

SUPPLEMENTAL FIGURE LEGENDS

Reduced FOXO1 accelerates skin wound healing and attenuates scarring

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Supplemental Table S3: Analysis for the molecular interactions between DRGs such as gene expression, activation, post-translational modification, and physical interactions.

1 **Supplemental Figure legends**

2 **Figure S1. Expression of FOXO1 protein at wound sites.**

3 Immunohistochemistry for FOXO1 (brown) using DAB, showing prominent presence
4 of FOXO1 in the epithelium and hair follicle of WT mice 1 d after injury (nuclei are
5 stained with hematoxylin [violet]). Arrow and arrowhead indicate the leading edge of
6 epithelia and wound margin, respectively. Scale bar = 100 μ m. Micrographs are
7 representative of six sections.

8

9 **Figure S2. Angiogenesis at wound sites of heterozygous *Foxo1*^{+/-} and WT mice.**

10 (A-D) Confocal imaging of 3-dimensional blood vessel structures in intact skin and at
11 the wound site. (E) Vascular density is not altered in *Foxo1*^{+/-} mice (n = 6 for intact skin
12 and 14 d; n= 15 for 7 d) compared with WT mice (n = 6 for intact skin; n = 12 for 7 d; n
13 = 7 for 14 d). Data are presented as the mean \pm SEM. Scale bar = 100 μ m.

14

15 **Figure S3. *Foxo1*^{+/-} mice are resistant to lipopolysaccharide (LPS)-induced
16 endotoxin shock.**

17 Age-matched WT (n = 14) and *Foxo1*^{+/-} (n = 11) mice were intraperitoneally injected
18 with 1 mg of LPS from *E. coli* O55. Survival was monitored for 4 d. The survival curve
19 was analyzed using Kaplan–Meier survival analysis and was compared with the
20 log-rank test.

21

22 **Figure S4. Collagen organization in intact skin of *Foxo1*^{+/-} and WT mice.**

1 (A) Transmission electron microscopy images of intact skin tissue from WT and
2 *Foxo1*^{+/-} mice. High magnification insets illustrate collagen fibril diameter in this tissue.
3 (B) Histograms of fibril diameters indicate total range of fibril diameters in intact skin
4 from at least 3 fields of wound site from each mice of WT (n = 839 fibrils from 5 mice)
5 and *Foxo1*^{+/-} (n = 864 fibrils from 5 mice). Scale bar = 1 μm and 100 nm (inset).

6

7 **Figure S5. Full scans of western immunoblots for the indicated figures.**

8 (A) Figure 2E (B) Figure 3B, (C) Figure 3C, and (D) Figure 5B. Molecular weights of
9 target protein are given in parentheses.

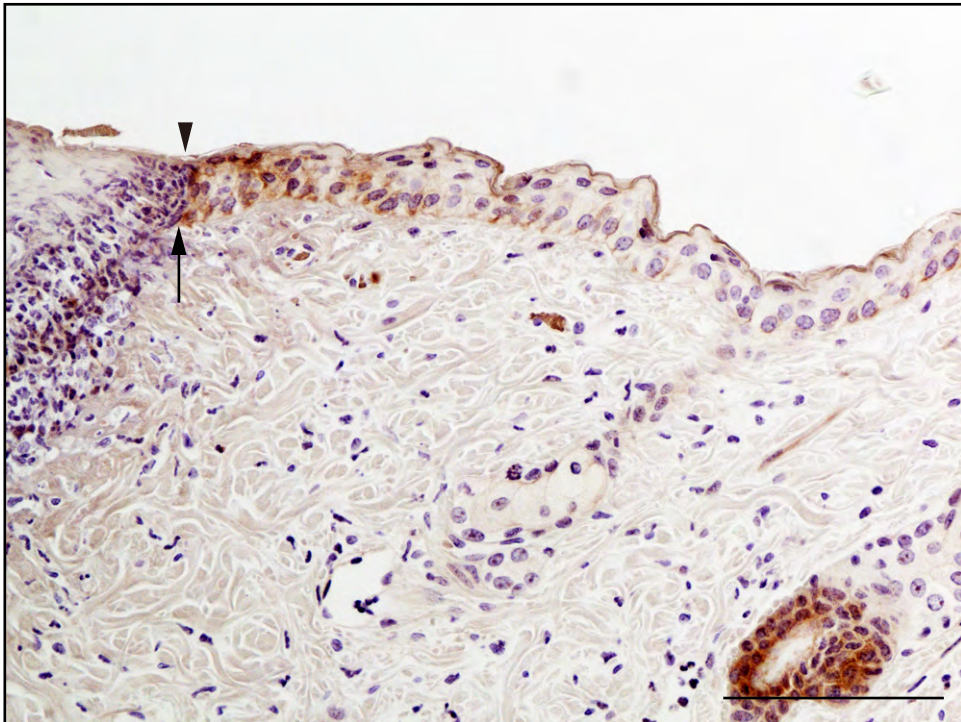


Figure S1

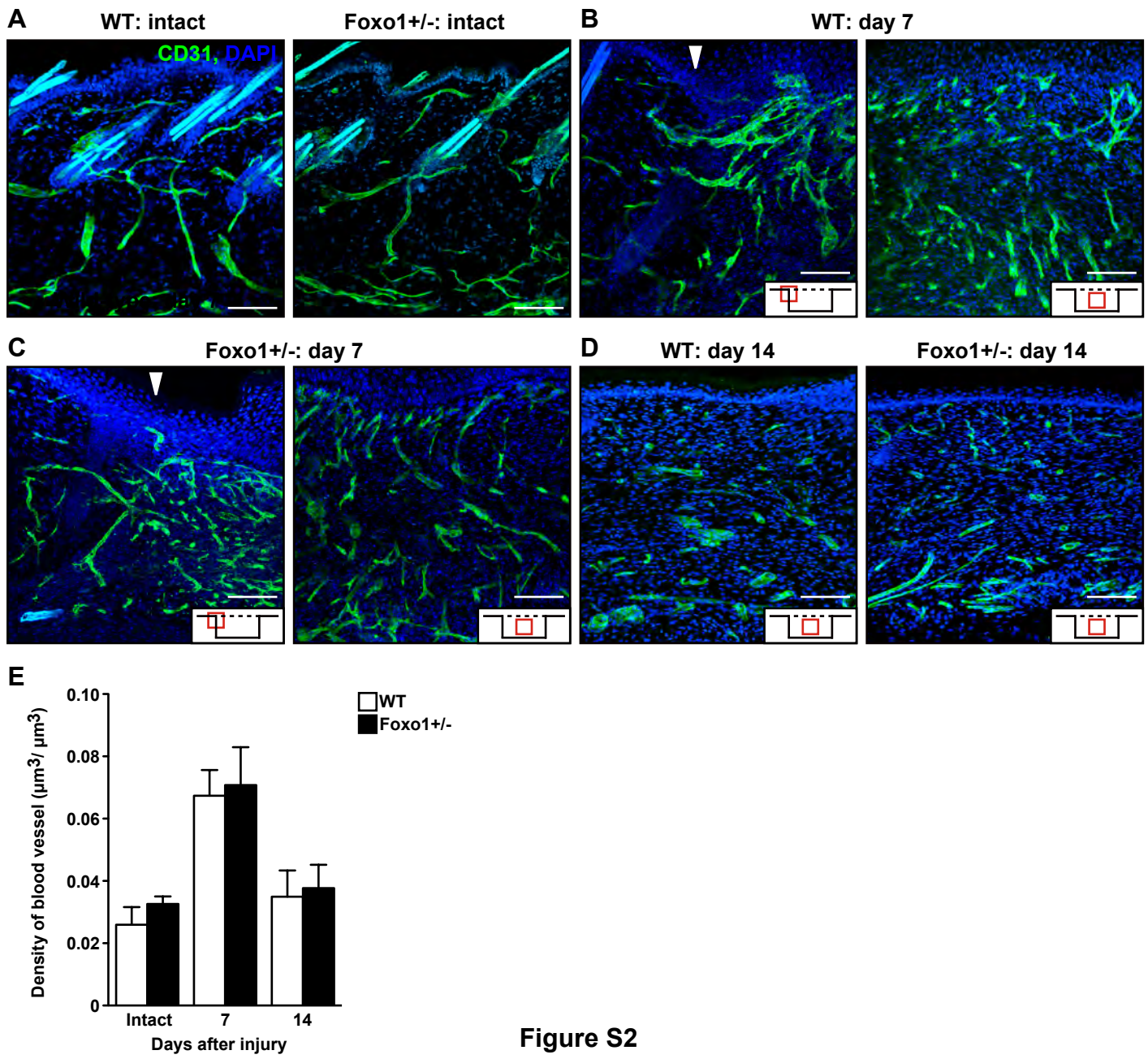


Figure S2

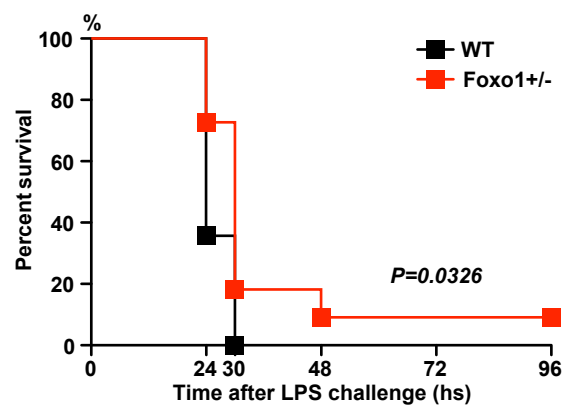
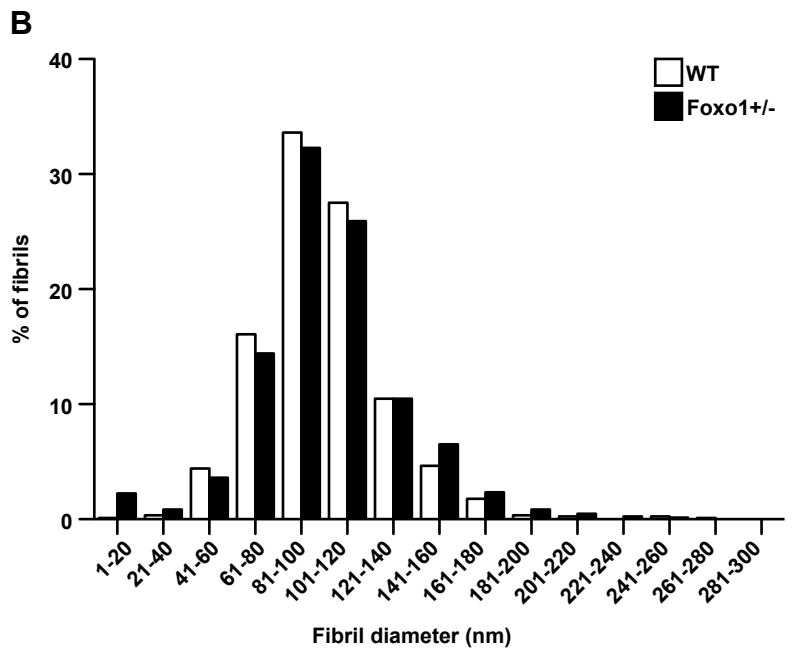
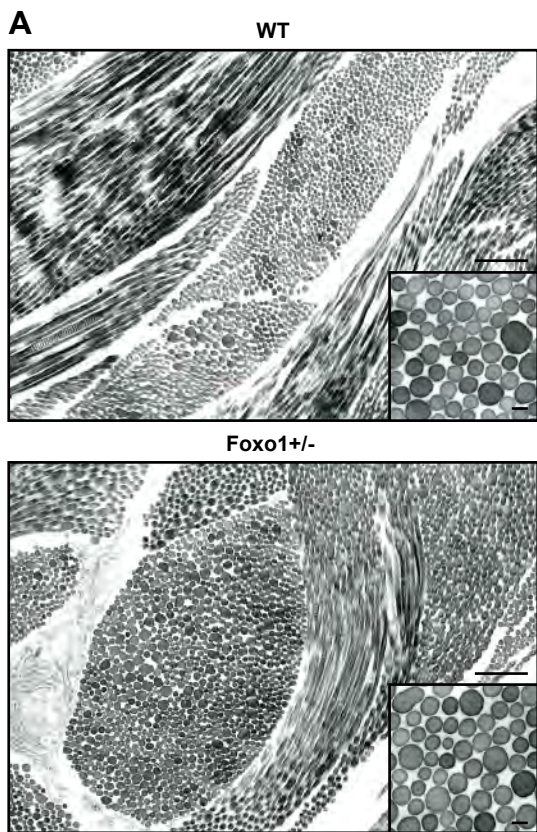


Figure S3



	Mean \pm SEM	Number of fibrils	Number of mice
WT	99.84 \pm 0.943	839	5
Foxo1+/-	102.3 \pm 1.698	864	5

Figure S4

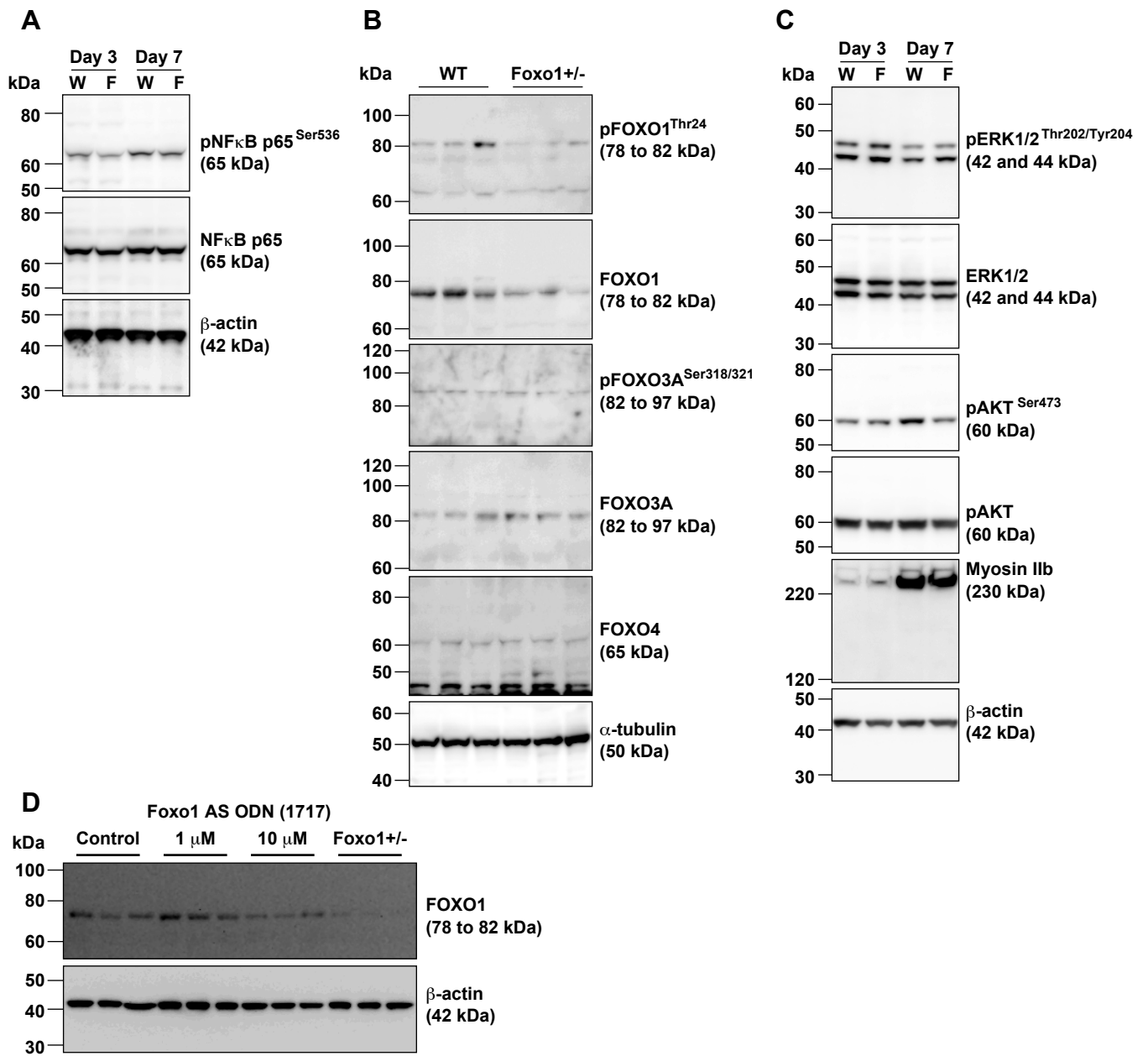


Figure S5

Supplemental Table S1. The profile of each sample for human

Keloid

Patient No.	Sex	Race	Age (yrs)	Biopsy site	Etiology	Duration of lesion (yrs)	Previous treatment
1	F	JP	60	LA	Op	7	No
1	F	JP	60	LA	Op	7	No
2	F	JP	40	Ear	Pierce	1	No
2	F	JP	40	UA	Op	3	No
2	F	JP	40	LA	Op	3	No
2	F	JP	40	Navel	Op	3	No
3	F	AA	31	Ear	Pierce	1	No
3	F	AA	31	Ear	Pierce	1	No
3	F	AA	31	Ear	Pierce	1	No

Normal skin in the immediate vicinity of keloid

Patient No.	Race	Age (yrs)	Biopsy site	Etiology
1	JP	60	LA	Op
2	JP	40	LA	Op
2	JP	40	Ear	Pierce

Abbreviations: F, Female; JP, Japanese; AA, African American; LA, Lower abdominal; UA, Upper abdominal; Op, Operation

Supplemental Table S2. Gene expression from the microarray data set.

Symbol: Name	Fold Change	Molecular Function	Location
<i>GPR37L1</i> : G protein-coupled receptor 37 like 1	7.296	G-protein coupled receptor	Plasma Membrane
<i>SPINK7</i> : serine peptidase inhibitor, Kazal type 7 (putative)	5.997	other	Extracellular Space
<i>Olf122</i> : olfactory receptor 122	5.706	G-protein coupled receptor	Plasma Membrane
<i>1010001N08Rik</i> : RIKEN cDNA 1010001N08 gene	5.426	other	Unknown
<i>HEATR7B1</i> : HEAT repeat containing 7B1	4.843	other	Unknown
<i>DNAH5</i> : dynein, axonemal, heavy chain 5	4.6	enzyme	Extracellular Space
<i>OR4C15</i> : olfactory receptor, family 4, subfamily C, member 15	4.49	G-protein coupled receptor	Plasma Membrane
<i>OR2Z1</i> : olfactory receptor, family 2, subfamily Z, member 1	4.449	G-protein coupled receptor	Plasma Membrane
<i>VT11A</i> : vesicle transport through interaction with t-SNAREs homolog 1A (yeast)	4.319	transporter	Plasma Membrane
<i>SYN3</i> : synapsin III	4.054	other	Plasma Membrane
<i>TBX22</i> : T-box 22	4.003	transcription regulator	Nucleus
<i>Vmn1r171</i> (includes others): vomeronasal 1 receptor 171	3.953	other	Unknown
<i>Rhox3a</i> (includes others): reproductive homeobox 3A	3.748	other	Unknown
<i>RABGAP1</i> : RAB GTPase activating protein 1	3.634	other	Cytoplasm
<i>Klra4</i> (includes others): killer cell lectin-like receptor, subfamily A, member 4	3.608	transmembrane receptor	Plasma Membrane
<i>SHANK2</i> : SH3 and multiple ankyrin repeat domains 2	3.526	other	Plasma Membrane
<i>DDX25</i> : DEAD (Asp-Glu-Ala-Asp) box helicase 25	3.433	enzyme	Nucleus
<i>Gbp6</i> (includes others): guanylate binding protein 6	3.387	other	Cytoplasm
<i>TDGF1</i> : teratocarcinoma-derived growth factor 1	3.382	growth factor	Extracellular Space
<i>Vmn1r227</i> : vomeronasal 1 receptor 227	3.329	G-protein coupled receptor	Plasma Membrane
<i>SCN3B</i> : sodium channel, voltage-gated, type III, beta subunit	3.314	ion channel	Plasma Membrane
<i>AU018091</i> : expressed sequence AU018091	3.246	other	Unknown
<i>MRGPRG</i> : MAS-related GPR, member G	3.207	G-protein coupled receptor	Plasma Membrane
<i>Speer4a</i> (includes others): spermatogenesis associated glutamate (E)-rich protein 4a	3.112	other	Nucleus
<i>D630014O11Rik</i> : RIKEN cDNA D630014O11 gene	3.068	other	Unknown
<i>VEZT</i> : vezatin, adherens junctions transmembrane protein	3.047	other	Plasma Membrane
<i>4931431B13Rik</i> : RIKEN cDNA 4931431B13 gene	2.964	other	Unknown
<i>Ssty1</i> (includes others): spermiogenesis specific transcript on the Y 2	2.953	other	Unknown
<i>RETN</i> : resistin	2.864	other	Extracellular Space
<i>ZFX2</i> : zinc finger homeobox 2	2.794	other	Nucleus
<i>ST6GALNAC1</i> : ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetyl-galactosaminide alpha-2,6-sialyltransferase 1	2.793	enzyme	Cytoplasm
<i>OR8B12</i> : olfactory receptor, family 8, subfamily B, member 12	2.787	G-protein coupled receptor	Plasma Membrane
<i>GLP2R</i> : glucagon-like peptide 2 receptor	2.778	G-protein coupled receptor	Plasma Membrane
<i>VPREB1</i> : pre-B lymphocyte 1	2.727	other	Plasma Membrane
<i>SHC4</i> : SHC (Src homology 2 domain containing) family, member 4	2.726	other	Cytoplasm
<i>GRIN2A</i> : glutamate receptor, ionotropic, N-methyl D-aspartate 2A	2.678	ion channel	Plasma Membrane
<i>ALPP</i> : alkaline phosphatase, placental	2.678	phosphatase	Plasma Membrane
<i>LOC626410</i> : uncharacterized LOC626410	2.604	other	Unknown
<i>PON1</i> : paraoxonase 1	2.567	phosphatase	Extracellular Space
<i>PABPC1L2A/PABPC1L2B</i> : poly(A) binding protein, cytoplasmic 1-like 2A	2.56	other	Unknown
<i>DCAF12L2</i> : DDB1 and CUL4 associated factor 12-like 2	2.559	other	Unknown
<i>THRSP</i> : thyroid hormone responsive	2.557	other	Nucleus
<i>TUB</i> : tubby homolog (mouse)	2.539	transcription regulator	Cytoplasm
<i>HERC2</i> : HECT and RLD domain containing E3 ubiquitin protein ligase 2	2.538	enzyme	Cytoplasm
<i>ProSAPiP1</i> : ProSAPiP1 protein	2.535	other	Cytoplasm
<i>Olf1507</i> : olfactory receptor 507	2.511	G-protein coupled receptor	Plasma Membrane
<i>IL24</i> : interleukin 24	2.478	cytokine	Extracellular Space
<i>Defb42</i> : defensin beta 42	2.469	other	Unknown
<i>ATG9B</i> : autophagy related 9B	2.442	other	Cytoplasm
<i>1700008J07Rik</i> : RIKEN cDNA 1700008J07 gene	2.438	other	Unknown
<i>NNAT</i> : neuronatin	2.433	transporter	Plasma Membrane
<i>VWC2</i> : von Willebrand factor C domain containing 2	2.431	other	Extracellular Space

<i>Olf1095/Olf141</i> : olfactory receptor 1095	2.417	G-protein coupled receptor	Plasma Membrane
<i>CABP5</i> : calcium binding protein 5	2.404	other	Cytoplasm
<i>9130227L01Rik</i> : RIKEN cDNA 9130227L01 gene	2.402	other	Unknown
<i>ST8SIA2</i> : ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 2	2.399	enzyme	Cytoplasm
<i>4930414F18Rik</i> : RIKEN cDNA 4930414F18 gene	2.398	other	Unknown
<i>Abpa</i> (includes others): androgen binding protein alpha	2.377	other	Extracellular Space
<i>NR113</i> : nuclear receptor subfamily 1, group I, member 3	2.356	ligand-dependent nuclear receptor	Nucleus
<i>Gm13939</i> : predicted gene 13939	2.32	other	Unknown
<i>ITGA1</i> : integrin, alpha 1	2.316	other	Plasma Membrane
<i>Serp1b9f</i> (includes others): serine (or cysteine) peptidase inhibitor, clade B, member 9f	2.31	other	Cytoplasm
<i>Olf158</i> (includes others): olfactory receptor 859	2.291	G-protein coupled receptor	Plasma Membrane
<i>4930540E01Rik</i> : RIKEN cDNA 4930540E01 gene	2.29	other	Unknown
<i>4930488N24Rik</i> (includes others): RIKEN cDNA 4930488N24 gene	2.275	other	Unknown
<i>Spaca5</i> : sperm acrosome associated 5	2.242	other	Unknown
<i>Defb28</i> (mouse): defensin beta 28	2.236	other	Unknown
<i>C78197</i> : expressed sequence C78197	2.22	other	Unknown
<i>ARX</i> : aristaless related homeobox	2.21	transcription regulator	Nucleus
<i>Ceacam5/Gm5155</i> : predicted gene 5155	2.209	other	Unknown
<i>IFNA1/IFNA13</i> : interferon, alpha 1	2.199	cytokine	Extracellular Space
<i>OXGR1</i> : oxoglutarate (alpha-ketoglutarate) receptor 1	2.199	G-protein coupled receptor	Plasma Membrane
<i>Olf1221</i> : olfactory receptor 1221	2.195	G-protein coupled receptor	Plasma Membrane
<i>SOWAHB</i> : sosondowah ankyrin repeat domain family member B	2.193	transcription regulator	Nucleus
<i>SH2D6</i> : SH2 domain containing 6	2.19	other	Unknown
<i>Gm6507</i> : predicted gene 6507	2.188	other	Unknown
<i>AA474408</i> : expressed sequence AA474408	2.175	other	Unknown
<i>E4F1</i> : E4F transcription factor 1	2.148	transcription regulator	Nucleus
<i>CATSPER4</i> : cation channel, sperm associated 4	2.137	transporter	Cytoplasm
<i>C20orf79</i> : chromosome 20 open reading frame 79	2.134	other	Unknown
<i>NUDT3</i> : nudix (nucleoside diphosphate linked moiety X)-type motif 3	2.125	phosphatase	Cytoplasm
<i>KIF9</i> : kinesin family member 9	2.118	enzyme	Cytoplasm
<i>NCOA7</i> : nuclear receptor coactivator 7	2.117	transcription regulator	Nucleus
<i>RERGL</i> : RERG/RAS-like	2.115	other	Unknown
<i>Sycp1-ps1</i> : synaptonemal complex protein 1, pseudogene 1	2.112	other	Unknown
<i>ZBED4</i> : zinc finger, BED-type containing 4	2.096	other	Nucleus
<i>Rhox4b</i> (includes others): reproductive homeobox 4B	2.078	transcription regulator	Nucleus
<i>CDO1</i> : cysteine dioxygenase, type I	2.076	enzyme	Cytoplasm
<i>Olf130</i> : olfactory receptor 30	2.076	G-protein coupled receptor	Plasma Membrane
<i>TGIF2LX</i> : TGFB-induced factor homeobox 2-like, X-linked	2.071	transcription regulator	Nucleus
<i>C14orf180</i> : chromosome 14 open reading frame 180	2.071	other	Unknown
<i>CPNE6</i> : copine VI (neuronal)	2.069	transporter	Plasma Membrane
<i>1700054O19Rik</i> : RIKEN cDNA 1700054O19 gene	2.062	other	Unknown
<i>RS1</i> : retinoschisin 1	2.057	other	Extracellular Space
<i>IL36A</i> : interleukin 36, alpha	2.051	cytokine	Extracellular Space
<i>RIMS4</i> : regulating synaptic membrane exocytosis 4	2.05	other	Unknown
<i>C77488</i> : EST C77488	2.047	other	Unknown
<i>Nol4</i> : nucleolar protein 4	2.043	other	Nucleus
<i>C11orf84</i> : chromosome 11 open reading frame 84	2.039	other	Unknown
<i>TRPM1</i> : transient receptor potential cation channel, subfamily M, member 1	2.033	ion channel	Plasma Membrane
<i>4933439C10Rik</i> : RIKEN cDNA 4933439C10 gene	2.028	other	Unknown
<i>Defb38</i> : defensin beta 38	2.02	other	Extracellular Space
<i>4930568E12Rik</i> : RIKEN cDNA 4930568E12 gene	2.005	other	Unknown
<i>Olf1342</i> : olfactory receptor 342	1.999	G-protein coupled receptor	Plasma Membrane
<i>JAKMIP1</i> : janus kinase and microtubule interacting protein 1	1.999	other	Cytoplasm
<i>ASTN2</i> : astrotactin 2	1.997	other	Unknown
<i>Olf1803</i> : olfactory receptor 803	1.996	G-protein coupled receptor	Plasma Membrane
<i>CD300LF</i> : CD300 molecule-like family member f	1.995	other	Unknown

<i>PNMA2</i> : paraneoplastic Ma antigen 2	1.995	transporter	Nucleus
<i>Gm7489</i> : predicted gene 7489	1.992	other	Unknown
<i>CYP2D6</i> : cytochrome P450, family 2, subfamily D, polypeptide 6	1.988	enzyme	Cytoplasm
<i>Gm9745/Idi2</i> : predicted gene 9745	1.984	enzyme	Cytoplasm
<i>Vmn2r66</i> (includes others): vomeronasal 2, receptor 66	1.981	other	Unknown
<i>CMYA5</i> : cardiomyopathy associated 5	1.972	other	Plasma Membrane
<i>OR5D18</i> : olfactory receptor, family 5, subfamily D, member 18	1.969	G-protein coupled receptor	Plasma Membrane
<i>1810044D09Rik</i> : RIKEN cDNA 1810044D09 gene	1.956	other	Unknown
<i>PTX3</i> : pentraxin 3, long	1.953	other	Extracellular Space
<i>GCM1</i> : glial cells missing homolog 1 (Drosophila)	1.953	transcription regulator	Nucleus
<i>NOTCH1</i> : notch 1	1.944	transcription regulator	Plasma Membrane
<i>Tas2r116</i> : taste receptor, type 2, member 116	1.937	other	Unknown
<i>1700027J07Rik</i> : RIKEN cDNA 1700027J07 gene	1.935	other	Unknown
<i>B020031M17Rik</i> : RIKEN cDNA B020031M17 gene	1.933	other	Unknown
<i>B430105A11Rik</i> : RIKEN cDNA B430105A11 gene	1.93	other	Unknown
<i>OLR1</i> : oxidized low density lipoprotein (lectin-like) receptor 1	1.929	transmembrane receptor	Plasma Membrane
<i>Igpb1b</i> : immunoglobulin (CD79A) binding protein 1b	1.927	other	Cytoplasm
<i>1700030L22Rik</i> : RIKEN cDNA 1700030L22 gene	1.922	other	Unknown
<i>MYO18B</i> : myosin XVIIIIB	1.922	other	Cytoplasm
<i>Klra22</i> : killer cell lectin-like receptor subfamily A, member 22	1.92	other	Plasma Membrane
<i>ACVR1C</i> : activin A receptor, type IC	1.917	kinase	Plasma Membrane
<i>MRAP</i> : melanocortin 2 receptor accessory protein	1.913	other	Cytoplasm
<i>FAM70A</i> : family with sequence similarity 70, member A	1.911	other	Extracellular Space
<i>AKAP7</i> : A kinase (PRKA) anchor protein 7	1.908	other	Plasma Membrane
<i>SERPINA10</i> : serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 10	1.908	other	Extracellular Space
<i>ACOT1</i> : acyl-CoA thioesterase 1	1.907	enzyme	Cytoplasm
<i>PDE6B</i> : phosphodiesterase 6B, cGMP-specific, rod, beta	1.905	enzyme	Cytoplasm
<i>GPR84</i> : G protein-coupled receptor 84	1.901	G-protein coupled receptor	Plasma Membrane
<i>SEC14L5</i> : SEC14-like 5 (S. cerevisiae)	1.896	other	Unknown
<i>Olfir668</i> : olfactory receptor 668	1.894	G-protein coupled receptor	Plasma Membrane
<i>PLCXD3</i> : phosphatidylinositol-specific phospholipase C, X domain containing 3	1.893	other	Unknown
<i>Olfir1322</i> : olfactory receptor 1322	1.891	G-protein coupled receptor	Plasma Membrane
<i>GABRA5</i> : gamma-aminobutyric acid (GABA) A receptor, alpha 5	1.89	ion channel	Plasma Membrane
<i>Gm5215</i> : predicted gene 5215	1.889	other	Cytoplasm
<i>7420700N18Rik</i> : RIKEN cDNA 7420700N18 gene	1.889	other	Unknown
<i>SLC16A7</i> : solute carrier family 16, member 7 (monocarboxylic acid transporter 2)	1.882	transporter	Plasma Membrane
<i>SPINT3</i> : serine peptidase inhibitor, Kunitz type, 3	1.882	other	Extracellular Space
<i>SLC7A10</i> : solute carrier family 7 (neutral amino acid transporter light chain, asc system), member 10	1.873	transporter	Plasma Membrane
<i>DLGAP2</i> : discs, large (Drosophila) homolog-associated protein 2	1.867	other	Plasma Membrane
<i>OR10W1</i> : olfactory receptor, family 10, subfamily W, member 1	1.856	G-protein coupled receptor	Plasma Membrane
<i>Gm11266</i> : predicted gene 11266	1.854	other	Unknown
<i>4930442E04Rik</i> : RIKEN cDNA 4930442E04 gene	1.852	other	Unknown
<i>C1orf123</i> : chromosome 1 open reading frame 123	1.847	other	Unknown
<i>RAD51AP2</i> : RAD51 associated protein 2	1.838	other	Unknown
<i>CIDEC</i> : cell death-inducing DFFA-like effector c	1.837	other	Cytoplasm
<i>C78653</i> : expressed sequence C78653	1.836	other	Unknown
<i>AIPL1</i> : aryl hydrocarbon receptor interacting protein-like 1	1.834	other	Nucleus
<i>SNTG1</i> : syntrophin, gamma 1	1.832	other	Nucleus
<i>GRIP1</i> : glutamate receptor interacting protein 1	1.831	other	Plasma Membrane
<i>SIX2</i> : SIX homeobox 2	1.83	transcription regulator	Nucleus
<i>PGR</i> : progesterone receptor	1.828	ligand-dependent nuclear receptor	Nucleus
<i>Gm6569</i> : predicted gene 6569	1.826	other	Unknown
<i>4930579D07Rik</i> : RIKEN cDNA 4930579D07 gene	1.825	other	Unknown
<i>ADIPOQ</i> : adiponectin, C1Q and collagen domain containing	1.824	other	Extracellular Space
<i>Ifnz</i> (includes others): interferon zeta	1.822	cytokine	Extracellular Space
<i>Abph</i> (includes others): androgen-binding protein eta	1.821	other	Unknown

<i>NPY2R</i> : neuropeptide Y receptor Y2	1.821	G-protein coupled receptor	Plasma Membrane
<i>Zfp740</i> : zinc finger protein 740	1.82	other	Unknown
<i>1700128F08Rik</i> : U1-snRNP binding protein homolog pseudogene	1.819	other	Unknown
<i>Olf247/Olfr819</i> : olfactory receptor 247	1.818	G-protein coupled receptor	Plasma Membrane
<i>Olf1489</i> : olfactory receptor 1489	1.818	G-protein coupled receptor	Plasma Membrane
<i>Spink11/Spink1</i> : serine peptidase inhibitor, Kazal type 11	1.814	other	Unknown
<i>GABRG1</i> : gamma-aminobutyric acid (GABA) A receptor, gamma 1	1.813	ion channel	Plasma Membrane
<i>4921515E04Rik</i> : RIKEN cDNA 4921515E04 gene	1.808	other	Unknown
<i>FMR1NB</i> : fragile X mental retardation 1 neighbor	1.808	other	Unknown
<i>OR51B2</i> : olfactory receptor, family 51, subfamily B, member 2	1.807	G-protein coupled receptor	Plasma Membrane
<i>IQUB</i> : IQ motif and ubiquitin domain containing	1.804	other	Cytoplasm
<i>E030018B13Rik</i> : RIKEN cDNA E030018B13 gene	1.801	other	Unknown
<i>Olf1328/Olfr1337</i> : olfactory receptor 1337	1.798	G-protein coupled receptor	Plasma Membrane
<i>HSPB9</i> : heat shock protein, alpha-crystallin-related, B9	1.792	other	Cytoplasm
<i>PLIN1</i> : perilipin 1	1.792	other	Cytoplasm
<i>HORMAD1</i> : HORMA domain containing 1	1.788	other	Nucleus
<i>Ctsr</i> : cathepsin R	1.785	peptidase	Cytoplasm
<i>OR51T1</i> : olfactory receptor, family 51, subfamily T, member 1	1.785	G-protein coupled receptor	Plasma Membrane
<i>CFTR</i> : cystic fibrosis transmembrane conductance regulator (ATP-binding cassette sub-family C, member 7)	1.783	ion channel	Plasma Membrane
<i>ICAM5</i> : intercellular adhesion molecule 5, telencephalin	1.78	other	Plasma Membrane
<i>LIF</i> : leukemia inhibitory factor	1.777	cytokine	Extracellular Space
<i>IGHM</i> : immunoglobulin heavy constant mu	1.775	transmembrane receptor	Plasma Membrane
<i>ERMN</i> : ermin, ERM-like protein	1.771	other	Extracellular Space
<i>MARCH10</i> : membrane-associated ring finger (C3HC4) 10, E3 ubiquitin protein ligase	1.769	other	Cytoplasm
<i>CPLX2</i> : complexin 2	1.767	other	Cytoplasm
<i>CTNND1</i> : catenin (cadherin-associated protein), delta 1	1.765	other	Nucleus
<i>TMCO7</i> : transmembrane and coiled-coil domains 7	1.761	other	Unknown
<i>Olf1101</i> : olfactory receptor 1101	1.754	G-protein coupled receptor	Plasma Membrane
<i>AQP2</i> : aquaporin 2 (collecting duct)	1.753	transporter	Plasma Membrane
<i>MT4</i> : metallothionein 4	1.753	other	Unknown
<i>C230057A21Rik</i> : RIKEN cDNA C230057A21 gene	1.752	other	Unknown
<i>PRG2</i> : proteoglycan 2, bone marrow (natural killer cell activator, eosinophil granule major basic protein)	1.75	other	Extracellular Space
<i>Defb44-ps</i> : defensin beta 44, pseudogene	1.75	other	Unknown
<i>ADHFE1</i> : alcohol dehydrogenase, iron containing, 1	1.749	enzyme	Cytoplasm
<i>A430088P11Rik</i> : RIKEN cDNA A430088P11 gene	1.749	other	Unknown
<i>5430416O09Rik</i> : RIKEN cDNA 5430416O09 gene	1.746	other	Unknown
<i>CLSTN2</i> : calyntenin 2	1.743	transporter	Plasma Membrane
<i>Mei4</i> : meiosis-specific, MEI4 homolog (S. cerevisiae)	1.742	other	Nucleus
<i>AMY1A (includes others)</i> : amylase, alpha 1A (salivary)	1.741	enzyme	Extracellular Space
<i>LRRIQ3</i> : leucine-rich repeats and IQ motif containing 3	1.739	other	Unknown
<i>KCTD19</i> : potassium channel tetramerisation domain containing 19	1.739	other	Unknown
<i>PRR3</i> : proline rich 3	1.738	other	Unknown
<i>CASR</i> : calcium-sensing receptor	1.73	G-protein coupled receptor	Plasma Membrane
<i>C4orf46</i> : chromosome 4 open reading frame 46	1.729	other	Unknown
<i>PREX2</i> : phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 2	1.727	other	Cytoplasm
<i>PINX1</i> : PIN2/TERF1 interacting, telomerase inhibitor 1	1.726	other	Nucleus
<i>WDR96</i> : WD repeat domain 96	1.725	other	Unknown
<i>4930504O13Rik</i> : RIKEN cDNA 4930504O13 gene	1.724	other	Unknown
<i>HRNR</i> : homerin	1.721	other	Unknown
<i>NDST4</i> : N-deacetylase/N-sulfotransferase (heparan glucosaminyl) 4	1.716	enzyme	Cytoplasm
<i>MIXL1</i> : Mix paired-like homeobox	1.715	transcription regulator	Nucleus
<i>PPP2R1B</i> : protein phosphatase 2, regulatory subunit A, beta	1.712	phosphatase	Unknown
<i>Olf154</i> : olfactory receptor 54	1.71	G-protein coupled receptor	Plasma Membrane
<i>Gm10757</i> : predicted gene 10757	1.708	other	Unknown
<i>RPH3AL</i> : rabphilin 3A-like (without C2 domains)	1.706	other	Plasma Membrane
<i>SEMA5B</i> : sema domain, seven thrombospondin repeats (type 1 and type 1-like), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 5B	1.703	other	Plasma Membrane

<i>CD1D</i> : CD1d molecule	1.699	other	Plasma Membrane
<i>TIMP4</i> : TIMP metalloproteinase inhibitor 4	1.698	other	Extracellular Space
<i>Spr2j-ps</i> : small proline-rich protein 2J, pseudogene	1.698	other	Cytoplasm
<i>A330093E20Rik</i> : RIKEN cDNA A330093E20 gene	1.697	other	Unknown
<i>MICAL2</i> : microtubule associated monooxygenase, calponin and LIM domain containing 2	1.69	enzyme	Cytoplasm
<i>CREM (includes EG:12916)</i> : cAMP responsive element modulator	1.689	other	Nucleus
<i>1700024P04Rik</i> : RIKEN cDNA 1700024P04 gene	1.689	other	Nucleus
<i>Gm5590</i> : predicted gene 5590	1.688	other	Unknown
<i>Arhgef38</i> : Rho guanine nucleotide exchange factor (GEF) 38	1.686	other	Unknown
<i>1700111E14Rik</i> : RIKEN cDNA 1700111E14 gene	1.685	other	Unknown
<i>ADRB3</i> : adrenoceptor beta 3	1.682	G-protein coupled receptor	Plasma Membrane
<i>Gm5606</i> : predicted gene 5606	1.682	other	Unknown
<i>GABBR2</i> : gamma-aminobutyric acid (GABA) B receptor, 2	1.681	G-protein coupled receptor	Plasma Membrane
<i>LOC637516</i> : vomeronasal type-2 receptor 26-like	1.68	other	Unknown
<i>GNG3</i> : guanine nucleotide binding protein (G protein), gamma 3	1.679	enzyme	Plasma Membrane
<i>Gm11381</i> : predicted gene 11381	1.678	other	Unknown
<i>DISC1</i> : disrupted in schizophrenia 1	1.676	other	Cytoplasm
<i>SLC36A2</i> : solute carrier family 36 (proton/amino acid symporter), member 2	1.674	transporter	Plasma Membrane
<i>OR10A4</i> : olfactory receptor, family 10, subfamily A, member 4	1.671	G-protein coupled receptor	Plasma Membrane
<i>Dusp21</i> : dual specificity phosphatase 21	1.669	phosphatase	Cytoplasm
<i>TMEM132B</i> : transmembrane protein 132B	1.669	other	Unknown
<i>Mup1 (includes others)</i> : major urinary protein 1	1.668	other	Extracellular Space
<i>Ighg3</i> : Immunoglobulin heavy constant gamma 3	1.667	other	Unknown
<i>OR4L1</i> : olfactory receptor, family 4, subfamily L, member 1	1.665	G-protein coupled receptor	Plasma Membrane
<i>ZNF205</i> : zinc finger protein 205	1.664	other	Nucleus
<i>AMY2A</i> : amylase, alpha 2A (pancreatic)	1.664	enzyme	Extracellular Space
<i>Olf1048</i> : olfactory receptor 1048	1.663	G-protein coupled receptor	Plasma Membrane
<i>CWC22</i> : CWC22 spliceosome-associated protein homolog (S. cerevisiae)	1.66	other	Nucleus
<i>Gm10536</i> : predicted gene 10536	1.659	other	Unknown
<i>SLC13A3</i> : solute carrier family 13 (sodium-dependent dicarboxylate transporter), member 3	1.658	transporter	Plasma Membrane
<i>DUOXA1</i> : dual oxidase maturation factor 1	1.657	other	Plasma Membrane
<i>PAK7</i> : p21 protein (Cdc42/Rac)-activated kinase 7	1.657	kinase	Nucleus
<i>Olf1772/Olf1773</i> : olfactory receptor 772	1.653	G-protein coupled receptor	Plasma Membrane
<i>Olf1129</i> : olfactory receptor 1129	1.653	G-protein coupled receptor	Plasma Membrane
<i>E530001K10Rik</i> : RIKEN cDNA E530001K10 gene	1.652	other	Unknown
<i>Olf1179</i> : olfactory receptor 1179	1.651	G-protein coupled receptor	Plasma Membrane
<i>Gm9767</i> : predicted gene 9767	1.648	other	Unknown
<i>FGF2</i> : fibroblast growth factor 2 (basic)	1.647	growth factor	Extracellular Space
<i>9630028I04Rik</i> : RIKEN cDNA 9630028I04 gene	1.643	other	Unknown
<i>MYH10</i> : myosin, heavy chain 10, non-muscle	1.641	other	Cytoplasm
<i>Gm10614</i> : predicted gene 10614	1.641	other	Unknown
<i>ADORA1</i> : adenosine A1 receptor	1.637	G-protein coupled receptor	Plasma Membrane
<i>SLC6A12</i> : solute carrier family 6 (neurotransmitter transporter, betaine/GABA), member 12	1.637	transporter	Plasma Membrane
<i>Gm16441</i> : predicted pseudogene 16441	1.636	other	Unknown
<i>SDAD1</i> : SDA1 domain containing 1	1.633	other	Nucleus
<i>RAB9B</i> : RAB9B, member RAS oncogene family	1.631	enzyme	Plasma Membrane
<i>GAB3</i> : GRB2-associated binding protein 3	1.627	other	Unknown
<i>Olf1491</i> : olfactory receptor 491	1.626	G-protein coupled receptor	Plasma Membrane
<i>Igkv6-14</i> : immunoglobulin kappa variable 6-14	1.626	other	Unknown
<i>RBP4</i> : retinol binding protein 4, plasma	1.625	transporter	Extracellular Space
<i>GPR139</i> : G protein-coupled receptor 139	1.624	G-protein coupled receptor	Plasma Membrane
<i>Gm11468</i> : predicted gene 11468	1.623	other	Unknown
<i>SLC35F1</i> : solute carrier family 35, member F1	1.622	other	Unknown
<i>Olf1329</i> : olfactory receptor 1329	1.622	G-protein coupled receptor	Plasma Membrane
<i>Gm7166</i> : predicted gene 7166	1.621	other	Unknown
<i>CYTL1</i> : cytokine-like 1	1.618	cytokine	Extracellular Space

1700022A22Rik: RIKEN cDNA 1700022A22 gene	1.617	other	Unknown
Rhox8: reproductive homeobox 8	1.617	other	Unknown
SKAP1: src kinase associated phosphoprotein 1	1.616	kinase	Cytoplasm
NRXN1: neurexin 1	1.615	transporter	Plasma Membrane
CMBL: carboxymethylglutaminase homolog (Pseudomonas)	1.613	enzyme	Unknown
FAM5C: family with sequence similarity 5, member C	1.613	other	Cytoplasm
Olf133 (includes others): olfactory receptor 134	1.612	G-protein coupled receptor	Plasma Membrane
ZNF395: zinc finger protein 395	1.612	other	Cytoplasm
SBK2: SH3-binding domain kinase family, member 2	1.612	other	Unknown
CLEC4A: C-type lectin domain family 4, member A	1.611	transmembrane receptor	Plasma Membrane
DACH2: dachshund homolog 2 (Drosophila)	1.611	other	Nucleus
Ott (includes others): ovary testis transcribed	1.611	other	Unknown
2310016G11Rik: RIKEN cDNA 2310016G11 gene	1.61	other	Unknown
ONECUT1: one cut homeobox 1	1.609	transcription regulator	Nucleus
MOGAT1: monoacylglycerol O-acyltransferase 1	1.609	enzyme	Cytoplasm
VMO1: vitelline membrane outer layer 1 homolog (chicken)	1.609	other	Extracellular Space
D8Etd158e: DNA segment, Chr 8, ERATO Doi 158, expressed	1.608	other	Unknown
HTR2B: 5-hydroxytryptamine (serotonin) receptor 2B, G protein-coupled	1.608	G-protein coupled receptor	Plasma Membrane
SEPT14: septin 14	1.607	other	Cytoplasm
OR9Q1: olfactory receptor, family 9, subfamily Q, member 1	1.604	G-protein coupled receptor	Plasma Membrane
VSTM2B: V-set and transmembrane domain containing 2B	1.603	other	Unknown
Vmn2r28/Vmn2r52: vomeronasal 2, receptor 28	1.602	other	Unknown
PMFBP1: polyamine modulated factor 1 binding protein 1	1.599	other	Cytoplasm
SV2C: synaptic vesicle glycoprotein 2C	1.598	other	Plasma Membrane
KCNJ8: potassium inwardly-rectifying channel, subfamily J, member 8	1.597	ion channel	Plasma Membrane
Wap: whey acidic protein	1.597	other	Extracellular Space
Gm1988 (includes others): predicted gene 6833	1.597	other	Unknown
STXBP5L: syntaxin binding protein 5-like	1.596	other	Cytoplasm
CAMP (includes EG:12796): cathelicidin antimicrobial peptide	1.595	other	Cytoplasm
Olf1110/Olf259: olfactory receptor 259	1.593	G-protein coupled receptor	Plasma Membrane
Gm2176: glucosamine-6-phosphate deaminase 1 pseudogene	1.589	other	Unknown
1700028116Rik: RIKEN cDNA 1700028116 gene	1.589	other	Unknown
Sly (includes others): Sycp3 like Y-linked	1.583	other	Cytoplasm
KCNS2: potassium voltage-gated channel, delayed-rectifier, subfamily S, member 2	1.582	ion channel	Plasma Membrane
SLCO5A1: solute carrier organic anion transporter family, member 5A1	1.579	transporter	Unknown
Olf1154 (includes others): olfactory receptor 1160	1.579	G-protein coupled receptor	Plasma Membrane
Fam188b2: family with sequence similarity 188, member B2	1.577	other	Unknown
DCC: deleted in colorectal carcinoma	1.576	transmembrane receptor	Plasma Membrane
FLJ23152: uncharacterized LOC401236	1.575	other	Unknown
TOX2: TOX high mobility group box family member 2	1.573	transcription regulator	Nucleus
C11orf35: chromosome 11 open reading frame 35	1.571	other	Unknown
B230114P17Rik: RIKEN cDNA B230114P17 gene	1.571	other	Unknown
4932415M13Rik (includes others): predicted gene 324	1.571	other	Unknown
HYDIN: HYDIN, axonemal central pair apparatus protein	1.57	other	Unknown
4930444P10Rik: RIKEN cDNA 4930444P10 gene	1.569	other	Unknown
LTK: leukocyte receptor tyrosine kinase	1.568	kinase	Plasma Membrane
C9orf78: chromosome 9 open reading frame 78	1.566	other	Unknown
DUSP8: dual specificity phosphatase 8	1.565	phosphatase	Nucleus
GDF10: growth differentiation factor 10	1.564	growth factor	Extracellular Space
LYZL1: lysozyme-like 1	1.563	enzyme	Unknown
Olf1418: olfactory receptor 1418	1.562	G-protein coupled receptor	Plasma Membrane
ATOH7: atonal homolog 7 (Drosophila)	1.557	other	Unknown
Olf1564: olfactory receptor 564	1.556	G-protein coupled receptor	Plasma Membrane
C9orf24: chromosome 9 open reading frame 24	1.556	other	Cytoplasm
CRB1: crumbs homolog 1 (Drosophila)	1.554	other	Plasma Membrane
E230015B07Rik: RIKEN cDNA E230015B07 gene	1.552	other	Unknown

<i>KALRN</i> : kalirin, RhoGEF kinase	1.551	kinase	Cytoplasm
<i>4931408C20Rik</i> : RIKEN cDNA 4931408C20 gene	1.549	other	Unknown
<i>SMARCA1</i> : SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 1	1.548	transcription regulator	Nucleus
<i>CRYAA</i> : crystallin, alpha A	1.547	other	Nucleus
<i>CRISP1</i> : cysteine-rich secretory protein 1	1.547	other	Extracellular Space
<i>TMEM55A</i> : transmembrane protein 55A	1.546	phosphatase	Unknown
<i>CPXCR1</i> : CPX chromosome region, candidate 1	1.545	other	Unknown
<i>IQCK</i> : IQ motif containing K	1.544	other	Unknown
<i>FUNDC2</i> : FUN14 domain containing 2	1.543	other	Cytoplasm
<i>EPHA5</i> : EPH receptor A5	1.542	kinase	Plasma Membrane
<i>1700003E24Rik/1700019M22Rik</i> : RIKEN cDNA 1700019M22 gene	1.54	other	Unknown
<i>D030047H15Rik</i> : RIKEN cDNA D030047H15 gene	1.539	other	Unknown
<i>Gm11202</i> : predicted gene 11202	1.537	other	Unknown
<i>MOGAT2</i> : monoacylglycerol O-acyltransferase 2	1.535	enzyme	Cytoplasm
<i>CYP2C8</i> : cytochrome P450, family 2, subfamily C, polypeptide 8	1.535	enzyme	Cytoplasm
<i>FOLR4</i> : folate receptor 4 (delta) homolog (mouse)	1.534	transporter	Plasma Membrane
<i>Olfir61</i> : olfactory receptor 61	1.532	G-protein coupled receptor	Plasma Membrane
<i>SH3PXD2A</i> : SH3 and PX domains 2A	1.532	other	Cytoplasm
<i>4933406J10Rik</i> : RIKEN cDNA 4933406J10 gene	1.532	other	Unknown
<i>UBL4B</i> : ubiquitin-like 4B	1.532	other	Unknown
<i>AOC3</i> : amine oxidase, copper containing 3 (vascular adhesion protein 1)	1.532	enzyme	Plasma Membrane
<i>PNPLA3</i> : patatin-like phospholipase domain containing 3	1.531	enzyme	Cytoplasm
<i>A530010F05Rik</i> : RIKEN cDNA A530010F05 gene	1.529	other	Unknown
<i>9430041J12Rik</i> : RIKEN cDNA 9430041J12 gene	1.528	other	Unknown
<i>Gm7789</i> : predicted pseudogene 7789	1.527	other	Unknown
<i>1700003D09Rik</i> : RIKEN cDNA 1700003D09 gene	1.526	other	Unknown
<i>GABRA2</i> : gamma-aminobutyric acid (GABA) A receptor, alpha 2	1.526	ion channel	Plasma Membrane
<i>OR14C36</i> : olfactory receptor, family 14, subfamily C, member 36	1.524	G-protein coupled receptor	Plasma Membrane
<i>RIMKLB</i> : ribosomal modification protein rimK-like family member B	1.524	other	Cytoplasm
<i>OR1A1</i> : olfactory receptor, family 1, subfamily A, member 1	1.522	G-protein coupled receptor	Plasma Membrane
<i>SULT1A3/SULT1A4</i> : sulfotransferase family, cytosolic, 1A, phenol-preferring, member 3	1.522	enzyme	Cytoplasm
<i>Olfir1105</i> : olfactory receptor 1105	1.522	G-protein coupled receptor	Plasma Membrane
<i>Olfir1233</i> : olfactory receptor 1233	1.521	G-protein coupled receptor	Plasma Membrane
<i>4930563F08Rik</i> : RIKEN cDNA 4930563F08 gene	1.521	other	Unknown
<i>LOC388588</i> : uncharacterized protein LOC388588	1.52	other	Unknown
<i>Vmn1r148 (includes others)</i> : vomeronasal 1 receptor 148	1.52	other	Plasma Membrane
<i>CCDC39</i> : coiled-coil domain containing 39	1.518	other	Cytoplasm
<i>Olfir1220</i> : olfactory receptor 1220	1.518	G-protein coupled receptor	Plasma Membrane
<i>RBFOX3</i> : RNA binding protein, fox-1 homolog (C. elegans) 3	1.517	other	Nucleus
<i>MAMSTR</i> : MEF2 activating motif and SAP domain containing transcriptional regulator	1.517	other	Nucleus
<i>KCNK4</i> : potassium channel, subfamily K, member 4	1.516	ion channel	Plasma Membrane
<i>OR52L1</i> : olfactory receptor, family 52, subfamily L, member 1	1.516	G-protein coupled receptor	Plasma Membrane
<i>KHDRBS2</i> : KH domain containing, RNA binding, signal transduction associated 2	1.515	other	Nucleus
<i>4930402F06Rik</i> : RIKEN cDNA 4930402F06 gene	1.515	other	Unknown
<i>MRAP2</i> : melanocortin 2 receptor accessory protein 2	1.515	other	Cytoplasm
<i>SPATA3</i> : spermatogenesis associated 3	1.512	other	Unknown
<i>H1FX</i> : H1 histone family, member X	1.511	other	Nucleus
<i>Poln</i> : DNA polymerase N	1.509	enzyme	Nucleus
<i>Vmn1r49 (includes others)</i> : vomeronasal 1, receptor 49	1.505	G-protein coupled receptor	Plasma Membrane
<i>ANXA10</i> : annexin A10	1.505	other	Cytoplasm
<i>Tgtp1/Tgtp2</i> : T cell specific GTPase 1	1.503	other	Unknown
<i>9630041A04Rik</i> : RIKEN cDNA 9630041A04 gene	1.503	other	Unknown
<i>C6orf58</i> : chromosome 6 open reading frame 58	1.502	other	Unknown
<i>FGG</i> : fibrinogen gamma chain	1.501	other	Extracellular Space
<i>Gm12371</i> : predicted gene 12371	1.501	other	Unknown
<i>NOX3</i> : NADPH oxidase 3	-1.5	enzyme	Cytoplasm

<i>OlfR594</i> : olfactory receptor 594	-1.502	G-protein coupled receptor	Plasma Membrane
<i>MGLL</i> : monoglyceride lipase	-1.503	enzyme	Plasma Membrane
<i>OlfR740</i> : olfactory receptor 740	-1.504	G-protein coupled receptor	Plasma Membrane
<i>Magea4</i> : melanoma antigen, family A, 4	-1.504	other	Unknown
<i>MSMO1</i> : methylsterol monooxygenase 1	-1.506	enzyme	Cytoplasm
<i>VWA2</i> : von Willebrand factor A domain containing 2	-1.507	other	Extracellular Space
<i>DGKI</i> : diacylglycerol kinase, iota	-1.507	kinase	Cytoplasm
<i>1700063D05Rik</i> : RIKEN cDNA 1700063D05 gene	-1.508	other	Unknown
<i>TNFRSF13C</i> : tumor necrosis factor receptor superfamily, member 13C	-1.51	transmembrane receptor	Plasma Membrane
<i>C230004F18Rik</i> : RIKEN cDNA C230004F18 gene	-1.51	other	Unknown
<i>Gm10513</i> : predicted gene 10513	-1.511	other	Unknown
<i>CNPY4</i> : canopy 4 homolog (zebrafish)	-1.513	other	Unknown
<i>1700058M13Rik</i> : RIKEN cDNA 1700058M13 gene	-1.513	other	Unknown
<i>Sval2</i> : seminal vesicle antigen-like 2	-1.513	other	Extracellular Space
<i>C19orf79</i> : chromosome 19 open reading frame 79	-1.513	other	Unknown
<i>SLC23A3</i> : solute carrier family 23 (nucleobase transporters), member 3	-1.514	transporter	Unknown
<i>OlfR987/OlfR988</i> : olfactory receptor 987	-1.516	G-protein coupled receptor	Plasma Membrane
<i>BDH1</i> (includes <i>EG:100037356</i>): 3-hydroxybutyrate dehydrogenase, type 1	-1.517	enzyme	Cytoplasm
<i>Vmn2r104/Vmn2r94</i> : vomeronasal 2, receptor 104	-1.517	other	Unknown
<i>BC021614</i> : cDNA sequence BC021614	-1.519	other	Unknown
<i>NSUN7</i> : NOP2/Sun domain family, member 7	-1.52	other	Unknown
<i>AY512931</i> : cDNA sequence AY512931	-1.521	other	Unknown
<i>KIAA1217</i> : KIAA1217	-1.521	other	Cytoplasm
<i>INADL</i> : InaD-like (Drosophila)	-1.522	other	Plasma Membrane
<i>RGS8</i> : regulator of G-protein signaling 8	-1.523	other	Cytoplasm
<i>C030047K22Rik</i> : RIKEN cDNA C030047K22 gene	-1.524	other	Unknown
<i>PLCH2</i> : phospholipase C, eta 2	-1.525	enzyme	Cytoplasm
<i>GSG1L</i> : GSG1-like	-1.525	other	Unknown
<i>OlfR969/OlfR970</i> : olfactory receptor 970	-1.525	G-protein coupled receptor	Plasma Membrane
<i>KLK6</i> : kallikrein-related peptidase 6	-1.526	peptidase	Extracellular Space
<i>WNT1</i> : wingless-type MMTV integration site family, member 1	-1.526	cytokine	Extracellular Space
<i>Vmn1r5/Vmn1r6</i> : vomeronasal 1 receptor 6	-1.529	G-protein coupled receptor	Plasma Membrane
<i>Gm3510</i> : predicted gene 3510	-1.529	other	Unknown
<i>TFAP2A</i> : transcription factor AP-2 alpha (activating enhancer binding protein 2 alpha)	-1.532	transcription regulator	Nucleus
<i>FXD3</i> : FXD domain containing ion transport regulator 3	-1.534	other	Cytoplasm
<i>PGLYRP2</i> : peptidoglycan recognition protein 2	-1.535	transmembrane receptor	Plasma Membrane
<i>SMARCC1</i> : SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily c, member 1	-1.538	transcription regulator	Nucleus
<i>D130009I18Rik</i> : RIKEN cDNA D130009I18 gene	-1.54	other	Unknown
<i>PLEKHH2</i> : pleckstrin homology domain containing, family H (with MyTH4 domain) member 2	-1.541	other	Cytoplasm
<i>4930511M11Rik</i> : RIKEN cDNA 4930511M11 gene	-1.542	other	Unknown
<i>BHMT2</i> : betaine-homocysteine S-methyltransferase 2	-1.542	enzyme	Cytoplasm
<i>1700011A15Rik</i> : RIKEN cDNA 1700011A15 gene	-1.543	other	Unknown
<i>ESM1</i> : endothelial cell-specific molecule 1	-1.551	growth factor	Extracellular Space
<i>KNG1</i> : kininogen 1	-1.552	other	Extracellular Space
<i>NOX1</i> : NADPH oxidase 1	-1.553	ion channel	Cytoplasm
<i>ODZ2</i> : odz, odd Oz/ten-m homolog 2 (Drosophila)	-1.553	other	Plasma Membrane
<i>MKX</i> : mohawk homeobox	-1.554	other	Nucleus
<i>PDSS1</i> : prenyl (decaprenyl) diphosphate synthase, subunit 1	-1.556	enzyme	Cytoplasm
<i>LOC626082</i> : uncharacterized LOC626082	-1.556	other	Unknown
<i>NELL1</i> : NEL-like 1 (chicken)	-1.557	growth factor	Extracellular Space
<i>OlfR1245</i> : olfactory receptor 1245	-1.557	G-protein coupled receptor	Plasma Membrane
<i>FOXP1</i> : forkhead box P1	-1.559	transcription regulator	Nucleus
<i>SPRR2G</i> : small proline-rich protein 2G	-1.559	other	Cytoplasm
<i>A330041J22Rik</i> : RIKEN cDNA A330041J22 gene	-1.561	other	Unknown
<i>Gm3772</i> : predicted gene 3772	-1.561	other	Unknown
<i>RGS20</i> : regulator of G-protein signaling 20	-1.562	other	Cytoplasm

<i>Mbd3l2</i> : methyl-CpG binding domain protein 3-like 2	-1.563	other	Unknown
<i>ZNF845</i> : zinc finger protein 845	-1.563	other	Nucleus
<i>LIPF</i> : lipase, hormone-sensitive	-1.564	enzyme	Cytoplasm
<i>GNG7</i> : guanine nucleotide binding protein (G protein), gamma 7	-1.565	enzyme	Plasma Membrane
<i>TMEM108</i> : transmembrane protein 108	-1.565	other	Unknown
<i>TMEM139</i> : transmembrane protein 139	-1.567	other	Unknown
<i>C11orf53</i> : chromosome 11 open reading frame 53	-1.569	other	Unknown
<i>Spanxn4 (mouse)</i> : SPANX family, member N4	-1.57	other	Unknown
<i>NTN4</i> : netrin 4	-1.57	other	Extracellular Space
<i>METTL21CP1</i> : methyltransferase like 21C pseudogene 1	-1.571	other	Unknown
<i>PADI4</i> : peptidyl arginine deiminase, type IV	-1.572	enzyme	Cytoplasm
<i>Gm12541</i> : predicted gene 12541	-1.572	other	Unknown
<i>MAP3K5</i> : mitogen-activated protein kinase kinase kinase 5	-1.572	kinase	Cytoplasm
<i>KRTAP13-1</i> : keratin associated protein 13-1	-1.573	other	Unknown
<i>EFCAB1</i> : EF-hand calcium binding domain 1	-1.573	other	Unknown
<i>OR51Q1</i> : olfactory receptor, family 51, subfamily Q, member 1	-1.574	G-protein coupled receptor	Plasma Membrane
<i>Olf938</i> : olfactory receptor 938	-1.574	G-protein coupled receptor	Plasma Membrane
<i>IL1RAPL1</i> : interleukin 1 receptor accessory protein-like 1	-1.574	transmembrane receptor	Plasma Membrane
<i>Olf1436/Olf1437</i> : olfactory receptor 1437	-1.577	G-protein coupled receptor	Plasma Membrane
<i>Gm5432</i> : predicted gene 5432	-1.578	other	Unknown
<i>C10orf120</i> : chromosome 10 open reading frame 120	-1.579	other	Unknown
<i>DSG2</i> : desmoglein 2	-1.579	other	Plasma Membrane
<i>ELOVL4</i> : ELOVL fatty acid elongase 4	-1.581	enzyme	Cytoplasm
<i>CCL1</i> : chemokine (C-C motif) ligand 1	-1.581	cytokine	Extracellular Space
<i>Psg18 (includes others)</i> : pregnancy specific glycoprotein 18	-1.585	other	Extracellular Space
<i>HAPLN1</i> : hyaluronan and proteoglycan link protein 1	-1.586	other	Extracellular Space
<i>CYP26B1</i> : cytochrome P450, family 26, subfamily B, polypeptide 1	-1.587	enzyme	Cytoplasm
<i>1700061117Rik</i> : RIKEN cDNA 1700061117 gene	-1.589	other	Unknown
<i>MBTPS2</i> : membrane-bound transcription factor peptidase, site 2	-1.59	peptidase	Cytoplasm
<i>Marvel3</i> : MARVEL (membrane-associating) domain containing 3	-1.594	other	Plasma Membrane
<i>ADRA1B</i> : adrenoceptor alpha 1B	-1.594	G-protein coupled receptor	Plasma Membrane
<i>Gucy2g</i> : guanylate cyclase 2g	-1.595	enzyme	Cytoplasm
<i>LPAR2</i> : lysophosphatidic acid receptor 2	-1.596	G-protein coupled receptor	Plasma Membrane
<i>Olf118/Olf120</i> : olfactory receptor 120	-1.597	G-protein coupled receptor	Plasma Membrane
<i>PRRT4</i> : proline-rich transmembrane protein 4	-1.598	other	Unknown
<i>KCNV1</i> : potassium channel, subfamily V, member 1	-1.599	ion channel	Plasma Membrane
<i>Plk5</i> : polo-like kinase 5 (Drosophila)	-1.6	other	Nucleus
<i>4933440M02Rik</i> : RIKEN cDNA 4933440M02 gene	-1.601	other	Unknown
<i>SCUBE2 (includes EG:499241)</i> : signal peptide, CUB domain, EGF-like 2	-1.602	other	Extracellular Space
<i>IL17RE</i> : interleukin 17 receptor E	-1.602	other	Unknown
<i>CAMTA1</i> : calmodulin binding transcription activator 1	-1.602	other	Unknown
<i>Fmo9</i> : flavin containing monooxygenase 9	-1.607	other	Unknown
<i>SLC9C1</i> : solute carrier family 9, subfamily C (Na ⁺ -transporting carboxylic acid decarboxylase), member 1	-1.608	other	Unknown
<i>FAM135B</i> : family with sequence similarity 135, member B	-1.611	enzyme	Unknown
<i>CECR6</i> : cat eye syndrome chromosome region, candidate 6	-1.611	transcription regulator	Nucleus
<i>RASSF9</i> : Ras association (RalGDS/AF-6) domain family (N-terminal) member 9	-1.611	transporter	Cytoplasm
<i>MEGF6</i> : multiple EGF-like-domains 6	-1.612	other	Cytoplasm
<i>TLX3</i> : T-cell leukemia homeobox 3	-1.614	transcription regulator	Nucleus
<i>ART4</i> : ADP-ribosyltransferase 4 (Dombrock blood group)	-1.616	enzyme	Nucleus
<i>CXADR</i> : coxsackie virus and adenovirus receptor	-1.619	transmembrane receptor	Plasma Membrane
<i>Gm10837</i> : predicted gene 10837	-1.62	other	Unknown
<i>Gm2483</i> : predicted gene 2483	-1.621	other	Unknown
<i>9530091C08Rik</i> : RIKEN cDNA 9530091C08 gene	-1.624	other	Unknown
<i>TNFRSF11B</i> : tumor necrosis factor receptor superfamily, member 11b	-1.624	transmembrane receptor	Plasma Membrane
<i>MTF1 (includes EG:17764)</i> : metal-regulatory transcription factor 1	-1.626	transcription regulator	Nucleus
<i>4921509O07Rik</i> : RIKEN cDNA 4921509O07 gene	-1.627	other	Unknown

<i>GLB1L3</i> : galactosidase, beta 1-like 3	-1.63	enzyme	Unknown
<i>CA2</i> : carbonic anhydrase II	-1.635	enzyme	Cytoplasm
<i>BCL11B</i> : B-cell CLL/lymphoma 11B (zinc finger protein)	-1.638	other	Nucleus
<i>SLC6A15</i> : solute carrier family 6 (neutral amino acid transporter), member 15	-1.639	transporter	Plasma Membrane
<i>Scd3</i> : stearyl-coenzyme A desaturase 3	-1.643	enzyme	Cytoplasm
<i>Tcl1b4</i> (includes others): T cell leukemia/lymphoma 1B, 4	-1.644	other	Unknown
<i>ELF5</i> : E74-like factor 5 (ets domain transcription factor)	-1.645	transcription regulator	Nucleus
<i>LOC152586</i> : glycosyltransferase 54 domain-containing protein	-1.645	other	Unknown
<i>ME3</i> : malic enzyme 3, NADP(+)-dependent, mitochondrial	-1.646	enzyme	Cytoplasm
<i>FAM26E</i> : family with sequence similarity 26, member E	-1.649	other	Unknown
<i>Fhl4</i> : four and a half LIM domains 4	-1.65	other	Unknown
<i>IGFN1</i> : immunoglobulin-like and fibronectin type III domain containing 1	-1.652	other	Nucleus
<i>4932411G14Rik</i> : RIKEN cDNA 4932411G14 gene	-1.652	other	Unknown
<i>Gm10829</i> : predicted gene 10829	-1.653	other	Unknown
<i>BC049730</i> : cDNA sequence BC049730	-1.654	other	Unknown
<i>TFAP2E</i> : transcription factor AP-2 epsilon (activating enhancer binding protein 2 epsilon)	-1.655	other	Unknown
<i>Tas2r113</i> : taste receptor, type 2, member 113	-1.66	other	Unknown
<i>KIAA1244</i> : KIAA1244	-1.661	other	Cytoplasm
<i>PSAPL1</i> : prosaposin-like 1 (gene/pseudogene)	-1.661	other	Unknown
<i>9130409I23Rik</i> : RIKEN cDNA 9130409I23 gene	-1.662	other	Unknown
<i>Gm9946</i> : predicted gene 9946	-1.664	other	Unknown
<i>KCTD14</i> : potassium channel tetramerisation domain containing 14	-1.664	ion channel	Unknown
<i>LGR5</i> : leucine-rich repeat containing G protein-coupled receptor 5	-1.666	G-protein coupled receptor	Plasma Membrane
<i>CHI3L1</i> : chitinase 3-like 1 (cartilage glycoprotein-39)	-1.67	enzyme	Extracellular Space
<i>LRAT</i> : lecithin retinol acyltransferase (phosphatidylcholine--retinol O-acyltransferase)	-1.671	enzyme	Cytoplasm
<i>C16orf62</i> : chromosome 16 open reading frame 62	-1.682	other	Unknown
<i>SLC45A2</i> : solute carrier family 45, member 2	-1.687	other	Plasma Membrane
<i>OTOL1</i> : otolin 1	-1.687	other	Unknown
<i>5830403M04Rik</i> : RIKEN cDNA 5830403M04 gene	-1.691	other	Unknown
<i>VSNL1</i> : visinin-like 1	-1.694	other	Cytoplasm
<i>4921529L05Rik</i> : RIKEN cDNA 4921529L05 gene	-1.703	other	Unknown
<i>HSD17B7</i> : hydroxysteroid (17-beta) dehydrogenase 7	-1.703	enzyme	Cytoplasm
<i>Gm2149</i> : predicted gene 2149	-1.708	other	Unknown
<i>4930542N06Rik</i> : RIKEN cDNA 4930542N06 gene	-1.71	other	Unknown
<i>ZIC4</i> : Zic family member 4	-1.714	other	Nucleus
<i>DYDC2</i> : DPY30 domain containing 2	-1.714	other	Extracellular Space
<i>Gm12603</i> : predicted gene 12603	-1.719	other	Unknown
<i>KRT17</i> : keratin 17	-1.721	other	Cytoplasm
<i>MAGEB6</i> : melanoma antigen family B, 6	-1.722	other	Unknown
<i>PCTP</i> : phosphatidylcholine transfer protein	-1.725	transporter	Cytoplasm
<i>RASSF6</i> : Ras association (RalGDS/AF-6) domain family member 6	-1.725	other	Unknown
<i>LRRC19</i> : leucine rich repeat containing 19	-1.726	other	Unknown
<i>WFDC2</i> : WAP four-disulfide core domain 2	-1.726	other	Extracellular Space
<i>LSS</i> : lanosterol synthase (2,3-oxidosqualene-lanosterol cyclase)	-1.727	enzyme	Cytoplasm
<i>EYA2</i> : eyes absent homolog 2 (Drosophila)	-1.729	phosphatase	Nucleus
<i>BGLAP</i> : bone gamma-carboxyglutamate (gla) protein	-1.735	other	Extracellular Space
<i>GALNT14</i> : UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 14 (GalNAc-T14)	-1.738	enzyme	Cytoplasm
<i>Ces2b/Ces2c</i> : carboxylesterase 2C	-1.739	enzyme	Cytoplasm
<i>MGAT5B</i> : mannosyl (alpha-1,6-)-glycoprotein beta-1,6-N-acetyl-glucosaminyltransferase, isozyme B	-1.741	other	Unknown
<i>LRRC18</i> : leucine rich repeat containing 18	-1.741	other	Cytoplasm
<i>Vmn1r15</i> : vomeronasal 1 receptor 15	-1.752	other	Unknown
<i>LEAP2</i> : liver expressed antimicrobial peptide 2	-1.759	other	Extracellular Space
<i>Aox4</i> : aldehyde oxidase 4	-1.763	enzyme	Unknown
<i>A030005L19Rik</i> : RIKEN cDNA A030005L19 gene	-1.77	transporter	Unknown
<i>VDR</i> : vitamin D (1,25- dihydroxyvitamin D3) receptor	-1.773	ligand-dependent nuclear receptor	Nucleus
<i>Gm16440</i> (includes others): predicted gene 16440	-1.773	other	Unknown

<i>FOXC1</i> : forkhead box C1	-1.775	transcription regulator	Nucleus
<i>NEFM</i> : neurofilament, medium polypeptide	-1.776	other	Cytoplasm
<i>AADACL3</i> : arylacetamide deacetylase-like 3	-1.78	other	Unknown
<i>SLC46A2</i> : solute carrier family 46, member 2	-1.787	transporter	Plasma Membrane
<i>SGPP2</i> : sphingosine-1-phosphate phosphatase 2	-1.793	phosphatase	Cytoplasm
<i>CDH4</i> : cadherin 4, type 1, R-cadherin (retinal)	-1.793	other	Plasma Membrane
<i>TP73</i> : tumor protein p73	-1.794	transcription regulator	Nucleus
<i>SDR16C6P</i> : short chain dehydrogenase/reductase family 16C, member 6, pseudogene	-1.801	other	Unknown
<i>Gm10662 (includes others)</i> : predicted gene 5891	-1.807	other	Unknown
<i>OR5T1</i> : olfactory receptor, family 5, subfamily T, member 1	-1.809	G-protein coupled receptor	Plasma Membrane
<i>CCDC136</i> : coiled-coil domain containing 136	-1.822	other	Cytoplasm
<i>Olf495/Olf498</i> : olfactory receptor 495	-1.827	G-protein coupled receptor	Plasma Membrane
<i>HSD17B2</i> : hydroxysteroid (17-beta) dehydrogenase 2	-1.83	enzyme	Cytoplasm
<i>PMEL</i> : premelanosome protein	-1.84	enzyme	Plasma Membrane
<i>PDZK1</i> : PDZ domain containing 1	-1.843	transporter	Plasma Membrane
<i>Acot5</i> : acyl-CoA thioesterase 5	-1.855	enzyme	Cytoplasm
<i>D7Etd715e</i> : DNA segment, Chr 7, ERATO Doi 715, expressed	-1.856	other	Unknown
<i>Gm438</i> : predicted gene 438	-1.859	other	Unknown
<i>4733401D01Rik</i> : RIKEN cDNA 4733401D01 gene	-1.861	other	Unknown
<i>Ear5</i> : eosinophil-associated, ribonuclease A family, member 5	-1.878	enzyme	Cytoplasm
<i>ILDR1</i> : immunoglobulin-like domain containing receptor 1	-1.887	transmembrane receptor	Plasma Membrane
<i>1700030C10Rik</i> : RIKEN cDNA 1700030C10 gene	-1.89	other	Unknown
<i>lqcf4</i> : IQ motif containing F4	-1.895	other	Unknown
<i>A030001D16Rik</i> : RIKEN cDNA A030001D16 gene	-1.905	other	Unknown
<i>FOXO1</i> : forkhead box O1	-1.92	transcription regulator	Nucleus
<i>MC3R</i> : melanocortin 3 receptor	-1.922	G-protein coupled receptor	Plasma Membrane
<i>Acot1</i> : acyl-CoA thioesterase 1	-1.923	enzyme	Cytoplasm
<i>2900064F13Rik</i> : RIKEN cDNA 2900064F13 gene	-1.934	other	Unknown
<i>OR10J3</i> : olfactory receptor, family 10, subfamily J, member 3	-1.938	G-protein coupled receptor	Plasma Membrane
<i>SCRG1</i> : stimulator of chondrogenesis 1	-1.942	other	Extracellular Space
<i>SNAP91</i> : synaptosomal-associated protein, 91kDa homolog (mouse)	-1.944	other	Plasma Membrane
<i>DCT</i> : dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	-1.949	enzyme	Cytoplasm
<i>GK5</i> : glycerol kinase 5 (putative)	-1.952	kinase	Unknown
<i>A1480526</i> : expressed sequence A1480526	-1.956	other	Unknown
<i>Krtap16-2</i> : keratin associated protein 16-2	-1.956	other	Unknown
<i>TFAP2B</i> : transcription factor AP-2 beta (activating enhancer binding protein 2 beta)	-1.959	transcription regulator	Nucleus
<i>CERS4</i> : ceramide synthase 4	-1.96	transcription regulator	Cytoplasm
<i>TMED6</i> : transmembrane emp24 protein transport domain containing 6	-1.961	other	Cytoplasm
<i>Mill1</i> : MHC I like leukocyte 1	-1.969	other	Plasma Membrane
<i>CYP3A43</i> : cytochrome P450, family 3, subfamily A, polypeptide 43	-1.97	enzyme	Cytoplasm
<i>PAQR7</i> : progestin and adipoQ receptor family member VII	-1.975	other	Unknown
<i>2700089I24Rik</i> : RIKEN cDNA 2700089I24 gene	-1.978	other	Unknown
<i>HSD3B2</i> : hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 2	-1.978	enzyme	Cytoplasm
<i>UPK3BL</i> : uroplakin 3B-like	-1.983	other	Unknown
<i>PANK1</i> : pantothenate kinase 1	-1.986	kinase	Cytoplasm
<i>CPSF4L</i> : cleavage and polyadenylation specific factor 4-like	-1.992	other	Unknown
<i>TMEM56</i> : transmembrane protein 56	-2.012	other	Unknown
<i>CYP1A1 (includes EG:13076)</i> : cytochrome P450, family 1, subfamily A, polypeptide 1	-2.014	enzyme	Cytoplasm
<i>CST6 (includes EG:1474)</i> : cystatin E/M	-2.023	other	Extracellular Space
<i>SOSTDC1</i> : sclerostin domain containing 1	-2.029	other	Extracellular Space
<i>DSPP</i> : dentin sialophosphoprotein	-2.04	other	Extracellular Space
<i>SGCD</i> : sarcoglycan, delta (35kDa dystrophin-associated glycoprotein)	-2.041	other	Cytoplasm
<i>CYP4A11</i> : cytochrome P450, family 4, subfamily A, polypeptide 11	-2.044	enzyme	Cytoplasm
<i>Gm16527/Gm5538</i> : predicted gene 5538	-2.045	other	Unknown
<i>ACOX2</i> : acyl-CoA oxidase 2, branched chain	-2.045	enzyme	Cytoplasm
<i>TYRP1</i> : tyrosinase-related protein 1	-2.05	enzyme	Cytoplasm

<i>Olf1491</i> : olfactory receptor 1491	-2.052	G-protein coupled receptor	Plasma Membrane
<i>AADACL4</i> : arylacetamide deacetylase-like 4	-2.077	other	Unknown
<i>ACOXL</i> : acyl-CoA oxidase-like	-2.079	enzyme	Unknown
<i>Vmn2r65</i> : vomeronasal 2, receptor 65	-2.083	G-protein coupled receptor	Plasma Membrane
<i>CIDEA</i> : cell death-inducing DFFA-like effector a	-2.097	other	Cytoplasm
<i>C730036E19Rik</i> : RIKEN cDNA C730036E19 gene	-2.112	other	Unknown
<i>ROBO2</i> : roundabout, axon guidance receptor, homolog 2 (Drosophila)	-2.112	transmembrane receptor	Plasma Membrane
<i>C8orf47</i> : chromosome 8 open reading frame 47	-2.119	other	Unknown
<i>Olf1463/Olf1466</i> : olfactory receptor 1466	-2.119	G-protein coupled receptor	Plasma Membrane
<i>BK250D10.8</i> : uncharacterized LOC339674	-2.145	other	Unknown
<i>DHCR24</i> : 24-dehydrocholesterol reductase	-2.154	enzyme	Cytoplasm
<i>Gm2516</i> : predicted gene 2516	-2.183	other	Unknown
<i>WFDC13</i> : WAP four-disulfide core domain 13	-2.205	other	Extracellular Space
<i>AADAC</i> : arylacetamide deacetylase (esterase)	-2.268	enzyme	Cytoplasm
<i>PANX3</i> : pannexin 3	-2.276	other	Plasma Membrane
<i>CLDN8</i> : claudin 8	-2.278	other	Plasma Membrane
<i>SEC14L4</i> : SEC14-like 4 (S. cerevisiae)	-2.315	transporter	Unknown
<i>Akr1c20</i> : aldo-keto reductase family 1, member C20	-2.323	enzyme	Unknown
<i>CD5L</i> : CD5 molecule-like	-2.337	transmembrane receptor	Plasma Membrane
<i>Mucl1/Spt1</i> : salivary protein 1	-2.355	other	Plasma Membrane
<i>CLDN3</i> : claudin 3	-2.373	transmembrane receptor	Plasma Membrane
<i>ELOVL6</i> : ELOVL fatty acid elongase 6	-2.382	enzyme	Cytoplasm
<i>AWAT1</i> : acyl-CoA wax alcohol acyltransferase 1	-2.387	other	Unknown
<i>PNPLA5</i> : patatin-like phospholipase domain containing 5	-2.392	other	Unknown
<i>FA2H</i> : fatty acid 2-hydroxylase	-2.399	enzyme	Cytoplasm
<i>FAR2</i> : fatty acyl CoA reductase 2	-2.415	enzyme	Cytoplasm
<i>Gm10000</i> : predicted gene 10000	-2.415	other	Unknown
<i>CHST6</i> : carbohydrate (N-acetylglucosamine 6-O) sulfotransferase 6	-2.428	enzyme	Cytoplasm
<i>COCH</i> : coagulation factor C homolog, cochlin (Limulus polyphemus)	-2.477	other	Extracellular Space
<i>Gm13124</i> : predicted gene 13124	-2.505	other	Unknown
<i>IGFL3</i> : IGF-like family member 3	-2.52	other	Extracellular Space
<i>CDHR1</i> : cadherin-related family member 1	-2.527	other	Plasma Membrane
<i>OR51F1</i> : olfactory receptor, family 51, subfamily F, member 1	-2.538	G-protein coupled receptor	Plasma Membrane
<i>4930532M18Rik</i> : RIKEN cDNA 4930532M18 gene	-2.581	other	Unknown
<i>PLSCR5</i> : phospholipid scramblase family, member 5	-2.583	other	Unknown
<i>ELOVL3</i> : ELOVL fatty acid elongase 3	-2.61	enzyme	Cytoplasm
<i>Gm2128 (includes others)</i> : predicted gene 5592	-2.636	other	Unknown
<i>CES4A</i> : carboxylesterase 4A	-2.667	enzyme	Extracellular Space
<i>SPRR4</i> : small proline-rich protein 4	-2.722	other	Cytoplasm
<i>KRT79</i> : keratin 79	-2.791	other	Extracellular Space
<i>TTR</i> : transthyretin	-2.816	transporter	Extracellular Space
<i>LHX2</i> : LIM homeobox 2	-2.818	transcription regulator	Nucleus
<i>Gsdma2/Gsdma3</i> : gasdermin A3	-3.418	other	Unknown
<i>DMRTC1/DMRTC1B</i> : DMRT-like family C1B	-4.195	other	Unknown

Supplemental Table S3. Analysis for the molecular interactions between DRGs such as gene expression, activation, post-translational modification, and physical interactions.

Gene	Neighbors	Genes
FGF2	10	CIDEA, BGLAP, GRIN2A, NOTCH1, KNG1, DSPP, FOXO1, MAP3K5, TP73, PTX3
LIF	9	BGLAP, TNFRSF11B, FGG, LHX2, PGR, COCH, KNG1, DSPP, ADRA1B
FOXO1	9	BGLAP, FGF2, VDR, ELOVL6, NOX3, PGR, CA2, CIDEA, FOXC1
VDR	8	BGLAP, FGG, ADIPOQ, FOXO1, TP73, LIPE, CASR, GRIP1
BGLAP	7	FGF2, VDR, LIF, ADIPOQ, NOTCH1, DSPP, FOXO1
LIPE	7	THRSP, VDR, ADIPOQ, CDO1, CA2, RBP4, PLIN1
CFTR	7	CYP4A11, HSD17B2, SHANK2, CYP3A43, CYP2D6, PDZK1, LPAR2
ONECUT1	6	PMEL, HTR2B, CYP3A43, TTR, PON1, SMARCC1
DISC1	5	CCDC136, HERC2, RABGAP1, NEFM, KALRN
ADIPOQ	5	BGLAP, VDR, OLR1, VTIIA, LIPE
NOTCH1	5	BGLAP, FGF2, FOXC1, ESM1, SMARCC1
NR1I3	5	Ces2b/Ces2c, SULT1A3/SULT1A4, LEAP2, CYP2C8, GRIP1
CREM (includes EG:12916)	4	CAMP (includes EG:12796), MSMO1, LSS, ADRA1B
DSPP	4	BGLAP, FGF2, LIF, ALPP
CASR	4	VDR, GABBR2, PON1, CTNND1
SMARCC1	4	ONECUT1, SMARCA1, NOTCH1, VPREB1

SHANK2	3	CYP1A1 (includes EG:13076), DLGAP2, CFTR
CIDEC	3	FGF2, CIDEA, PLIN1
CYP1A1 (includes EG:13076)	3	SHANK2, IFNA1/IFNA13, MT4
GRIN2A	3	FGF2, INADL, DLGAP2
FGG	3	VDR, LIF, KHDRBS2
PGR	3	LIF, SMARCA1, FOXO1
TTR	3	ONECUT1, CPNE6, RBP4
CTNND1	3	CDH4, PAK7, CASR
TP73	3	AQP2, FGF2, VDR
DLGAP2	3	SHANK2, GRIN2A, IL1RAPL1
ELF5	2	CRISP1, Wap
INADL	2	GRIN2A, CRB1
HRNR	2	PINX1, KHDRBS2
SMARCA1	2	PGR, SMARCC1
LHX2	2	LIF, ROBO2
IFNA1/IFNA13	2	CYP1A1 (includes EG:13076), Tgtp1/Tgtp2
WNT1	2	TLX3, DDX25
CA2	2	FOXO1, LIPE
CYP3A43	2	ONECUT1, CFTR
KNG1	2	FGF2, LIF
RBP4	2	TTR, LIPE
CIDEA	2	CIDEC, FOXO1
PLIN1	2	CIDEC, LIPE
PON1	2	ONECUT1, CASR
KHDRBS2	2	HRNR, FGG
VPREB1	2	IGHM, SMARCC1
MAP3K5	2	FGF2, DHCR24
ADRA1B	2	LIF, CREM (includes EG:12916)
GRIP1	2	VDR, NR1I3
FOXC1	2	NOTCH1, FOXO1

CYP4A11	1	CFTR
HSD17B2	1	CFTR
NUDT3	1	FXYD3
THRSP	1	LIPE
AQP2	1	TP73
FOXP1	1	BCL11B
TLX3	1	WNT1
FXYD3	1	NUDT3
BCL11B	1	FOXP1
Ces2b/Ces2c	1	NR1I3
KRT17	1	CCL1
CRISP1	1	ELF5
CAMP (includes EG:12796)	1	CREM (includes EG:12916)
PINX1	1	HRNR
OLR1	1	ADIPOQ
TNFRSF11B	1	LIF
TDGF1	1	ACVR1C
ELOVL6	1	FOXO1
MSMO1	1	CREM (includes EG:12916)
NOX3	1	FOXO1
Wap	1	ELF5
GNG7	1	GNG3
Tgtp1/Tgtp2	1	IFNA1/IFNA13
CDH4	1	CTNND1
CDO1	1	LIPE
ALPP	1	DSPP
IGHM	1	VPREB1
PMEL	1	ONECUT1
GABBR2	1	CASR
CRB1	1	INADL
DDX25	1	WNT1

HTR2B	1	ONECUT1
LSS	1	CREM (includes EG:12916)
CPNE6	1	TTR
CCDC136	1	DISC1
ACVR1C	1	TDGF1
COCH	1	LIF
DHCR24	1	MAP3K5
VTI1A	1	ADIPOQ
HERC2	1	DISC1
IL1RAPL1	1	DLGAP2
TFAP2B	1	TFAP2A
SIX2	1	EYA2
RABGAP1	1	DISC1
MT4	1	CYP1A1 (includes EG:13076)
NEFM	1	DISC1
EYA2	1	SIX2
KALRN	1	DISC1
PAK7	1	CTNND1
SULT1A3/SULT1A4	1	NR1I3
TFAP2A	1	TFAP2B
LEAP2	1	NR1I3
ROBO2	1	LHX2
CCL1	1	KRT17
CYP2D6	1	CFTR
PDZK1	1	CFTR
CYP2C8	1	NR1I3
LPAR2	1	CFTR
PTX3	1	FGF2
GNG3	1	GNG7
ESM1	1	NOTCH1