

Table SI. Network stats for the protein-protein interaction network

Node	Identifier	Node degree
1700012B09Rik	10090.ENSMUSP00000049826	2
1700024G13Rik	10090.ENSMUSP00000098289	2
AB124611	10090.ENSMUSP00000134056	0
AW551984	10090.ENSMUSP00000042582	1
Adcy7	10090.ENSMUSP00000130594	1
Akr1c13	10090.ENSMUSP00000021634	0
Akr1c18	10090.ENSMUSP00000021635	0
Ankrd55	10090.ENSMUSP00000022275	1
Ano1	10090.ENSMUSP00000112616	1
Arc	10090.ENSMUSP00000023268	2
Arhgap28	10090.ENSMUSP00000024840	0
Arhgap36	10090.ENSMUSP00000110554	0
Arhgef16	10090.ENSMUSP00000030898	0
Aspa	10090.ENSMUSP00000021119	2
Bcas1	10090.ENSMUSP00000013667	1
Bglap3	10090.ENSMUSP00000074965	0
Ccdc33	10090.ENSMUSP00000096279	0
Cd38	10090.ENSMUSP00000030964	2
Cd3d	10090.ENSMUSP00000034602	3
Cd59a	10090.ENSMUSP00000048041	0
Cd6	10090.ENSMUSP00000079172	1
Cd83	10090.ENSMUSP00000015540	3
Cdhr2	10090.ENSMUSP00000043596	0
Chil1	10090.ENSMUSP00000080717	0
Chrn4	10090.ENSMUSP00000034854	0
Crct1	10090.ENSMUSP00000029521	0
Ddit4l	10090.ENSMUSP00000058896	0
Dlk1	10090.ENSMUSP00000105470	3
Dusp6	10090.ENSMUSP00000020118	2
Dynlrb2	10090.ENSMUSP00000077301	2
Ear2	10090.ENSMUSP00000074386	1
Ebf3	10090.ENSMUSP00000101724	2
Egr2	10090.ENSMUSP00000041053	7
Esm1	10090.ENSMUSP00000040187	1
Exoc3l4	10090.ENSMUSP00000072438	1
Fam183b	10090.ENSMUSP00000091708	3
Fgf20	10090.ENSMUSP00000034014	0
Fhdc1	10090.ENSMUSP00000088525	0
Fkbp11	10090.ENSMUSP00000003445	0
Fltp	10090.ENSMUSP00000027959	0
Fosl2	10090.ENSMUSP00000031017	3
Fst	10090.ENSMUSP00000022287	1
Fut4	10090.ENSMUSP00000053027	1
Gbp9	10090.ENSMUSP00000031238	1
Gja10	10090.ENSMUSP00000061742	0
Glr1	10090.ENSMUSP00000099777	2
Gm1045	10090.ENSMUSP00000136951	0

Gm1141	10090.ENSMUSP00000099034	0
Gm14781	10090.ENSMUSP00000077562	0
Gm4070	10090.ENSMUSP00000102377	2
Gm5431	10090.ENSMUSP00000104835	2
Gm7945	10090.ENSMUSP00000130156	0
Gm8180	10090.ENSMUSP00000131109	0
Gpr64	10090.ENSMUSP00000108019	0
Gpx3	10090.ENSMUSP00000081011	4
Grb10	10090.ENSMUSP00000091011	3
Grin3b	10090.ENSMUSP00000048576	0
Gstm7	10090.ENSMUSP00000004137	4
Gstt2	10090.ENSMUSP00000046324	4
Gstt3	10090.ENSMUSP00000001715	4
Gzma	10090.ENSMUSP00000023897	1
H2-Q7	10090.ENSMUSP00000071843	2
Hoatz	10090.ENSMUSP00000126725	0
Hoxa1	10090.ENSMUSP00000000964	0
Hsd3b7	10090.ENSMUSP00000036245	0
Hspb8	10090.ENSMUSP00000037007	0
Htr2c	10090.ENSMUSP00000043936	1
Ier5	10090.ENSMUSP00000056948	0
Ifi2712a	10090.ENSMUSP00000054698	3
Ifi47	10090.ENSMUSP00000104825	4
Insc	10090.ENSMUSP00000112682	0
Itgb4	10090.ENSMUSP00000102068	2
Kank4	10090.ENSMUSP00000099851	1
Lhfp15	10090.ENSMUSP00000079598	1
Lpo	10090.ENSMUSP00000099466	0
Lypd3	10090.ENSMUSP00000079543	0
Mab2114	10090.ENSMUSP00000035332	0
Mag	10090.ENSMUSP00000139881	6
Magel2	10090.ENSMUSP00000079265	3
Mb	10090.ENSMUSP00000125995	1
Mboat1	10090.ENSMUSP00000045441	2
Mgst1	10090.ENSMUSP00000008684	4
Mthfd21	10090.ENSMUSP00000071578	0
Myrf	10090.ENSMUSP00000139601	4
Nfatc2	10090.ENSMUSP00000074198	2
Nkx2-2	10090.ENSMUSP00000069666	4
Nr4a1	10090.ENSMUSP00000023779	4
Olf1033	10090.ENSMUSP00000107216	0
Olf222	10090.ENSMUSP00000071835	0
Olf47	10090.ENSMUSP00000077204	0
Onecut2	10090.ENSMUSP00000110798	1
Ovol2	10090.ENSMUSP00000044026	0
P2rx6	10090.ENSMUSP00000023441	0
Pcbd1	10090.ENSMUSP00000020298	0
Pcdh18	10090.ENSMUSP00000039245	1
Pdlim2	10090.ENSMUSP00000116200	2

Peg10	10090.ENSMUSP00000127306	4
Pigk	10090.ENSMUSP00000045351	0
Pirb	10090.ENSMUSP00000077546	3
Plac8	10090.ENSMUSP00000031264	0
Plekhh1	10090.ENSMUSP00000049460	0
Plip	10090.ENSMUSP00000034227	3
Pou4f1	10090.ENSMUSP00000060798	4
Ppap2c	10090.ENSMUSP00000069670	1
Ppbp	10090.ENSMUSP00000031319	0
Psemb9	10090.ENSMUSP00000133499	3
Resp18	10090.ENSMUSP00000043783	0
Ribc1	10090.ENSMUSP00000026288	1
Rimkla	10090.ENSMUSP00000058996	1
Rnase1	10090.ENSMUSP00000079025	0
Rnf138rt1	10090.ENSMUSP00000139291	0
Saa3	10090.ENSMUSP0000006956	1
Serpib8	10090.ENSMUSP00000108326	3
Sirpb1c	10090.ENSMUSP00000061216	0
Slc4a9	10090.ENSMUSP00000111358	0
Slc6a9	10090.ENSMUSP00000030269	2
Sncg	10090.ENSMUSP00000023826	1
Sp100	10090.ENSMUSP00000066399	1
Spaca9	10090.ENSMUSP00000121846	2
Sparc	10090.ENSMUSP00000018737	1
Sspo	10090.ENSMUSP00000131401	4
St8sia6	10090.ENSMUSP00000003509	1
Synj2	10090.ENSMUSP00000079164	0
Sytl2	10090.ENSMUSP00000102829	0
Tcf7l2	10090.ENSMUSP00000107283	4
Tekt2	10090.ENSMUSP00000099676	1
Tgtp1	10090.ENSMUSP00000069914	2
Tinagl1	10090.ENSMUSP00000101620	1
Tlr2	10090.ENSMUSP00000029623	5
Tmem125	10090.ENSMUSP00000063157	1
Trem14	10090.ENSMUSP00000118772	1
Trim36	10090.ENSMUSP00000037978	0
Trpm6	10090.ENSMUSP00000037443	0
Vipr1	10090.ENSMUSP00000035115	0
Wfdc15b	10090.ENSMUSP00000105001	0
Zcchc12	10090.ENSMUSP00000110913	1
Zpbp2	10090.ENSMUSP00000017339	0
Zyg11a	10090.ENSMUSP00000038478	0
mCG_117244	10090.ENSMUSP00000127953	0

Table SII. The top 10 enriched functional GO terms.

Term ID	Term description	List hit	List total	Pop hit	Pop total	Gene ratio	Bg ratio (pop hit/pop total)	Enrichment score	Gene symbols	P-value	FDR bh	Category
GO:0005576	Extracellular region	62	402	1,668	20,330	0.154229	0.082046	1.87978	Lyz2; Nmu; Apoc1; Sepp1; Ccl6; Ccl12; Ceacam10; Nsms; Trf; Ucn3; Prok1; Lbp; Zpbp2; Dhrrs11; Lgals3; Esm1; Wisp3; C4b; Cxcl1; Lcn12; Fgf20; Ccl5; Scgn; Sparc; Ccl2; Gpx3; Il1f9; Resp18; Cd59b; Txndc16; C3; Fst; Gnas; Sbp; Vash2; Serpinb1a; Saa3; Epyc; Folr1; Itih3; Ppy; Ntn5; Cxcl13; Bglap3; Casp4; Ceacam16; Sspo; Chil1; Cd40; Wfdc2; Nts; Milr1; Sfrp5; Adamts11; Ltf; Spp1; Wfdc15b; Col6a6; Rnasel; Cd59a; Gzma; Tinagl1	9.92x10 ⁻⁷	0.000259	Cellular component
GO:0002376	Immune system process	25	396	425	20,209	0.063131	0.02103	3.001931	Oas2; Cd74; Cd1d1; Ifit2; Lbp; Gbp5; Lgals3; Cd3d; Psmb9; H2-Q7; Il1f9; Zbp1; Pirb; C3; Clec4d; Dcstamp; Casp4; Tlr2; Cd40; Ifitm3; Zc3hav1; Ltf; Oasl2; Padi4; Trem14	1.18x10 ⁻⁶	0.001651	Biological process
GO:0006954	Inflammatory response	21	396	343	20,209	0.05303	0.016973	3.124459	Ccl6; Fpr2; Ccl12; Gbp5; Il25; Cxcl1; Ccl5; Ccl2; Il1f9; Cd6; C3; Cxcl13; Tnfrsf25; Ppbp; Casp4; Chil1; Tlr2; Fpr3; Cd40; Lipa; Itgb6	4.61x10 ⁻⁶	0.002371	Biological process
GO:0009615	Response to virus	8	396	52	20,209	0.020202	0.002573	7.851204	Oas2; Zc3hav1; Ccl5; Bcl3; Oasl2; Ifit2; Ifi2712a; Ifitm3	7.17x10 ⁻⁶	0.002371	Biological process
GO:0071346	Cellular response to interferon-gamma	10	396	87	20,209	0.025253	0.004305	5.865842	Ccl5; Ccl2; H2-Q7; Ccl6; Ccl12; Evi; Stx11; Gbp9; Gbp5; Rab7b	7.79x10 ⁻⁶	0.002371	Biological process
GO:0006955	Immune response	16	396	222	20,209	0.040404	0.010985	3.678042	Cd80; Oas2; Cd74; Cxcl1; Ccl5; Oasl2; Ccl2; Ccl6; Cxcl13; Ccl12; Il1f9; Tnfrsf25; Ppbp; Tinagl1; Cd40; Ccr10	8.51x10 ⁻⁶	0.002371	Biological process
GO:0008009	Chemokine activity	7	398	40	20,023	0.017588	0.001998	8.804083	Cxcl1; Ccl5; Ccl2; Ccl6; Ccl12; Cxcl13; Ppbp	1.23x10 ⁻⁵	0.005651	Molecular Function
GO:0070098	Chemokine-mediated signaling pathway	7	396	43	20,209	0.017677	0.002128	8.30767	Cxcl1; Ccl5; Ccl2; Ccl6; Ccl12; Cxcl13; Ppbp	1.84x10 ⁻⁵	0.004286	Biological process
GO:0048245	Eosinophil chemotaxis	5	396	19	20,209	0.012626	0.00094	13.42969	Ccl5; Ccl2; Ccl6; Ccl12; Lgals3	2.61x10 ⁻⁵	0.005201	Biological process

GO, Gene Ontology; FDR, false discovery rate; Bg, background.

Table SIII. The top 10 enriched Kyoto Encyclopedia of Genes and Genomes pathways.

Term ID	Term description	List hit	List total	Pop hit	Pop total	Gene ratio	BgRatio	Enrichment score	Gene IDs	Gene symbols	P-value	FDR bh	Classification level
path:mmu04080	Neuroactive ligand-receptor interaction	18	171	311	7,874	0.105263	0.039497	2.665087	15560; 14427; 108015; 22354; 56183; 14289; 19064; 83428; 94045; 14654; 94226; 12311; 170483; 14938; 18441; 14294; 18440; 67405	Htr2c; Galr1; Chrn4; Vipr1; Nmu; Fpr2; Ppy; Ucn3; P2rx5; Glra1; S1pr5; Calcr; Grin3b; Gzma; P2ry1; Fpr3; P2rx6; Nts	0.000133	0.030363	Environmental Information Processing
path:mmu04978	Mineral absorption	6	171	44	7,874	0.035088	0.005588	6.279107	70358; 74051; 12309; 22041; 15203; 225997	Steap1; Steap2; S100g; Trf; Heph; Trpm6	0.000342	0.038998	Organismal Systems
path:mmu05144	Malaria	6	171	53	7,874	0.035088	0.006731	5.212843	20296; 20293; 15234; 17057; 24088; 21939	Ccl2; Ccl12; Hgf; Klrb1a; Tlr2; Cd40	0.000947	0.071218	Human Diseases
path:mmu04970	Salivary secretion	7	171	76	7,874	0.040936	0.009652	4.241151	17105; 76113; 11513; 75600; 20535; 12494; 14683	Lyz2; Lpo; Adcy7; Calml4; Slc4a2; Cd38; Gnas	0.001249	0.071218	Organismal Systems
path:mmu05168	Herpes simplex infection	12	171	206	7,874	0.070175	0.026162	2.682337	246728; 15015; 16149; 20304; 20296; 15018; 20293; 667373; 12534; 20684; 24088; 12266	Oas2; H2-Q4; Cd74; Ccl5; Ccl2; H2-Q7; Ccl12; Ifit1b1; Cdk1; Sp100; Tlr2; C3	0.001711	0.078021	Human Diseases
path:mmu04060	Cytokine-cytokine receptor interaction	13	171	264	7,874	0.076023	0.033528	2.267455	14825; 20304; 16186; 20296; 20305; 55985; 20293; 85030; 15234; 57349; 140806; 21939; 12777	Cxcl1; Ccl5; Il2rg; Ccl2; Ccl6; Cxcl13; Ccl12; Tnfrsf25; Hgf; Ppbp; Il25; Cd40; Ccr10	0.004825	0.1627	Environmental Information Processing
path:mmu05150	Staphylococcus aureus infection	5	171	52	7,874	0.02924	0.006604	4.427575	12266; 211924; 14289; 14294; 12268	C3; Dsg1c; Fpr2; Fpr3; C4b	0.005192	0.1627	Human Diseases
path:mmu05142	Chagas disease (American trypanosomiasis)	7	171	101	7,874	0.040936	0.012827	3.191361	20304; 12500; 20296; 20293; 24088; 12266; 14683	Ccl5; Cd3d; Ccl2; Ccl12; Tlr2; C3; Gnas	0.006258	0.1627	Human Diseases
path:mmu04062	Chemokine signaling pathway	10	171	183	7,874	0.05848	0.023241	2.516218	14825; 20304; 11513; 20296; 20305; 55985; 20293; 57349; 66066; 12777	Cxcl1; Ccl5; Adcy7; Ccl2; Ccl6; Cxcl13; Ccl12; Ppbp; Gng11; Ccr10	0.006422	0.1627	Organismal Systems
path:mmu05146	Amoebiasis	7	171	105	7,874	0.040936	0.013335	3.069786	14683; 380839; 66222; 12479; 282663; 24088; 226421	Gnas; Serpinb1c; Serpinb1a; Cd1d1; Serpinb1b; Tlr2; Rab7b	0.007707	0.175715	Human Diseases