

Table S4: Systems level analysis of functional clustering of proteins modified in degenerating synapses (networks identified as statistically significant clusters [P<0.05], IPA analysis)

	Functional Annotation	Number of Proteins	% of Candidate List	Proteins
Disease/Disorder	Neurological Disorder	35	54.7	ABLIM1, ALDH1A1, ANK3, CALB2, CLTB, CNP, DARS, DCLK1, DNAJC5, DNAJC6, GAD1, GAD2, GLO1, GRM3, HIBCH, HTT, HUWE1, IGSF8, INA, INPP4A, MYO5A, NAGA, NAPG, NRCAM, PDP1, PDXK, PEX14, PIP5K1C, PRKAR2B, PSMD13, ROCK2, SGTA, SPTBN2, UBR4, WDR7
	Metabolic Disorder	24	37.5	ABLIM1, ALDH1A1, ANK3, ANKFY1, ASAH1, DCLK1, DMXL2, DPYSL5, EPB41L1, GAD2, GRM3, HIBCH, HTT, IVD, MCCC2, NAGA, NIF3L1, NRCAM, OLA1, PDP1, PEX14, PHGDH, TLN1, WDR7
	Movement disorder	11	17.2	ANK3, CNP, GAD2, MYO5A, PDP1, PDXK, PRKAR2B, ROCK2, SGTA, UBR4, WDR7
	Alzheimer's Disease	11	17.2	ANK3, CNP, DARS, GAD2, GRM3, HTT, IGSF8, PEX14, PRKAR2B, PSMD13, WDR7
	Neuromuscular Disease	10	15.6	CNP, GAD2, MYO5A, PDP1, PDXK, PRKAR2B, ROCK2, SGTA, UBR4, WDR7
	Huntington's Disease	5	7.8	GAD2, MYO5A, PDP1, ROCK2, SGTA
	Parkinson's Disease	5	7.8	CNP, PDXK, PRKAR2B, UBR4, WDR7
Schizophrenia	5	7.8	CLTB, CNP, GAD1, GAD2, PRKAR2B	
Cellular Process	Synaptic Transmission	7	10.9	CNP, DNAJC5, GAD1, GAD2, GRM3, HTT, MYO5A
	Neurogenesis	7	10.9	ACSL6, DCLK1, DPYSL4, DPYSL5, GDA, HTT, PLXNA4
	Modification of Amino Acids	7	10.9	CFL1, DCLK1, GAD1, GAD2, PDP1, PRKAR2B, ROCK2
	Guidance of Axons	6	9.4	ABLIM1, ANK3, DPYSL5, KIF5C, NFASC, NRCAM
	Formation of Filaments	6	9.4	CFL1, CNP, HTT, INA, ROCK2, TLN1
	Development of Neurites	5	7.8	CNP, DCLK1, PHGDH, PIP5K1C, ROCK2
	Assembly of Filaments	5	7.8	CFL1, CNP, HTT, ROCK2, TLN1
	Biogenesis of Cytoskeleton	5	7.8	CFL1, CNP, INA, ROCK2, TLN1
	Inhibition of Apoptosis	5	7.8	CFL1, GLO1, HTT, NOL3, PDXK
	Exocytosis	4	6.3	DNAJC5, HTT, MYO5A, PIP5K1C
	Transport of Vesicles	4	6.3	HTT, MYO5A, NAPG, SPTBN2
	Movement of Neurons	4	6.3	CFL1, DCLK1, GAD1, PIP5K1C
	Biogenesis of Synapse	3	4.7	ANK3, MYO5A, NFASC
	Quantity of Phosphatidylinositol Diphosphate	3	4.7	INPP4A, PIP5K1C, ROCK2
	Formation of Vesicles	3	4.7	HTT, PIP5K1C, ROCK2
	Import of Protein	3	4.7	CFL1, HTT, PEX14
	Biogenesis of Actin Cytoskeleton	3	4.7	CFL1, ROCK2, TLN1
	Proliferation of Neurons	3	4.7	ACSL6, CFL1, CNP
	Neurodegeneration	3	4.7	CNP, DNAJC5, HTT
	Development of Axons	3	4.7	CNP, DCLK1, PIP5K1C