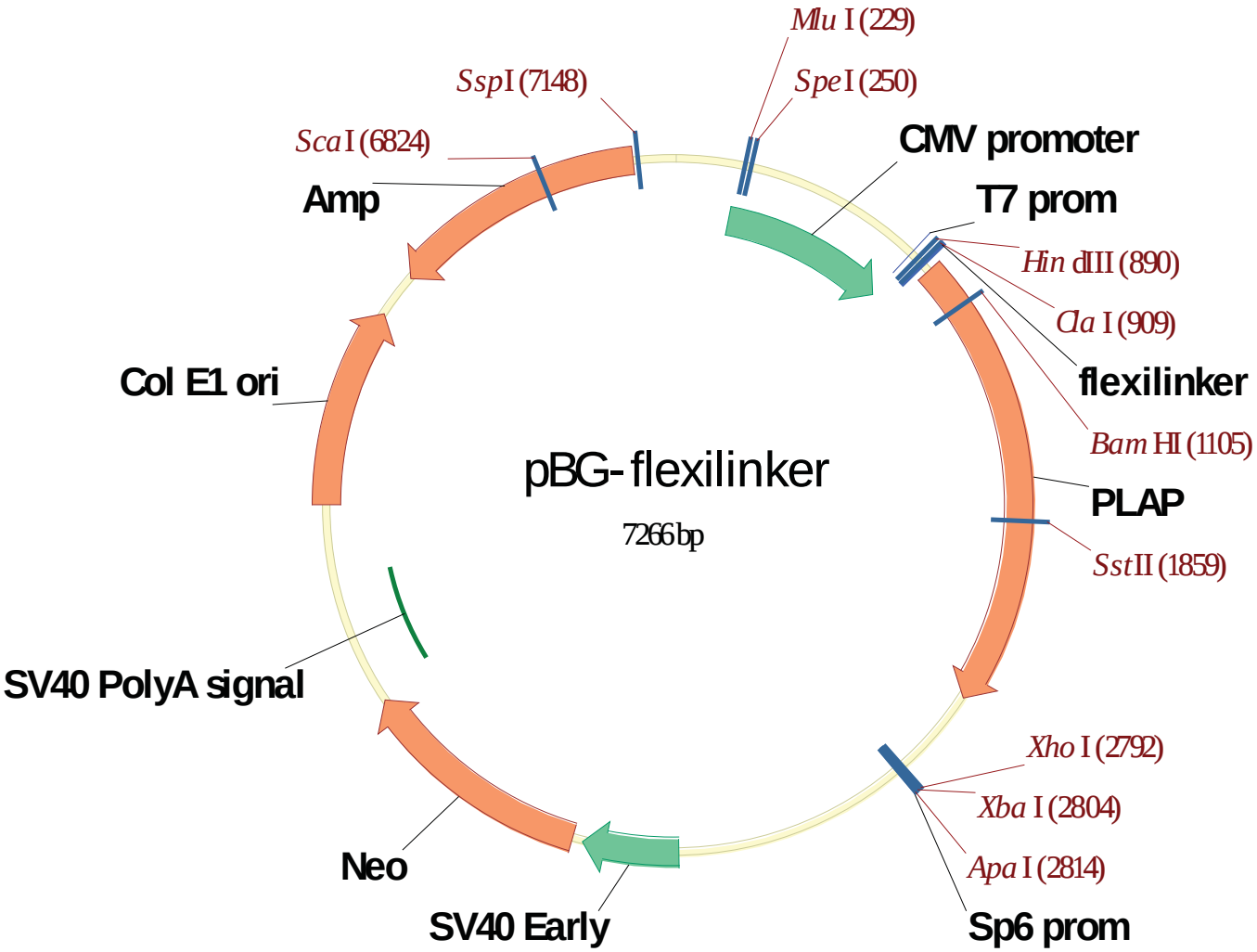
Chesini *et al.*

Supplementary Material

Figure S1. Schematic representation of the pBG-flexilinker vector used to generate RAP *in situ* probes. The plasmid backbone, enabling propagation in bacteria (Amp, Col E1 ori), and the resistance cassette that allows stable selection in mammalian cells (SV40 early, Neo, SV40 polA signal) are indicated. The CMV promoter will drive expression of PLAP fusion proteins resulting from insertion of coding sequences in between HindIII and ClaI sites. The nucleotide and amino acid sequence details of the region spanning the insertion site, the flexible linker region and the fusion point with PLAP are shown in detail below the map. Unique restriction sites are displayed only (positions are indicated in between brackets).

Figure S2. The binding of BR7ecto226 probe to the mouse cerebellum is not altered by the PTPBR7 extracellular domain itself. Increasing amounts of BR7ecto226-His protein were mixed with fixed amounts of the BR7ecto226 probe. Molar ratios BR7ecto226 / BR7ecto226-His were respectively 1/0 (A), 1/5 (B), 1/11 (C). (D) Comparative staining with the sole PLAP containing conditioned medium after normalization for PLAP activity. Bar = 1 mm. E) Quantification of staining intensity in white matter (wm) was performed as described in Materials and Methods. Average mean gray values are shown and results (n=6 except for ratio 1/5 where n=5) are presented as Mean ± S.D. No significant decrease in average gray values was observed, except when using the sole PLAP containing medium (p=0.003).



flexilinker

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          S  L  P   R  S  G   S  I  G  G   G  G  S   G  G  G   G  S  P  I
889   AAGCTTGCCC AGATCTGGAT CGATCGGCGG AGGAGGTTCC GGAGGTGGCG GTTCACCGAT
      HindIII                 ClaI
          I  P  V   E  E  E   N  P  D  F   W  N  R   E  A  A   E  A  L  G
949   CATCCCAGTT GAGGAGGAGA ACCCGGACTT CTGGAACCGC GAGGCAGCCG AGGCCCTGGG

          A  A  K   K  L  Q   P  A  Q  T   A  A  K   N  L  I   I  F  L  G
1009  TGCCGCCAAG AAGCTGCAGC CTGCACAGAC AGCCGCCAAG AACCTCATCA TCTTCCTGGG

          D  G  M   G  V  S   T  V  T  A   A  R  I
1069  CGATGGGATG GGGGTGTCTA CGGTGACAGC TGCCAGGATC C
                                          BamHI
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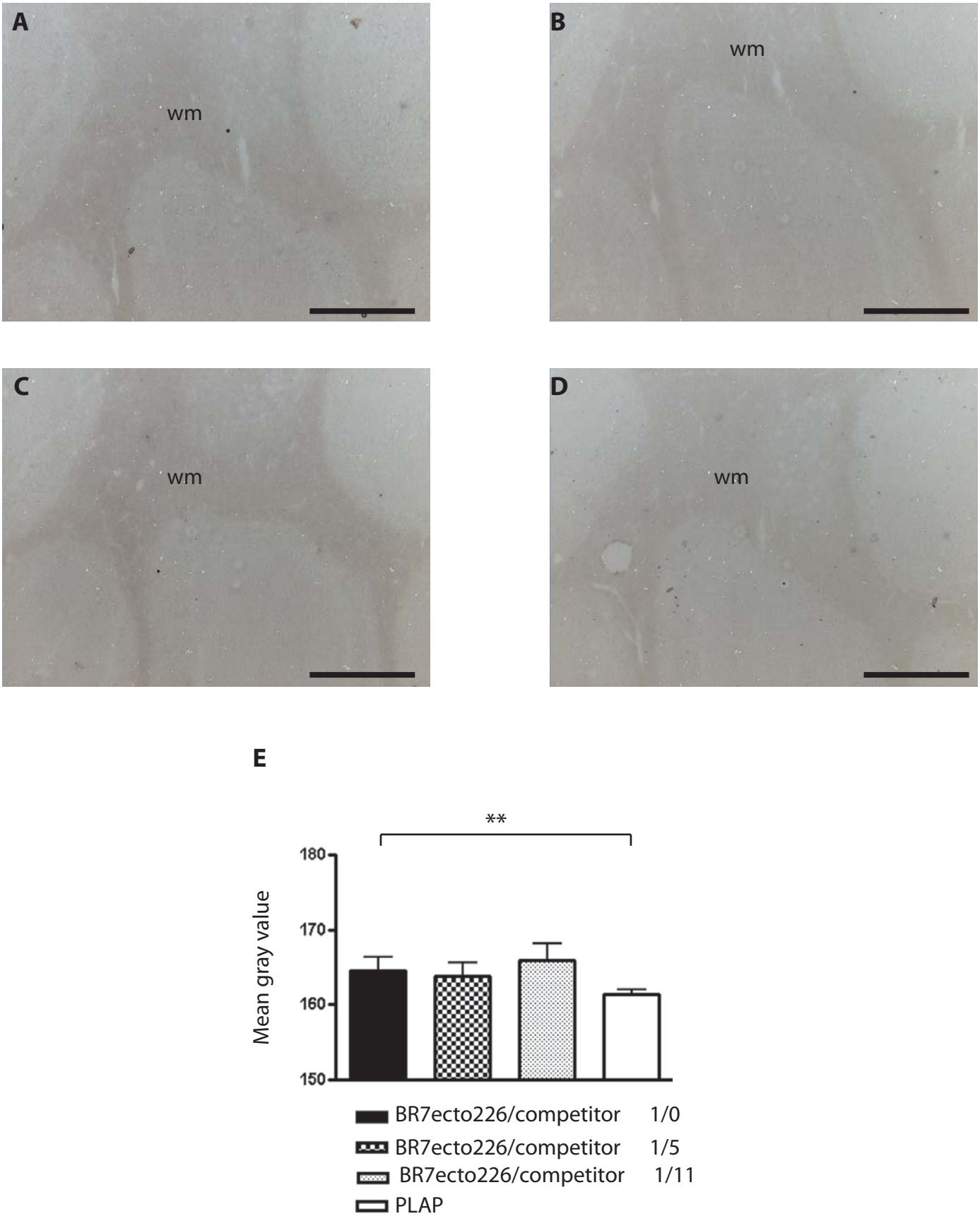
Chesini *et al.*, Supplementary Figure S1



Chesini *et al.*, Figure S2

Table S1. Mascot scores for proteins identified by LC-ESI-FT-MS/MS that were affinity-purified from brain lysates.

Mascot results compiled from experiment:	A	A	A	B	B	B
Sample name	Empty beads	BR7ecto	RPTPmu	Empty beads	BR7ecto	RPTPmu
Actin, cytoplasmic 1 OS=Mus musculus GN=Actb PE=1 SV=1	1193	992	1237	1740	2212	800
Tubulin alpha-1A chain OS=Mus musculus GN=Tuba1a PE=1 SV=1	3919	605	190	875	687	627
Tubulin beta-4 chain OS=Mus musculus GN=Tubb4 PE=1 SV=3	7362	598	0	1117	727	0
Tubulin beta-3 chain OS=Mus musculus GN=Tubb3 PE=1 SV=1	6474	568	0	1124	744	698
Tubulin beta-2C chain OS=Mus musculus GN=Tubb2c PE=1 SV=1	8624	549	0	1232	732	663
Tubulin beta-5 chain OS=Mus musculus GN=Tubb5 PE=1 SV=1	7411	528	0	1129	765	599
Tubulin beta-2A chain OS=Mus musculus GN=Tubb2a PE=1 SV=1	9102	435	84	1216	569	404
Myelin basic protein OS=Mus musculus GN=Mbp PE=1 SV=2	3025	280	137	1162	840	956
Beta-actin-like protein 2 OS=Mus musculus GN=Actbl2 PE=2 SV=1	659	229	0	0	689	249
Thy-1 membrane glycoprotein OS=Mus musculus GN=Thy1 PE=1 SV=1	0	157	51	80	116	43
Calcium/calmodulin-dependent protein kinase type II subunit alpha OS=Mus musculus GN=Camk2a PE=1 SV=2	0	153	69	38	200	45
Neuronal growth regulator 1 OS=Mus musculus GN=Negr1 PE=1 SV=1	0	147	62	97	62	0
Creatine kinase B-type OS=Mus musculus GN=Ckb PE=1 SV=1	2073	133	0	84	0	0
Receptor-type tyrosine-protein phosphatase R OS=Mus musculus GN=Ptprr PE=1 SV=1	0	117	0	0	952	0
Limbic system-associated membrane protein OS=Mus musculus GN=Lsamp PE=1 SV=1	0	104	0	43	74	40
Guanine nucleotide-binding protein G(o) subunit alpha OS=Mus musculus GN=Gnao1 PE=1 SV=3	0	85	0	0	139	0
Neurotrimin OS=Mus musculus GN=Ntm PE=2 SV=2	0	77	0	0	31	0
Guanine nucleotide-binding protein G(z) subunit alpha OS=Mus musculus GN=Gnaz PE=2 SV=2	0	73	0	0	0	0
Dihydropyrimidinase-related protein 2 OS=Mus musculus GN=Dpysl2 PE=1 SV=2	3598	72	0	71	107	0
ATP synthase subunit alpha, mitochondrial OS=Mus musculus GN=Atp5a1 PE=1 SV=1	235	59	0	170	0	97
Hemoglobin subunit epsilon-Y2 OS=Mus musculus GN=Hbb-y PE=1 SV=2	50	58	0	31	50	40
Elongation factor 1-alpha 1 OS=Mus musculus GN=Eef1a1 PE=1 SV=3	0	53	0	94	143	0
Ubiquitin OS=Mus musculus GN=Rps27a PE=1 SV=1	91	52	0	85	107	151
Histone H2A type 1-F OS=Mus musculus GN=Hist1h2af PE=1 SV=3	63	52	0	128	376	92
Myosin regulatory light chain 12B OS=Mus musculus GN=Myl12b PE=1 SV=2	0	48	0	129	67	0
N6-adenosine-methyltransferase 70 kDa subunit OS=Mus musculus GN=Mettl3 PE=2 SV=2	0	38	51	51	58	65
Desmoglein-1-alpha OS=Mus musculus GN=Dsg1a PE=2 SV=2	0	35	37	38	0	64
Heat shock cognate 71 kDa protein OS=Mus musculus GN=Hspa8 PE=1 SV=1	1144	34	0	169	196	0
Sodium/potassium-transporting ATPase subunit beta-1 OS=Mus musculus GN=Atp1b1 PE=1 SV=1	484	33	0	51	42	53
Tomoregulin-1 OS=Mus musculus GN=Tmeff1 PE=2 SV=1	0	33	54	0	0	0
Usher syndrome type-1C protein-binding protein 1 OS=Mus musculus GN=Ushbp1 PE=1 SV=1	0	32	0	31	0	0
Arf-GAP with SH3 domain, ANK repeat and PH domain-containing protein 2 OS=Mus musculus GN=Asap2 PE=1 SV=3	0	31	41	0	37	0
Histone H2B type 1-A OS=Mus musculus GN=Hist1h2ba PE=2 SV=3	0	31	0	32	0	35
V-type proton ATPase 116 kDa subunit a isoform 1 OS=Mus musculus GN=Atp6v0a1 PE=1 SV=2	0	0	0	90	319	65
Contactin-1 OS=Mus musculus GN=Cntn1 PE=1 SV=1	0	0	102	142	233	0
V-type proton ATPase subunit d 1 OS=Mus musculus GN=Atp6v0d1 PE=1 SV=2	0	0	0	127	222	0
Myosin-10 OS=Mus musculus GN=Myh10 PE=1 SV=2	0	0	132	906	193	0
Sodium/potassium-transporting ATPase subunit alpha-2 OS=Mus musculus GN=Atp1a2 PE=1 SV=1	0	0	74	511	192	0
Serum albumin OS=Mus musculus GN=Alb PE=1 SV=3	0	0	0	0	158	61
Glyceraldehyde-3-phosphate dehydrogenase OS=Mus musculus GN=Gapdh PE=1 SV=2	558	0	69	366	158	108
Transcriptional activator protein Pur-alpha OS=Mus musculus GN=Pura PE=1 SV=1	0	0	0	76	122	0
Microtubule-associated protein 1A OS=Mus musculus GN=Map1a PE=1 SV=2	94	0	0	0	114	0
Heterogeneous nuclear ribonucleoproteins A2/B1 OS=Mus musculus GN=Hnrnpa2b1 PE=1 SV=2	0	0	0	0	97	0

Nuclear fragile X mental retardation-interacting protein 2 OS=Mus musculus GN=Nufip2 PE=1 SV=1	0	0	0	113	77	130
Eukaryotic initiation factor 4A-I OS=Mus musculus GN=Eif4a1 PE=2 SV=1	0	0	0	0	75	0
Peroxiredoxin-2 OS=Mus musculus GN=Prdx2 PE=1 SV=3	291	0	57	59	73	57
Hemoglobin subunit alpha OS=Mus musculus GN=Hba PE=1 SV=2	93	0	70	58	70	0
Calmodulin OS=Mus musculus GN=Calm1 PE=1 SV=2	128	0	0	0	66	0
Neurofilament light polypeptide OS=Mus musculus GN=Nefl PE=1 SV=5	0	0	0	72	62	0
Alpha-internexin OS=Mus musculus GN=Ina PE=1 SV=2	0	0	0	125	55	0
Ermin OS=Mus musculus GN=Ermn PE=1 SV=1	65	0	0	0	52	0
Myosin light polypeptide 6 OS=Mus musculus GN=Myl6 PE=1 SV=3	0	0	0	34	50	0
ATP synthase subunit beta, mitochondrial OS=Mus musculus GN=Atp5b PE=1 SV=2	2199	0	0	214	48	0
Alpha-centractin OS=Mus musculus GN=Actr1a PE=2 SV=1	90	0	0	52	45	37
Actin-related protein 2 OS=Mus musculus GN=Actr2 PE=1 SV=1	90	0	0	52	45	37
Nuclear pore complex protein Nup93 OS=Mus musculus GN=Nup93 PE=2 SV=1	0	0	0	0	44	0
Annexin A2 OS=Mus musculus GN=Anxa2 PE=1 SV=2	0	0	0	0	44	0
Brain acid soluble protein 1 OS=Mus musculus GN=Basp1 PE=1 SV=3	77	0	0	0	44	0
Neural cell adhesion molecule 1 OS=Mus musculus GN=Ncam1 PE=1 SV=3	0	0	0	0	43	0
Syntaxin-binding protein 1 OS=Mus musculus GN=Stxbp1 PE=1 SV=2	143	0	0	112	41	
Phosphate carrier protein, mitochondrial OS=Mus musculus GN=Slc25a3 PE=1 SV=1	0	0	0	55	41	75
Rod cGMP-specific 3~,5~-cyclic phosphodiesterase subunit beta OS=Mus musculus GN=Pde6b PE=2 SV=2	0	0	0	0	41	0
Histone H4 OS=Mus musculus GN=Hist1h4a PE=1 SV=2	0	0	0	0	40	0
N-acylglucosamine 2-epimerase OS=Mus musculus GN=Renbp PE=2 SV=2	0	0	0	33	38	0
Excitatory amino acid transporter 2 OS=Mus musculus GN=Slc1a2 PE=1 SV=1	177	0	0	0	36	0
Triosephosphate isomerase OS=Mus musculus GN=Tpi1 PE=1 SV=3	321	0	0	103	36	0
Ubiquitin-like modifier-activating enzyme 1 OS=Mus musculus GN=Uba1 PE=1 SV=1	0	0	0	0	36	0
Tripartite motif-containing protein 39 OS=Mus musculus GN=Trim39 PE=2 SV=1	0	0	0	0	36	0
Tubulin polymerization-promoting protein OS=Mus musculus GN=Tppp PE=1 SV=1	794	0	0	0	36	0
Nuclear receptor subfamily 6 group A member 1 OS=Mus musculus GN=Nr6a1 PE=1 SV=1	0	0	0	0	36	0
Cleavage and polyadenylation specificity factor subunit 1 OS=Mus musculus GN=Cpsf1 PE=1 SV=1	0	0	0	0	34	0
Glyceraldehyde-3-phosphate dehydrogenase, testis-specific OS=Mus musculus GN=Gapdhs PE=1 SV=1	0	0	0	0	33	0
ADP/ATP translocase 1 OS=Mus musculus GN=Slc25a4 PE=1 SV=4	31	0	0	37	33	0
Anaphase-promoting complex subunit 1 OS=Mus musculus GN=Anapc1 PE=1 SV=1	34	0	41	0	33	31
Voltage-gated potassium channel subunit beta-1 OS=Mus musculus GN=Kcnab1 PE=2 SV=1	0	0	0	0	32	0
Synaptotagmin-like protein 2 OS=Mus musculus GN=Sytl2 PE=1 SV=2	0	0	0	0	32	0
Enhancer of polycomb homolog 1 OS=Mus musculus GN=Epc1 PE=2 SV=1	0	0	0	0	31	0
FCH and double SH3 domains protein 2 OS=Mus musculus GN=Fchsd2 PE=1 SV=2	0	0	0	32	31	32
Titin OS=Mus musculus GN=Ttn PE=1 SV=1	0	0	0	0	30	0

Table S1. Mascot scores for proteins identified by LC-ESI-FT-MS/MS that were affinity-purified from brain lysates using BR7ecto226-His (BR7ecto) as bait. Also scores for proteins identified in control isolates, using the His-tagged RPTPμ ectodomain (RPTPmu) as bait or nickel beads alone (Empty beads), are listed for two independent experiments (A, B). Data displayed on a green background, which concern proteins that had Mascot scores above 60 and that did not purify in control isolates, are discussed in the text.