Vagal Nerve Stimulation Modifies Neuronal Activity and the Proteome of Excitatory Synapses of Amygdala/Piriform Cortex

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Supplemental Materials

Supplemental Figure Legends:

Figure S1. Assessment of reproducibility of the analytical approach employed in this study. A, Triplicate PSD fractions were generated and analyzed to determine the variation in any one protein's measured intensity across three replicate preparations. B, A histogram of the number of proteins within bins of measured variations (bins of 5% relative standard deviation) show that the sample preparation protocol is reproducible and the workflow is capable of quantitatively measuring differences in samples due to biology.

Figure S2: Three-dimensional principal component analysis (PCA) of the z-score corrected protein intensity values across control (n=4 animals, n=8 analytical injections) and VNS challenge (n=6 animals, n=12 analytical injections). For each unique biological (i.e., animal) sample, two datasets (i.e., technical duplicates) were acquired. A, The PCA analysis at the global protein level (n=436 proteins) indicated a VNS-stimulus dependent separation based on PC2. B, The PCA analysis using only those n=22 proteins classified as being differentially regulated in VNS versus Control indicated a VNS-stimulus dependent separation based on PC1.

Figure S3. A, Subcellular distribution of PSD proteins in the rat brain. Proteins (10 or 1 μg) of each fraction isolated from rat hippocampus were analyzed by immunoblotting analysis with indicated antibodies. B, Quantification of enrichment of PSD-95 and synaptophysin in rat brain subcellular fractions. PSD-95, a marker of the postsynaptic density, was highly enriched in PSD-1T and PSD-2T fractions whereas synaptophysin, a marker of the presynaptic axon terminal, was highly enriched in presynaptic fraction and absent in PSD fractions. The enrichment of PSD-95 and absence of synaptophysin immunoreactivities in the PSD fractions validated the purification of the PSD fraction.

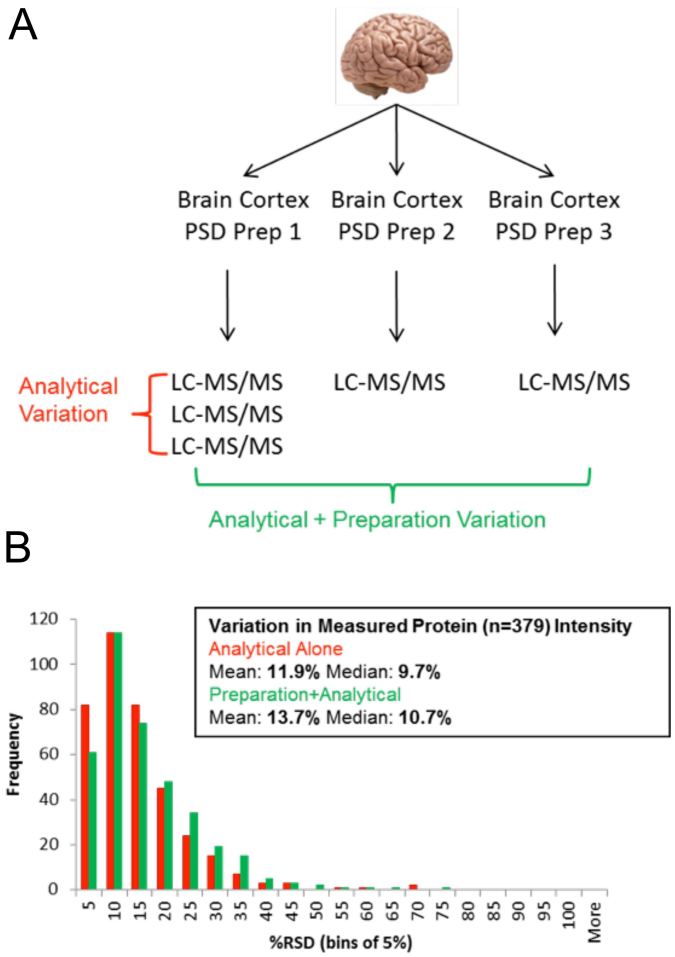
A
Brain Cortex PSD Prep 1
Brain Cortex PSD Prep 2
Brain Cortex PSD Prep 3
Analytical Variation
LC-MS/MS
LC-MS/MS
LC-MS/MS
LC-MS/MS
LC-MS/MS
LC-MS/MS
Analytical + Preparation Variation
B
Variation in Measured Protein (n=379) Intensity
Analytical Alone
Mean: 11.9% Median: 9.7%
Preparation+Analytical
Mean: 13.7% Median: 10.7%
Frequency
%RSD (bins of 5%)

Figure S1.

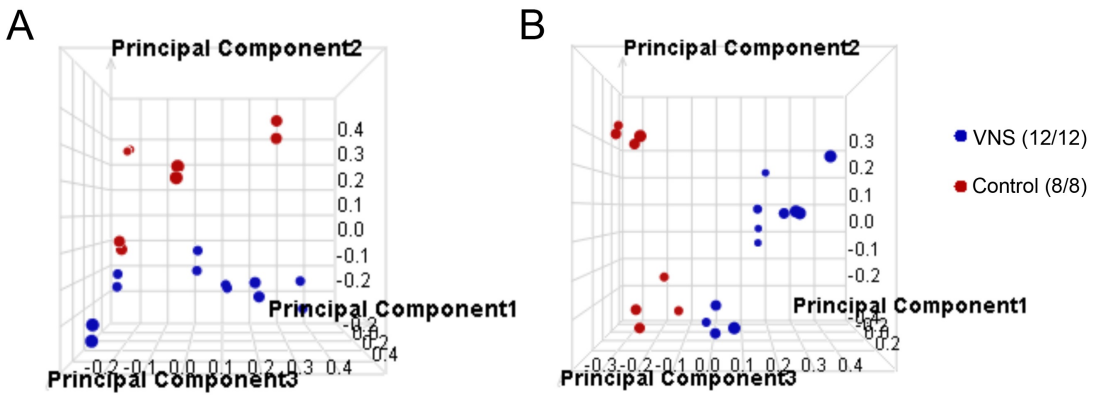
A
Principal Component2
Principal Component1
Principal Component3
B
Principal Component2
Principal Component1
Principal Component3
VNS (12/12)
Control (8/8)

Figure S2.

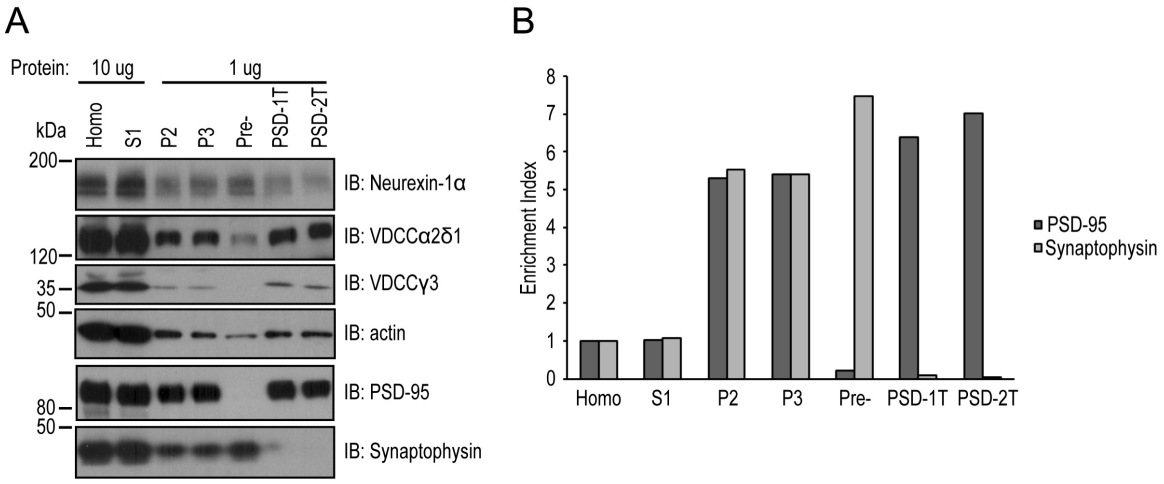
A
Protein:
10 ug
1 ug
kDa
Homo
S1
P2
P3
Pre-
PSD-1T
PSD-2T
200
120
35
50
80
50
IB: Neurexin-1α
IB: VDCCα2δ1
IB: VDCCγ3
IB: actin
IB: PSD-95
IB: Synaptophysin
B
Enrichment Index
0
1
2
3
4
5
6
7
8
Homo
S1
P2
P3
Pre-
PSD-1T
PSD-2T
PSD-95
Synaptophysin

Figure S3.

Supplemental Table 1. Proteins identified in PSD fraction by LC-MS/MS grouped by function.

Bold text indicates proteins not yet identified in the PSD fraction by proteomic analyses.

Bracketed numbers indicate that the preceding residue was modified. C[160.0307] indicates alkylation of cysteine, and M[147.0354] indicates oxidation of methionine.

Protein Name	Protein Description	Number of Unique Peptides	Peptide Sequences																			
			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
Cell adhesion and junction																						
PGCB_RAT	**Brevican core protein**	**1**	FKDTETPK EEK																			
CAD13_MOUSE	Cadherin-13	2	INENTGSV SVTR	SIVVSPILI PENQR																		
CADH2_RAT	Cadherin-2	3	SAAPHPGD IGDFINEGL K	YSVTGPG ADQPPT GIFIINPIS GQLSVTK PLDR	FLEAGIY EVPIVITD SGNPPK																	
CTNA2_MOUSE	Catenin alpha-2	6	IVEEALEAV K	LVYDGVR	LNYVAAR	NTSDVIN AAK	ALLSAVT R	NATNEQD LANR														
CTNB1_MOUSE	Catenin beta-1	2	LVQLLVR	LLNDEDQ VVVNK																		
CTND2_MOUSE	Catenin delta-2	3	GGSAPEG AAYAAPR	TSTAPSS PGVDSVP LQR	AAGQSFS QGTTGR																	
CLD11_MOUSE	Claudin-11	1	FYYSSGSS SPTHAK																			
CLD12_MOUSE	**Claudin-12**	**1**	LSAIEIDIPV VSHST																			
CNTN1_RAT	Contactin-1	20	TTKPYPADI VVQFK	HSIEVPIP R	ILYRPDG QHDGK	AHSDGG DGVVSQ VK	ATSVALT WSR	STEATLS FGYLDPF PPEDRPE VK	TILSDDW K	VQVTSQE YSAR	TDPPIIEG NMESAK	IVESYQIR	ASPFPVY K	FIPLIPIPE R	VLEPMPT TAEISTS GAVLK	DGEYVVE VR	IKTDGAA PNVAPSD VGGGGG TNR	ELTITWA PLSR	TDGAAPN VAPSDVG GGGGTN R	VTVTNPD TGR	VVATNTL GTGEPSI PSNR	GPPGPP GGLR
CNTP1_MOUSE	Contactin-associated protein 1	3	YNLQSALR	DQNLPQI LEESR	FSLLVDS QLDSPK																	
CXA1_RAT	Gap junction alpha-1 protein	5	VAAGHELQ PLAIVDQR PSSR	QASEQN WANYSA EQNR	MGQAGS TISNSHA QPFDFPD DNQNAK	GDWSAL GK	SDPYHAT TGPLSPS K															
CXG2_RAT	**Gap junction gamma-2 protein**	**1**	SGAQEQLA TKPR																			
HPLN1_MOUSE	Hyaluronan and proteoglycan link protein 1	1	LLVEAEQA K																			
IGS21_MOUSE	**Immunoglobulin superfamily member 21**	**2**	LIVFENPNI PR	TPGSDGT VEVR																		
ICAM5_MOUSE	Intercellular adhesion molecule 5	1	ASLTLTLLR																			
CD47_RAT	**Leukocyte surface antigen CD47**	**1**	ISVSDLLK																			
LSAMP_MOUSE	Limbic system-associated membrane protein	7	SGIIFAGHD K	HALEYSL R	C[160.0307]EASAVP APDFEW YR	AANEVSS ADVK	VTVNYPP TITESK	EFEGEEE YLEILGIT R	GTDNITV R													
NCAM1_MOUSE	**Neural cell adhesion molecule 1**	**1**	GLGEISAAT EFK																			
NCAN_MOUSE	Neurocan core protein	4	ASDSGLYR	RLTLAGA R	YPIQTPR	VSLPAYP R																
NFASC_RAT	Neurofascin	1	VIAVNEVG SSHPSLPS ER																			
NLGN1_RAT	Neuroligin-1	1	ELVDQDVQ PAR																			
NLGN3_RAT	Neuroligin-3	3	TGDPNKPV PQDTK	VPLPSEIL GPVDQYL GVPYAAP PIGEK	LTALPDY TLTLR																	
NEGR1_RAT	Neuronal growth regulator 1	4	LFNGQQGII IQNFSTR	VSISTLNK	VVVNFAP TIQEIK	SSIIFAGG DK																
NTRI_MOUSE	Neurotrimin	4	VHLIVQVS PK	SGDATFP K	VTVNYPP YISEAK	AVGFVSE DEYLEIQ GITR																
OPCM_RAT	**Opioid-binding protein/cell adhesion molecule**	**2**	ITVNYPPYI SK	LATGLDG VR																		
PKP4_MOUSE	Plakophilin-4	3	ALADSGGI EK	VVSSVAT ALR	TPQEDQ WDGVGPI PGLSK																	
TENR_RAT	Tenascin-R	1	LDSSVVPN TVTEFTITR																			
Chaperone																						
DJC11_MOUSE	DnaJ homolog subfamily C member 11	2	IIEAEESR	ENTASDIL QK																		
HSP7C_MOUSE	**Heat shock cognate 71 kDa protein**	**13**	IINEPTAAI AYGLDKK	ITITNDK	SQIHDIVL VGGSTR	NQTAEKE EFEHQQ K	STAGDTH LGGEDFD NR	NQVAMN PTNTVFD AK	IINEPTAA AIAYGLD K	VEIIANDQ GNR	NQVAM[147.0354]N PTNTVFD AK	TVTNAVV TVPAYFN DSQR	FEELNAD LFR	TTPSYVA FTDTER	DAGTIAG LNVLR							
HSF3_MOUSE	**Heat shock factor protein 3**	**1**	DGYELVED K																			
HSPB8_RAT	**Heat shock protein beta-8**	**1**	FGVPAEGR																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
Cytoskeleton-Actin																						
ACTG_RAT	Actin, cytoplasmic 2	11	AVFPSIVGRPR	RGILTLK	DLYANTVLSGGTTMYPGIADR	EITALAPSTMK	AGFAGDDAPR	EITALAPSTM[147.0354]K	QEYDESGPSIVHR	DSYVGDEAQSK	DSYVGDEAQSKR	GYSFTTTAER	SYELPDGQVITIGNER									
ARPC4_MOUSE	Actin-related protein 2/3 complex subunit 4	1	ELLLQPVTISR																			
ACTN1_RAT	Alpha-actinin-1	1	RDQALTEEHSR																			
AINX_RAT	Alpha-internexin	22	ALEAELAALR	KLLEGEETR	DVDGATLAR	TNEKEQLQGLNDR	RLPASDGLDLSQAAAR	AQLEEASAR	DGLAEEVQR	ASREEIHEYR	VGESFEETLEETVVSTK	LPASDGLDLSQAAAR	FSTSGLSINPSYLLPPR	LLEGEETR	KEEEEEEEEEEGASK	FAVFIEK	FANLNEQAAR	VSSAGLSLK	STIEEITTSSSQK	AQYESLAAK	EEEEEEEEEEGASK	TIEIEGLR
ANK2_MOUSE	Ankyrin-2	7	SHTLSHASYLR	TLEQQENFSEVAR	AGEEEPGEPFEIVER	GADSGLLTEPVIR	TDKRPPVPSSGR	ATSPLIEETPIGSIK	ATFSPIVTLEPR													
E41L1_RAT	Band 4.1-like protein 1	1	APESDTGDEDQDQER																			
E41L3_MOUSE	Band 4.1-like protein 3	1	HQTNISELKR																			
COR1A_RAT	Coronin-1A	1	DAGPLLISLK																			
COR1C_MOUSE	Coronin-1C	1	NADPILISLK																			
DREB_RAT	Drebrin	1	ASDSGPSSSSSSSSPPR																			
CAZA2_MOUSE	F-actin-capping protein subunit alpha-2	2	TSVETALR	LLLNNDNLLR																		
SPTA2_RAT	Spectrin alpha chain, brain	70	KFEEFQTDLAAHEER	HQALQAEIAGHEPR	HALLEADVAAHQDR	HQLLEADISAHEDR	HQAFEAELSANQSR	SADESGQALLAAGHYASDEVR	EKLDILDQER	AALLELWELR	LIQSHPESAEDLKEK	LIDVNHYAK	KLLEATELK	LIQEQHPEEELIK	KFDDFQK	SQLLGSAHEVQR	DADETKEWIEEK	LQQSHPLSANQIQVK	NQALNTDNYGHDLASVQALQR	TKQEEVNAAWQR	ALSSEGKPYVTK	MNEVISLWK
SPTB2_MOUSE	Spectrin beta chain, brain 1	43	LILEVHQFSR	DTGNIGQER	EAEKLESEHPDQAQAILSR	TQILAASYELHK	TQTAIASEDMPNTLTEAEK	KHYASEEIKEK	IVSSNDVGHDEYSTQSLVK	LEDLEVIQHR	EVDDLEQWIAER	LQALDTGWNELHK	ITDLYTDLR	DQNTVETLQR	DASVAEAWLLGQEPYLSSR	LTTLELLEVR	FESLEPEMNNQASR	VQAVVAVAR	LVSDGNINSDR	IDDIFER	TLETPAAQMEGFLNR	QALQDTLALYK
SPTN2_RAT	Spectrin beta chain, brain 2	34	VPTLEQHYEELQAR	RREESLGEAR	LLEVLSGETLPKPTK	VVNAAIATASSASGEPEEPVVPSASR	DTSTIGQER	LVSSPEVGHDEFSTQALAR	VGELTQEANALAAGHPAQAPAINTR	LTLEQGQQLVAEGHPGANQASTR	ETWLSENQR	SAVAWEER	AQQFYR	DLTSVNILLK	LLDPEDVNVDQPDEK	LTALEER	VGDLYSDLR	LGEVQTGWEDLR	DLNAAEALQR	LEDLEVVQQR	VTAVSDIAEQLLK	LEALGTGWEELGR
SYNPO_RAT	Synaptopodin	2	SSPGLYNAPVQDSLQPTAVSPTYSSDISPVSPSR	VASEEEEVPLVVYLK																		
Cytoskeleton-Other																						
GFAP_RAT	Glial fibrillary acidic protein	8	QEADEATLAR	FADLTDVASR	ESASYQEALAR	ALAAELNQLR	ITIPVQTFSNLQIR	LEAENNLAVYR	LQDETNLR	LADVYQAELR												
K1C10_MOUSE	Keratin, type I cytoskeletal 10	1	ALEESNYELEGK																			
K2C1_MOUSE	**Keratin, type II cytoskeletal 1**	**2**	FLEQQNQVLQTK	TNAENEFVTIK																		
K2C6A_RAT	Keratin, type II cytoskeletal 6A	1	YEELQITAGR																			
MAP1A_RAT	Microtubule-associated protein 1A	10	ESTFLDEGPDEQEITPLQHTPR	VAVVEQDLIIHQK	VPEAGESLATR	REEVLEEGAK	ALGLEESPAEGSK	TSTEEATEPQKDEVLR	VLFPGNAPQNK	SSLLLDTVTSIPSSR	NLISPELGVVFFNVPDK	AVLDALLEGK										
MAP1B_RAT	Microtubule-associated protein 1B	3	HSPTEDEEIAK	TPEVSGYTYEK	NLISPDLGVVFLNVPENLK																	
MAP2_RAT	Microtubule-associated protein 2	13	VGSLDNAHHVPGGGNVK	VTEGSQPFAPVFFQSDDK	LASVSADAEVAR	GLSSVPEVAEVETTTK	LINQPLPDLK	GNAQESLDTVSPK	TPGTPGTPSYPR	FAAPVQPEEER	TTATSGESAQAPSAFK	ADQGLDVAAK	SILTEQLETIPK	ETSPETSLIQDEVALK	VTSEPEAVSEK							
MAP4_MOUSE	Microtubule-associated protein 4	1	LATTVSAPDLK																			
MAP6_RAT	Microtubule-associated protein 6	14	VEKPSVQSSKPK	YSEATEHPGAPPQPPAPPQPGLAPPSR	TTESPSATKPDDKEQSK	TEGHEEKPLPPAQSQTQEGGPAAGK	ATGPAPGPSGDRETAAAPGR	SEGHEQTTAAHAQGTGPEGGK	DPEGAGGAGVPAAGK	RSEGHEQTTAAHAQGTGPEGGK	AVAIETQPAQGESDAVAR	DLGPVAPASVK	SEYQPSDAPFER	EEVTSTVSSSYR	ADIAVPLVFTK	AVADALNR						
TAU_RAT	Microtubule-associated protein tau	2	IGSTENLK	IGSLDNITHVPGGGNK																		
MLP3B_RAT	Microtubule-associated proteins 1A/1B light chain 3B	1	IPVIIER																			
NFH_RAT	Neurofilament heavy polypeptide	8	KEEVPAAPEKK	AEEKEPLTEKPK	AAAPEEETPAK	TSVSSVSASPSR	FAQEAEAAR	FAGYIDK	IGFGPSPFSLTEGLPK	EYQDLLNVK												
NFL_MOUSE	Neurofilament light polypeptide	8	LAAEDATNEK	AQLQDLNDR	FTVLTESAAK	YEEEVLSR	ALYEQEIR	SAYSSYSAPVSSSLSVR	EGLEETLR	VLEAELLVLR												
NFM_RAT	Neurofilament medium polypeptide	9	LRDDTEAAIR	SNEKEQLQGLNDR	VSGSPSSGFR	GSPSTVSSSYK	VQSLQDEVAFLR	QLSDIEER	FAGYIEK	VEEHEETFEEK	TDISTALK											
SEPT3_RAT	Neuronal-specific septin-3	1	VVNVIPVIAK																			
PLEC1_RAT	Plectin-1	7	SKELAEQEAAR	ALQALDELK	LTQGHTTVAELTQR	SSSVGSSSSYPISSAVPR	APVPASELLASK	EVAEADEVR	VPVDVAYQR													
SEP11_RAT	Septin-11	2	SYELQESNVR	ELEEEVSNFQK																		
SEP14_MOUSE	**Septin-14**	**1**	IQQEEILK																			
SEPT2_RAT	Septin-2	1	ASIPFSVVGSNQLIEAK																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
SEPT5_MOUSE	Septin-5	2	M[147.0354]ESPIPILPLPTPDAETEK	INQTVEILK																		
SEPT7_MOUSE	Septin-7	7	ILEQQNSSR	IYEFPETDDEEENKLVK	NLEGYVGFANLPNQVYR	DSEAELQR	ANWEAQQR	DVTNNVHYENYR	FEDYLNAESR													
SEPT8_RAT	Septin-8	2	ISNAEPEPR	EFLSELQR																		
TBA1A_MOUSE	Tubulin alpha-1A chain	6	DVNAAIATIK	TIGGGDDSFNTFFSETGAGK	EIIDLVLDR	LIGQIVSSITASLR	TIQFVDWC[160.0307]PTGFK	AVFVDLEPTVIDEVR														
TBA4A_MOUSE	Tubulin alpha-4A chain	11	NLDIERPTYTNLNR	EDMAALEK	DVNAAIAAIK	LSVDYGKK	EDAANNYAR	VGINYQPPTVVPGGDLAK	IHFPLATYAPVISAEK	EIIDPVLDR	FDGALNVDLTEFQTNLVPYPR	AVFVDLEPTVIDEIR	LISQIVSSITASLR									
TBB2A_RAT	Tubulin beta-2A chain	2	YLTVAAIFR	INVYYNEAAGNK																		
TBB2C_MOUSE	Tubulin beta-2C chain	4	AVLVDLEPGTMDSVR	ALTVPELTQQMFDAK	AVLVDLEPGTM[147.0354]DSVR	INVYYNEATGGK																
TBB3_RAT	Tubulin beta-3 chain	1	YLTVATVFR																			
TBB4_MOUSE	Tubulin beta-4 chain	1	INVYYNEATGGNYVPR																			
TBB5_RAT	Tubulin beta-5 chain	17	EVDEQMLNVQNK	IREEYPDR	FPGQLNADLR	IM[147.0354]NTFSVVPSPK	IMNTFSVVPSPK	AILVDLEPGTMDSVR	LAVNMVPFPR	MAVTFIGNSTAIQELFK	ISEQFTAMFR	YLTVAAVFR	LAVNM[147.0354]VPFPR	GHYTEGAELVDSVLDVVR	ALTVPELTQQVFDAK	SGPFGQIFRPDNFVFGQSGAGNNWAK	ISVYYNEATGGK	AILVDLEPGTM[147.0354]DSVR	NSSYFVEWIPNNVK			
TPPP_MOUSE	Tubulin polymerization-promoting protein	2	APVISGVTK	VDLVDESGYVPGYK																		
GTPases and Regulators																						
AGAP2_MOUSE	**Arf-GAP with GTPase, ANK repeat and PH domain-containing protein 2**	**2**	TEGSAVQAEAK	AEAAAVAGLSTPGSLHR																		
ASAP2_MOUSE	**Arf-GAP with SH3 domain, ANK repeat and PH domain-containing protein 2**	**1**	EIISEVQR																			
ATLA1_MOUSE	**Atlastin-3**	**1**	GLLEYFK																			
RB6I2_MOUSE	ELKS/Rab6-interacting/CAST family member 1	1	RFENAPDSAK																			
RASK_MSVKI	GTPase KRas	1	SYGIPFIETSAK																			
GNAI1_RAT	Guanine nucleotide-binding protein G(i), alpha-1 subunit	3	IDFGDAAR	IAQPNYIPTQQDVLR	EYQLNDSAAYYLNDLDR																	
GNAI2_RAT	Guanine nucleotide-binding protein G(i), alpha-2 subunit	1	EYQLNDSAAYYLNDLER																			
GBG2_MOUSE	**Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2**	**2**	KLVEQLK	EDPLLTPVPASENPFR																		
GBB1_RAT	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1	1	LFVSGAC[160.0307]DASAK																			
GBB2_RAT	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-2	4	VHAIPLR	LIIWDSYTTNK	TFVSGAC[160.0307]DASIK	LLVSASQDGK																
GNAO_RAT	Guanine nucleotide-binding protein G(o) subunit alpha	13	TTGIVETHFTFK	IIHEDGFSGEDVK	NLKEDGISAAK	AMDTLGVEYGDKER	YYLDSLDR	IGAADYQPTEQDILR	LWGDSGIQEC[160.0307]FNR	MVC[160.0307]DVVSR	AMDTLGVEYGDK	SPLTIC[160.0307]FPEYPGSNTYEDAAAYIQTQFESK	SREYQLNDSAK	EYQLNDSAK	LFDVGGQR							
GNAZ_RAT	Guanine nucleotide-binding protein G(z) subunit alpha	4	AYDAVQLFALTGPAESK	GEITPELLGVMR	LLLLGTSNSGK	LYEDNQTSR																
PSD3_MOUSE	PH and SEC7 domain-containing protein 3	2	NAVSVHHALASK	LSQEEQLK																		
VAV_MOUSE	Proto-oncogene vav	1	LALDAM[147.0354]R																			
RP3A_RAT	Rabphilin-3A	5	RAPGQKPGPDLTSAPGR	DSEGWDHGHGGGAGDTSR	TLNPEFNEEFFYDIK	TGPTGGFQAAPHTAGPYSQAAPAR	TKPQQPAGEPATQEQPTPESR															

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
RPGF4_MOUSE	Rap guanine nucleotide exchange factor 4	3	SSEDVDIIFTR	TTANLDLFLR	VLLQQFNTGDER																	
SYGP1_RAT	Ras GTPase-activating protein SynGAP	24	DLFYVSRPPLAR	DKWIENLQR	KLEEYER	SASGDTVFWGEHFEFNNLPAVR	VVNSHC[160.0307]VFPR	RLLSQEEQTSK	GGEPPGDTFAPFHGYSK	DLNSSIDLQSFMAR	LSQMGVTTDGVPAQQLR	LLSDISTALR	GSIPAMSYAPFR	AGYVGLVTVPVATLAGR	SVSMLDLQGDGPGGR	LWIIEAR	VIQNLANFSK	LSQGSGSSITAAGMR	DHPAMAEPLPEPK	MLC[160.0307]AVLEPALNVK	LSQGSGSSITAAGM[147.0354]R	AIEEYMR
RAC1_MOUSE	Ras-related C3 botulinum toxin substrate 1	6	LDLRDDKDTIEK	HHC[160.0307]PNTPIILVGTK	LTPITYPQGLAMAK	AVLC[160.0307]PPPVK	WYPEVR	YLEC[160.0307]SALTQR														
RAB14_RAT	Ras-related protein Rab-14	1	LTSEPQPQR																			
RAB35_RAT	Ras-related protein Rab-35	1	VVETEDAYK																			
RAB5A_MOUSE	**Ras-related protein Rab-5A**	**1**	NEPQNPGANSAR																			
RAB5C_MOUSE	Ras-related protein Rab-5C	1	NEPQNAAGAPGR																			
RAP1A_MOUSE	Ras-related protein Rap-1A	1	LVVLGSGGVGK																			
Kinases, Phosphatases and Regulators																						
BEGIN_RAT	Brain-enriched guanylate kinase-associated protein	2	AGGDLSLSPSR	AAATLGSPLEAQVAPGFAR																		
KCC2A_RAT	Calcium/calmodulin-dependent protein kinase type II alpha chain	13	HPWISHR	STVASC[160.0307]MHR	RITAAEALK	MLTINPSKR	ITQYLDAGGIPR	FYFENLWSR	ESSESTNTTIEDEDTK	ESSESTNTTIEDEDTKVR	VTEQLIEAISNGDFESYTK	VLAGQEYAAK	SGAPSVLPH	MLTINPSK	FTEEYQLFEELGK							
KCC2B_MOUSE	Calcium/calmodulin-dependent protein kinase type II beta chain	6	GAILTTMLATR	FTDEYQLYEDIGK	FYFENLLAK	ESSDSTNTTIEDEDAK	GSLPPAALEPQTTVHNPVDGIK	GAILTTM[147.0354]LATR														
KCC2D_RAT	Calcium/calmodulin-dependent protein kinase type II delta chain	2	ITASEALK	IPTGQEYAAK																		
KCC2G_RAT	Calcium/calmodulin-dependent protein kinase type II gamma chain	7	DLKPENLLLASK	NLINQMLTINPAK	LTQYIDGQGRPR	FTDDYQLFEELGK	QSSAPASPAASAAGLAGQAAK	AGAYDFPSPEWDTVTPEAK	ITADQALK													
CAMKV_MOUSE	CaM kinase-like vesicle-associated protein	1	GEEATGC[160.0307]AQESQR																			
KC1D_RAT	Casein kinase I isoform delta	1	GAPVNVSSSDLTGR																			
CTRO_MOUSE	Citron Rho-interacting kinase	2	VASSPAPPEGPSHPR	ATDHPHPSTPATAR																		
CDKL5_MOUSE	Cyclin-dependent kinase-like 5	2	AQITETNTSR	TYQASTQPGSSSK																		
GLPK_MOUSE	Glycerol kinase	1	VQEAVEENR																			
NEUM_RAT	Neuromodulin	9	NDEDQKIEQDGVKPEDK	EKDDAPVADGVEKK	EKDDAPVADGVEK	QDEGKEDPEADQEHA	QADVPAAVTDAAATTPAAEDAAK	EGDGSATTDAAPATSPK	IEQDGVKPEDK	AGDAPSEEKKGEGDAAPSEEK	AEEPSKAGDAPSEEK											
MYPT1_RAT	Protein phosphatase 1 regulatory subunit 12A	1	LGSTSDIEEK																			
DCLK1_MOUSE	Serine/threonine-protein kinase DCLK1	3	TLSDNVNLPQGVR	SPSPSPTSPGSLR	ISQHGGSSTSLSSTK																	
DCLK2_MOUSE	Serine/threonine-protein kinase DCLK2	1	GLVFAISNDR																			
MARK2_MOUSE	Serine/threonine-protein kinase MARK2	2	KTQSNNAENKRPEEEETGR	VPVASPSAHNISSSGAPDR																		
PP2BB_MOUSE	**Serine/threonine-protein phosphatase 2B catalytic subunit beta isoform**	**1**	LFEVGGSPANTR																			
P4R3A_MOUSE	**Serine/threonine-protein phosphatase 4 regulatory subunit 3A**	**1**	GIFLLNR																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
PGAM5_RAT	**Serine/threonine-protein phosphatase PGAM5, mitochondrial**	**1**	AVETTDIISK																			
SKP1_RAT	S-phase kinase-associated protein 1	1	NDFTEEEEAQVR																			
SRCN1_RAT	SRC kinase signaling inhibitor 1	8	THPGPTPTPDHKPPK	SSGATPVSGPPPPAVSSTPAGQPTAVSR	SLSTYSAAALQSDLEDSLYK	VVTDTLAQIR	LGGAPTSQGVSPSPSAILER	STGASTAGAPPSEFPGPGER	LQLQNQESVR	AGAGGPLYGDGYGFR												
Membrane Trafficking																						
AP2A2_MOUSE	AP-2 complex subunit alpha-2	5	KGPSTVTDLEETKR	DDVQGYAAK	NADVELQQR	ALLLSTYIK	ATIQDVLR															
AP2B1_MOUSE	AP-2 complex subunit beta-1	6	LQNNNVYTIAK	NINLIVQK	LAPPLVTLLSGEPEVQYVALR	LLSTDPVTAK	FLELLPK	IQPGNPNYTLSLK														
AP2M1_MOUSE	AP-2 complex subunit mu-1	5	LNYSDHDVIK	SGIYETR	DIILPFR	TFITQQGIK	ISEENIK															
DYN1_MOUSE	Dynamin-1	4	VPVGDQPPDIEFQIR	LQDAFSAIGQNADLDLPQIAVVGGQSAGK	SSVLENFVGR	GISPVPINLR																
NPC1_MOUSE	**Niemann-Pick C1 protein**	**1**	GTERERLLNF																			
SYN1_RAT	Synapsin-1	15	VLLVIDEPHTDWAK	LPSPTAAPQQSASQATPMTQGQGR	GSHSQTPSPGALPLGR	ASTAAPVASPAAPSPGSSGGGGFFSSLSNAVK	TYATAEPFIDAK	EM[147.0354]LSSTTYPVVVK	MTQALPR	SQSLTNAFNLPEPAPPRPSLSQDEVK	QTSQQPAGPPAQQRPPPQGGPPQPGPGPQR	QGPPQKPPGPAGPIR	QASISGPAPPK	QSRPVAGGPGAPPAARPPASPSPQR	QGPPLQQRPPPQGQQHLSGLGPPAGSPLPQR	EMLSSTTYPVVVK	TSVSGNWK					
SYN2_RAT	Synapsin-2	6	FPLIEQTYYPNHR	EMLTLPTFPVVVK	QTAASAGLVDAPAPSAASR	QLITDLVISK	TPALSPQRPLTTQQPQSGTLK	TPALSPQRPLTTQQPQSGTLKEPDSSK														
SNP25_MOUSE	Synaptosomal-associated protein 25	5	RADQLADESLESTRR	ADQLADESLESTRR	EQMAISGGFIR	AWGNNQDGVVASQPAR	MLQLVEESK															
SYT1_MOUSE	Synaptotagmin-1	9	MDVGGLSDPYVK	NTLNPYYNESFSFEVPFEQIQK	LTVVILEAK	DLQSAEKEEQEK	VFVGYNSTGAELR	VPYSELGGK	TLNPVFNEQFTFK	LGDIC[160.0307]FSLR	VFLLPDK											
SYT7_MOUSE	Synaptotagmin-7	2	NLNPIFNESFAFDIPTEK	NDPIGEVSIPLNK																		
SYTL3_MOUSE	**Synaptotagmin-like protein 3**	**1**	ALGLLLNR																			
SNPH_RAT	Syntaphilin	8	HSELDLHPSGPR	VGQAQGC[160.0307]SSVLK	EEGTGESAGGSPAR	DPDSAVVVTVGDEPEAPEPITR	QAGDPSNTPAEDR	ADSGFVAADDTLSR	AIQTDFVQYQPDLNTILEK	VEAQLALK												
STX1A_RAT	Syntaxin-1A	3	SIEQSIEQEEGLNR	IAENVEEVK	QALSEIETR																	
STX1B_MOUSE	Syntaxin-1B	4	QLEITGR	QALNEIETR	LAIFTDDIK	AIEQSIEQEEGLNR																
STXB1_MOUSE	Syntaxin-binding protein 1	8	YETSGIGEAR	EPLPSLEAVYLITPSEK	DNALLAQLIQDK	SSASFSTTAVSAR	HIAEVSQEVTR	ISEQTYQLSR	SQLLILDR	LNKTDEEISS												
Metabolism																						
CN37_RAT	2',3'-cyclic-nucleotide 3'-phosphodiesterase	17	AGQVFLEELGNHK	ADFSEEYKR	LSISALFVTPK	LDC[160.0307]AQLK	LDEDLAGYC[160.0307]R	AIFTGYYGK	TAGAQVVLNEQELQLWPSDLDKPSSSESLPPGSR	HFISGDEPKEK	GGSQGEEVGELPR	RPPGVLHC[160.0307]TTK	MVSADAYK	ADFSEEYK	HFISGDEPK	ATGAEEYAQQDVVR	VLVLDDTNHER	NQWQLSLDDLK	LDLVSYFGK			
THIL_RAT	Acetyl-CoA acetyltransferase, mitochondrial	4	FANEITPITISVK	IAAFADAAVDPIDFPLAPAYAVPK	LGTIAIQGAIEK	LEDLIVK																
ADH1_YEAST	**Alcohol dehydrogenase 1**	**8**	ANELLINVK	ANGTTVLVGMPAGAK	YVVDTSK	EALDFFAR	DIVGAVLK	C[160.0307]C[160.0307]SDVFNQVVK	VVGLSTLPEIYEK	SISIVGSYVGNR												
AOFA_RAT	**Amine oxidase [flavin-containing] A**	**7**	EVLNALGK	DIWVEEPESK	EIPVDAPWQAR	WVDVGGAYVGPTQNR	INVLVLEAR	YVISAIPPILTAK	IFSVTNGGQER													
AATM_MOUSE	Aspartate aminotransferase, mitochondrial	1	IAATILTSPDLR																			
KCRU_MOUSE	Creatine kinase, ubiquitous mitochondrial	7	TVGMVAGDEETYEVFAELFDPVIQER	TVGM[147.0354]VAGDEETYEVFAELFDPVIQER	GTGGVDTAATGSVFDISNLDR	VVVDALSGLK	LGYILTC[160.0307]PSNLGTGLR	LYPPSAEYPDLR	SGYFDER													
QCR1_RAT	**Cytochrome b-c1 complex subunit 1, mitochondrial**	**8**	IEEVDAQMVR	EVESIGAHLNAYSTR	LC[160.0307]TSATESEVTR	TDLTDYLSR	VVELLADIVQNISLEDSQIEK	MVLAAAGGVK	FTGSEIR	IPLAEWESR												
QCR2_RAT	**Cytochrome b-c1 complex subunit 2, mitochondrial**	**12**	AVAFQNPQTR	LASTLTTK	AVAQGNLSSADVQAAK	TSAPGGVPLQPQELEFTK	SMTASGNLGHTPFLDEL	IIENLHDVAYK	NALANPLYC[160.0307]PDYR	EVAEQFLNIR	RGNNTTSLLSQSVAK	GNNTTSLLSQSVAK	WEVAALR	LPNGLVIASLENYAPLSR								

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
QCR7_MOUSE	**Cytochrome b-c1 complex subunit 7**	**2**	YEEDKFYLEPYLK	WYYNAAGFNK																		
QCR8_RAT	**Cytochrome b-c1 complex subunit 8**	**3**	HVISYSLSPFEQR	AFPHYFSK	EFGNLTR																	
QCR9_MOUSE	**Cytochrome b-c1 complex subunit 9**	**1**	LYSLLFR																			
UCRI_RAT	**Cytochrome b-c1 complex subunit Rieske, mitochondrial precursor**	**5**	LSDIPEGK	VPDFSDYR	SGPFAPVLSATSR	EIDQEAAVEVSQLR	ESLSGQAATRPLVATVGLNVPASVR															
CX7A2_RAT	**Cytochrome c oxidase polypeptide 7A2, mitochondrial**	**1**	GGTSDALLYR																			
CX6C2_RAT	**Cytochrome c oxidase polypeptide VIc-2**	**2**	QAGVFQSAK	AYADFYR																		
COX2_MOUSE	**Cytochrome c oxidase subunit 2**	**3**	LLEVDNR	VVLPM[147.0354]ELPIR	VVLPMELPIR																	
COX3_MOUSE	**Cytochrome c oxidase subunit 3**	**1**	EGTYQGHHTPIVQK																			
COX41_RAT	Cytochrome c oxidase subunit 4 isoform 1, mitochondrial	6	IQFNESFAEMNK	VNPIQGFSAK	ADWSSLSR	SEDYALPSYVDRR	SEDYALPSYVDR	DYPLPDVAHVK														
COX5A_RAT	Cytochrome c oxidase subunit 5A, mitochondrial	6	EIYPYVIQELRPTLNELGISTPEELGLDKV	RLNDFASAVR	GMNTLVGYDLVPEPK	GM[147.0354]NTLVGYDLVPEPK	LNDFASAVR	ILEVVKDK														
COX5B_RAT	Cytochrome c oxidase subunit 5B, mitochondrial	3	EDPNLVPSVSNK	EIMIAAQR	AASGTKEDPNLVPSVSNKR																	
COX7C_MOUSE	Cytochrome c oxidase subunit 7C, mitochondrial	1	NLPFSVENK																			
CX6B1_MOUSE	Cytochrome c oxidase subunit VIb isoform 1	4	SLC[160.0307]PVSWVSAWDDR	IAEGTFPGK	GGDVSVC[160.0307]EWYR	IAEGTFPGKI																
CYC_MOUSE	Cytochrome c, somatic	1	TGQAAGFSYTDANK																			
CY1_MOUSE	**Cytochrome c1, heme protein, mitochondrial**	**8**	LAYRPPK	RGFQVYK	EGLYFNPYFPGQAIGMAPPIYTEVLEYDDGTPATMSQVAK	DVATFLR	LSDYFPKPYPNPEAR	AANNGALPPDLSYIVR	WASEPEHDHRK	WASEPEHDHR												
CYFP2_MOUSE	Cytoplasmic FMR1-interacting protein 1	1	LGTPQQIAIAR																			
ODP2_RAT	**Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex, mitochondrial**	**6**	VPLPSLSPTMQAGTIAR	DIDSFVPTK	ILVPEGTR	AAPAAAAAAPPGPR	VAPTPAGVFIDIPISNIR	VFVSPLAK														
ODO2_MOUSE	**Dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex, mitochondrial**	**3**	VEGGTPLFTLR	GLVVPVIR	EAVTFLR																	
GLNA_RAT	Glutamine synthetase	1	LTGFHETSNINDFSAGVANR																			
G3P_RAT	Glyceraldehyde-3-phosphate dehydrogenase	5	GAAQNIIPASTGAAK	LISWYDNEYGYSNR	VPTPNVSVVDLTC[160.0307]R	LTGM[147.0354]AFR	VGVNGFGR															
GPDM_RAT	Glycerol-3-phosphate dehydrogenase, mitochondrial	2	LAFLNVQAAEEALPK	LVSEFPYIEAEVK																		
HXK1_RAT	Hexokinase-1	2	EGLLFEGR	FNTSDVSAIEK																		

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NDUAA_RAT	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 10, mitochondrial]	7	LTLPEYLPPHAVIYIDVPVSEIQSR	VTSAYLQDIEDAYK	YAPGYNADVGDK	EVLNYTTVPVYLPEITIGAHQGSR	LQSWLYASR	VVEDIEYLNYNK	IYDSFR													
NDUAB_RAT	**NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 11]**	**1**	LEGWELFATPK																			
NDUAC_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 12]	3	IGTLVGEDK	IGTLVGEDKYGNK	FNVSATPEQYVPYSTTR																	
NDUAD_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 13]	2	ENLEEEAIIMK	LLIEDLEAR																		
NDUA2_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 2]	1	YAFGQEK																			
NDUA3_MOUSE	**NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 3]**	**1**	ATPYNYPVPVR																			
NDUA4_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 4]	5	NNPEPWNK	KNNPEPWNK	FYSVNVDYSK	LGPNEQYK	LALFNPDVSWDR															
NDUA5_RAT	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 5]	4	YTEQITSEK	KYTEQITSEK	YTEQITSEKLELVK	LTILYTK																
NDUA6_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 6]	1	FFHETETPRPK																			
NDUA7_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 7]	2	EVVPPSIIMSSQK	NWASGQDLQAK																		
NDUA8_MOUSE	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 8]	1	TDRPLPENPYHSR																			
NDUA9_RAT	NADH dehydrogenase [ubiquinone 1 alpha subcomplex subunit 9, mitochondrial] (Fragment)	10	AVQHSNVVINLIGR	FVYSWIGR	YVVNHLGR	QPVYVADVSK	NFDFEDVFVNIPR	WLSSEIEETKPAK	MGSQVIIPYR	LFGLSPFEPWTTK	TFAFTGPNR	TFIPYPLPR										
NDUBA_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 10]	2	AYDLVVDWPVTLVR	TPAPSPQTSLPNPITYLTK																		
NDUB3_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 3]	1	MELPDYR																			
NDUB4_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 4]	1	EYLLQYNDPK																			
NDUB5_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 5, mitochondrial]	1	TLAILQIESEK																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
NDUB6_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 6]	2	WLKDQELSPR	IFPGDTILETGEVIPPMR																		
NDUB7_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 7]	1	YLWDASVEPDPEK																			
NDUB8_MOUSE	NADH dehydrogenase [ubiquinone 1 beta subcomplex subunit 8, mitochondrial]	1	QYPYNNLYLER																			
NDUC2_MOUSE	**NADH dehydrogenase [ubiquinone 1 subunit C2]**	**1**	FLPDEAR																			
NDUV1_MOUSE	NADH dehydrogenase [ubiquinone flavoprotein 1, mitochondrial]	12	KTSFGSLKDEDR	HFRPELEDR	GGTWFAGFGR	YLVVNADEGEPGTC[160.0307]K	GEFYNEASNLQVAIR	GGAGFPTGLK	EAYEAGLIGK	LVEGC[160.0307]LVGGR	AAYIYIR	TSFGSLKDEDR	IFTNLYGR	LIEFYK								
NDUV2_RAT	NADH dehydrogenase [ubiquinone flavoprotein 2, mitochondrial precursor]	3	DIEEIIDELR	DTPENNPDTPFDFTPENYER	AAAVLPVLDLAQR																	
NDUV3_RAT	**NADH dehydrogenase [ubiquinone flavoprotein 3, mitochondrial]**	**3**	LPQPSSGR	EPTLVPESSDTTTYK	TESVFKEPTLVPESSDTTTYK																	
NDUS2_MOUSE	NADH dehydrogenase [ubiquinone iron-sulfur protein 2, mitochondrial]	8	VLFGEITR	IIEQC[160.0307]LNK	IDEVEEMLTNNR	LLNIQPPPR	LYTEGYQVPPGATYTAIEAPK	TQPYDVYDQVEFDVPIGSR	GSGIQWDLR	TYLQALPYFDR												
NDUS3_MOUSE	NADH dehydrogenase [ubiquinone iron-sulfur protein 3, mitochondrial]	5	ILTDYGFEGHPFR	VVAEPVELAQEFR	FDLNSPWEAFPAYR	DFPLTGYVELR	SLADLTAVDVPTR															
NDUS4_RAT	NADH dehydrogenase [ubiquinone iron-sulfur protein 4, mitochondrial]	5	HGWSYDVEGR	DTQLITVDEK	SYGANFSWNK	LDVTPLTGVPEEHIK	EDAVAFAEK															
NDUS6_MOUSE	NADH dehydrogenase [ubiquinone iron-sulfur protein 6, mitochondrial]	3	IIAC[160.0307]DGGGGALGHPK	VYINLDKETK	ITHTGQVYDEK																	
NDUS7_MOUSE	NADH dehydrogenase [ubiquinone iron-sulfur protein 7, mitochondrial]	4	AEYVVTK	QADVMIVAGTLTNK	SRAEYVVTK	LDDLINWAR																
NDUS8_MOUSE	NADH dehydrogenase [ubiquinone iron-sulfur protein 8, mitochondrial]	1	EPATINYPFEK																			
NDUS1_RAT	**NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial**	**22**	GNDMQVGTYIEK	LTEPMVR	DFYMTDSISR	VGMQIPR	VAVTPPGLAR	LSVAGNC[160.0307]R	GLLTYTSWEDALSR	ILQDIASGNHEFSK	VAGMLQSFEGK	VALIGSPVDLTYR	IASQVAALDLGYKPGVEAIR	ALSEIAGITLPYDTLDQVR	FASEIAGVDDLGTTGR	LVDQEFLADPLVPPQLTIK	DDGAAILAAVSSIAQK	FAYDGLK	YDHLGDSPK	LGEVSPNLVR	SATYVNTEGR	FEAPLFNAR
NU4M_RAT	**NADH-ubiquinone oxidoreductase chain 4**	**1**	VSIILDPLTK																			
NU5M_RAT	**NADH-ubiquinone oxidoreductase chain 5**	**1**	STSITQTQLSK																			

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DHB4_MOUSE	Peroxisomal multifunctional enzyme type 2	1	IDVVVNNAGILR																			
ODPA_MOUSE	Pyruvate dehydrogenase E1 component subunit alpha, somatic form, mitochondrial	1	LEEGPPVTTVLTR																			
ODPB_RAT	Pyruvate dehydrogenase E1 component subunit beta, mitochondrial	4	IMEGPAFNFLDAPAVR	DFLIPIGK	VVSPWNSEDAK	ILEDNSIPQVK																
SUCB1_MOUSE	Succinyl-CoA ligase [ADP-forming subunit beta, mitochondrial	1	SSDEAYAIAK																			
TKTL1_MOUSE	**Transketolase-like protein 1**	**1**	LIESQIQTNK																			
VATA_MOUSE	**Vacuolar ATP synthase catalytic subunit A**	**2**	LPANHPLLTGQR	GVNVSALSR																		
VATB2_MOUSE	**Vacuolar ATP synthase subunit B, brain isoform**	**1**	EQALAVSR																			
VAS1_RAT	**Vacuolar ATP synthase subunit S1**	**1**	GPTITLTQIV																			
Mitochondria																						
ODO1_MOUSE	**2-oxoglutarate dehydrogenase E1 component, mitochondrial**	**2**	SSPYPTDVAR	IEQLSPFPFDLLLK																		
HCD2_RAT	**3-hydroxyacyl-CoA dehydrogenase type-2**	**1**	VVTIAPGLFATPLLTTLPDK																			
ADT1_RAT	ADP/ATP translocase 1	5	DFLAGGIAAAVSK	EQGFLSFWR	AAYFGVYDTAK	QIFLGGVDR	EFNGLGDC[160.0307]LTK															
ADT2_MOUSE	ADP/ATP translocase 2	12	MMMQSGR	YFAGNLASGGAAGATSLC[160.0307]FVYPLDFAR	DFLAGGVAAAISK	YFPTQALNFAFK	TAVAPIER	QIFLGGVDK	AAYFGIYDTAK	EQGVLSFWR	LLLQVQHASK	QIFLGGVDKR	GNLANVIR	GAWSNVLR								
ATP8_RAT	**ATP synthase protein 8**	**2**	IYLPLSLPPQ	TNNPWESK																		
ATPA_RAT	ATP synthase subunit alpha, mitochondrial precursor	19	LTDADAMK	TGTAEM[147.0354]SSILEER	LKEIVTNFLAGFEP	EPMQTGIK	EIVTNFLAGFEP	ELIIGDR	GMSLNLEPDNVGVVVFGNDK	STVAQLVK	HALIIYDDLSK	ILGADTSVDLEETGR	AVDSLVPIGR	QGQYSPMAIEEQVAVIYAGVR	TGAIVDVPVGDELLGR	VLSIGDGIAR	LELAQYR	TGTAEMSSILEER	EVAAFAQFGSDLDAATQQLLSR	VVDALGNAIDGK	TSIAIDTINQK	
ATF5F1_RAT	ATP synthase subunit b, mitochondrial	3	QIQDAINR	IAQLEEIK	HVIQSISAQQEK																	
ATPB_RAT	ATP synthase subunit beta, mitochondrial precursor	16	LVLEVAQHLGESTVR	AHGGYSVFAGVGER	VALVYGQMNEPPGAR	GSITSVQAIYVPADDLTDPAPATTFAHLDATTVLSR	VLDSGAPIK	VALTGLTVAEYFR	AIAELGIYPAVDPLDSTSR	TIAMDGTEGLVR	IMNVIGEPIDER	IPVGPETLGR	VVDLLAPYAK	FTQAGSEVSALLGR	IMDPNIVGSEHYDVAR	IGLFGGAGVGK	LVPLKETIK	VLDSGAPIKIPVGPETLGR				
ATP5H_RAT	ATP synthase subunit d, mitochondrial	2	NC[160.0307]AQFVTGSQAR	ANVDKPGLVDDFK																		
ATPD_MOUSE	ATP synthase subunit delta, mitochondrial	2	AQSELSGAADEAAR	IEANEALVK																		
ATP5I_RAT	ATP synthase subunit e, mitochondrial	2	VPPVQVSPLIK	ELAEAEDVSIFK																		
ATPK_MOUSE	ATP synthase subunit f, mitochondrial	1	DFTPSGIAGAFR																			
ATPG_MOUSE	ATP synthase subunit gamma, mitochondrial	2	VYGTGSLALYEK	HLIIGVSSDR																		

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
ATPO_RAT	ATP synthase subunit O, mitochondrial	4	YATALYSAASK	VSLAVLNPYIK	LVRPPVQVYGIEGR	TVLNSFLSK																
ATP5J_RAT	**ATP synthase-coupling factor 6, mitochondrial**	**2**	LASGGPVDTGPEYQQEVDR	LASGGPVDTGPEYQQEVDRELFK																		
CHCH3_MOUSE	Coiled-coil-helix-coiled-coil-helix domain-containing protein 3, mitochondrial	3	VTTEEYQK	VAEELALEQAK	LSENVIDR																	
BDH_MOUSE	**D-beta-hydroxybutyrate dehydrogenase, mitochondrial**	**1**	VSVVEPGNFIAATSLYSPER																			
DLDH_RAT	**Dihydrolipoyl dehydrogenase, mitochondrial**	**1**	EANLAASFGKPINF																			
OPA1_RAT	**Dynamin-like 120 kDa protein, mitochondrial**	**10**	EVLEDFAEDGEK	ALGYFAVVTGK	IDQLQEELLHTQLK	IQQIIEGK	VNDEHPAYLASDEITVR	AVEVAWETLQDEFSR	WNDFAEDSLR	TIFVLTK	VVVVGDQSAGK	ESVEQQADSFK										
M2OM_RAT	Mitochondrial 2-oxoglutarate/malate carrier protein	7	NVFNALIR	MQLSGEGAK	LTGADGTPPGFLLK	GIYTGLSAGLLR	LGIYTVLFER	AVVVNAAQLASYSQSK	EEGVPTLWR													
MTCH1_MOUSE	Mitochondrial carrier homolog 1	1	LMSNALSTVTR																			
MTCH2_MOUSE	Mitochondrial carrier homolog 2	3	VLIQVGYEPLPPTIGR	SMVQFIGR	GNSLFFR																	
MFF_RAT	Mitochondrial fission factor	1	VAPPNADLEQGFQDGVPNASVIMQVPER																			
GHC1_MOUSE	Mitochondrial glutamate carrier 1	4	IQLQDAGR	GAAVNLTLVTPEK	LAANDFFR	GLGATLLR																
TIM50_MOUSE	**Mitochondrial import inner membrane translocase subunit TIM50**	**1**	IPDEFDSDPILVQQLR																			
TOM20_RAT	**Mitochondrial import receptor subunit TOM20 homolog**	**1**	IVSAQSLAEDDVE																			
TOM22_RAT	**Mitochondrial import receptor subunit TOM22 homolog**	**1**	QILLGPNTGLSGGMPGALPPLPGKI																			
TOM70_RAT	**Mitochondrial import receptor subunit TOM70**	**4**	SDEDKDKEGEALEVK	AAAFEQLQK	NADLSTFYQNR	GFEEVIK																
IMMT_MOUSE	Mitochondrial inner membrane protein	15	RIDQLNR	SEIQAEQDR	KAVDEAADALLK	TAMDNSEIAGEK	TSSAEMPTIPLGSAVEAIR	GIEQAVQSHAVAEEEAR	VVSQYHELVVQAR	LFGMVLGSAPYTVPLPK	QEQVEMESLAK	TAMDNSEIAGEKK	ELDSITPDITPGWK	GVYSEETLR	AVDEAADALLK	VAQDWLK	ERPPEEVAAR					
MIRO1_MOUSE	**Mitochondrial Rho GTPase 1**	**2**	ILLVGEPR	AEEITIPADVTPER																		
MOSC2_RAT	**MOSC domain-containing protein 2, mitochondrial**	**3**	LVQFDTK	VGDPVYR	LGLPGQPR																	
MPCP_MOUSE	Phosphate carrier protein, mitochondrial	4	TVEALYK	GSTASQVLQR	IQTQPGYANTLR	FVVPKPR																
PHB_MOUSE	Prohibitin	10	ILFRPVASQLPR	NITYLPAGQSVLLQLPQ	AAELIANSLATAGDGLIELR	QVSDDLTER	DLQNVNITLR	EFTEAVEAK	AAIISAEGDSK	IYTSIGEDYDER	VLPSITTEILK	FDAGELITQR										
PHB2_RAT	Prohibitin-2	12	IVQAEGEAEAAK	IPWFQYPIIYDIR	DLQMVNISLR	IYLTADNLVLNLQDESFTR	ESVFTVEGGHR	LGLDYEER	EYTAAVEAK	AQVSLLIR	AQFLVEK	FNASQLITQR	VLPSIVNEVLK	LLLGAGAVAYGVR								
ECHA_MOUSE	**Trifunctional enzyme subunit alpha, mitochondrial**	**2**	FGELALTK	TVLGVPEVLLGILPGAGGTQR																		
ECHB_RAT	**Trifunctional enzyme subunit beta, mitochondrial precursor**	**5**	VGAPPLEK	DQLLLGPTYATPK	LAAAFAVSR	AALSGLLYR	IPFLLSGTSYK															
USMG5_RAT	Up-regulated during skeletal muscle growth protein 5	1	AGPESDGQFQFTGIK																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
VDAC1_MOUSE	Voltage-dependent anion-selective channel protein 1	10	VNNSSLIGLGYTQTLKPGIK	LGLGLEFQA	WNTDNTLGTEITVEDQLAR	YQVDPDAC[160.0307]FSAK	LTFDSSFSPNTGKK	WTEYGLTFTEK	TKSENGLEFTSSGSANTETTK	LTFDSSFSPNTGK	GYGFGLIK	VTQSNFAVGYK										
VDAC2_RAT	Voltage-dependent anion-selective channel protein 2	9	YQLDPTASISAK	SC[160.0307]SGVEFSTSGSSNTDTGK	LTLSALVDGK	TGDFQLHTNVNNGTEFGGSIYQK	LTFDTTFSPNTGKK	LTFDTTFSPNTGK	VNNSSLIGVGYTQTLRPGVK	SNFAVGYR	GFGFGLVK											
VDAC3_RAT	Voltage-dependent anion-selective channel protein 3	6	LTVDTIFVPNTGKK	LTVDTIFVPNTGK	WNTDNTLGTEISWENK	VC[160.0307]NYGLIFTQK	VNNASLIGLGYTQSLRPGVK	LC[160.0307]QNNFALGYK														
Motor Proteins																						
KIF2A_RAT	Kinesin-like protein KIF2A	2	LQQQELR	AALQEEEQASK																		
MYL6_RAT	Myosin light polypeptide 6	3	EAFQLFDR	HVLVTLGEK	ALGQNPTNAEVLK																	
MRLCA_RAT	**Myosin regulatory light chain RLC-A**	**1**	FTDEEVDELYR																			
MYH10_MOUSE	**Myosin-10**	**5**	KFDQLLAEEK	TGLEDPER	YLFVDR	DAAGLESQLQDTQELLQEETR	ELDDATEANEGLSR															
MYH7B_MOUSE	Myosin-7B	1	IQLELSQVK																			
MYO5A_MOUSE	**Myosin-Va**	**3**	VTELEQEK	LGNADSFHYTK	LTNLEGVYNSETEK																	
MYO5A_RAT	Myosin-Va	1	TVGLQFR																			
MYO6_MOUSE	Myosin-VI	1	IVEANPLLEAFGNAK																			
Other																						
ASPM_MOUSE	**Abnormal spindle-like microcephaly-associated protein homolog**	**1**	STVVVQALVR																			
AKAP2_RAT	**A-kinase anchor protein 2**	**1**	QLPPHIELSR																			
TRY1_RAT	**Anionic trypsin-1**	**1**	LGEHNINVLEGDEQFINAAK																			
ANS1B_RAT	Ankyrin repeat and sterile alpha motif domain-containing protein 1B	9	NIIAEHEIR	KSVQIDPSEQK	ILASLGDR	SVQIDPSEQK	ILQAIQLLPK	TLANLPWIVEPGQEAK	NISC[160.0307]AAQDPEDLSTFAYITK	NENYFDDIPR	LHEDPPQKPPR											
ARM10_RAT	Armadillo repeat-containing protein 10	3	INSLNQSIK	LLYLLESTDDPIITEK	ALVTLGNNAAFSTNQAIIR																	
ATAD3_RAT	**ATPase family AAA domain-containing protein 3**	**3**	QQQLLNEENLR	TAGTLFGEGFR	ISVLEALR																	
BASP1_RAT	**Brain acid soluble protein 1**	**11**	APAPAAPAAEPQAEAPVASSEQSVAVKE	GYNVNDEK	AEPEKSEGAAEEQPEPAPAEQEAAAPGPAAGGEAPK	KAEGAGTEEEGTQKESEPQAAADATEVK	AEGAGTEEEGTQKESEPQAAADATEVK	SEGAAEEQPEPAPAPEQEAAAPGPAAGGEAPK	APAPAAPAAEPQAEAPVASSEQSVAVK	ESAEEKPKDAADGEAK	AGEASAESTGAADGAPQEEGEAK	ESEPQAAADATEVK	ETPAASEAPSSAAK									
BAI1_MOUSE	Brain-specific angiogenesis inhibitor 1	1	ELEPLPPSPLELR																			
BAIP2_RAT	Brain-specific angiogenesis inhibitor 1-associated protein 2	6	DGWHYGESEK	AFPSQTAGTFK	MGELASESQGSK	TIMEQFNPSLR	LSDSYSNTLPVR	GYFDALVK														
BCAS1_RAT	**Breast carcinoma-amplified sequence 1 homolog (Fragment)**	**3**	ADLTPQETQGTAK	GSSQPGQAPSAGTSDTAR	AGPTSLPLGK																	
CECR6_MOUSE	**Cat eye syndrome critical region protein 6 homolog**	**1**	AISEAGAPPGSAGPLLLQPQQHR																			
CD59_RAT	CD59 glycoprotein	1	LEIANVQYR																			
CISD1_RAT	**CDGSH iron sulfur domain-containing protein 1**	**2**	AMVNLQIQK	HNEETGDNVGPLIIK																		
CEND_RAT	Cell cycle exit and neuronal differentiation protein 1	3	GPGDGAEEDESNTGGR	QEQPAAPGPATTK	DAQAEKQEQPAAPGPATTK																	
CEP55_MOUSE	**Centrosomal protein of 55 kDa**	**1**	NVYYLLEK																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
PDE2A_RAT	**cGMP-dependent 3',5'-cyclic phosphodiesterase**	**3**	HALVALQR	VFDGGVVDDESYEIR	RPEAVQNTSADPSEDQKDEK																	
C109A_MOUSE	Coiled-coil domain-containing protein 109A	1	VAIYSPDGVR																			
CHCH6_MOUSE	Coiled-coil-helix-coiled-coil-helix domain-containing protein 6	2	LSSQQFHEAASK	LSESVVNR																		
CSRP1_RAT	Cysteine and glycine-rich protein 1	1	HEEAPGHRPTTNPNASK																			
DPYL2_MOUSE	Dihydropyrimidinase-related protein 2	1	SAAEVIAQAR																			
DPP6_RAT	**Dipeptidyl aminopeptidase-like protein 6**	**1**	RLGFLEEK																			
STAU1_MOUSE	**Double-stranded RNA-binding protein Staufen homolog 1**	**1**	AVLEQLR																			
ENPP6_RAT	Ectonucleotide pyrophosphatase/phosphodiesterase family member 6	1	DQGPVVSLWPVPEK																			
ELFN1_MOUSE	**Extracellular leucine-rich repeat and fibronectin type-III domain-containing protein 1**	**1**	SSPVPETILTVTPAATVLR																			
FBX41_MOUSE	F-box only protein 41	2	EIEIPLGELFAR	LSEEVEQK																		
FKBP8_RAT	**FK506-binding protein 8**	**1**	VLAQQGEYSEAIPILR																			
FEN1_MOUSE	**Flap endonuclease 1**	**1**	IHLTASEAK																			
GDAP1_MOUSE	Ganglioside-induced differentiation-associated protein 1	3	LAEENPDLQEAYIAK	LLDHDNVK	VLDQVETELQR																	
UBP53_MOUSE	**Inactive ubiquitin carboxyl-terminal hydrolase 53**	**1**	AFSEHIK																			
IQEC1_MOUSE	**IQ motif and SEC7 domain-containing protein 1**	**4**	SLHSEEVPASDTAR	SALSSSLR	LTSAVPGADIK	VLINFNAPNPQDR																
IQEC2_MOUSE	IQ motif and SEC7 domain-containing protein 2	14	DLREESQLHR	YRVESELEK	EAGYSAAVGVGQRPPR	IGLNLFNK	DVGYPNR	LQPASVALR	GIQYLIER	TIQTAFR	HYPAPEGPAPAPPGPLPPAPNSGTGPSGVAGGR	VLIIFNAPSLQDR	DLLVGIYQR	LIEAFSQR	EASYQLQDTTGYTAR	SSLEDTYGAGDGLK						
LGI1_RAT	Leucine-rich glioma-inactivated protein 1	3	IQDIEVLK	GLDSLTNVDLR	WGGSSFQDIQR																	
LRC59_MOUSE	Leucine-rich repeat-containing protein 59	1	LVTLPVSFAQLK																			
LRRC7_RAT	Leucine-rich repeat-containing protein 7	10	TRPTPVKGEESC[160.0307]GK	TPSPFEDR	VGSLQPTTK	LETTPTTSPLPER	GITLQPAR	TLAVDENFLPELPR	LDLGNNEFSELPEVLDQIQNLR	VENANPTANTEQTVK	VQPDGPASNLLQPGDK	EQQPYEGNINK										
LPP3_RAT	**Lipid phosphate phosphohydrolase 3**	**1**	TTLSLPAPAIR																			
PRIO_MOUSE	Major prion protein	2	YPGQGSPGGNR	ESQAYYDGR																		
MGST3_MOUSE	Microsomal glutathione S-transferase 3	1	VLYAYGYYTGDPSK																			
MIPO1_MOUSE	Mirror-image polydactyly gene 1 protein homolog	1	M[147.0354]NSEQSIR																			
MUC4_RAT	**Mucin-4**	**1**	VASTTLGR																			
MCFD2_RAT	**Multiple coagulation factor deficiency protein 2 homolog**	**1**	ASLQLLR																			
MBP_RAT	Myelin basic protein S	10	TQDENPVVHFFK	HRDTGILDSIGR	SPLPSHAR	FSWGAEGQKPGFGYGGR	DTGILDSIGR	GAYDAQGTLSK	SRPGLC[160.0307]HM[147.0354]YK	TTHYGSLPQK	YLATASTM[147.0354]DHAR	YLATASTMDHAR										

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
MYPR_MOUSE	Myelin proteolipid protein	6	MYGVLPW NAFPGK	GLSATVT GGQK	TSASIGS LC[160.03 07]ADAR	QIFGDYK	LIETYFSK	GLLEC[16 0.0307]C[160.0307] AR														
MOBP_MOUSE	Myelin-associated oligodendrocyte basic protein	1	HQPAASPV VVR																			
MOG_RAT	Myelin-oligodendrocyte glycoprotein	4	LAGQFLEE LR	ALVGDEA ELPC[160. 0307]R	VIGPGHPI R	LAGQFLE ELRNPF																
MYADM_RAT	**Myeloid-associated dlfferentiati on marker**	**2**	TTITTTSSS STTVGSAR	ALTQPLG LLR																		
NOE1_RAT	**Noelin**	**3**	LTGISDPVT VK	DLQYVEK	LSAASGG TLDR																	
NOE2_MOUSE	**Noelin-2**	**1**	LTGVSNPIT IR																			
OMGP_MOUSE	Oligodendrocyte-myelin glycoprotein	5	SLEVLNLS SNK	TLDISNN R	SDTAYQ WNLK	DTTFSST DR	LESLPAQ LPR															
PAIRB_RAT	**Plasminogen activator inhibitor 1 RNA-binding protein**	**1**	SAAQAAAQ TNSNAAGK																			
PLRG1_RAT	**Pleiotropic regulator 1**	**1**	TAPAGSEY R																			
PKD1_MOUSE	**Polycystin-1**	**1**	VLQGILVR																			
PRR7_RAT	Proline-rich protein 7	1	LPVSIPLFG R																			
PRRT1_RAT	Proline-rich transmembrane protein 1	1	LGAGGLAS AAAGAQR																			
FA81A_MOUSE	Protein FAM81A	1	DIEVLQEQI R																			
LYRIC_RAT	Protein LYRIC	2	TVEIPEDEV VR	TELGLDL GLEPK																		
SCAI_MOUSE	**Protein SCAI**	**1**	DETVENPH LQK																			
SHSA7_MOUSE	**Protein shisa-7**	**1**	ALVDILR																			
WNT7B_MOUSE	**Protein Wnt-7b**	**1**	YGIDFSR																			
RIMB2_MOUSE	RIMS-binding protein 2	2	ILPQPQGA PVSTTVAK	GLVPSNF VDFIQDN ESR																		
SKT_MOUSE	**Sickle tail protein**	**4**	SISPSPSAI LER	DVEDGAF LLR	IPALSPSS GK	SYLPGSG LTTTR																
SRBS2_RAT	Sorbin and SH3 domain-containing protein 2	4	VGIFPISYV EK	SYSSTLT DLGR	ADLPGSS STFTTSFI SSSPSSP SR	LAFLVSP VPFR																
SAM50_RAT	Sorting and assembly machinery component 50 homolog	4	SLEPLPSS GTDFGALG EEAEFVEV EPEAK	VTGQFP WSSLR	NFSVNLY K	FYLGGPT SVR																
STML2_RAT	**Stomatin-like protein 2**	**3**	NTVILFVPQ QEAWVVE R	ILEPGLN VLIPVLDR	APVPGA QNSSEA R																	
THY1_RAT	Thy-1 membrane glycoprotein	3	HVLSGTLG VPEHTYR	VNLFSDR	VISLTAC[1 60.0307]L VNQNLR																	
CI046_MOUSE	**Transmembrane protein C9orf46 homolog**	**1**	GLITFESLE K																			
TP8L1_MOUSE	**Tumor necrosis factor alpha-induced protein 8-like protein 1**	**1**	SLALQAQK																			
UBIQ_RAT	Ubiquitin	2	TLSDYNIQ K	TITLEVEP SDTIENV K																		
CF154_RAT	**Uncharacterized protein C6orf154 homolog**	**1**	ELTLSANP GITPK																			
CI172_MOUSE	**Uncharacterized protein C9orf172 homolog**	**1**	NWYVTPEI TITDNDLR																			
K1549_MOUSE	**UPF0606 protein KIAA1549**	**1**	ILDPAASVP SVFIEPR																			
VPP1_MOUSE	**Vacuolar proton translocating ATPase 116 kDa subunit a isoform 1**	**4**	NFLELTELK	LGFVAGV INR	ANIPIMDT GENPEVP FPR	DLNPDVN VFQR																
VAMP2_MOUSE	Vesicle-associated membrane protein 3	2	ADALQAGA SQFETSAA K	LSELDDR																		
NSF_RAT	Vesicle-fusing ATPase	5	TPLVSVLLE GPPHSGK	YVGESEA NIR	IAEESNF PFIK	VLDDGEL LVQQTK	LLDYVPI GPR															
AT2A2_MOUSE	**Sarcoplasmic/endoplasmic reticulum calcium ATPase 2**	**1**	IGIFGQDED VTSK																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
Receptors and Channels																						
KCD12_MOUSE	**BTB/POZ domain-containing protein KCTD12**	**1**	DLQLVLPD YFPER																			
KCD16_MOUSE	**BTB/POZ domain-containing protein KCTD16**	**2**	EAEYFQLP DLVK	YILDYLR																		
KCMA1_MOUSE	**Calcium-activated potassium channel subunit alpha-1**	**1**	TLVTGGAT PELEALIAE ENALR																			
FLOT1_MOUSE	Flotillin-1	2	LPESVER	AQQVAVQ EQEIAR																		
FLOT2_MOUSE	Flotillin-2	3	MALVLEAL PQIAAK	DADIGVA EAER	IQQIAEG EK																	
GBRA1_MOUSE	Gamma-aminobutyric acid receptor subunit alpha-1	2	SVVVAEDG SR	LLDGYDN R																		
GBRB2_MOUSE	Gamma-aminobutyric acid receptor subunit beta-2	1	ITIPDLTDV NAIDR																			
GABR1_RAT	Gamma-aminobutyric acid type B receptor subunit 1	1	VFLTGGDL PALDGAR																			
GABR2_RAT	Gamma-aminobutyric acid type B receptor subunit 2	3	TSTSVTSV NQASTSR	TIILEQLR	VGTLTQD VQR																	
NMDE1_RAT	Glutamate NMDA receptor subunit epsilon-1 (NR2A)	3	YLPEEVAH SDISETSS R	FSYIPEA K	LLEGNLY GSLFSVP SSK																	
NMDE2_MOUSE	Glutamate NMDA receptor subunit epsilon-2 (NR2B)	14	ALVTNKPV VSALHGAV PGR	DDFHHLS VVPR	HGVVGG VPAPWE K	KPLDIGL PSSK	LHNYSST VAGQNS GR	HSQLSDL YGK	NLTNVD WEDR	TFGNLQL K	YPQSPTN SK	GVDDALL SLK	DSVSGG GPC[160. 0307]TNR	EEAALAP R	EFDEIELA YR	DFYLDQF R						
NMDZ1_RAT	Glutamate NMDA receptor subunit zeta-1 (NR1)	11	RLETLLEE R	VEFNEDG DRK	YQGLTILV K	AITSTLAS SFK	IPVLGLTT R	FIYATVK	EISGNAL R	YADGVTG R	IVNIGAVL STR	VLQFDPG TK	ITGINDPR									
GRIA1_RAT	Glutamate receptor 1	3	NPVNLAVL K	ADVAVAP LTITLVR	LNAILGQI VK																	
GRIA2_RAT	Glutamate receptor 2	12	VNDIVDQVI TIGK	LTIVGDG K	NPQNINP SSSQNS QNFATYK	QVQVEG LSGNIK	WSTLEEK	SAEPSVF VR	LNEQGLL DK	EGYNVY GIESVK	GYGIATP K	ADIAIAPL TITLVR	GSSLGNA VNLAVLK	EGYNVY GIESVKI								
GRIA3_RAT	Glutamate receptor 3	1	GSALGNAV NLAVLK																			
GRIA4_RAT	Glutamate receptor 4	1	AEIAIAPLTI TLVR																			
LPHN3_RAT	Latrophilin-3	1	VYLADPVV FTVK																			
GRM3_MOUSE	**Metabotropic glutamate receptor 2**	**1**	LFQIPQISY ASTSAK																			
NRX1A_RAT	Neurexin-1-alpha	1	NRDEGSY HVDESR																			
GP158_MOUSE	Probable G-protein coupled receptor 158	1	ITEIPETVS R																			
CCG2_MOUSE	Voltage-dependent calcium channel gamma-2 subunit	1	ATDYLQAS AITR																			
CCG3_MOUSE	Voltage-dependent calcium channel gamma-3 subunit	1	ESLHNNPA NRR																			
CCG8_RAT	Voltage-dependent calcium channel gamma-8 subunit	3	EAASGVTV TVTGPPAA PAPAPPAP AAPAPGTL SK	EAAASNT NTLNR	AGGGAG GSGGSG PSAILR																	
CA2D1_MOUSE	Voltage-dependent calcium channel subunit alpha-2/delta-1	3	AVELYIQGK	FVVTDGG ITR	TASGVTQ LADIYEK																	
CA2D3_MOUSE	**Voltage-dependent calcium channel subunit alpha-2/delta-3**	**1**	GILLGVVG TDVPVK																			
CACB4_MOUSE	Voltage-dependent L-type calcium channel subunit beta-4	1	EQQAAIQL ER																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
CAC1A_MOUSE	Voltage-dependent P/Q-type calcium channel subunit alpha-1A	1	DEQEEEEA ANQK																			
Scaffolds																						
1433G_MOUSE	14-3-3 protein gamma	1	NVTELNEP LSNEER																			
1433T_MOUSE	**14-3-3 protein theta**	**2**	AVTEQGAE LSNEER	NLLSVAY K																		
1433Z_MOUSE	14-3-3 protein zeta/delta	1	SVTEQGAE LSNEER																			
CSKI1_MOUSE	Caskin-1	1	TLSGPVTG LLATAR																			
DLG2_RAT	Disks large homolog 2	23	YQDEDGP HDHSLPR	FNAKPGV IDSK	FGSC[160 .0307]VPH TTRPK	GPELVHV SEK	GASHEQ AAAALK	DYHFVIS R	NTSDVVY LK	VNEVDVS EVSHSK	GNSGLG FSIAGGT DNPHIGD DPGIFITK	TSLPPISP GR	GLGFSIA GGVGNQ HIPGDNSI YVTK	AISLEGE PR	LVIEEQS GPFIWIP SK	RDYEVD GR	FIEAGQY NDNLYGT SVQSVR	HYSPVEC [160.0307] DK	DYEVDG R	DSGLPSQ GLSFK	IIPGGAAA EDGR	GAGQTV TIIAQYQP EDYAR
DLG3_RAT	Disks large homolog 3	3	VNEVDVSE VVHSR	HEEAVAS LK	LLAVNNT NLQDVR																	
DLG4_RAT	Disks large homolog 4 (PSD95)	24	VHSDSETD DIGFIPSKR	SLENVLEI NKR	RGFYIR	NASHEQ AAIALK	DYHFVSS R	DLLGEED IPREPR	HC[160.03 07]ILDVS ANAVR	EVTHSAA VEALK	FIEAGQY NSHLYGT SVQSVR	VHSDSET DDIGFIPS K	FGDVLHV IDAGDEE WWQAR	RVHSDSE TDDIGFIP SK	IIPGGAAA QDGR	REYEIDG R	DWGSSS GSQGR	SLENVLEI NK	EQLMNS SLGSGTA SLR	ALFDYDK	DC[160.03 07]GFLSQ ALSFR	ANDDLLS EFPDK
DLGP1_MOUSE	Disks large-associated protein 1	5	SLDSLDPA GLLTSPK	AVSEVSI NR	ATQPSLT ELTTLK	FQSVGV QVEEEK	LPTNLLD QFER															
DLGP2_RAT	Disks large-associated protein 2	4	SLDLPDR	EAEENDL SEEILGK	AMNLALE SAAAQR	ADSIEIYI PEAQTR																
DLGP3_RAT	Disks large-associated protein 3	1	EGYPLPYE PPATDGSP GPPPVPAP GPGSGR																			
DLGP4_MOUSE	Disks large-associated protein 4	3	ATQQSLGE QSNPR	NPYLLSP TEAFAR	DGFSTLQ FPR																	
ERC2_RAT	**ERC protein 2**	**14**	KIENLQEQ LR	EHASSLA SAGLK	EAHLANL R	SQLQPEP AK	VNALQAE LTEK	NAQLLEE VR	LEEIESFR	KINVLQK	IAELESLT LR	LASTQQS LAEK	TISNPEG SPSR	DANIALLE LSASK	AAILQTE VDALR	MNPEFAD R						
GEPH_MOUSE	Gephyrin	2	TLIINLPGS K	ESDDGTE ELEVR																		
HOME1_RAT	Homer protein homolog 1	14	LTAALLEST ANVK	AEPAQNA LPFSHSA GDR	LKQEIDN AR	VKEEEIE R	TLLEILDG K	FGQWAD SR	LQEVEIR	TELSQTV QELEETL K	QQLAAYQ EEAER	IFELTELR	TQGLSHA SSAISK	SQSEQD AFR	TPDVTQN SEPR	DLEGQLS ELEQR						
PRIP1_MOUSE	ProSAP-interacting protein 1	1	GAAGGSST PTPQHGEE K																			
BSN_RAT	Protein bassoon	25	AQGVVGP GPHEEQR PYPQGLPG R	HSDSGS DSKHEAS ASSSAAA AAAR	STAPAAS HPAGKP QPGPTTA PGPQPA GLPR	TGARPG GTPGAPA GQPAAE GESVFSK	EPQEPLK	DSTPTAS DSQRPE PLGPGG VSGRPG K	HETRPHP QASPAPA M[147.035 4]QK	LPHNATT GYEELLS EEGPAEP TDGALQ GGLR	SGEAEEP VPKPYSQ DLSR	HHVLQQ QQEER	ASQPAAD GTPAGLG ATVYEEIL QTSQSIA R	QAVPGP QQSQPP SSR	AAGPPTP GLGLVPG PGPGPG PGSVSR	DLAFTED K	LQLEQIQ QLQQQL QQQLEE QK	EKPLSGG DGEVGP PQPSR	APQAQS APGPAGA K	KGQPGY PSSADYS QPSR	AQGLSG QEAEGP R	HEASASS SAAAAAA R
PCLO_RAT	Protein piccolo	39	TEAEKPVP EKETASIEK	ATVQQP GPAK	DKREESE AELTK	EISGVGE SQK	AHVQIPE EEPTGK	VESQHG VERPR	SALQDEA DKPYSSG SR	TKPTSLPI SQSR	IIEDDEKP VDLTAGR	TPAQQP GPTKPSP QQPIPAK PQPQQP VATK	SPSTISLK	SGPYGY R	FSPIQES R	LPSGSLP VSTHPSK	TPGQQA GLEK	FSLNLGG ITDAPK	APVGDVE PK	EESEAEL TK	AYLQGVA EDR	SQPTTPQ ETVTGK
RIMS1_RAT	Regulating synaptic membrane exocytosis protein 1	4	LDPGSAVL LR	ATTLTVP EQQR	LFPPSSL VDPTLAP LTR	SVVQPG EGIADER																
SHAN1_RAT	SH3 and multiple ankyrin repeat domains protein 1	24	GGSGGST DSHHGGA SYIPER	RAPSPSL LPASDHK	RLPPPAIS LR	ASIISELS SK	NSIPIPTIII K	ALGTSGN LRPGPSG GLR	GGPFNP SSGGPLP ASSPSSF DGPSPP DTR	SSPTGGA GGSTDPF APVFVPP HPGISGG LGGALSG ASR	STLFLST DAGDED GGDSGL GPGGPP GPR	EDYVDLG VTR	AQTPIEE FTPTPAF PALQYLE SVDEGG VAWR	ALDPASP LGLALAA R	GSIPSAS SPTSPAL PR	ESSEGG GTPQPPP RPPSPR	GPPGAGL TVPPALL R	GSGAPG NLASTR	DSEGFGF VLR	TAAPEEP ER	LPPTAPG VGPLLLQ LGPEPPT PHPGVSK	LESGGSS GGYGAYA AGSR
SHAN2_RAT	SH3 and multiple ankyrin repeat domains protein 2	23	RRPPNTLA APR	RAPTTAL TLR	KLYSAVP GR	SVKPGE GLELPVG AK	VYGTIKP AFNQNPV AK	DKPEEIV PASKPSR	ADLNKPL YIDTK	ELENHFL GGGEAG AQGEAG GPLSSTS K	SNALYQD TLPEEDT DGFVIPP PAPPPPP GSAQAG VAK	SSSPASP ENYVHPL TGR	ADTPIEE FTPTPAF PALQYLE SVDEGG VAWQAG LR	TGDFLIE VNNENVV K	EDLIDLG VTR	FSLDSED VYSR	IFLSGITE EER	AASVPAL ADLVK	TAENVAIE SR	TEGALQI SAAPEPA AAPGR	SPAPQAA FR	LLDPSSP LALALSA R
SHAN3_RAT	SH3 and multiple ankyrin repeat domains protein 3	18	SPGGPGG GASYSVRP SGR	RAPSTTL TLR	VEGLGA GVGGAG RPFGLTP PTILK	RAPSPVK PASLER	ALASQTP SR	ISPSGPG GSGPAP GPGPASP APPAPPP R	SPAWIPV PAR	LWGDPV ESR	QLQVEDA QER	GPLASPA FSPR	SLGEEPV GGLGSLL DPAK	LGAGAA GLYDSGT PLGPLPY PER	LASLLEG R	FLDEER	LLGTGAT TGR	AALAVGS PGPVGG SFAR	EDFVELG VTR	SPSPSPL PSPSPGS GPSAGP R		
WASF1_RAT	Wiskott-Aldrich syndrome protein family member 1	2	NLDRPHEP EK	TPVFVSP TPPPPPP PLPSALS TSSLR																		
Translation																						
RT36_MOUSE	**28S ribosomal protein S36, mitochondrial**	**1**	GSKMASAT R																			
RS14_MOUSE	40S ribosomal protein S14	1	TPGPGAQS ALR																			
RS2_MOUSE	40S ribosomal protein S2	1	GTGIVSAP VPK																			
RS4X_MOUSE	40S ribosomal protein S4, X isoform	1	LTIAEER																			
RS9_RAT	40S ribosomal protein S9	1	LFEGNALL R																			
RLA1_RAT	60S acidic ribosomal protein P1	1	AAGVNVEP FWPGLFAK																			

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
RLA2_RAT	60S acidic ribosomal protein P2	3	NIEDVIAQGVGK	LASVPAGGAVAVSAAPGSAAPAAGSAPAAAEEK	ILDSVGIEADDER																	
RL11_RAT	60S ribosomal protein L11	1	AEEILEK																			
RL12_RAT	60S ribosomal protein L12	2	QAQIEVVPSASALIIK	IGPLGLSPK																		
RL13_RAT	60S ribosomal protein L13	1	STESLQANVQR																			
RL14_MOUSE	**60S ribosomal protein L14**	**1**	LVAIVDVIDQNR																			
RL18_RAT	60S ribosomal protein L18	3	GTVLLSGPR	TAVVVGTITDDVR	ILTFDQLALESPK																	
RL19_MOUSE	60S ribosomal protein L19	1	LLADQAEAR																			
RL23A_MOUSE	**60S ribosomal protein L23a**	**2**	VNTLIRPDGEK	LAPDYDALDVANK																		
RL26_RAT	**60S ribosomal protein L26**	**1**	FNPFVTSDR																			
RL27_RAT	**60S ribosomal protein L27**	**1**	YSVDIPLDK																			
RL31_MOUSE	60S ribosomal protein L31	1	LYTLVTYVPVTTFK																			
RL35_RAT	**60S ribosomal protein L35**	**1**	VLTVINQTQK																			
RL4_RAT	60S ribosomal protein L4	1	NIPGITLLNVSK																			
RL7_RAT	60S ribosomal protein L7	1	IALTDNSLVAR																			
RL7A_RAT	60S ribosomal protein L7a	1	NFGIGQDIQPK																			
RL8_MOUSE	60S ribosomal protein L8	2	ASGNYATVISHNPETK	AVVGVVAGGGR																		
RL9_RAT	60S ribosomal protein L9	1	TILSNQTVDIPENVDITLK																			
EF1A2_MOUSE	Elongation factor 1-alpha 2	4	STTTGHLIYK	RYDEIVK	LPLQDVYK	IGGIGTVPVGR																
EFTU_RAT	Elongation factor Tu, mitochondrial	2	LLDAVDTYIPVPTR	GTVVTGTLER																		
IF4G1_MOUSE	Eukaryotic translation initiation factor 4 gamma 1	1	GGPPGPPINR																			
KS6A5_MOUSE	**Ribosomal protein S6 kinase alpha-5**	**1**	MEANTQK																			
Transporters																						
ACPM_MOUSE	**Acyl carrier protein, mitochondrial**	**1**	LYDKIDPEK																			
ABCD2_MOUSE	**ATP-binding cassette sub-family D member 2**	**1**	ILGEDSVLK																			
CMC1_MOUSE	Calcium-binding mitochondrial carrier protein Aralar1	11	FTLGSVAGAVGATAVYPIDLVK	LATATFAGIENK	LQVAGEITTGPR	IYSTLAGTR	YLGLYNDPNSNPK	EEGPSAFWK	IAPLAEGALPYNLAELQR	IVQLLAGVADQTK	FGLYLPK	DIEVTKEEFAQSAIR	LTVNDFVR									
S4A4_RAT	Electrogenic sodium bicarbonate cotransporter 1	1	LADYYPINSDFR																			
EAA1_RAT	Excitatory amino acid transporter 1	2	KPYQLIAQDNEPEKPVADSETK	IVQVTAADAFLDLIR																		
EAA2_RAT	Excitatory amino acid transporter 2	5	TQSVYDDTK	M[147.0354]HDSHLSSEEPK	DLEVVAR	MHDSHLSSEEPK	SELDTIDSQHR															
S27A1_RAT	Long-chain fatty acid transport protein 1	3	LLGQTDVAVYGVAVPGVEGK	LLPQVDTTGTFK	IFQAVAQR																	
AT2B1_RAT	Plasma membrane calcium-transporting ATPase 1	7	NEKGEIEQER	QVVAVTGDGTNDGPALK	EASDIILTDDNFTSIVK	MVTGDNINTAR	GIIDSTVSEQR	YGDLLPADGILIQGNDLK	TSPNEGLSGNPADLER													
AT2B2_RAT	Plasma membrane calcium-transporting ATPase 2	2	IDESSLTGESDQVR	TSPVEGLPGTAPDLEK																		
SFXN1_MOUSE	Sideroflexin-1	2	QGIVPAGLTENELWR	NILLTNEQLENAR																		

			Peptide 1	Peptide 2	Peptide 3	Peptide 4	Peptide 5	Peptide 6	Peptide 7	Peptide 8	Peptide 9	Peptide 10	Peptide 11	Peptide 12	Peptide 13	Peptide 14	Peptide 15	Peptide 16	Peptide 17	Peptide 18	Peptide 19	Peptide 20
SFXN3_RAT	Sideroflexin-3	6	ELQVGIPVTDEAGQR	QGIFQVVVSR	AGVVTPGLTEDQLWR	AQIQAQKPSIDVVYNK	YVYDSAFHPDTGEK	NIVQNYR														
SFXN5_MOUSE	Sideroflexin-5	2	FQQTSFYGR	EAVQLLEDYK																		
SC6A1_RAT	Sodium- and chloride-dependent GABA transporter 1	1	VADGQISTEVSEAPVASDKPK																			
AT1A1_RAT	Sodium/potassium-transporting ATPase subunit alpha-1	14	DKYEPAAVSEHGDKK	GVGIISEGNETVEDIAAR	NMVPQQALVIR	DGPNALTPPPTTPEWVK	AVFQANQENLPILK	AAVPDAVGK	SPDFTNENPLETR	QGAIVAVTGDGVNDSPALK	QGAIVAVTGDGVNDSPALKK	LIIVEGC[160.0307]QR	VDNSSLTGESEPQTR	IVEIPFNSTNK	YGTDLSR	LNIPVNQVNPR						
AT1A3_RAT	Sodium/potassium-transporting ATPase subunit alpha-3	11	RNPGGWVEK	DVAGDASESALLK	IATLASGLEVGK	VAEIPFNSTNK	YQLSIHETEDPNDNR	GGQDNIPVLK	GVVVATGDR	AQEILAR	LNIPVSQVNPR	LNWDDR	EAFQNAYLELGGLGER									
AT1B1_RAT	Sodium/potassium-transporting ATPase subunit beta-1	5	SYEAYVLNIIR	YNPNVLPVQC[160.0307]TGK	TEISFRPNDPK	VAPPGLTQIPQIQK	AYGENIGYSEK															
S12A5_MOUSE	Solute carrier family 12 member 5	2	EIQSITDESR	LLQAISR																		
GTR1_RAT	Solute carrier family 2, facilitated glucose transporter member 1	1	TFDEIASGFR																			
S2546_RAT	Solute carrier family 25 member 46	1	SPSYGVPSAPPTLEGPAEEPFPGGGDGPRPGR																			
TXTP_RAT	Tricarboxylate transport protein, mitochondrial	1	TQLQLDER																			
VA0D1_MOUSE	**Vacuolar proton pump subunit d 1**	**5**	SIAELVPK	ADDYEQVK	NVADYYPEYK	LYPEGLAQLAR	LLFEGAGSNPGDK															
VATE1_MOUSE	**Vacuolar proton pump subunit E 1**	**1**	GALFGANANR																			
VGLU1_MOUSE	**Vesicular glutamate transporter 1**	**1**	YIEDAIGESAK																			

	Peptide 21	Peptide 22	Peptide 23	Peptide 24	Peptide 25	Peptide 26	Peptide 27	Peptide 28	Peptide 29	Peptide 30	Peptide 31	Peptide 32	Peptide 33	Peptide 34	Peptide 35	Peptide 36	Peptide 37	Peptide 38	Peptide 39	Peptide 40	Peptide 41	Peptide 42
Cytoskeleton-Actin																						
ACTG_RAT																						
ARPC4_MOUSE																						
ACTN1_RAT																						
AINX_RAT	NLQSAEEWYK	VGELFQR																				
ANK2_MOUSE																						
E41L1_RAT																						
E41L3_MOUSE																						
COR1A_RAT																						
COR1C_MOUSE																						
DREB_RAT																						
CAZA2_MOUSE																						
SPTA2_RAT	KLDPAQSASR	ADVVESWIGEK	ALC[160.0307]AEADR	GEIDAHEDSFK	EANQQQQFNR	DLAALGDK	EKEPIAASTNR	GVIDMGNSLIER	EAGSVSLR	AINVQEEK	LDILDQER	LSILSEER	SLQQLAEER	SSEEIESAFR	QEEVNAAWQR	LAALADQWQFLVQK	DLTGVQNLR	ALINADELANDVAGAEALLDR	QWELLLEK	WTQLLANSATR	VLETAEDIQER	DLTNVQNLQK
SPTB2_MOUSE	SALPAQSAATLPAR	LQQFLR	VLLLSQDYGK	INAVVETGR	WDVDDWDNENSSAR	DVEDEILWVGER	ENEVLEAWK	DLDDFQSWLSR	LQAAYAGDK	VSEEAESQQWDTSK	LVSQDNFGFDLPAVEAATK	EIGQSVDEVEK	SAATWDER	LLQLTEK	VLDNAIETEK	VAVVNQIAR	SQNIITDSSSLNAEAIR	EIEELQSQAQALSQEGK	EQWANLEQLSAIR	AQTLPTSVVTITSESSPGK	LPEELGR	LLEVLSGER
SPTN2_RAT	ALAQEDQSAGEVER	WDLPDSDWDNDSSSAR	LEALAEER	VIESTQDLGNDLAGVLALQR	EQAAALPPALSHTPEVQGR	LEQLAAR	FETLEPEMNALAAR	IIGTQEQLNQR	WDELETTTQAK	AAELQAQWER	VLDTAWDGTQSK	LVSQDNFGLELAAVEAAVR	LEQSNVPEGPGSGTGDESSGPR	ALEEEIR								
SYNPO_RAT																						
Cytoskeleton-Other																						
GFAP_RAT																						
K1C10_MOUSE																						
K2C1_MOUSE																						
K2C6A_RAT																						
MAP1A_RAT																						
MAP1B_RAT																						
MAP2_RAT																						
MAP4_MOUSE																						
MAP6_RAT																						
TAU_RAT																						
MLP3B_RAT																						
NFH_RAT																						
NFL_MOUSE																						
NFM_RAT																						
SEPT3_RAT																						
PLEC1_RAT																						
SEP11_RAT																						
SEP14_MOUSE																						
SEPT2_RAT																						

	Peptide 21	Peptide 22	Peptide 23	Peptide 24	Peptide 25	Peptide 26	Peptide 27	Peptide 28	Peptide 29	Peptide 30	Peptide 31	Peptide 32	Peptide 33	Peptide 34	Peptide 35	Peptide 36	Peptide 37	Peptide 38	Peptide 39	Peptide 40	Peptide 41	Peptide 42
RPGF4_MOUSE																						
SYGP1_RAT	LISASLFLR	LLSQEEQTSK	ILMQYQAR	EGSIGGSGGSGGGGGGGLKPSITK																		
RAC1_MOUSE																						
RAB14_RAT																						
RAB35_RAT																						
RAB5A_MOUSE																						
RAB5C_MOUSE																						
RAP1A_MOUSE																						
Kinases, Phosphatases and Regulators																						
BEGIN_RAT																						
KCC2A_RAT																						
KCC2B_MOUSE																						
KCC2D_RAT																						
KCC2G_RAT																						
CAMKV_MOUSE																						
KC1D_RAT																						
CTRO_MOUSE																						
CDKL5_MOUSE																						
GLPK_MOUSE																						
NEUM_RAT																						
MYPT1_RAT																						
DCLK1_MOUSE																						
DCLK2_MOUSE																						
MARK2_MOUSE																						
PP2BB_MOUSE																						
P4R3A_MOUSE																						

	Peptide 21	Peptide 22	Peptide 23	Peptide 24	Peptide 25	Peptide 26	Peptide 27	Peptide 28	Peptide 29	Peptide 30	Peptide 31	Peptide 32	Peptide 33	Peptide 34	Peptide 35	Peptide 36	Peptide 37	Peptide 38	Peptide 39	Peptide 40	Peptide 41	Peptide 42
NDUB6_MOUSE																						
NDUB7_MOUSE																						
NDUB8_MOUSE																						
NDUC2_MOUSE																						
NDUV1_MOUSE																						
NDUV2_RAT																						
NDUV3_RAT																						
NDUS2_MOUSE																						
NDUS3_MOUSE																						
NDUS4_RAT																						
NDUS6_MOUSE																						
NDUS7_MOUSE																						
NDUS8_MOUSE																						
NDUS1_RAT	GWNILTNSEK	VASGAAAEWK																				
NU4M_RAT																						
NU5M_RAT																						

	Peptide 21	Peptide 22	Peptide 23	Peptide 24	Peptide 25	Peptide 26	Peptide 27	Peptide 28	Peptide 29	Peptide 30	Peptide 31	Peptide 32	Peptide 33	Peptide 34	Peptide 35	Peptide 36	Peptide 37	Peptide 38	Peptide 39	Peptide 40	Peptide 41	Peptide 42
CAC1A_MOUSE																						
Scaffolds																						
1433G_MOUSE																						
1433T_MOUSE																						
1433Z_MOUSE																						
CSKI1_MOUSE																						
DLG2_RAT	GDIPGLG DDGYGT K	INDDLISE FPDK	GQEDLIL SYEPVTR																			
DLG3_RAT																						
DLG4_RAT	VIEDLSG PYIWVPA R	NTYDVVY LK	DLLGEED IPR	VNDSILF VNEVDVR																		
DLGP1_MOUSE																						
DLGP2_RAT																						
DLGP3_RAT																						
DLGP4_MOUSE																						
ERC2_RAT																						
GEPH_MOUSE																						
HOME1_RAT																						
PRIP1_MOUSE																						
BSN_RAT	ATAEFST QTPSLTP SSDIPR	GQPGYP SSADYSQ PSR	YGLALDP VPGR	NLAPAAIS SK	ASGAGG PPRPELP AGGAR																	
PCLO_RAT	QAPTPSQ SPAAQGP AK	ADIQSSS TTKPDILS SQVQSQ AQVK	VLYSPISP LSPGNAL EPAFVPY EKPLPDD ISPQK	SPVPSQ QASPK	NYVLIDDI GDITK	SVSIPIPP EPLALDR	FAEELEW ER	LLQDDITF GLR	SQEVTDF LAPLQTS SR	AAAGPLP PISADTR	IISQPGP GSESK	ISLPEPGL AQAPSSV TAPQIK	AGEEEQ QPDSRP EALPGAT PLTLPK	IVDSGVQ TDDEETA DR	ALGGDLA AAIPSSP QPTPK	KSSTSFD DDAGRR	TIELNSTI ADK	DDHYQY DR	AAAAENL ESKPEQA PTAK			
RIMS1_RAT																						
SHAN1_RAT	DANFLEE ER	LALGPQP SLR	EQDVVPF QESPK	LQQFGG SSTAGGA LPWAR																		
SHAN2_RAT	NSPAFLS TDLGDED VGLGPPA PR	DNEGFG FVLR	EILPTPPS AAAASPS PTLSDVF SLPSQSP AGDLFGL NPAGR																			
SHAN3_RAT																						
WASF1_RAT																						
Translation																						
RT36_MOUSE																						
RS14_MOUSE																						
RS2_MOUSE																						
RS4X_MOUSE																						
RS9_RAT																						
RLA1_RAT																						

	Peptide 43	Peptide 44	Peptide 45	Peptide 46	Peptide 47	Peptide 48	Peptide 49	Peptide 50	Peptide 51	Peptide 52	Peptide 53	Peptide 54	Peptide 55	Peptide 56	Peptide 57	Peptide 58	Peptide 59	Peptide 60	Peptide 61	Peptide 62	Peptide 63	Peptide 64
Cytoskeleton-Actin																						
ACTG_RAT																						
ARPC4_MOUSE																						
ACTN1_RAT																						
AINX_RAT																						
ANK2_MOUSE																						
E41L1_RAT																						
E41L3_MOUSE																						
COR1A_RAT																						
COR1C_MOUSE																						
DREB_RAT																						
CAZA2_MOUSE																						
SPTA2_RAT	IDGITIQAR	NTTGVTEEALK	VNSLGETAQR	VNEVNQFAAK	GLVSSDELAK	ELVLALYDYQEK	LGDSHDLQR	DVEDEETWIR	EELYQNLTR	EANELQQWINEK	ELPTAFDYVEFTR	LSDDNTIGQEEIQQR	ITALDEFATK	FQFFQR	DLSSVQTLLTK	DLASVQALLR	DLIGVQNLLK	ILGESQTLQQFSR	LLVSSEDYGR	SSLSSAQADFNQLAELDR	TATDEAYKDPSNLQGK	ENLLEEQGSIALR
SPTB2_MOUSE	ILSSDDYGK																					
SPTN2_RAT																						
SYNPO_RAT																						
Cytoskeleton-Other																						
GFAP_RAT																						
K1C10_MOUSE																						
K2C1_MOUSE																						
K2C6A_RAT																						
MAP1A_RAT																						
MAP1B_RAT																						
MAP2_RAT																						
MAP4_MOUSE																						
MAP6_RAT																						
TAU_RAT																						
MLP3B_RAT																						
NFH_RAT																						
NFL_MOUSE																						
NFM_RAT																						
SEPT3_RAT																						
PLEC1_RAT																						
SEP11_RAT																						
SEP14_MOUSE																						
SEPT2_RAT																						

	Peptide 65	Peptide 66	Peptide 67	Peptide 68	Peptide 69	Peptide 70
Cytoskeleton-Actin						
ACTG_RAT						
ARPC4_MOUSE						
ACTN1_RAT						
AINX_RAT						
ANK2_MOUSE						
E41L1_RAT						
E41L3_MOUSE						
COR1A_RAT						
COR1C_MOUSE						
DREB_RAT						
CAZA2_MOUSE						
SPTA2_RAT	DVDETIGWIK	DLAALEDK	LQVASDENYKDPTNLQGK	LFGAAEVQR	EAALTSEEVGADLEQVEVLQK	LLEATELK
SPTB2_MOUSE						
SPTN2_RAT						
SYNPO_RAT						
Cytoskeleton-Other						
GFAP_RAT						
K1C10_MOUSE						
K2C1_MOUSE						
K2C6A_RAT						
MAP1A_RAT						
MAP1B_RAT						
MAP2_RAT						
MAP4_MOUSE						
MAP6_RAT						
TAU_RAT						
MLP3B_RAT						
NFH_RAT						
NFL_MOUSE						
NFM_RAT						
SEPT3_RAT						
PLEC1_RAT						
SEP11_RAT						
SEP14_MOUSE						
SEPT2_RAT						

Supplemental Table 2. Ingenuity Pathway Analysis of 56 Proteins Significantly Changed by VNS ($p<0.05$), as detected by LC-MS/MS.

Top Canonical Pathways

Name	p-value	Overlap
Glutamate Receptor Signaling	5.46E-09	10.5 % 6/57
Amyotrophic Lateral Sclerosis Signaling	7.83E-06	4.5 % 5/111
RhoGDI Signaling	6.63E-05	2.9 % 5/173
Signaling by Rho Family GTPases	3.49E-04	2.0 % 5/247
phagosome maturation	4.36E-04	2.8 % 4/144

Top Networks

ID	Associated Network Functions	Score
1	Cell-To-Cell Signaling and Interaction, Nervous System Development and Function, Amino Acid Metabolism	50
2	Cell-To-Cell Signaling and Interaction, Hair and Skin Development and Function, Cellular Movement	32
3	Connective Tissue Disorders, Inflammatory Disease, Inflammatory Response	22
4	Cell Morphology, Nervous System Development and Function, Tissue Morphology	6
5	Cancer, Hematological Disease, Immunological Disease	3

Top Diseases and Bio Functions

Diseases and Disorders

Name	p-value	#Molecules
Neurological Disease	7.37E-03 - 1.24E-08	38
Organismal Injury and Abnormalities	7.37E-03 - 3.31E-08	46
Psychological Disorders	7.37E-03 - 3.31E-08	22
Skeletal and Muscular Disorders	7.37E-03 - 2.14E-07	24
Hereditary Disorder	7.37E-03 - 2.38E-06	26

Molecular and Cellular Functions

Name	p-value	#Molecules
Cellular Assembly and Organization	7.37E-03 - 6.50E-11	30
Cellular Function and Maintenance	7.37E-03 - 6.50E-11	33
Cell Morphology	7.37E-03 - 5.25E-10	29
Cell-To-Cell Signaling and Interaction	7.37E-03 - 4.48E-09	28
Cellular Development	7.37E-03 - 6.89E-09	27

Physiological System Development and Function

Name	p-value	#Molecules
Behavior	7.37E-03 - 4.46E-10	20
Nervous System Development and Function	7.37E-03 - 5.25E-10	28
Tissue Morphology	7.37E-03 - 5.25E-10	22
Tissue Development	7.37E-03 - 6.89E-09	27
Embryonic Development	7.37E-03 - 3.85E-06	17