

TableS8 - VEGF related genes							
Accession	Protein names	Genes	Gene Function	prot_score_WT	prot_matches_WT	prot_score_KO	prot_matches_KO
Q7TPR4	Alpha-actinin-1 (Alpha-actinin cytoskeletal isoform) (Non-muscle alpha-actinin-1) (F-actin cross-linking protein)	Actn1	F-actin cross-linking protein which is thought to anchor actin to a variety of intracellular structures. This is a bundling protein	0	0	34	8
P57780	Alpha-actinin-4 (Non-muscle alpha-actinin 4) (F-actin cross-linking protein)	Actn4	F-actin cross-linking protein which is thought to anchor actin to a variety of intracellular structures. This is a bundling protein.	0	0	34	10
Q63844	Mitogen-activated protein kinase 3 (EC 2.7.11.24) (Extracellular signal-regulated kinase 1) (ERK-1) (Insulin-stimulated MAP2 kinase) (MAP kinase 1) (MAPK 1) (p44-ERK1) (ERT2) (p44-MAPK) (Microtubule-associated protein 2 kinase) (MNK1)	Mapk3 (Erk1) (Prkm3)	Involved in both the initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating a number of transcription factors such as ELK-1	0	0	37	14
P35918	Vascular endothelial growth factor receptor 2 (VEGFR-2) (EC 2.7.10.1) (Protein-tyrosine kinase receptor flk-1) (Fetal liver kinase 1) (Kinase NYK) (CD antigen CD309)	Kdr (Flk-1) (Flk1)	Receptor for VEGF or VEGFC. Has a tyrosine-protein kinase activity. The VEGF-kinase ligand/receptor signaling system plays a key role in vascular development and regulation of vascular permeability.	0	0	34	16

P63085	Mitogen-activated protein kinase 1 (EC 2.7.11.24) (Extracellular signal-regulated kinase 2) (ERK-2) (Mitogen-activated protein kinase 2) (MAP kinase 2) (MAPK 2) (p42-MAPK) (ERT1)	Mapk1 (Erk2) (Mapk) (Prkm1)	Involved in both the initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating a number of transcription factors such as ELK1	0	0	112	19
Q6ZWX6	Eukaryotic translation initiation factor 2 subunit 1 (Eukaryotic translation initiation factor 2 subunit alpha) (eIF-2-alpha) (EIF-2alpha) (EIF-2A)	Eif2s1 (Eif2a)	Functions in the early steps of protein synthesis by forming a ternary complex with GTP and initiator tRNA.	27	7	177	11
O70456	14-3-3 protein sigma (Stratifin)	Sfn (Mkrn3)	Adapter protein implicated in the regulation of a large spectrum of both general and specialized signaling pathway. Binds to a large number of partners, usually by recognition of a phosphoserine or phosphothreonine motif. Binding generally results in the modulation of the activity of the binding partner. When bound to KRT17, regulates protein synthesis and epithelial cell growth by stimulating Akt/mTOR pathway.	573	56	666	71
O08908	Phosphatidylinositol 3-kinase regulatory subunit beta (PI3-kinase p85 subunit beta) (PtdIns-3-kinase p85-beta)	Pik3r2	Binds to activated (phosphorylated) protein-tyrosine kinases, through its SH2 domain, and acts as an adapter, mediating the association of the p110 catalytic unit to the plasma membrane.	19	20	25	24
P35969	Vascular endothelial growth factor receptor 1 (VEGFR-1) (EC 2.7.10.1) (Tyrosine-protein kinase receptor FLT) (FLT-1) (Embryonic receptor kinase 2)	Flt1 (Emrk2) (Flt)	Receptor for VEGF and PGF. Has a tyrosine-protein kinase activity. The VEGF-kinase ligand/receptor signaling system plays a key role in vascular development and regulation of vascular permeability.	29	35	36	32

P62259	14-3-3 protein epsilon (14-3-3E)	Ywhae	Adapter protein implicated in the regulation of a large spectrum of both general and specialized signaling pathway. Binds to a large number of partners, usually by recognition of a phosphoserine or phosphothreonine motif. Binding generally results in the modulation of the activity of the binding partner	1202	116	998	95
Q02956	Protein kinase C zeta type (EC 2.7.11.13) (nPKC-zeta)	Prkcz (Pkcζ)	This is calcium-independent, phospholipid-dependent, serine- and threonine-specific enzyme	29	8	15	6
P60710	Actin, cytoplasmic 1 (Beta-actin)	Actb	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.	5140	282	4496	208
P68033	Actin, alpha cardiac muscle 1 (Alpha-cardiac actin)	Actc1 (Actc)	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.	3948	234	2726	155
P53762	Aryl hydrocarbon receptor nuclear translocator (ARNT protein) (Dioxin receptor, nuclear translocator) (Hypoxia-inducible factor 1 beta) (HIF-1 beta)	Arnt	Required for activity of the Ah (dioxin) receptor. This protein is required for the ligand-binding subunit to translocate from the cytosol to the nucleus after ligand binding. The complex then initiates transcription of genes involved in the activation of PAH procarcinogens. The heterodimer with HIF1A or EPAS1/HIF2A functions as a transcriptional regulator of the adaptive response to hypoxia	25	7	22	4
Q62084	Protein phosphatase 1 regulatory subunit 14B (Phosphatase holoenzyme inhibitor 1) (PHI-1) (Phospholipase C beta 3 neighbouring gene protein)	Ppp1r14b (Png)	Inhibitor of PPP1CA. Has over 50-fold higher inhibitory activity when phosphorylated.	58	4	14	2

P49766	Vascular endothelial growth factor B (VEGF-B) (VEGF-related factor) (VRF)	Vegfb (Vrf)	Growth factor for endothelial cells. VEGF-B167 binds heparin and neuropilin-1 whereas the binding to neuropilin-1 of VEGF-B186 is regulated by proteolysis. VEGF-B seems to be required for normal heart function in adult but is not required for proper development of the cardiovascular system either during development or for angiogenesis in adults.	28	3	0	0
O35608	Angiopoietin-2 (ANG-2)	Angpt2 (Agpt2)	Binds to TIE2 receptor and counteracts blood vessel maturation/stability mediated by angiopoietin-1. In the absence of angiogenic inducers, such as VEGF, ANG2-mediated loosening of cell-matrix contacts may induce endothelial cell apoptosis with consequent vascular regression. In concert with VEGF, it may facilitate endothelial cell migration and proliferation, thus serving as a permissive angiogenic signal.	28	4	0	0
P62137	Serine/threonine-protein phosphatase PP1-alpha catalytic subunit (PP-1A) (EC 3.1.3.16)	Ppp1ca (Ppp1a)	Protein phosphatase 1 (PP1) is essential for cell division, and participates in the regulation of glycogen metabolism, muscle contractility and protein synthesis. Involved in regulation of ionic conductances and long-term synaptic plasticity. May play an important role in dephosphorylating substrates such as the postsynaptic density-associated Ca(2+)/calmodulin dependent protein kinase II.	219	6	0	0
Q9WVS8	Mitogen-activated protein kinase 7 (EC 2.7.11.24) (Extracellular signal-regulated kinase 5) (ERK-5) (Big MAP kinase 1) (BMK1 kinase)	Mapk7 (Erk5)	Plays a role in various cellular processes such as proliferation, differentiation and cell survival. May be important for endothelial function and maintenance of blood vessel integrity.	28	7	0	0

Q99N57	RAF proto-oncogene serine/threonine-protein kinase (EC 2.7.11.1) (C-RAF) (cRaf) (Raf-1)	Raf1 (Craf)	Involved in the transduction of mitogenic signals from the cell membrane to the nucleus. Part of the Ras-dependent signaling pathway from receptors to the nucleus. Protects cells from apoptosis mediated by STK3	25	8	0	0
P42337	Phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha isoform (EC 2.7.1.153) (PI3-kinase p110 subunit alpha) (PtdIns-3-kinase p110) (PI3K)	Pik3ca	Phosphorylates PtdIns, PtdIns4P and PtdIns(4,5)P2 with a preference for PtdIns(4,5)P2.	26	13	0	0