

**Supplemental Table 7. List of gene modules and hub genes of the *Beta4* cluster.** 9714 genes were not assigned to any module. *Related to Figure 5.*

Module	# of genes in module	Mean connectivity	Hub genes	DEG Hubs	Fold enrichment of DEGs (p-value)	Fold enrichment of surface markers (p-value)	Top 5 KEGG pathways
M1	1249	0.0017	<i>Rpl13, Rpl19, Rps13</i>	<i>Rpl13, Rps13, Rpl15</i>	14 (4.7e-67***)	2.8 (1.9e-21***)	Ribosome, Oxidative phosphorylation, Parkinson's disease, Alzheimer's disease, Huntington's disease
M2	865	0.0013	<i>Dad1</i>	<i>Dad1</i>	12 (5.5e-49***)	4.8 (2e-43***)	Protein processing in endoplasmic reticulum, Protein export, N-Glycan biosynthesis, Lysosome, Proteasome
M3	370	0.0021	<i>Ercc6l, Bub1, Mcm10</i>		--	2.2 (9.1e-05***)	Spliceosome, Cell cycle, Glucagon signaling pathway, Oocyte meiosis, Thyroid hormone signaling pathway
M4	347	0.011	<i>Sell, Ifi213, Prkcq</i>		--	--	Leukocyte transendothelial migration, Primary immunodeficiency, Cell adhesion molecules (CAMs), Axon guidance, Adherens junction
M5	306	0.006	<i>Wfdc18, Ctse, Slc45a3</i>		--	--	Retrograde endocannabinoid signaling, Inflammatory mediator regulation of TRP channels, GABAergic synapse, Morphine addiction
M6	303	0.0019	<i>Uhrf1, Trip13</i>		--	1.7 (0.027*)	Spliceosome, FoxO signaling pathway, Gap junction, GnRH signaling pathway, Signaling pathways regulating pluripotency of stem cells
M7	285	0.0094	<i>Kcne4, Jph2, Pcdh18</i>		--	--	Focal adhesion, Platelet activation, ECM-receptor interaction, Gastric acid secretion, cGMP-PKG signaling pathway
M8	269	0.0062	<i>Prelp, Pof1b, Bche</i>		--	--	PI3K-Akt signaling pathway, Gastric acid secretion, Ras signaling pathway, AMPK signaling pathway, Axon guidance
M9	253	0.0089	<i>Ddr2, Slc30a10, Rbm46</i>		--	--	Vascular smooth muscle contraction, cGMP-PKG signaling pathway, Platelet activation, Protein digestion and absorption, Calcium signaling pathway
M10	200	0.0073	<i>Ifit3b, Ifit3, Irf7</i>		1.4 (0.37)	--	Herpes simplex infection, Influenza A, Measles, Antigen processing and presentation, Hepatitis C
M11	165	0.017	<i>Trim30b, Wdfy4, Cxcl9</i>		--	--	Intestinal immune network for IgA production, Rheumatoid arthritis, Graft-versus-host disease, Cytokine-cytokine receptor interaction, Inflammatory bowel disease (IBD)
M12	162	0.0082	<i>Sox17, Prrg1, Tbx3</i>		--	--	ECM-receptor interaction, Rap1 signaling pathway, Ras signaling pathway
M13	117	0.0019	<i>B3gnt7, Dcst1, Akr1b7</i>		--	--	
M14	114	0.002	<i>Hal, Olfr961</i>		--	--	
M15	112	0.0061	<i>mt-Co3, mt-Nd1</i>	<i>mt-Nd1</i>	5.6 (0.00018***)	2.7 (0.0024**)	Parkinson's disease, Oxidative phosphorylation, Alzheimer's disease, Cardiac muscle contraction, Huntington's disease
M16	112	0.0071	<i>Gulp1, Hmcn1, Mertk</i>		--	--	
M17	109	0.0029	<i>Flvcr2, 1700028P14Rik, Cxcl1</i>		--	--	
M18	70	0.017	<i>Clec5a, Clec4a2, Lt4r1</i>		--	--	Osteoclast differentiation