

## Supplemental Material: Gene expression matrix

Gene	log(KO/WT) 1	log(KO/WT) 2	log(KO/WT) 3	log(KO/WT) 4
CD97 antigen	-0.039837638	-0.101334333	-0.140345392	-0.049913044
angiopoietin-like 2	-0.335720422	-0.507407811	-0.276548013	-0.07604153
ribosomal protein S6 kinase, polypeptide 2	-0.056009673	-0.083215744	-0.195063764	-0.102842222
sterol O-acyltransferase 1	0.182544507	0.211457791	0.220166496	0.090425918
solute carrier family 12, member 2	0.11485363	0.029095705	0.118364595	0.168359563
spectrin beta 2	-0.060075507	-0.202329208	-0.16241383	-0.18195958
regulator of G-protein signaling 2	0.18262808	0.154237592	0.177385843	0.063803445
CUG triplet repeat, RNA binding protein 1	0.070465105	0.108147394	0.174731961	0.087948395
peroxiredoxin 4	0.25283637	0.166156421	0.229954528	0.080246778
ceruloplasmin	0.203734719	0.604796285	0.435906266	0.164196915
SA rat hypertension-associated homolog	0.123531319	0.258043253	0.314968922	0.116840107
RIKEN cDNA 5830426I05 gene	0.08083083	0.118156351	0.19170347	0.146944386
glycogen synthase 3, brain	-0.214254787	-0.271584625	-0.277115133	-0.136617361
Kruppel-like factor 5	-0.148406561	-0.1082526	-0.214462627	-0.106969274
ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide	0.158017158	0.077645318	0.05970992	0.037109383
thymoma viral proto-oncogene 2	-0.191245094	-0.285593521	-0.148252062	-0.033026888
RIKEN cDNA C630016B22 gene	-0.043955329	-0.177023483	-0.203315621	-0.108190932
mitochondrial ribosomal protein L33	0.087210404	0.130404944	0.154766894	0.164933442
endothelial differentiation, sphingolipid G-protein-coupled receptor, 3	-0.311139463	-0.551137687	-0.409566993	-0.101547403
calmodulin 1	-0.099247901	-0.156772198	-0.201000349	-0.135154718
glutathione S-transferase, mu 1	-0.157047557	-0.092243565	-0.044201564	-0.14737004
monocyte to macrophage differentiation-associated	-0.213681115	-0.337475599	-0.159688792	-0.055939151
activating transcription factor 4	0.145551965	0.230863063	0.199971933	0.061058976
myogenic differentiation 1	-0.087459566	-0.170115497	-0.198042903	-0.038789824
glycerol-3-phosphate dehydrogenase 1 (soluble)	-0.288150281	-0.080558326	-0.227199254	-0.108179869
glycogen synthase 3, brain	-0.214254787	-0.271584625	-0.277115133	-0.136617361
lipoprotein lipase	-0.168264752	-0.16478225	-0.250156995	-0.065378136
hypermethylated in cancer 1	-0.155744438	-0.198846666	-0.017696207	-0.116291274
endothelial differentiation, sphingolipid G-protein-coupled receptor, 3	-0.311139463	-0.551137687	-0.409566993	-0.101547403
transcription factor 20	0.071419734	0.139096259	0.066574315	0.044759462
actin, beta, cytoplasmic	0.176807912	0.389467422	0.17541223	0.157488254
insulin-like growth factor binding protein 5	-0.28999389	-0.898241456	-0.383799392	-0.057724692
connective tissue growth factor	0.307970802	0.139013689	0.249415221	0.057445272
tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, beta polypeptide	-0.050945131	-0.15656402	-0.092194731	-0.086636066
upregulated during skeletal muscle growth 5	0.085025845	0.037763117	0.166887259	0.07130813
calsyntenin 1	-0.177928557	-0.206783718	-0.119282969	-0.10912871
ribosomal protein L36	0.066648108	0.177306027	0.157203735	0.050266062
small nuclear ribonucleoprotein E	0.113790324	0.076992322	0.198227498	0.04794441
endothelial-specific receptor tyrosine kinase	-0.120928345	-0.076954614	-0.152617613	-0.055565743
chloride channel 4-2	-0.065958643	-0.137965852	-0.105991444	-0.049474614
novel nuclear protein 1	-0.209534826	-0.27967131	-0.206513025	-0.080506328
ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide	0.158017158	0.077645318	0.05970992	0.037109383
calpain 1	-0.079782587	-0.215287263	-0.166032294	-0.125955166
amyloid beta (A4) precursor protein	-0.11195105	-0.23371238	-0.218340121	-0.047569616
CUG triplet repeat, RNA binding protein 1	0.070465105	0.108147394	0.174731961	0.087948395

## Supplemental Material: Connectivity references

Gene	MYOD	MYF5	MYOG	PAX3	PAX7	SRF	SIX1	SIX4	SIX5	MEF2	NUR77
CD97 antigen	2		1								
angiotensin-like 2	2										
ribosomal protein S6 kinase, polypeptide 2	2										
sterol O-acyltransferase 1	2										
solute carrier family 12, member 2	2						13	13			
spectrin beta 2	2										
regulator of G-protein signaling 2	2										
CUG triplet repeat, RNA binding protein 1	2										
peroxiredoxin 4	2,3										
ceruloplasmin	2										
SA rat hypertension-associated homolog	2										
RIKEN cDNA 5830426105 gene	2										
glycogen synthase 3, brain	3										
Kruppel-like factor 5	3										
ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide	3,8										
thymoma viral proto-oncogene 2 (akt2)	3		4								
RIKEN cDNA C630016B22 gene	3										
mitochondrial ribosomal protein L33	3										
endothelial differentiation, sphingolipid G-protein-coupled receptor, 3	3,7										
calmodulin 1			4								
glutathione S-transferase, mu 1	4										
monocyte to macrophage differentiation-associated			4								
activating transcription factor 4	4		4								
myogenic differentiation 1				9		14				5	
glycerol-3-phosphate dehydrogenase 1 (soluble)											6
glycogen synthase 3, brain											6
lipoprotein lipase											6
hypermethylated in cancer 1	7										
endothelial differentiation, sphingolipid G-protein-coupled receptor, 3	7										
transcription factor 20		7									
actin, beta, cytoplasmic		7									
insulin-like growth factor binding protein 5	2,7	7	7	12					16		
connective tissue growth factor		7									
tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, beta polypeptide		7									
upregulated during skeletal muscle growth 5	8										
calsyntenin 1	8										
ribosomal protein L36	8										
small nuclear ribonucleoprotein E	8										
endothelial-specific receptor tyrosine kinase				9							
chloride channel 4-2										10	
novel nuclear protein 1						11					
ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide							13		16		
calpain 1				9							
amyloid beta (A4) precursor protein				9							
CUG triplet repeat, RNA binding protein 1			15								

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Supplemental Material: Control strength matrix

Name	MYOD	MYF5	MYOG	PAX3	SRF	MEF2	NUR77
Cd97	-1.46E+00	0	-1.49E-01	0	0	0	0
Angptl2	-5.74E-01	0	0	0	0	0	0
Rps6ka2	-9.00E-01	0	0	0	0	0	0
Soat1	1.01E+00	0	0	0	0	0	0
Spnb2	-4.02E-01	0	0	0	0	0	0
Rgs2	7.23E-01	0	0	0	0	0	0
Cugbp1	1.11E+00	0	0	0	0	0	0
Prdx4	5.56E-01	0	0	0	0	0	0
Cp	9.48E-01	0	0	0	0	0	0
Sah	1.20E+00	0	0	0	0	0	0
5830426I05Rik	7.36E-01	0	0	0	0	0	0
Gys3	-1.09E+00	0	0	0	0	0	0
Klf5	-8.39E-01	0	0	0	0	0	0
Atp1a1	-2.59E-01	0	0	0	0	0	0
Akt2	4.35E+00	0	2.68E+00	0	0	0	0
C630016B22Rik	-1.04E+00	0	0	0	0	0	0
Mrpl33	2.75E-01	0	0	0	0	0	0
Edg3	-9.06E-01	0	0	0	0	0	0
Calm1	0	0	5.39E-01	0	0	0	0
Gstm1	1.19E+00	0	0	0	0	0	0
Mmd	0	0	3.58E-01	0	0	0	0
Atf4	-2.15E+00	0	-1.73E+00	0	0	0	0
Myod1	0	0	0	1.39E+00	1.92E-01	-5.08E-01	0
Gpd1	0	0	0	0	0	0	7.18E-01
Gys3	0	0	0	0	0	0	1.08E+00
Lpl	0	0	0	0	0	0	1.21E+00
Hic1	5.84E-01	0	0	0	0	0	0
Edg3	-9.06E-01	0	0	0	0	0	0
Tcf20	0	1.14E+00	0	0	0	0	0
Actb	0	1.21E+00	0	0	0	0	0
Ctgf	0	-4.62E-01	0	0	0	0	0
Ywhab	0	-1.19E+00	0	0	0	0	0
Usmg5	6.92E-01	0	0	0	0	0	0
Clstn1	-6.83E-02	0	0	0	0	0	0
Rpl36	1.09E+00	0	0	0	0	0	0
Snrpe	9.46E-01	0	0	0	0	0	0
Tek	0	0	0	5.78E-01	0	0	0
Clcn4-2	0	0	0	0	0	1.49E+00	0
Nnp1	0	0	0	0	1.81E+00	0	0
Capn1	0	0	0	8.92E-01	0	0	0
App	0	0	0	1.14E+00	0	0	0
Cugbp1	0	0	-5.44E-01	0	0	0	0