

Table S1. DEGs and the prime information of qRT-PCR verification

Gene	Gene ID	Primer Sequence (5'-3')	
		Forward primer	Reverse primer
<i>prss</i>	LS_GLEAN_10003514	TCGTCGGAGGGTATGAATGC	AACTTGGATGCGGGACTTGT
<i>muc2</i>	LS_GLEAN_10008706	ATCCGCAATGGACAAGTGGT	CTCTGTCGGATCTGGACTGC
<i>slc6a19</i>	LS_GLEAN_10011640	TGCCTCTATGCTGGTCTCCT	TTAGGGCCTCCCTGTACCA
<i>cd36</i>	LS_GLEAN_10003179	ACGCCAGTCTACATCTCCCT	GAGCGATGCAGTTGGCTCTA
<i>apob-48</i>	LS_GLEAN_10003911	GATGCTCGTTTCCACTCCCA	GCCGTACAGGGTTAGGTCAC
<i>apoa-1</i>	LS_GLEAN_10004674	GGCTTTGCAGAACGATGCT	CTTGACCTTGACTCGGCGT
<i>gapdh</i>		GCATCGAGGAGGCACTCATGA	TCAATGGTAAGCTGACAGGCAT
(Internal reference)			

Table S2. Transcriptome sequencing quality indicators

Sample	Total	Raw	Total Clean	Total Clean	Clean	Reads	Clean	Reads	Clean	Reads	Total Mapping (%)
	Reads (M)		Reads (M)	Bases (Gb)	Q20 (%)		Q30 (%)		Ratio (%)		
KK1	67.47		64.19	6.42	98.15		91.82		95.15		76.86
KK2	69.96		65.19	6.52	98.27		92.38		93.17		71.89
KK3	67.47		64.13	6.41	98.13		91.73		95.05		75.12
LC1	67.47		63.89	6.39	97.98		91.22		94.71		76.15
LC2	67.47		62.75	6.28	97.98		91.33		93.01		75.63
LC3	67.47		62.93	6.29	98.03		91.5		93.28		75.67
PM1	69.96		66.23	6.62	97.98		91.18		94.66		75.19
PM2	67.47		63.94	6.39	97.94		91.03		94.77		76.47
PM3	64.97		61.67	6.17	98.04		91.43		94.93		77.51
SL1	69.96		65.07	6.51	97.97		91.34		93.01		76.68
SL2	69.96		65.23	6.52	98.12		91.82		93.23		76.94
SL3	69.96		65.06	6.51	98.22		92.18		92.99		77.39
YL1	69.96		64.37	6.44	98.08		91.62		92.01		76.89
YL2	67.47		63.72	6.37	97.95		91.12		94.44		76.09
YL3	69.96		65.08	6.51	97.98		91.39		93.02		75.73

Table S3. Genes and their expression levels in neuroactive ligand-receptor interaction pathway

Gene ID	Entry	Name	Transcription	YL_FPKM	PM_FPKM	KK_FPKM	LC_FPKM	SL_FPKM
LS_GLEAN_10017312	K05202	<i>grik2</i>	<i>glutamate receptor, ionotropic kainate 2</i>	82.24	157.89	237.92	351.85	585.47
LS_GLEAN_10006891	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	1.49	49.35	201.63	158.47	501.44
LS_GLEAN_10006894	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	0.54	19.45	85.14	51.27	162.80
LS_GLEAN_10018345	K05198	<i>gria2</i>	<i>glutamate receptor 2</i>	56.62	85.55	130.04	122.95	157.92
LS_GLEAN_10016340	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	3.35	5.79	17.34	17.30	81.60
LS_GLEAN_10008863	K05208	<i>grin1</i>	<i>glutamate receptor, ionotropic, N-methyl D-aspartate1</i>	12.36	18.94	24.42	38.70	69.35
LS_GLEAN_10005848	K05208	<i>grin1</i>	<i>glutamate receptor, ionotropic, N-methyl D-aspartate1</i>	15.45	24.58	28.50	45.13	66.31
LS_GLEAN_10008633	K05199	<i>gria3</i>	<i>glutamate receptor 3</i>	20.05	25.49	34.56	34.04	61.41
LS_GLEAN_10006913	K05205	<i>grik5</i>	<i>glutamate receptor, ionotropic, kainate 5</i>	19.73	27.05	32.88	36.25	53.49
LS_GLEAN_10010648	K05198	<i>gria2</i>	<i>glutamate receptor, ionotropic, AMPA 2</i>	15.48	21.29	22.56	30.19	51.97
LS_GLEAN_10021517	K05262	<i>adcyap</i>	<i>pituitary adenylate cyclase-activating polypeptide</i>	17.93	30.70	31.26	47.60	47.29
LS_GLEAN_10009205	K05175	<i>gabra</i>	<i>gamma-aminobutyric acid receptor subunit alpha</i>	13.47	29.57	23.09	39.29	42.99
LS_GLEAN_10016960	K05262	<i>adcyap</i>	<i>pituitary adenylate cyclase-activating polypeptide</i>	14.72	26.67	23.90	39.50	42.28
LS_GLEAN_10015956	K12332	<i>calca</i>	<i>calcitonin</i>	3.38	8.61	21.27	20.70	41.16
LS_GLEAN_10007003	K04166	<i>agtr1</i>	<i>angiotensin II receptor, type 1</i>	2.74	6.73	14.23	16.74	36.59
LS_GLEAN_10002066	K05051	<i>taar</i>	<i>trace amine associated receptor</i>	16.15	18.23	17.13	17.11	35.88
LS_GLEAN_10006272	K05197	<i>gria1</i>	<i>glutamate receptor 1</i>	14.52	20.35	19.76	25.30	31.86
LS_GLEAN_10015172	K16367	<i>edn2</i>	<i>endothelin-2</i>	13.01	16.85	20.18	19.85	30.05
LS_GLEAN_10010477	K05080	<i>ghr</i>	<i>growth hormone receptor</i>	9.31	6.56	11.57	12.02	28.31
LS_GLEAN_10012515	K05242	<i>avp</i>	<i>arginine vasopressin</i>	1.56	7.27	12.67	18.11	28.06
LS_GLEAN_10010649	K05196	<i>glrb</i>	<i>glycine receptor beta</i>	7.08	13.28	13.90	21.13	27.55
LS_GLEAN_10011032	K04146	<i>drd3</i>	<i>dopamine receptor D3</i>	5.87	9.63	13.78	12.35	27.37
LS_GLEAN_10010186	K04806	<i>chrna4</i>	<i>cholinergic receptor, nicotinic, alpha 4</i>	11.01	10.17	14.51	13.73	25.55

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Table S3. Continued

Gene ID	Entry	Name	Transcription	YL_FPKM	PM_FPKM	KK_FPKM	LC_FPKM	SL_FPKM
LS_GLEAN_10019467	K05184	<i>gabrd</i>	<i>gamma-aminobutyric acid type A receptor subunit delta</i>	0.98	5.39	10.32	17.54	25.31
BGI_novel_G002312	K04291	<i>lpar2</i>	<i>lysophosphatidic acid receptor 2</i>	1.69	6.54	10.35	10.30	25.11
LS_GLEAN_10004366	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	14.58	11.81	21.01	21.70	24.86
LS_GLEAN_10012039	K05199	<i>gria3</i>	<i>glutamate receptor 3</i>	7.90	12.89	9.83	20.05	24.61
LS_GLEAN_10017859	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	9.42	15.28	13.31	24.00	24.47
LS_GLEAN_10018361	K04160	<i>htr4</i>	<i>5-hydroxytryptamine receptor 4</i>	9.41	11.61	17.37	18.57	23.40
LS_GLEAN_10007996	K05438	<i>gh</i>	<i>growth hormone</i>	0.06	0.85	4.59	15.08	19.96
LS_GLEAN_10020321	K05264	<i>vip</i>	<i>vasoactive intestinal peptide</i>	3.32	7.05	13.66	14.70	17.99
LS_GLEAN_10012779	K05193	<i>glra1</i>	<i>glycine receptor alpha-1</i>	6.74	11.30	10.22	18.40	17.53
LS_GLEAN_10017489	K05246	<i>hcrt</i>	<i>hypocretin (orexin) neuropeptide</i>	7.76	10.72	12.06	15.79	17.39
LS_GLEAN_10004629	K04291	<i>lpar2</i>	<i>lysophosphatidic acid receptor 2</i>	1.60	3.85	6.07	6.97	17.30
LS_GLEAN_10017860	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	6.83	8.35	15.13	13.87	14.79
LS_GLEAN_10016918	K05207	<i>grid2</i>	<i>glutamate receptor, ionotropic, delta 2</i>	4.91	8.16	7.68	10.37	14.33
LS_GLEAN_10010028	K04234	<i>f2rl1</i>	<i>coagulation factor II (thrombin) receptor-like 1</i>	6.11	6.81	6.91	10.29	13.77
BGI_novel_G002110	K05181	<i>gabrb</i>	<i>gamma-aminobutyric acid receptor subunit beta</i>	2.00	4.96	9.26	12.80	13.64
LS_GLEAN_10011681	K05248	<i>uts2</i>	<i>urotensin 2</i>	4.14	6.64	6.97	11.56	13.61
LS_GLEAN_10006662	K05081	<i>prlr</i>	<i>prolactin receptor</i>	4.53	7.22	10.08	8.84	13.52
LS_GLEAN_10012741	K04615	<i>gabbr</i>	<i>gamma-aminobutyric acid (GABA) B receptor</i>	2.62	6.32	6.71	11.17	13.32
LS_GLEAN_10005105	K04145	<i>drd2</i>	<i>dopamine receptor D2</i>	4.16	6.61	8.70	9.57	12.37
LS_GLEAN_10013708	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	4.77	9.16	9.56	13.01	12.08
LS_GLEAN_10015730	K05227	<i>edn3</i>	<i>endothelin-3</i>	5.84	7.30	7.36	8.61	11.82
LS_GLEAN_10018635	K05840	<i>drd5</i>	<i>dopamine receptor D5</i>	2.35	4.37	9.34	6.99	11.37
LS_GLEAN_10012994	K04010	<i>c5ar1</i>	<i>complement C5a receptor 1</i>	1.85	2.89	6.04	4.30	10.94

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Table S3. Continued

Gene ID	Entry	Name	Transcription	YL_FPKM	PM_FPKM	KK_FPKM	LC_FPKM	SL_FPKM
LS_GLEAN_10016682	K05244	<i>gal</i>	<i>galanin</i>	2.23	3.21	4.67	10.04	10.60
BGI_novel_G001577	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	0.14	0.19	1.04	3.31	10.24
BGI_novel_G001010	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	2.49	5.40	8.01	8.43	10.01
LS_GLEAN_10010419	K05186	<i>gabrg</i>	<i>gamma-aminobutyric acid receptor subunit gamma</i>	3.43	6.47	5.54	10.48	9.35
LS_GLEAN_10016412	K05228	<i>pomc</i>	<i>proopiomelanocortin</i>	2.06	4.51	3.08	10.39	9.05
LS_GLEAN_10015317	K05194	<i>glra2</i>	<i>glycine receptor alpha-2</i>	2.87	5.22	5.01	7.34	8.90
LS_GLEAN_10014084	K12332	<i>calca</i>	<i>calcitonin</i>	2.38	3.10	4.82	5.62	8.63
LS_GLEAN_10008216	K05226	<i>cck</i>	<i>cholecystokinin</i>	4.18	3.61	3.47	5.66	8.47
LS_GLEAN_10016432	K05181	<i>gabrb</i>	<i>gamma-aminobutyric acid receptor subunit beta</i>	3.00	6.71	6.24	11.94	8.30
LS_GLEAN_10013080	K05202	<i>grik2</i>	<i>glutamate receptor, ionotropic kainate 2</i>	1.40	2.41	2.42	4.28	8.30
LS_GLEAN_10015429	K04306	<i>rxfp1</i>	<i>relaxin family peptide receptor 1</i>	1.30	1.85	2.63	3.67	8.09
LS_GLEAN_10016433	K05175	<i>gabra</i>	<i>gamma-aminobutyric acid receptor subunit alpha</i>	2.48	5.10	5.13	6.75	8.07
LS_GLEAN_10013591	K05206	<i>grid1</i>	<i>glutamate receptor, ionotropic, delta 1</i>	2.01	2.88	3.62	4.45	8.06
LS_GLEAN_10010985	K05256	<i>crh</i>	<i>corticotropin-releasing hormone</i>	1.40	3.70	3.61	10.94	8.04
LS_GLEAN_10015436	K04210	<i>gpr83</i>	<i>G protein-coupled receptor 83</i>	3.74	5.05	4.93	8.16	7.75
LS_GLEAN_10000045	K05081	<i>prlr</i>	<i>prolactin receptor</i>	2.53	3.04	3.57	5.07	7.60
LS_GLEAN_10012963	K05175	<i>gabra</i>	<i>gamma-aminobutyric acid receptor subunit alpha</i>	1.60	3.81	2.73	7.57	7.24
LS_GLEAN_10019047	K05190	<i>gabrr</i>	<i>gamma-aminobutyric acid receptor subunit rho</i>	2.24	2.94	4.31	5.36	6.83
LS_GLEAN_10013733	K23143	<i>pth2</i>	<i>parathyroid hormone 2</i>	1.79	2.74	2.87	3.39	6.81
LS_GLEAN_10020154	K04813	<i>chrna2</i>	<i>cholinergic receptor, nicotinic, alpha 2</i>	3.27	4.43	4.04	7.15	6.78
BGI_novel_G003280	K05771	<i>nr3c1</i>	<i>glucocorticoid receptor</i>	2.15	2.57	3.58	4.25	6.32
BGI_novel_G001024	K08377	<i>npbwr2</i>	<i>neuropeptides B/W receptor 2</i>	1.97	3.87	3.44	6.71	6.13
LS_GLEAN_10003663	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	2.61	2.03	2.61	2.64	6.07

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Table S3. Continued

Gene ID	Entry	Name	Transcription	YL_FPKM	PM_FPKM	KK_FPKM	LC_FPKM	SL_FPKM
LS_GLEAN_10012659	K04306	<i>rxfp1</i>	<i>relaxin family peptide receptor 1</i>	0.72	1.73	2.24	2.81	5.94
LS_GLEAN_10011387	K05175	<i>gabra</i>	<i>gamma-aminobutyric acid receptor subunit alpha</i>	1.25	3.55	3.24	7.07	5.91
LS_GLEAN_10007860	K04204	<i>npy1r</i>	<i>neuropeptide Y receptor Y1</i>	2.19	3.10	2.51	3.01	5.74
LS_GLEAN_10018142	K04809	<i>chrna7</i>	<i>cholinergic receptor, nicotinic, alpha 7</i>	1.67	3.31	3.97	3.72	5.46
LS_GLEAN_10015778	K05206	<i>grid1</i>	<i>glutamate receptor, ionotropic, delta 1</i>	1.70	3.22	3.48	4.19	5.42
LS_GLEAN_10013475	K05213	<i>grin3a</i>	<i>glutamate receptor, ionotropic, N-methyl-D-aspartate 3A</i>	2.46	2.40	3.11	3.23	5.35
LS_GLEAN_10020896	K05189	<i>gabrp</i>	<i>gamma-aminobutyric acid receptor subunit pi</i>	0.46	2.02	2.52	5.87	5.26
LS_GLEAN_10005468	K22000	<i>rln3</i>	<i>relaxin 3</i>	0.99	0.98	3.28	5.55	5.17
LS_GLEAN_10013562	K04215	<i>oprm1</i>	<i>opioid receptor, mu 1</i>	1.35	2.98	2.80	4.09	5.12
LS_GLEAN_10015346	K04586	<i>pthr2</i>	<i>parathyroid hormone receptor 2</i>	0.97	1.35	1.90	1.86	5.11
LS_GLEAN_10020897	K05189	<i>gabrp</i>	<i>gamma-aminobutyric acid receptor subunit pi</i>	0.54	1.80	1.92	2.78	4.87
LS_GLEAN_10005935	K04605	<i>grm2_3</i>	<i>glutamate receptor, metabotropic 2/3</i>	1.78	3.05	2.79	4.46	4.79
LS_GLEAN_10017389	K18832	<i>penka</i>	<i>proenkephalin a</i>	1.31	2.65	3.08	6.21	4.79
LS_GLEAN_10018556	K04579	<i>crhr2</i>	<i>corticotropin releasing hormone receptor 2</i>	1.41	1.99	1.41	2.68	4.77
BGI_novel_G002458	K05175	<i>gabra</i>	<i>gamma-aminobutyric acid receptor subunit alpha</i>	2.36	2.25	5.43	4.38	4.74
BGI_novel_G000534	K05051	<i>taar</i>	<i>trace amine associated receptor</i>	1.36	2.49	3.58	5.33	4.57
LS_GLEAN_10017901	K05185	<i>gabre</i>	<i>gamma-aminobutyric acid receptor subunit epsilon</i>	2.42	2.10	2.16	3.38	4.55
LS_GLEAN_10019482	K04216	<i>oprl1</i>	<i>opiate receptor-like 1</i>	1.75	2.85	2.23	4.31	4.48
LS_GLEAN_10009352	K04583	<i>gcgr</i>	<i>glucagon receptor</i>	1.37	1.62	2.80	3.23	4.42
LS_GLEAN_10014586	K05237	<i>sst</i>	<i>somatostatin</i>	1.79	2.45	3.29	5.45	4.25
LS_GLEAN_10020155	K04808	<i>chrna6</i>	<i>cholinergic receptor, nicotinic, alpha 6</i>	1.31	1.26	1.52	1.54	3.95
LS_GLEAN_10005547	K04280	<i>gnrhr</i>	<i>gonadotropin-releasing hormone receptor</i>	1.17	1.40	1.31	1.95	3.79
LS_GLEAN_10010069	K04580	<i>gipr</i>	<i>gastric inhibitory polypeptide receptor</i>	1.34	0.96	2.08	1.77	3.72

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Table S3. Continued

Gene ID	Entry	Name	Transcription	YL_FPKM	PM_FPKM	KK_FPKM	LC_FPKM	SL_FPKM
LS_GLEAN_10000772	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	1.62	2.76	2.60	3.34	3.71
BGI_novel_G001578	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	0.42	0.93	1.31	2.19	3.56
LS_GLEAN_10018145	K04808	<i>chrna6</i>	<i>cholinergic receptor, nicotinic, alpha 6</i>	1.16	1.31	1.47	2.40	3.55
LS_GLEAN_10021534	K05269	<i>prlh</i>	<i>prolactin releasing hormone</i>	1.61	2.68	2.51	4.91	3.48
LS_GLEAN_10011144	K05217	<i>p2rx3</i>	<i>P2X purinoceptor 3</i>	1.44	2.00	1.62	4.65	3.45
LS_GLEAN_10019312	K04811	<i>chrna10</i>	<i>cholinergic receptor, nicotinic, alpha 10</i>	0.95	1.67	1.44	2.67	3.44
LS_GLEAN_10015412	K05271	<i>glra4</i>	<i>glycine receptor alpha-4</i>	0.37	0.80	1.37	1.89	3.28
LS_GLEAN_10019971	K05235	<i>nts</i>	<i>neurotensin</i>	1.01	2.05	1.72	3.28	3.28
BGI_novel_G002618	K05051	<i>taar</i>	<i>trace amine associated receptor</i>	0.90	2.46	2.51	4.24	3.18
BGI_novel_G002492	K04804	<i>chrna2</i>	<i>cholinergic receptor, nicotinic, alpha 2</i>	0.88	0.95	1.03	1.41	3.16
LS_GLEAN_10018270	K04160	<i>htr4</i>	<i>5-hydroxytryptamine receptor 4</i>	0.36	0.77	1.70	3.17	3.08
LS_GLEAN_10018926	K05190	<i>gabrr</i>	<i>gamma-aminobutyric acid receptor subunit rho</i>	0.86	1.53	1.89	2.52	2.93
LS_GLEAN_10019827	K04217	<i>sstr1</i>	<i>somatostatin receptor 1</i>	1.09	1.92	1.90	2.58	2.88
LS_GLEAN_10019046	K05190	<i>gabrr</i>	<i>gamma-aminobutyric acid receptor subunit rho</i>	1.05	1.39	2.55	2.13	2.82
LS_GLEAN_10015763	K04131	<i>chrm3</i>	<i>muscarinic acetylcholine receptor M3</i>	0.54	1.31	1.23	2.34	2.73
LS_GLEAN_10014791	K05217	<i>p2rx3</i>	<i>P2X purinoceptor 3</i>	0.77	0.91	0.85	1.72	2.68
LS_GLEAN_10012049	K04273	<i>p2ry5</i>	<i>lysophosphatidic acid receptor 6</i>	0.63	1.31	1.74	2.95	2.66
LS_GLEAN_10012917	K05214	<i>grin3b</i>	<i>glutamate receptor, ionotropic, N-methyl-D-aspartate 3B</i>	0.75	1.14	1.62	1.80	2.63
LS_GLEAN_10012320	K01312	<i>prss1_2_3</i>	<i>trypsin [EC:3.4.21.4]</i>	0.00	0.63	1.12	2.33	2.56
LS_GLEAN_10014905	K04202	<i>mc4r</i>	<i>melanocortin 4 receptor</i>	1.16	1.33	1.12	2.57	2.48
LS_GLEAN_10001052	K05439	<i>prl</i>	<i>prolactin</i>	0.48	0.68	1.08	1.53	2.42
LS_GLEAN_10014119	K04204	<i>npy1r</i>	<i>neuropeptide Y receptor Y1</i>	0.42	1.34	1.20	2.32	2.25
LS_GLEAN_10018122	K05211	<i>grin2c</i>	<i>glutamate receptor, ionotropic, N-methyl-D-aspartate 2C</i>	0.64	0.99	0.66	1.42	2.13

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Table S3. Continued

Gene ID	Entry	Name	Transcription	YL_FPKM	PM_FPKM	KK_FPKM	LC_FPKM	SL_FPKM
LS_GLEAN_10001169	K03914	<i>f2rl1</i>	<i>coagulation factor II (thrombin) receptor-like 1</i>	0.87	0.99	1.08	2.08	2.10
LS_GLEAN_10003376	K04280	<i>gnrhr</i>	<i>gonadotropin-releasing hormone receptor</i>	0.47	0.70	1.41	1.61	2.09
LS_GLEAN_10005143	K04273	<i>p2ry5</i>	<i>lysophosphatidic acid receptor 6</i>	0.62	1.14	1.59	2.08	2.08
LS_GLEAN_10013678	K04153	<i>htr1</i>	<i>5-hydroxytryptamine receptor 1</i>	0.60	0.61	0.74	1.52	2.01
LS_GLEAN_10010963	K05267	<i>npb</i>	<i>preproneuropeptide B</i>	0.44	0.57	0.97	1.32	1.96
LS_GLEAN_10019514	K04608	<i>grm6_7_8</i>	<i>glutamate receptor, metabotropic 6/7/8</i>	0.71	1.19	1.00	1.99	1.86
LS_GLEAN_10013660	K04153	<i>htr1</i>	<i>5-hydroxytryptamine receptor 1</i>	0.56	1.25	1.06	2.12	1.80
LS_GLEAN_10009600	K05232	<i>npy</i>	<i>neuropeptide Y</i>	0.60	0.78	0.71	1.15	1.78
LS_GLEAN_10020234	K05189	<i>gabrp</i>	<i>gamma-aminobutyric acid receptor subunit pi</i>	0.21	1.04	1.03	2.16	1.72
LS_GLEAN_10011949	K04322	<i>cysltr1</i>	<i>cysteinyl leukotriene receptor 1</i>	0.81	0.79	1.08	1.59	1.63

Table S4. Supplement excel file including Gene Ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) enrichment analyses of genes in the target module (brown, red, purple, grey, cyan, pink, lightcyan, yellow, turquoise module).

Table S5. List of hub genes associated with early development in clearhead icefish

Module color	Gene ID	Name	Description	YL FPKM	PM FPKM	KK FPKM	LC FPKM	SL FPKM
brown	LS_GLEAN_10005367	<i>ccnd2</i>	<i>cyclin D2</i>	5.82	3.21	0.94	0.35	0.14
brown	LS_GLEAN_10008873	<i>actb_g1</i>	<i>actin beta/gamma 1</i>	8.04	19.21	47.25	47.17	67.88
brown	LS_GLEAN_10013198	<i>seh1l</i>	<i>nucleoporin SEH1</i>	49.76	36.17	27.96	23.52	16.41
brown	LS_GLEAN_10019617	<i>parp</i>	<i>poly (ADP-ribose) polymerase [EC:2.4.2.30]</i>	12.03	8.12	7.43	6.15	5.06
red	LS_GLEAN_10005911	<i>ppp1r12c</i>	<i>protein phosphatase 1, regulatory subunit 12C</i>	51.03	33.81	38.18	26.54	33.12
red	LS_GLEAN_10010320	<i>ankrd28</i>	<i>ankyrin repeat domain 28</i>	21.33	14.72	15.00	11.79	13.29
red	LS_GLEAN_10017132	<i>arf4</i>	<i>ADP-ribosylation factor 4</i>	17.37	13.57	14.28	11.60	13.44
red	LS_GLEAN_10020492	<i>kdm6a</i>	<i>lysine (K)-specific demethylase 6A</i>	81.31	46.60	57.51	38.21	53.66
purple	LS_GLEAN_10003784	<i>hce</i>	<i>choriolysin H [EC:3.4.24.67]</i>	18.25	27.81	0.34	0.00	0.06
purple	LS_GLEAN_10007168	<i>ptp4a</i>	<i>protein tyrosine phosphatase type IVA [EC:3.1.3.48]</i>	105.68	142.29	76.63	79.97	58.43
purple	LS_GLEAN_10015246	<i>dlx3</i>	<i>distal-less homeobox 3</i>	8.69	10.87	4.22	2.36	2.90
purple	LS_GLEAN_10016803	<i>pak3</i>	<i>p21-activated kinase 3 [EC:2.7.11.1]</i>	43.07	47.37	26.60	32.48	26.20
grey	LS_GLEAN_10003831	<i>myl1</i>	<i>myosin light chain 1</i>	836.08	723.24	824.87	865.29	733.70
grey	LS_GLEAN_10004958	<i>slc7a8</i>	<i>solute carrier family 7, member 8</i>	9.50	8.05	20.55	13.96	13.60
grey	LS_GLEAN_10015489	<i>dgat2</i>	<i>diacylglycerol O-acyltransferase 2</i>	14.96	5.99	13.17	13.40	9.17
grey	LS_GLEAN_10016116	<i>tas1r1</i>	<i>taste receptor, type 1, member 1</i>	9.01	11.44	9.27	8.81	11.35
cyan	LS_GLEAN_10009026	<i>atp9</i>	<i>F-type H+-transporting ATPase subunit c</i>	457.75	585.42	784.27	655.88	531.12
cyan	LS_GLEAN_10016443	<i>inpp4</i>	<i>inositol polyphosphate-4-phosphatase [EC:3.1.3.66]</i>	14.28	10.25	8.01	8.46	9.43
cyan	LS_GLEAN_10019724	<i>trav</i>	<i>T cell receptor alpha chain V region</i>	0.18	1.56	3.62	3.07	1.82
pink	LS_GLEAN_10006828	<i>slc13a2_3_5</i>	<i>solute carrier family 13, member 2/3/5</i>	8.41	10.37	13.28	8.96	4.79
pink	LS_GLEAN_10014833	<i>matn3</i>	<i>matrilin-3</i>	7.17	5.34	4.68	5.83	8.49

Continued in the following page

Table S5. Continued

Module color	Gene ID	Name	Description	YL FPKM	PM FPKM	KK FPKM	LC FPKM	SL FPKM
pink	LS_GLEAN_10007693	<i>ndufa5</i>	<i>NADH: ubiquinone oxidoreductase subunit A5</i>	219.40	245.60	267.11	294.43	160.97
pink	LS_GLEAN_10008321	<i>lsc2</i>	<i>succinyl-CoA synthetase beta subunit [EC:6.2.1.4 6.2.1.5]</i>	198.80	210.65	241.38	204.10	131.15
pink	LS_GLEAN_10018065	<i>foxk</i>	<i>forkhead box K</i>	19.05	15.99	14.68	17.02	23.76
lightcyan	LS_GLEAN_10012933	<i>mfge8</i>	<i>lactadherin</i>	0.76	4.51	5.05	12.44	4.86
lightcyan	LS_GLEAN_10013102	-	-	3.84	9.36	5.03	12.74	6.77
lightcyan	LS_GLEAN_10016649	<i>slc17a6_7_8</i>	<i>solute carrier family 17, member 6/7/8</i>	2.52	8.98	8.33	16.31	8.69
lightcyan	LS_GLEAN_10018115	<i>prph2</i>	<i>peripherin-2</i>	0.47	5.60	6.18	23.27	9.45
yellow	LS_GLEAN_10010668	<i>scn4b</i>	<i>voltage-gated sodium channel type IV beta</i>	4.50	6.41	6.48	13.22	13.49
yellow	LS_GLEAN_10012854	<i>syt12</i>	<i>synaptotagmin-12</i>	5.11	6.66	6.96	11.49	11.95
yellow	LS_GLEAN_10019403	<i>sag</i>	<i>S-antigen</i>	0.88	2.19	3.50	7.15	7.67
yellow	LS_GLEAN_10020896	<i>gabrp</i>	<i>gamma-aminobutyric acid receptor subunit pi</i>	0.46	2.02	2.52	5.87	5.26
turquoise	LS_GLEAN_10007396	<i>chd3</i>	<i>chromodomain-helicase-DNA-binding protein 3 [EC:3.6.4.12]</i>	3.06	4.73	5.98	7.62	15.63
turquoise	LS_GLEAN_10014535	<i>nlgn</i>	<i>neuroligin</i>	3.19	5.56	8.43	7.55	13.58
turquoise	LS_GLEAN_10016477	<i>slc7a8</i>	<i>solute carrier family 7, member 8</i>	2.76	4.78	8.51	8.38	15.52
turquoise	LS_GLEAN_10015133	<i>tspan4</i>	<i>tetraspanin-4</i>	5.53	10.80	14.68	20.26	27.08

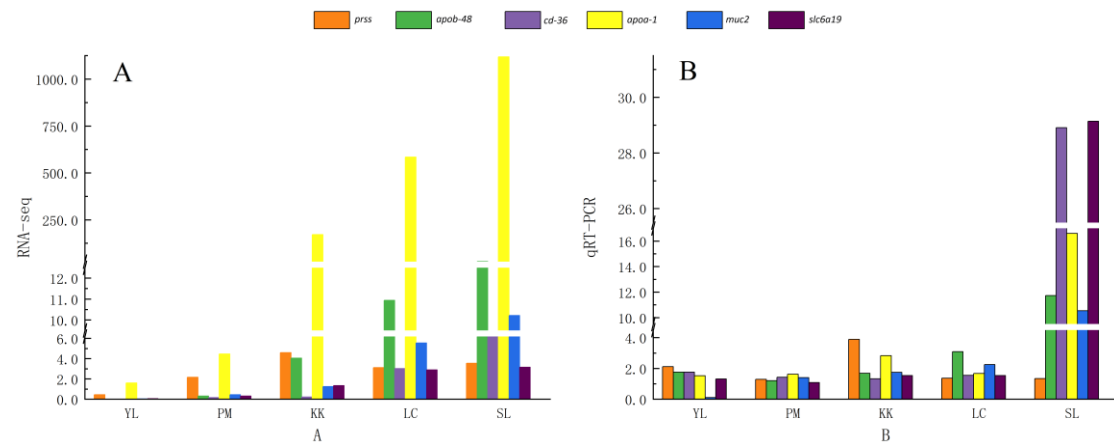


Figure S1. Real-time fluorescent quantitative PCR verification of RNA-seq results

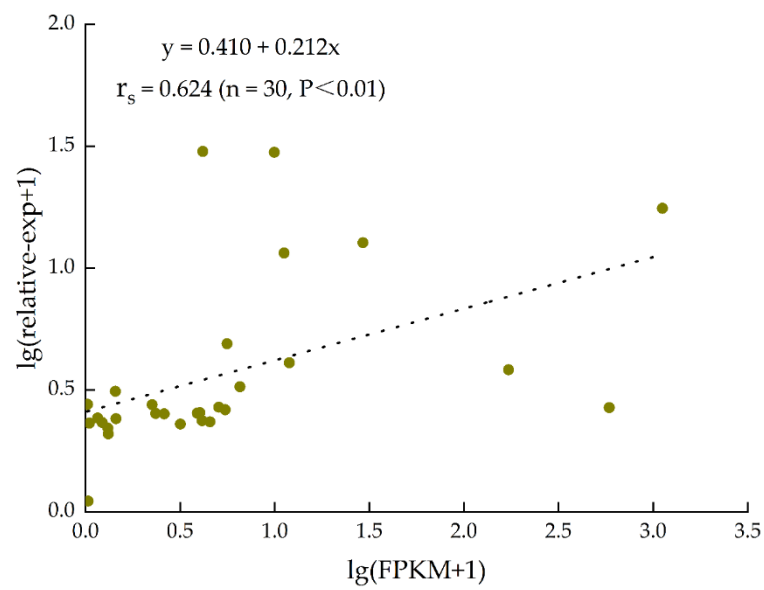


Figure S2. The correlations of quantitative real-time PCR (qRT-PCR) and RNA-seq expression data (FPKM) of all chosen unigenes