

8 APPENDIX

8.1 Table 1

A complete list of quantified proteins by nanoLC-MALDI-MS/MS

DRM proteins ($^{18}\text{O}/^{16}\text{O}>6$) and DRM-associated proteins ($3<^{18}\text{O}/^{16}\text{O}\leq 6$)						
Synaptic vesicle proteins						
Protein Name	Acc. No. (NCBI)	MW (Da)	Peptides MS/MS	Peptides used for quantification	m/z	Ratio $^{18}\text{O}/^{16}\text{O}$
ATPase, H ⁺ transporting, lysosomal V0 subunit a isoform 1	gil13928826	96265	6	SVFIFFQGDQLK FLPFSFEHIR	1541.82 1292.62	>6 >6
ATPase, H ⁺ transporting, V1 subunit C, isoform 1	gil58865560	43873	2	TEFWLISAPGEK AVDDFRHK	1419.68 987.49	>6 >6
ATPase, H ⁺ transporting, V1 subunit A, isoform 1	gil34869154	68222	16	ADYAQLLEDMQNAFR IKADYAQLLEDMQNAFR	1784.78 2025.98	>6 >6
ATPase, H ⁺ transporting, V0 subunit D isoform 1	gil62665162	51010	9	NVADYYPEYK FFEHEVK	1261.55 935.46	>6 >6
ATPase, H ⁺ transporting, ATPase E1	gil38454230	26112	3	IMEYYEKK IMEYYEK	1103.57 975.47	>6 >6
Rab3a	gil61098195	24954	3	YADDSFTPAFVSTVGIDFK LQIWDTAGQER	2079.86 1316.52	>6 >6
Synaptobrevin 2 (VAMP 2)	gil6981614	12683	2	LQQTQAQVDEVVDIMR ADALQAGASQFETSAK	1872.96 1665.83	>6 >6
Synapsin I	gil9507159	73943	10	QTTAAAAATFSEQVGGGSGG AGR MGHAHSGMGK	2051.93 1012.4	>6 >6
Synapsin II	gil6685997	63417	5	SQSLTNAFSFESEFFR SFRPDFVLIR	1941.8 1249.68	>6 >6
Synaptic vesicle glycoprotein 2a	gil62027591	82608	4	QVHDTNMR GLDRVQDEYSRR	1000.44 1493.71	>6 >6
Synaptophysin	gil6981622	33289	3	MATDPENIK MDVVNQLVAGGQFR	1131.51 1575.77	4.26 3.41
Synaptotagmin I	gil92791	47441	2	VFVGYNSTGAELR VPYSELGGK	1412.71 949.46	>6 >6
Thy-1 antigen	gil57358	18160	3	VNLFSDR SRVNLFSDR	850.43 1093.57	>6 >6
Membrane trafficking proteins						
AP-2 complex, alpha subunit	gil13591908	103979	3	YGGTFQNVSVK AVEYLR	1199.58 750.4	>6 >6
AP-2 complex, beta subunit	gil18034787	105691	2	ALQHMTDFAIQFNK LASQANIAQVLAELK	1663.79 1568.94	>6 >6
AP-3 complex beta3B subunit	gil34857415	119096	3	ATGYQELPDWPPEEAPDPSVR EFQTYIR	2257.08 956.49	>6 >6
Clathrin heavy chain	gil9506497	191477	7	VANVELYYK SVNESLNNLFITEEDYQALR	1098.55 2355.04	>6
Clathrin light chain	gil14010873	26964	3	VADEAFYK ELEEYARQDEQLQK	942.47 1965.02	>6 >6
Dynamin 1	gil18093102	95867	11	TGLFTPDLAFEATVK RSPTSSPTPQR	1609.82 1213.59	>6 >6
Hsc70-ps1	gil56385	70884	18	IINEPTAAAIAYGLDKK NSLESYAFNMK	1788 1303.59	>6 >6
Munc18-1	gil435433	67568	3	REPLPSLEAVYLITPSEK VLVVVDQLSMR	2042.04 1159.61	>6 >6
N-ethylmaleimide sensitive fusion protein	gil13489067	82600	8	VVNGPEILNKYVGESEANIR KLFADAEERQR	2201.1 1335.61	>6 >6
Rab1b	gil226486	22176	2	MNPEYDYLFK NATNVEQAFMTMAAEIK	1361.61 1884.9	>6 >6
SNAP-25a	gil1314854	20545	5	AWGNNQDGVVASQPAR ADQLADESLESTRR	1669.63 1590.6	>6 >6
SNAP-25-interacting protein	gil9507127	129665	9	HTQGAQPGLADQAAK SLVGFPPVPAKDTETR	1492.79 1770.95	>6 >6
Plasmalemmal and signaling proteins						
BM88 antigen	gil62079059	15034	4	DAQAEKQEQAAPGPATTK APLTKPVK	1938.03 853.58	>6 >6
Calcium/calmodulin-dependent protein kinase II	gil6978593	54081	2	ITQYLDAGGIPR DLKPENLLLASK	1303.71 1340.8	>6 >6

alpha subunit						
Calcium/calmodulin-dependent protein kinase II beta subunit	gil1120682	60364	5	FTDEYQLYEDIGK AGAYDFPSPEWDTVTPEAK	1620.68 2080.9	>6 >6
Calcium/calmodulin-dependent protein kinase II gamma	gil19424316	59001	5	NLINQMLTINPAK DLKPENLLLASK	1469.84 1340.79	>6 >6
cAMP-dependent protein kinase catalytic subunit	gil288120	38996	2	QIEHTLNEKR VRFPSHFSSDLK	1267.69 1419.75	>6 >6
Cyclic nucleotide phosphodiesterase 1	gil57977323	47239	8	AGQVFLEELGNHK ATGAEYYAQQDVVR	1441.6 1536.73	3.63 3.24
14-3-3, gamma polypeptide	gil9507245	28285	2	EHMQPTHPIR NVTELNEPLSNEER	1245.65 1643.86	>6 >6
14-3-3, zeta polypeptide	gil68085421	27771	4	YLAEVAAGDDKK SVTEQGAELSNEER	1279.55 1548.54	>6 >6
Glutamate transporter	gil56263	61634	4	MHDSHLSSEEPK MHDSHLSSEEPKHR	1412.57 1705.72	4.59 4.19
GTP-binding protein alpha o	gil8394152	40043	12	IHHEDGFSGEDVK IGAADYQPTAQDILRTR	1445.69 1946.94	3.47 3.89
Guanine nucleotide-binding protein, beta-1 subunit	gil13591874	37363	8	LLVSASQDGK SELDQLRQEAQLKNQIR	1017.52 2240.13	>6 >6
Guanine nucleotide binding protein, alpha inhibiting 1	gil6980962	40319	2	EYQLNDSAAYYLNDLDR IAQPNYIPTQQDVLR	2062.89 1755.89	>6 5.6
Guanine nucleotide binding protein, alpha inhibiting 2	gil13591955	40473	2	EYQLNDSAAYYLNDLER IAQSDYIPTQQDVLR	2076.9 1746.85	>6 >6
Guanine nucleotide-binding protein, beta 2	gil29789261	37307	3	AGVLAGHDNR SELEQLRQEAQLR	1009.5 1770.85	5.85 >6
Guanine nucleotide binding protein, alpha z subunit	gil6980966	40854	5	AYDAVQLFALTGPAESK GQNTYEEAAVYIQR	1780.86 1641.75	5.08 4.09
Growth associated protein 43 (GAP-43)	gil8393415	23589	9	AEDGPAKEEPK KGDAPAAEAEAK	1170.59 1157.59	>6 >6
Paralemmin	gil18677765	41901	2	MEVLATDTVVSQQR MEVLATDTVVSQQRQAIAEK	1648.82 2402.3	>6 >6
Phosphodiesterase 2A, cGMP-stimulated	gil13592021	104597	4	VFDGGVVDDSEYEIR IAELIYKEFFSQGDLEK	1699.84 2030.07	>6 >6
Prion protein	gil6981410	27786	2	YPGQGSPPGGR ESQAYYDGR	1089.52 1088.43	4.75 4.92
Protein kinase C, beta	gil6981398	76799	3	ADPAAGPPPSEGEESTVR IGQGTKAPEEK	1808.78 1157.59	>6 >6
Protein kinase C, gamma	gil6981400	78307	2	SGENFDKFFTR LGSGPDGEPTIR	1347.61 1198.63	>6 >6
Na+/K+ -ATPase alpha 3 subunit	gil6978547	111664	10	TVNDLEDSYGQWTYEQR SPDCTHDNPLETR	2231.93 1555.62	>6 >6
Na+/K+ -ATPase beta 1 subunit	gil6978549	35211	6	SYEAYVLNIIR FIWNSEKK	1340.61 1051.46	5.06 3.97
Septin 5	gil16758814	43892	5	ESAPFAVIGSNTVVEAK STLVHSLFLTDLYKDR	1718.91 1908.04	>6 >6
Septin 7	gil12018296	50476	2	ILEQQNSSR SPLAQMEERREHVAK	1074.45 1909.78	>6 >6
Serine/threonine specific protein phosphatase	gil4584820	57578	3	EVFDNDGKPR TQEHFTHNTR	1176.55 1369.68	>6 >6
NMDA receptor subunit NR1 (GRIN1)	gil34873803	96398	7	KVETIASGK TVPQAPDKATSAFR	932.54 1488.81	>6 >6
Voltage-gated calcium channel alpha2/delta-1 subunit	gil11055592	123390	12	YQDLYTVEPNAR TPNKIDLYDVR	1582.75 1333.73	3.87 4.09
Synaptic scaffolding proteins						
Actin beta	gil71620	41724	10	HQGMVMGMGQKDSYVGDE AQSK SYELPDGQVITIGNER	2351.1 1790.89	>6 >6
Cask-interacting protein 1	gil18093104	150255	3	AQPGSPQALGGPHGPATAK GKEQELVQAVKAEDVGTAR	1741.85 2156.06	>6 >6
Contactin 2	gil6981632	112972	6	AGDNEAAADRVR GPPGPPGGVVVR	1244.64 1088.63	3.75 3.68
Densin-180	gil16924000	167378	2	SREQPYEGNINK SFQNTVDLVIQR	1562.8 1419.69	>6 >6
Mtap6 protein	gil8850229	100423	10	ATGPAPGPSGDRETAAPGR AVAIETQPAQGESDAVAR	1835.8 1812.83	>6 >6
Myosin heavy chain 10	gil13928704	228824	11	HADQYKEQMEK QLLQANPILESFGNAK	1406.68 1742.96	>6 >6

Neurotrimin	gil8394196	37974	3	VTVNYPPYISEAK EQSGEYECASNDVAAPVVR	1480.82 2181.98	>6 >6
Postsynaptic density protein 93	gil2497503	94875	2	FIEAGQYNDNLYGTSVQSVR GQEDLILSYEPVTR	2261.15 1619.86	>6 >6
Postsynaptic density protein 95	gil9665227	80416	4	VNDSILFVNEVDVR IIEGGAHKDGR	1618.81 1223.63	>6 >6
Proline rich synapse associated protein 2	gil5262748	192269	2	DHEGFGFVLR LFSSLGELSTISAQR	1176.52 1608.77	>6 >6
Spectrin alpha chain	gil17380501	284462	47	QFQDAGHFDAENIKK HQAFEAEVQANSQAIVK	1747.88 1798.84	>6 >6
Spectrin beta chain 1	gil34879632	278250	34	KHYASEEIKEK ELEAESYHDIKR	1361.73 1489.67	>6 >6
Spectrin beta chain 3	gil9507135	270769	3	QQQLPDGTGR SSESAHVATLPAAR	1099.58 1325.62	>6 >6
SynGAP-a	gil10122138	141981	7	EKPPPPPPGGGK QQQVEKDSQIK	1157.66 1330.72	>6 >6
Tubulin, alpha 1	gil11560133	50104	17	IHFPLATYAPVISAEEK VGINYQPPTVVPGGDLAK	1756.8795 1824.9021	>6 >6
Tubulin, beta, 2	gil40018568	49769	17	MSATFIGNSTAIQELFK EIVHLQAGQCNGQIGAK	1857.97 1836.85	>6 >6
Ves1-1L	gil3452560	41323	3	AEPAQNALPFSHSAGDR FGQWADSR	1767.68 966.35	>6 >6
Mitochondrial proteins						
Aconitase 2	gil40538860	85380	12	AKDINQEVYNFLATAGAK SDFDPGQDQTYQHPPK	1952.93 1731.71	3.32 3.81
ATP synthase beta subunit	gil1374715	51171	12	IMDPNIVGSEHYDVAR FLSQPFQVAEVFTGHMGK	1815.69 2022.85	>6 >6
ATP synthase gamma-subunit	gil310190	29915	3	THSDQFLVSFK NASDMIDKLTFTNR	1308.7 1738.87	>6 >6
ATP synthase, mitochondrial F1 complex, alpha subunit, isoform 1	gil40538742	59717	4	EAYPGDVLYLHSR ISVREPMQTGIK	1553.6 1374.62	>6 >6
ATP synthase, H+ transporting, mitochondrial F0 complex, subunit b, isoform 1	gil19705465	28850	2	HVIQSISAQQEK QIQDAINR	1367.58 957.39	>6 >6
ATP synthase, H+ transporting, mitochondrial F0 complex, subunit d	gil9506411	18770	5	ANVDKPLVDDFKNK TIDWVSFVEIMPQNQK	1659.88 1934.97	>6 >6
Chaperonin 60	gil1778213	60858	6	ALMLQGVDLLADAVAVTMG PK TVIEQSWGSPK	2113.13 1344.7	>6 >6
Citrate synthase	gil18543177	51833	3	VVPGYGHAVLR AYAEGINR	1167.64 893.44	4.82 4.63
Cytochrome-c oxidase II	gil13481	25925	2	ILYMMDEINNPVLTVK VVLPMELPIR	1892.82 1166.57	>6 >6
Dihydroipoamide acetyltransferase	gil220838	57246	2	VAPTPAGVFIDIPISNIR VAPTPAGVFIDIPISNIRR	1879.98 2036.09	>6 >6
Isocitrate dehydrogenase 3 (NAD+) alpha	gil16758446	39588	5	IFDAAKAPIQWEER APIQWEER	1673.82 1028.51	3.00 3.58
Mitochondrial inner membrane protein	gil62647466	92218	9	KPIQSGPLK QHIELALER	967.61 1108.6	>6 >6
NADH dehydrogenase 1 alpha subcomplex 10-like protein	gil32996721	40519	4	IYDSFRELPGRK KLHEYSR	1480.76 932.5	3.54 3.14
NADH dehydrogenase (ubiquinone) flavoprotein 1	gil55741424	50699	2	HFRPELEDR GGAGFPTGLK	1198.5 904.4	>6 >6
NADH dehydrogenase (ubiquinone) flavoprotein 2	gil51092268	27361	3	AAAVLPVLDLAQR VAEVLQVPPMR	1336.65 1238.59	>6 >6
NADH oxidoreductase	gil27717677	12493	3	TQPPKLPVGPESHK LSNNYYCTR	1482.89 1204.58	>6 >6
NADH-ubiquinone oxidoreductase 30 kDa subunit	gil27702072	30208	2	VVAEPVELAQEFR ILTDYGFEGHPFR	1486.65 1551.6	>6 >6
Pyruvate carboxylase	gil55716040	129695	2	VIAHGKDHPTAATK VVHSYEELEENYTR	1445.81 1767.83	>6 >6
Solute carrier family 25, member 5	gil32189350	32880	3	LLQVQHASK TAVAPIER	1136.71 856.51	>6 >6
Solute carrier family 25, member 4	gil32189355	32968	2	LLQVQHASK YFPTQALNFAFK	1136.57 1446.63	5.98 >6
Translocase of outer mitochondrial membrane 70 homolog A	gil47058988	67402	2	NADLSTFYQNR AAAFEQLQK	1328.61 1005.53	>6 >6
Ubiquinol-cytochrome c	gil34866011	13550	4	RLPENLYNDR	1289.68	>6

reductase binding protein				AGRPAVAASSK	1056.6	>6
Ubiquinol-cytochrome c reductase core protein II	gil55741544	48366	3	IDKAVAFQNPQTR YENYNYLGTSHLLR	1487.68 1742.7	4.41 3.31
Voltage dependent anion channel (porin)	gil4105605	32557	8	YQVDPDACFSAK VTQSNFAVGYYK	1414.68 1213.62	>6 >6
Others						
Aldolase A	gil6978487	39327	8	PHPYPALTPEQKK LQSIGTENTEENRR	1505.78 1646.78	>6 >6
Carbonic anhydrase 4	gil9506449	35054	2	KLYYDQEYK LYYDQEYK	1214.55 1086.46	4.76 5.20
Creatine kinase	gil31542401	42685	2	HGGYQPSDEHK VLTPELYAELR	1254.43 1303.61	>6 >6
Enolase1 protein	gil50926833	47098	3	LAMQEFMILPVGASSFR AGKYDLDFKSPDDASR	1896.79 1784.68	>6 >6
Enolase 2, gamma	gil26023949	47111	3	LAMQEFMILPVGAESFR AGAAEKDLPLYR	1938.85 1303.58	>6 >6
Fatty acid synthase	gil2231054	272478	2	LTQGEVYKELR DLSFAAVSFYYK	1335.67 1410.73	>6 >6
Glutamate oxaloacetate transaminase 1	gil38197390	46400	2	TDDSQPWVLPVVR WYNGTDNK	1511.75 997.48	>6 >6
Glutamate oxaloacetate transaminase 2	gil38197424	47284	3	DAGMQLQGYR DAGMQLQGYR	1138.53 1154.5	4.97 4.82
Glyceraldehyde 3-phosphate-dehydrogenase	gil56188	35813	9	LISWYDNEYGYSNR GAAQNIIPASTGAAK	1779.87 1369.79	>6 >6
Hexokinase 1	gil6981022	102342	4	SIPDGSEKGFIALDLGSSFR LSDEILIDLTR	2268.09 1400.82	3.97 4.27
Heat shock protein 1, alpha	gil28467005	84762	4	FYEQFSK ELHINLIPNKQDR	948.43 1589.81	5.18 4.34
Hypothetical protein LOC360975	gil53734284	116221	3	STRFEEFLQRK FLDTAFDLDAFKK	1440.79 1530.82	>6 >6
Myelin basic protein	gil4454311	21471	3	TTHYGSLPQK YLATASTMDHAR	1131.59 1336.65	5.94 5.36
Myelin/oligodendrocyte glycoprotein	gil8381631	24948	4	NGKDQDAEQAPEYR DQDAEQAPEYR	1620.77 1321.58	3.59 4.14
Neuronal olfactomedin-related ER localized protein	gil442368	14512	2	QVEESHKQHLAR MDELRLIPVLEEYKADAK	1461.69 2230.07	3.87 4.18
Prohibitin	gil13937353	29802	2	FDAGELITQR FVVEKAEQQK	1149.58 1205.69	>6 >6
Phosphofructokinase	gil57977273	85665	3	MFAIYDGFDFGLANGQIK RFDEAVKLR	1859.84 1133.62	5.84 >6
Phosphoglycerate kinase 1	gil40254752	44510	3	LGDVYVNDAFGTAHR AEPAKIDAFR	1634.78 1117.6	>6 >6
Phosphoglycerate mutase (EC 5.4.2.1) B chain	gil112128	28831	3	HYGGLTGLNK ALPFWNEEIVPQIK	1059.57 1683.98	>6 >6
Pyruvate dehydrogenase beta chain	gil50925725	38957	4	EAINQGMDEELERDEK VTGADVMPYAK	1905.81 1248.59	>6 >6
Pyruvate kinase	gil16757994	57781	5	EAEAAVFHR IISKIENHEGVR	1029.49 1394.73	>6 >6
Similar to Coiled-coil-helix-coiled-coil-helix domain containing 6	gil34856405	35225	2	LSSQQFHEAASK FQQEQLAVQDELVK	1332.7 1674.87	>6 >6
Similar to grp75	gil62664205	73699	5	LYSPSQIGAFVLMK RYDDPEVQKDTK	1553.78 1493.66	>6 >6
Similar to mKIAA0417 protein	gil34864793	129287	9	ADKEAGGGDAGPR GAVLFGLDPAVIK	1241.58 1298.78	>6 >6
Similar to RIKEN cDNA 2900041A09	gil62638424	23532	3	FAVHGDTR FKDKSSEAVR	902.34 1295.53	>6 >6
Similar to Tu translation elongation factor	gil62641274	56210	2	DKPHVNVGTIGHVDHGK YEEIDNAPEER	1809.77 1364.48	5.65 >6
Triosephosphate isomerase 1	gil12621074	26904	3	TATPQQAQEVHEK FFVGGNWK	1466.56 954.38	>6 >6
Ubiquitin carboxy-terminal hydrolase L1	gil8394506	24766	2	EFTEREQGEVR QFLSETEKLSPEDR	1379.68 1678.81	>6 >6
Non-DRM proteins (3>¹⁸O/¹⁶O)						
Cadherin 13	gil20302073	78037	4	SIVVSPILIPENQR GVDQDPKGTFR	1564.88 1219.59	2.02 1.62
Calcium channel, voltage-dependent, alpha2/delta 3 subunit	gil28212256	122127	9	GVEVAFLGTR YSGSQLLQK	1048.58 1023.55	2.12 2.18
Calcium channel, voltage dependent, alpha2/delta subunit 2	gil28212250	130694	8	LADAAENFQK NLFDVQENEPQK	1106.57 1460.72	2.82 2.86
Chondroitin sulfate	gil13928904	135460	3	TGFPAPGAR	873.42	2.14

proteoglycan 3				ELGGEVFYVGPARG	1393.64	2.13
Cytochrome oxidase subunit II	gil829023	25982	2	ILYMMDEINNPVLTVK	1892.97	2.21
				LLEVNDNRVVLPMELPIR	2006.21	2.42
Glycoprotein m6a	gil30017437	31174	2	SKEEQELHDIHSTR	1708.85	1.51
				QFGIVTIGEEK	1220.61	1.39
Fasciclin II GPI-linked protein isoform	gil42528323	81135	2	AIDGVTTFSEGDKSPDGR	1750.88	0.71
				EVLSPQEFK	1076.58	1.13
Fyn proto-oncogene	gil6978863	60663	3	LIEDNEYTAR	1223.57	2.12
				AQFETLQQLVQHYSER	1976.87	1.83
Hyaluronan and proteoglycan link protein	gil9506519	40236	2	LLVEAEQAK	1000.49	0.98
				NYGFWDKDK	1172.42	1.40
L-type calcium channel alpha2/delta subunit	gil17864880	122096	8	TPNKIDLYDVR	1333.65	0.55
				YYPASPWVDNSR	1454.6	0.85
Limbic system-associated membrane protein	gil25742796	37301	7	EFEGEEEYLEILGTR	1926.82	1.05
				AANEVSSADVK	1090.51	1.15
Malate dehydrogenase	gil42476181	35661	6	HGVYNPNK	928.48	2.54
				VDFPQDQLATLTGR	1560.75	2.86
Neural adhesion molecule F3	gil1095168	113409	5	FIPLIPIPER	1194.68	1.57
				NGYAYHKGELR	1307.6	1.51
Neural cell adhesion molecule 1	gil13928706	94599	4	SEPQSEAKPAPTEVK	1726.76	0.74
				AAHFVFR	847.41	0.83
Neuronal growth regulator 1	gil11067409	37834	4	KGDTAVLR	859.45	2.44
				SSIIFAGGDKWSVDPR	1734.82	2.41
Neurexin 3	gil16758662	167378	2	QLAEMQNAAGVK	1275.65	2.14
				TPVNDGKYHVVR	1374.69	2.13
Opioid-binding protein/cell adhesion molecule-like	gil16758710	38043	5	STILYAGNDKWSIDPR	1835.76	2.02
				AMDNVTVR	905.36	1.50
Optic atrophy 1-like protein	gil37812499	111223	2	ATDHGSESDKHVR	1502.62	2.72
				AVEVAVETLQDEFGR	1779.81	3.12
2-oxoglutarate carrier protein	gil1580888	34127	3	GFTPYAR	974.44	1.13
				GIYTGLSAGLLR	1220.72	1.22
Regulator of Gz-selective protein signaling 2	gil34853560	24305	2	FLNSQIYK	1012.53	2.69
				MIYEDYISILSPK	1571.83	2.97
Protein tyrosine phosphatase, non-receptor type substrate 1	gil31543529	55621	8	SPIYSFIGGEHFPR	1606.77	1.55
				TDKPEHFTDNR	1359.58	1.60
Sideroflexin 1	gil50927667	35565	3	KVVHDIR	916.51	1.58
				AKYAYDSAFHPDTGEK	1799.78	1.37
Sideroflexin 3	gil12621120	35411	7	AGVVTPGLTEDQLWR	1641.78	1.56
				GDLPLNINIQEPR	1520.82	1.38
Similar to succinate-Coenzyme A ligase, ADP-forming, beta subunit	gil62661722	50274	2	AVSSQMIGQK	1048.44	2.60
				INFDSNSAYR	1186.43	2.80
Similar to OL-protocadherin isoform	gil34856897	105244	2	DSGHGDSEQGDSDHDVTNR	2027.86	1.54
				SFDYEQIKDFSFQVEAR	2108.99	0.97
Similar to ganglioside-induced differentiation associated protein 1	gil62648499	47878	2	LMPDEGSMYYPR	1458.6	1.58
				AQGPPAAEVR	995.51	1.77
Similar to succinyl-coa ligase beta chain	gil34874487	48219	5	AVSSQMIGQK	1048.56	1.51
				INFDSNSAYR	1186.54	1.48
Similar to brain link protein	gil34877663	49370	3	YPIVNPR	858.5	1.70
				LDLEGVVFYPYHPR	1541.83	1.67
Solute carrier family 3, member 2	gil9506891	58036	5	GQNAWFLPPQADIVATK	1855.91	2.02
				IGDLQAFVGPPEAR	1372.67	1.82
Similar to ectonucleotide pyrophosphatase/phosphodiesterase 6	gil62662656	50668	2	GIFLAFGPDFK	1211.55	1.06
				LLVLLLDGFR	1158.63	1.07
Similar to 5730405I09Rik protein	gil62663696	39343	3	YYFDLR	876.4	1.68
				SLAEANSLSFPLEPLSR	1830.9	2.02
Na+/K+ - ATPase alpha 2 subunit	gil55250732	112145	4	AGQENISVSKR	1188.65	1.16
				GVGIIEGNETVEDIAR	1829.93	1.20
Na+/K+ - ATPase alpha 1 subunit	gil38303881	112982	4	GIVVYTGDR	979.53	1.14
				LNIPVNQVNPR	1263.73	1.09
Suclg1 protein	gil38181885	34995	2	QGTFFHSQQALEYGTK	1694.85	1.40
				AKPVVVFAGITAPPGR	1680.9	1.51
Synaptogyrin 1	gil9507167	25652	2	QPHTILR	864.48	2.73
				AGGAFDPYTLVR	1266.65	2.37
Synaptotagmin VIII	gil12667448	75769	5	QQSLQQPLSQNQR	1553.82	3.00
				LGEKPAPVPPGEDALR	1741.87	2.91
Unnamed protein product	gil1334284	57890	7	ALMLQGVDLLADAVAVTMG	2113.07	0.74
				PK AKDKVFGADAR	1177.56	0.72

8.2 Table 2

Primers used (Endo(endophilin); Amph(amphiphysin); h(human); SNX(sorting nexin))

Names	Sequences	Purposes
EpsinENTH-F	ATAAGGATCCATGTCGACATCATCGCTGCGGCGT	Epsin1ENTH (1-164) Rattus
EpsinENTH-R	ATAACTCGAGCTAAGCTGCTGAGGAAGCCGTGGCA	Epsin1ENTH (1-164aa) Rattus
EndoNBAR-F	ATAAGGATCCATGTCGGTGGCAGGGCTGAAGAAGCA	Endophilin1 NBAR Rattus
EndoNBAR-R	ATCCCTCGAGCTACTGATATTCCTTCTTGGTTGAGATGAAG	Endophilin1 NBAR (1-256aa)
EndoFL-R	ATCCCTCGAGCTAATGGGGCAGAGCAACCAGAATTTCTAC	Endophilin1 FL
AmphNBAR-F	ATAAGGATCCATGGCCGACATCAAGACGGGCATCT	Amphiphysin 1 NBAR
AmphNBAR-R	ATATCTCGAGCTAAATGCTGAAGGCCCTTGCAGCGTG	Amphiphysin 1 NBAR (1-245aa)
API80ANTH-F	AATACCCGGGTATGTCGGGCCAAACGCTCACGGAT	API80 ANTH (1-289aa)
API80ANTH-R	AATTTAAGGCGGCCCTATTCTTCTCTTAGGGTATTTAGATG	API80 ANTH (1-289aa)
hSNX9-PXBAR-F	ATAAGGATCCACCTCTACTTTTGTACTGTGTGGTAGCA	SNX9-PXBAR (human 247-595aa)
hSNX9-PXBAR-R	ATAACTCGAGCTACATCACTGGAAAGCGGCTGAG	SNX9-PXBAR (human 247-595aa)
hSNX9-PX-R	ATAACTCGAGCTATCGGAAATTTAGGAACTGCTGGAAACT	SNX9-PX (human 247-357aa)
hSNX9-BAR-F	ATAAGGATCCGATGAGAAGGAATGGAAAAGCTGGAAAGAGG	SNX9-BAR-(human 358-595aa)
hPXBAR-LF	ATAAGGATCCGATGACAGCGGCGCTCAGCGA	SNX9-PXBAR (human 185-595aa)
Arf6-V4QL5E-NdeI-F	CATCCCATATGGGGAAGCAGGAATCCAAAATCTTCGGGAACAAG	pET-21b
Arf6-V4QL5E-EcoRI-F	GTACGAATTCATGGGGAAGCAGGAATCCAAAATCTTCGGGAACAAG	pcHAMK and pEGFP-3
Arf6-V4QL5E-NotI-R	AAAATGCGGCCCGCAGATTTGTAGTTAGAGGTTAACCATGTGAGCC	pcHAMK
Arf6-V4QL5E-BamHI-R	ACTGGGATCCAGATTTGTAGTTAGAGGTTAACCATGTGAGCC	pEGFP-N3
Arf1-I4QF5E-NdeI-F	AATCCCATATGGGGAACCAAGAAGCCAACCTCTTCAAGGGCCTT	pET-21b
Arf1-I4QF5E-EcoRI-F	AAACGAATTCATGGGGAACCAAGAAGCCAACCTCTTCAAGGGCCTT	pcHAMK and pEGFP-N3
Arf1-I4QF5E-NotI-R	AAAATGCGGCCCGCCTTCTGGTTCCGGAGCTGATTGGACAG	pcHAMK
Arf1-I4QF5E-BamHI-R	AATGGGATCCCTTCTGGTTCCGGAGCTGATTGGACAG	pEGFP-N3 and pcHAMK
EGFP-Arf1I4Q-F	AAACGAATTCATGGGGAACCAATTCGCCAACCTCTTC	pEGFP-N3 and pcHAMK
EGFP-Arf1F5Q-F	AAACGAATTCATGGGGAACATCCAAGCCAACCTCTTC	pEGFP-N3 and pcHAMK
EGFP-Arf1L8Q-F	AAACGAATTCATGGGGAACATCTTCGCCAACCAATTCAGGGCCTT	pEGFP-N3 and pcHAMK
EGFP-Arf1F9Q-F	AAACGAATTCATGGGGAACATCTTCGCCAACCTCCAAAAGGGCCTTTT	pEGFP-N3 and pcHAMK
EGFP-Arf14Q5Q-F	CCACGAATTCATGGGGAACCAACAAGCCAACCTCTTCAAG	pEGFP-N3 and pcHAMK
EGFP-Arf18Q9Q-F	AAACGAATTCATGGGGAACATCTTCGCCAACCAACAAAAGGGCCTTTT	pEGFP-N3 and pcHAMK
pET21b-Arf1 L8QF9E-F-NheI	AATCCCATATGGGGAACATCTTCGCCAACCAAGAGAAGGGCCTTTT	pET21b
pET21b-Arf6 I8QF9E-F-NheI	CATCCCATATGGGGAAGGTGCTATCCAAACAGGAGGGGAACAAGGAA	pET21b
Arf1 L8QF9E-F	AAACGAATTCATGGGGAACATCTTCGCCAACCAAGAGAAGGGCCTTTT	pEGFP-N3 and pcHAMK
Arf6 I8QF9E-F	CATCCCATATGGGGAAGGTGCTATCCAAACAGGAGGGGAACAAGGAA	pEGFP-N3 and pcHAMK
Arf6-V4Q-F	GTACGAATTCATGGGGAAGCAGCTATCCAAAATCTTC	pEGFP-N3 and pcHAMK
Arf6-L5Q-F	GTACGAATTCATGGGGAAGGTGCAATCCAAAATCTTCGG	pEGFP-N3 and pcHAMK
Arf6-I8Q-F	GTACGAATTCATGGGGAAGGTGCTATCCAAACAATTCGGGAACAAGG	pEGFP-N3 and pcHAMK
Arf6-F9Q-F	GTACGAATTCATGGGGAAGGTGCTATCCAAAATCCAAGGGAACAAGGAA	pEGFP-N3 and pcHAMK
Arf6-4Q5Q-F	GTACGAATTCATGGGGAAGCAGCAATCCAAAATCTTCGG	pEGFP-N3 and pcHAMK
Arf6-8Q9Q-F	GTACGAATTCATGGGGAAGGTGCTATCCAAACAACAAGGGAACAAGGAA	pEGFP-N3 and pcHAMK
pET21b-Arf1L8QF9Q-F	AATCCCATATGGGGAACATCTTCGCCAACCAACAAAAGGGCCTTTT	pET21b
pET21b-Arf6I8QF9Q-F	CATCCCATATGGGGAAGGTGCTATCCAAACAACAAGGGAACAAGGAA	pET21b

8.3 List of abbreviations

Amp	Ampicillin
AP	alkaline phosphate
APS	ammonium persulfate
ARF	ADP-ribosylation factor
AP-2	Adaptor (Assembly) protein 2
16-BAC	benzyltrimethyl- <i>n</i> -hexadecyl-ammonium chloride
BCA	bicinchoninic acid
BCIP	5-bromo-4-chloro-3-indolyl-phosphate
BFA	Brefeldin A
BSA	bovine serum albumin
CHC	Clathrin heavy chain
CIP	calf intestine alkaline phosphatase
DAPI	4',6-diamidino-2-phenylindole
dH ₂ O	distilled water
DIV	day <i>in vitro</i>
DMSO	dimethylsulfoxid
DNA	deoxyribonucleic acid
dNTP	deoxynucleosidetriphosphate
DTT	Dithiothreitol
EB	ethidium bromide
<i>E.Coli</i>	<i>Escherichia coli</i>
EDTA	ethylenediaminetetraacetic acid
EEA1	Early endosome antigen 1
EGTA	ethylene glycol tetraacetic acid
EM	electron microscopy
EPR	electro paramagnetic resonance
ER	endoplasmic reticulum
ES	embryonic stem
<i>et al</i>	and others (et alii)
FAD	flavin adenine dinucleotide
FBS	fetal bovine serum
FCS	fetal calf serum
FRET	fluorescent resonance electron transfer
g	acceleration of gravity
Goat α Mouse	goat against mouse
Goat α Rabbit	goat against rabbit
GAP	GTPase activating protein
GEF	guanine nucleotide-exchange factor
GDP	Guanosine-5'-diphosphate
GGA	Golgi localized, gamma-adaptin ear containing, ARF-binding
GFP	Green fluorescence protein
GPI	glycosylphosphatidylinositol
GSDB	goat serum dilution buffer
GSH	glutathione
GST	glutathione S-transferase
GTP	Guanosine-5'-triphosphate
GTP γ S	Guanosine-5'-O-(3-thiotriphosphate)
HA	hemagglutinin

HEPES	4-(2-hydroxyethyl) piperazine-1-ethanesulfonic acid
His6	6× histidine tag
HRP	horse radish peroxidase
IB	immunoblot
IF	immunofluorescence
IgG	immunoglobulin G
IPTG	isopropyl-β-D-thiogalactopyranoside
Kan	Kanamycin
l	liter
LB	Luria-Bertani
LUV	large unilamellar vesicle
m	milli
μ	micro
M	molar
mA	milliampere
min	minute
n	nano
NBT	nitro blue tetrazolium
NCBI	National Center of Biotechnology Information
NMR	nuclear magnetic resonance
OD	optical density
PAGE	polyacrylamide gel-electrophoresis
PBS	Phosphate-buffered salt
PCR	polymerase chain reaction
PFA	paraformaldehyde
pH	preponderance of hydrogen ions
PH	pleckstrin homology
PIPKIγ	phosphatidylinositol-4-phosphate-5-kinase I gamma
PMSF	phenylmethylsulphonylfluoride
RFP	red fluorescence protein
SV2	synaptic vesicle 2
2-ME	2-mercaptoethanol
MβCD	methyl-β-cyclodextrin
MPa	mega pascal
P2	synaptosomes
PA	phosphatidic acid
PC	phosphatidylcholine
PE	phosphatidylethanolamine
PFA	paraformaldehyde
PI	phosphatidylinositol
PS	phosphatidylserine
PI(4,5)P ₂	phosphatidylinositol (4,5)-bisphosphate
PI(4)P	phosphatidylinositol 4-monophosphate
PI(3)P	phosphatidylinositol 3-monophosphate
RabbitαMouse	rabbit against mouse
rpm	rounds per minute
RT	room temperature
SDS	sodium dodecyl sulfate
sec	second
SNARE	soluble NSF-attachment proteins
SP2	crude synaptic vesicle
Taq	Thermus aquaticus

TBE	Tris-boronacid-EDTA
TBS	Tris buffered saline
TEMED	N,N,N,N-tetramethylenediamin
TFA	trifluoroacetic acid
TGN	trans-Golgi network
TM	trademark
Tris	Tris-(hydroxymethyl)-aminoethan
Triton X-100	octylphenol ethylene oxide condensate
UV	ultraviolet
V	Volt
W	Watt
w/o	without
WT	wild type