---	---	0.33	-3.06	3.07	5.68E-14	1	
4356	17208849	---	---	0.33	-3.07	2.77	5.68E-14	1	
2561	17205187	---	---	0.33	-3.07	3.12	0	1	
4613	17209377	---	---	0.33	-3.07	3.12	0	1	
36136	17514337	ENSMUST00000099047 // Gm10719 // predicted gene 10719 // --- // ---	Gm10719	VSMUST0000009904	0.32	-3.08	4.34	0	1
39729	17547349	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.32	-3.08	6.74	0	1
41147	17550572	ENSMUST00000082416 // mt-Ts2 // mitochondrially encoded tRNA serine 2 // --- // ---	mt-Ts2	VSMUST0000008241	0.32	-3.08	2.38	0	1
5169	17210501	---	---	0.32	-3.08	3.76	0	1	
3544	17207191	---	---	0.32	-3.08	4.98	0	1	
22939	17383892	NM_008491 // Lcn2 // lipocalin 2 // 2 A3 2 22.09 cM // 16819 /// ENSMUST00000050785 //	Lcn2	NM_008491	0.32	-3.08	9.23	0	1
39742	17547385	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001025241 /	Gm21943	NM_001017393	0.32	-3.09	5.13	0	1
1592	17203211	---	---	0.32	-3.11	2.52	0	1	
2853	17205781	---	---	0.32	-3.11	4.27	1.42E-14	1	
1064	17202141	---	---	0.32	-3.11	1.84	0	1	
3945	17208017	---	---	0.32	-3.13	2.58	0	1	
1464	17202953	---	---	0.32	-3.13	2.13	2.84E-14	1	
8766	17246386	XM_887185 // Olfr764 // olfactory receptor 764 // 10 D3 10 // 622733	Olfr764	XM_887185	0.32	-3.14	2.92	0	1
6323	17221249	---	---	0.32	-3.14	9.23	0	1	
18108	17336414	ENSMUST00000041982 // H2-DMb2 // histocompatibility 2, class II, locus Mb2 // 17 B1 17	H2-DMb2	VSMUST0000004198	0.32	-3.14	46.81	0	1
1594	17203215	---	---	0.32	-3.17	2.16	1.42E-13	1	
1850	17203743	---	---	0.31	-3.18	2.45	0	1	
37059	17523680	NR_039546 // Mir101c // microRNA 101c // 9 9 1.84 cM // 100628572	Mir101c	NR_039546	0.31	-3.18	7.67	0	1
2212	17204479	---	---	0.31	-3.18	10.59	0	1	
1990	17204031	---	---	0.31	-3.18	11.24	8.53E-14	1	
4129	17208393	---	---	0.31	-3.19	2.96	0	1	

39730	17547351	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001025241 /	Gm21943	NM_001017393	0.31	-3.19	5.23	5.68E-14	1
39739	17547378	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001025241 /	Gm21943	NM_001017393	0.31	-3.19	5.23	5.68E-14	1
3276	17206647	---	---	---	0.31	-3.19	3.40	2.84E-14	1
5246	17210659	---	---	---	0.31	-3.19	6.54	5.68E-14	1
20888	17363160	ENSMUST00000104103 // Gm24124 // predicted gene, 24124 // --- // ---	Gm24124	VSMUST0000010410	0.31	-3.20	2.28	0	1
33343	17487586	NM_001166726 // Vmn1r127 // vomeronasal 1 receptor 127 // 7 A3 7 // 621561 /// NM_00116	Vmn1r127	NM_001166726	0.31	-3.20	4.02	0	1
33367	17487647	NM_001166726 // Vmn1r127 // vomeronasal 1 receptor 127 // 7 A3 7 // 621561 /// NM_00116	Vmn1r127	NM_001166726	0.31	-3.20	4.02	0	1
2191	17204433	---	---	---	0.31	-3.21	14.95	0	1
39530	17546459	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.31	-3.21	5.54	0	1
20337	17357910	NM_001011840 // Olfr1463 // olfactory receptor 1463 // 19 A 19 // 258120 /// ENSMUST000	Olfr1463	NM_001011840	0.31	-3.22	2.47	5.68E-14	1
4037	17208203	---	---	---	0.31	-3.23	4.42	1.42E-14	1
39743	17547387	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.31	-3.24	5.15	0	1
1007	17202025	---	---	---	0.31	-3.24	1.82	2.84E-14	1
3960	17208047	---	---	---	0.31	-3.25	2.56	5.68E-14	1
39642	17547012	NM_001103152 // Gm20831 // predicted gene, 20831 // Y Y // 100040223 /// NM_009220 // S	Gm20831	NM_001103152	0.31	-3.26	2.96	0	1
7657	17235358	ENSMUST00000158603 // Gm25044 // predicted gene, 25044 // --- // ---	Gm25044	VSMUST0000015860	0.31	-3.27	2.31	0	1
31194	17467316	NM_007836 // Gadd45a // growth arrest and DNA-damage-inducible 45 alpha // 6 C1 6 // 13	Gadd45a	NM_007836	0.31	-3.27	6.46	0	1
3965	17208057	---	---	---	0.31	-3.27	2.39	2.84E-14	1
39747	17547396	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.30	-3.29	6.10	0	1
3134	17206351	---	---	---	0.30	-3.30	2.82	2.84E-14	1
3097	17206277	---	---	---	0.30	-3.31	8.01	5.68E-14	1
9828	17257052	---	---	---	0.30	-3.35	3.46	4.26E-14	1
12168	17280893	NM_013760 // Dnajb9 // Dnaj (Hsp40) homolog, subfamily B, member 9 // 12 B1 12 // 27362	Dnajb9	NM_013760	0.30	-3.35	2.89	0	1
39534	17546467	NM_001017393 // Gm21943 // predicted gene, 21943 // Y A1 Y // 434935 /// NM_001025241 /	Gm21943	NM_001017393	0.30	-3.36	6.64	0	1
3599	17207315	---	---	---	0.30	-3.36	3.04	5.68E-14	1
22045	17374198	NM_146884 // Olfr1299 // olfactory receptor 1299 // 2 E5 2 // 258886	Olfr1299	NM_146884	0.30	-3.36	2.04	2.84E-14	1
1484	17202993	---	---	---	0.30	-3.37	1.92	2.84E-14	1
3482	17207067	---	---	---	0.30	-3.37	3.79	2.84E-14	1
33339	17487572	NM_001166725 // Vmn1r129 // vomeronasal 1 receptor 129 // 7 A3 7 // 621510 /// ENSMUSTO	Vmn1r129	NM_001166725	0.30	-3.38	7.91	9.95E-14	1
2857	17205789	---	---	---	0.30	-3.38	3.79	0	1
32001	17474761	NM_001122682 // Vmn1r132 // vomeronasal 1 receptor 132 // 7 A3 7 // 100043604 /// NM_03	Vmn1r132	NM_001122682	0.29	-3.39	2.50	0	1
4233	17208603	---	---	---	0.29	-3.39	7.73	0	1
39648	17547026	ENSMUST00000179900 // Srsy // serine-rich, secreted, Y-linked // Y A1 Y // 385550 /// E	Srsy	VSMUST0000017990	0.29	-3.41	5.31	0	1
17388	17329361	NM_001102409 // Kng2 // kininogen 2 // 16 B1 16 // 385643 /// NM_001102410 // Kng2 // k	Kng2	NM_001102409	0.29	-3.41	4.09	0	1
4785	17209723	---	---	---	0.29	-3.42	7.52	2.84E-14	1
1551	17203129	---	---	---	0.29	-3.43	1.85	1.42E-13	1
8689	17245422	NM_010441 // Hmga2 // high mobility group AT-hook 2 // 10 D2 10 67.94 cM // 15364 /// E	Hmga2	NM_010441	0.29	-3.44	10.45	0	1
39771	17547464	NM_207162 // Gm20738 // predicted gene, 20738 // Y C2 Y // 382133 /// ENSMUST0000009684	Gm20738	NM_207162	0.29	-3.45	6.64	5.68E-14	1
629	17201257	---	---	---	0.29	-3.45	3.08	0	1
30663	17462566	NM_008646 // Mug2 // murinoglobulin 2 // 6 F1 6 // 17837 /// ENSMUST00000081777 // Mug2	Mug2	NM_008646	0.29	-3.47	1.89	0	1
39759	17547434	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.29	-3.48	6.05	0	1
376	17200743	---	---	---	0.29	-3.48	6.17	5.68E-14	1
2442	17204943	---	---	---	0.29	-3.48	2.88	5.68E-14	1
10822	17267430	NM_025638 // Gdpd1 // glycerophosphodiester phosphodiesterase domain containing 1 // 11	Gdpd1	NM_025638	0.29	-3.48	9.30	0	1
37891	17532629	ENSMUST00000082416 // mt-Ts2 // mitochondrially encoded tRNA serine 2 // --- // --- //	mt-Ts2	VSMUST000000824:	0.29	-3.50	2.64	0	1
32071	17475200	---	---	---	0.29	-3.50	2.04	1.14E-13	1
39567	17546586	ENSMUST00000179309 // Gm21732 // predicted gene, 21732 // --- // --- // ENSMUST0000017	Gm21732	VSMUST0000017930	0.28	-3.51	12.47	2.84E-14	1
4161	17208457	---	---	---	0.28	-3.52	2.46	1.14E-13	1
32778	17481776	NM_001276301 // Ampd3 // adenosine monophosphate deaminase 3 // 7 E2-E3 7 57.85 cM // 1	Ampd3	NM_001276301	0.28	-3.52	3.39	1.71E-13	1
3381	17206863	---	---	---	0.28	-3.52	3.49	2.84E-14	1
39675	17547156	ENSMUST00000179309 // Gm21732 // predicted gene, 21732 // --- // --- // ENSMUST0000017	Gm21732	VSMUST0000017930	0.28	-3.53	10.56	2.84E-14	1
449	17200893	---	---	---	0.28	-3.54	5.42	8.53E-14	1
4014	17208155	---	---	---	0.28	-3.54	3.38	0	1
28250	17438318	---	---	---	0.28	-3.55	4.40	1.14E-13	1
637	17201273	---	---	---	0.28	-3.56	3.42	0	1
1834	17203711	---	---	---	0.28	-3.58	10.49	0	1
2287	17204629	---	---	---	0.28	-3.59	4.09	0	1
4965	17210085	---	---	---	0.28	-3.60	11.30	8.53E-14	1
39647	17547022	ENSMUST00000179900 // Srsy // serine-rich, secreted, Y-linked // Y A1 Y // 385550 /// E	Srsy	VSMUST0000017990	0.28	-3.62	5.94	0	1
39649	17547030	ENSMUST00000179900 // Srsy // serine-rich, secreted, Y-linked // Y A1 Y // 385550 /// E	Srsy	VSMUST0000017990	0.28	-3.62	5.94	0	1
39681	17547174	ENSMUST00000179900 // Srsy // serine-rich, secreted, Y-linked // Y A1 Y // 385550 /// E	Srsy	VSMUST0000017990	0.28	-3.62	5.94	2.84E-14	1
4513	17209173	---	---	---	0.28	-3.62	2.22	1.71E-13	1
39731	17547353	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.27	-3.65	6.08	0	1
39741	17547383	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.27	-3.65	6.08	0	1
39737	17547371	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.27	-3.65	6.61	0	1
10997	17269158	NM_027800 // Krtap2-4 // keratin associated protein 2-4 // 11 D 11 // 71453 /// ENSMUST	Krtap2-4	NM_027800	0.27	-3.67	2.61	0	1
39706	17547269	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.27	-3.69	6.46	0	1
37234	17525680	---	---	---	0.27	-3.69	3.14	0	1
41149	17550576	ENSMUST00000082417 // mt-TI2 // mitochondrially encoded tRNA leucine 2 // --- // ---	mt-TI2	VSMUST000000824:	0.27	-3.71	3.04	0	1
3741	17207603	---	---	---	0.27	-3.72	4.88	5.68E-14	1
128	17200243	---	---	---	0.27	-3.72	2.68	2.84E-14	1
1191	17202399	---	---	---	0.27	-3.72	3.12	5.68E-14	1
13709	17293348	NM_001145801 // Ctla2b // cytotoxic T lymphocyte-associated protein 2 beta // 13 13 //	Ctla2b	NM_001145801	0.27	-3.72	12.55	2.84E-14	1
337	17200665	---	---	---	0.27	-3.74	7.26	8.53E-14	1
2228	17204511	---	---	---	0.27	-3.75	17.54	2.84E-14	1
5325	17210823	---	---	---	0.26	-3.80	6.25	1.42E-14	1
39581	17546647	ENSMUST00000179309 // Gm21732 // predicted gene, 21732 // --- // --- // ENSMUST0000017	Gm21732	VSMUST0000017930	0.26	-3.81	12.00	5.68E-14	1
2854	17205783	---	---	---	0.26	-3.82	4.38	5.68E-14	1
13351	17290674	NM_031191 // Prl2c2 // prolactin family 2, subfamily c, member 2 // 13 A1 13 5.18 cM //	Prl2c2	NM_031191	0.26	-3.85	9.06	2.84E-14	1
29694	17453133	---	---	---	0.26	-3.85	2.59	1.42E-13	1
3949	17208025	---	---	---	0.26	-3.86	2.92	0	1
1085	17202185	---	---	---	0.26	-3.86	2.42	1.07E-14	1
3498	17207099	---	---	---	0.26	-3.87	3.31	0	1
1957	17203961	---	---	---	0.26	-3.91	11.12	0	1
3491	17207085	---	---	---	0.25	-3.93	3.61	1.42E-14	1
560	17201117	---	---	---	0.25	-3.94	4.64	5.68E-14	1
37894	17532635	ENSMUST00000082422 // mt-Tt // mitochondrially encoded tRNA threonine // --- // ---	mt-Tt	VSMUST000000824:	0.25	-3.94	2.88	0	1
1631	17203291	---	---	---	0.25	-3.95	3.10	1.42E-14	1
11100	17270083	---	---	---	0.25	-3.98	3.49	5.68E-14	1
2990	17206057	---	---	---	0.25	-3.98	3.30	0	1
2877	17205829	---	---	---	0.25	-3.99	2.47	1.71E-13	1
28419	17439805	NM_016779 // Dmp1 // dentin matrix protein 1 // 5 E5 5 50.61 cM // 13406 /// XM_0065347	Dmp1	NM_016779	0.25	-3.99	8.17	0	1
4288	17208713	---	---	---	0.25	-4.00	6.23	2.84E-14	1
5272	17210715	---	---	---	0.25	-4.00	2.27	0	1
1971	17203991	---	---	---	0.25	-4.02	5.71	2.84E-14	1

38880	17540902	ENSMUST00000179466 // Gm2964 // predicted gene 2964 // X A3.1 X // 100040781	Gm2964	VSMUST0000017946	0.25	-4.02	3.24	0	1
13213	17289380	ENSMUST00000104762 // Gm22007 // predicted gene, 22007 // --- // ---	Gm22007	VSMUST0000010476	0.25	-4.05	5.22	8.53E-14	1
1993	17204037	---	---	---	0.25	-4.06	11.57	1.14E-13	1
5332	17210837	---	---	---	0.25	-4.06	3.69	5.68E-14	1
39588	17546671	XM_006541892 // LOC102631913 // Y-linked testis-specific protein 1-like // --- // 10263	LOC102631913	XM_006541892	0.25	-4.07	7.17	0	1
13756	17293793	---	---	---	0.25	-4.07	2.35	2.84E-14	1
5091	17210345	---	---	---	0.24	-4.09	8.30	2.84E-14	1
5190	17210545	---	---	---	0.24	-4.10	2.66	1.99E-13	1
41151	17550580	ENSMUST00000082422 // mt-Tt // mitochondrially encoded tRNA threonine // --- // ---	mt-Tt	VSMUST0000008242	0.24	-4.12	3.02	1.71E-13	1
409	17200809	---	---	---	0.24	-4.13	6.17	0	1
38592	17538754	---	---	---	0.24	-4.15	7.30	0	1
1501	17203027	---	---	---	0.24	-4.19	3.45	1.14E-13	1
1388	17202797	---	---	---	0.24	-4.21	5.26	0	1
1496	17203017	---	---	---	0.24	-4.24	3.64	0	1
33788	17491626	ENSMUST00000101891 // Gm22173 // predicted gene, 22173 // --- // ---	Gm22173	VSMUST0000010189	0.24	-4.24	5.61	7.11E-15	1
4506	17209159	---	---	---	0.23	-4.26	3.26	1.71E-13	1
18577	17341037	ENSMUST00000101829 // Gm26375 // predicted gene, 26375 // --- // ---	Gm26375	VSMUST0000010182	0.23	-4.28	4.40	7.11E-15	1
10061	17259507	NM_001025427 // Hmga1 // high mobility group AT-hook 1 // 17 A3.3 17 14.5 cM // 15361 /	Hmga1	NM_001025427	0.23	-4.29	3.94	0	1
22743	17381519	ENSMUST00000083890 // Gm26315 // predicted gene, 26315 // --- // ---	Gm26315	VSMUST0000008389	0.23	-4.31	3.81	3.55E-14	1
2080	17204211	---	---	---	0.23	-4.34	9.64	0	1
23627	17391437	---	---	---	0.23	-4.34	8.26	1.71E-13	1
14494	17300233	ENSMUST00000103733 // Traj7 // T cell receptor alpha joining 7 // --- // ---	Traj7	VSMUST0000010373	0.23	-4.38	52.38	0	1
4851	17209855	---	---	---	0.22	-4.54	6.09	5.68E-14	1
2712	17205493	---	---	---	0.22	-4.56	4.01	0	1
7378	17232910	NR_039554 // Mir3473b // microRNA 3473b // 10 10 22.64 cM // 100628609 /// ENSMUST00000	Mir3473b	NR_039554	0.22	-4.59	4.12	0	1
2113	17204277	---	---	---	0.22	-4.60	20.88	5.68E-14	1
458	17200911	---	---	---	0.22	-4.60	5.82	2.84E-14	1
2403	17204865	---	---	---	0.22	-4.62	3.48	0	1
2230	17204515	---	---	---	0.21	-4.67	7.29	1.42E-14	1
4402	17208949	---	---	---	0.21	-4.68	11.16	1.14E-13	1
1768	17203573	---	---	---	0.21	-4.72	5.30	0	1
1876	17203795	---	---	---	0.21	-4.79	9.40	2.84E-14	1
492	17200979	---	---	---	0.21	-4.84	4.45	0	1
1219	17202455	---	---	---	0.20	-4.94	4.68	2.13E-14	1
20722	17361546	NM_028623 // Cst6 // cystatin E/M // 19 A 19 4.3 cM // 73720 /// ENSMUST00000025764 //	Cst6	NM_028623	0.20	-4.99	7.40	2.84E-14	1
1040	17202091	---	---	---	0.20	-5.02	6.34	2.84E-14	1
29233	17448772	---	---	---	0.20	-5.12	7.96	0	1
2565	17205195	---	---	---	0.19	-5.18	8.72	0	1
4617	17209385	---	---	---	0.19	-5.18	8.72	0	1
397	17200785	---	---	---	0.19	-5.35	6.40	5.68E-14	1
5284	17210739	---	---	---	0.18	-5.48	10.15	4.26E-14	1
2269	17204593	---	---	---	0.18	-5.62	5.59	5.68E-14	1
162	17200311	---	---	---	0.18	-5.70	10.49	1.42E-14	1
2732	17205533	---	---	---	0.17	-5.80	9.11	1.42E-14	1
31904	17473957	ENSMUST00000101946 // Gm24701 // predicted gene, 24701 // --- // ---	Gm24701	VSMUST0000010194	0.17	-5.85	7.39	0	1
3445	17206993	---	---	---	0.16	-6.27	5.18	1.42E-14	1
22414	17378313	---	---	---	0.16	-6.38	6.10	0	1
2716	17205501	---	---	---	0.15	-6.56	9.34	1.14E-13	1
8999	17248424	ENSMUST00000082643 // Gm25799 // predicted gene, 25799 // --- // ---	Gm25799	VSMUST0000008264	0.15	-6.65	5.15	0	1
1487	17202999	---	---	---	0.15	-6.65	6.20	5.68E-14	1
3252	17206597	---	---	---	0.15	-6.69	4.63	0	1
1892	17203829	---	---	---	0.14	-7.03	8.21	7.11E-14	1
2015	17204081	---	---	---	0.14	-7.28	18.74	5.68E-14	1
4844	17209841	---	---	---	0.11	-8.86	13.20	8.53E-14	1
335	17200661	---	---	---	0.11	-8.89	11.93	0	1
3838	17207799	---	---	---	0.11	-9.29	10.45	0	1
2763	17205597	---	---	---	0.10	-10.15	15.72	8.53E-14	1
16024	17315396	---	---	---	0.10	-10.39	10.92	0	1
29247	17448793	---	---	---	0.07	-14.56	34.46	0	1
33699	17491193	NM_011315 // Saa3 // serum amyloid A 3 // 7 B4 7 30.51 cM // 20210 /// ENSMUST000000069	Saa3	NM_011315	0.05	-21.77	25.43	2.84E-13	1
38602	17538767	---	---	---	0.03	-35.81	21.79	1.71E-13	1