

**Table S2.** Training set of 217 peptides, derived from the C-termini of mouse proteins. Peptides are arranged within 13 classes. The first column indicates the name of the protein from which the peptide was derived, the second column indicates the last 10 residues of the peptide sequence, and the third column indicates whether or not an interaction was observed with the peptide by fluorescence polarization.

Name	Sequence	FP-positive
<b>Previously Reported PDZ Ligands</b>		
AN2	PALRNGQYWV	Yes
APC	HSGSYLVTSV	
Aquaporin 4	DSSGEVLSSV	Yes
ASIC2	ALGTLEEIAC	
Caspr2	IDESKKEWLI	Yes
Cav2.2	YHHPDQDHC	
Cftr	TEEEVQETRL	Yes
c-KIT	TQPLLVHEDA	
Claudin 1	PTPSSGKDYV	Yes
Cnksr2	HTHSYIETHV	Yes
Connexin-43	SRPRPDDLEI	Yes
CRIPT	DTKNYQTSV	Yes
CtBP1	ADRDHTSDQL	
Dlgap1/2/3	IYIPEAQTRL	Yes
EphA7_1	LHLHGTGIQV	Yes
EphB2	QMNQIQSVEV	Yes
Ephrin B1/2	QSPANIYYKV	Yes
ErbB4	VAQGATAEMF	Yes
Frizzled	TNSKQGETTV	Yes
GluR1	SGMPLGATGL	Yes
GluR2_1	NVYGIESVKI	Yes
GluR5_1	RRTQRKETVA	Yes
Glycophorin C	GDTSKKEYFI	Yes
GRK6	DSEELPTRL	Yes
Htr2c	NVVSERISSV	Yes
JAM-1	EFKQTSSFLV	Yes
KIF17	SKNSFGGEPL	Yes
KIF1B	NLKAGRETTV	Yes
Kir2.1	PRPLRRESEI	Yes
Kv1.4	SNAKAVETDV	Yes
L-glutaminase	LSKENLESMV	Yes
Liprin- 2	DNSTVRYTYS	
Megalin	ANLVKEDSDV	Yes
Mell1a/b	NNNLIKVDSV	Yes
mGluR3	EVL DSTTSSL	Yes
Na/Pi cotransporter	LPAHHNATRL	Yes
Nav1.4	VRPGVKESLV	Yes
Nav1.5	SPDRDRESIV	Yes
Neurexin 1/2	KKNKDKEYYV	Yes

Name	Sequence	FP-positive
NMDAR2A	KKMPSIESDV	Yes
NMDAR2B	EKLSSIESDV	Yes
P2Y1	EFKQNGDTSL	Yes
Parkin	ACMGDHWFDV	Yes
PDGFR	PLAEAE DSFL	Yes
PFK-M	SRKRSGEAAV	Yes
PIX	NDPAWDETNL	Yes
PKC	FVHPILQSAV	Yes
PMCA1	SPLHSLETSL	Yes
Ril	VYPNAKVELV	Yes
Sapk3	GARVPKETAL	Yes
SSTR2	SGAEDI IAWV	Yes
Stargazin	NTANRRRTPV	Yes
Syndecan 1	KPTKQEEFYA	Yes
Syndecan 2	QKAPTKEFYA	Yes
TAZ	NKSEPFLLTWL	Yes
Trip6	ELSATVTTDC	
TRPC4	AHEDYVTTTL	Yes
<b>Activin Receptors</b>		
AcvR1	NSLDKLTDC	
AcvR2	VDFPPKESSL	Yes
AcvR2b	VDLLPKESSI	Yes
<b>Calcium Channels</b>		
Cacna1a	AYSESEDDWC	Yes
Cav1.2	ADSRSYVSNL	Yes
Cav2.3	LSDTEEDDKC	
Cav3.2	APDDSGDEPV	
ITPR3	FVDVQNCMSR	
RYR2	FRKQYEDQLN	
SERCA1	KFIARNYLEG	
SERCA2A	NYLEQPAILE	
SERCA3	RGESPVWPSD	
TPC1	GSRQRSQTVT	
<b>Claudins</b>		
Claudin 2	FNSYSLTGYV	Yes
Claudin 3	GTAYDRKDYV	Yes
Claudin 4	ARSVPASNYV	Yes
Claudin 5	NGDYDKKNYV	Yes
Claudin 6	PSEYPTKNYV	Yes

Name	Sequence	FP-positive
Claudin 7	PKSNSKEYV	Yes
Claudin 8	PSIYSKSQYV	Yes
Claudin 9	ASGLDKRDYV	Yes
Claudin 10	SKQFDKNAYV	Yes
Claudin 11	SPTHAKSAHV	Yes
Claudin 13	SGANNDTLDV	
Claudin 14	HSGYRLNDYV	Yes
Claudin 15	FGKYGKNAYV	Yes
Claudin 16	AKMYAVDTRV	Yes
Claudin 18	QSHPTKYDYV	Yes
Claudin 19	GPSTAAREYV	Yes
Claudin 22	LELKQANPEI	
Claudin 23	QNSLPCDSDL	Yes
<b>Ephrins</b>		
Ephrin B3	QSPPNLYYKV	Yes
<b>Glutamate Receptors</b>		
GluR2_2	GMNVSVTDLS	
GluR2_3	PKGTSLGWVE	
GluR3	NVYGTESVKI	
GluR5_2	IRTQPSVHTV	Yes
GluRdelta1	ALDTSHGTSI	Yes
GluRdelta2	GNDPDRGTSI	Yes
KA-2	TGPRELTEHE	
mGluR1	RDYKQSSSTL	Yes
NMDAR1	LQLCSRHRES	
NMDAR2C	RRISSESEV	Yes
NMDAR2D	AHFSSLESEV	Yes
NMDAR3B	RLHHAAPAES	
<b>Neuroligins</b>		
Neuroigin 1	PKQATYKRCE	
Neuroigin 2	LPHPHSTTRV	Yes
Neuroigin 3	VPMVGPTDLF	
<b>Neurexins</b>		
Caspr4	VGENQKEYFF	Yes
Neurexin 3	QKNKDKEYYV	Yes
Neurexin 4	PQILEESRSE	
<b>Potassium Channels</b>		
CNGA2	INTPEPAVAE	
CNGA3	ENSEDASKTD	
KCNAB2	KPYSKKDYRS	
KCNE1	THLPELKPLS	
KCNE4_1	RQAEGLVSIC	Yes

Name	Sequence	FP-positive
KCNE4_2	GSSENIHQNS	
KCNH1	ESDRDIFGAS	
KCNK3	RGLMKRRSSV	
KCNK4_1	LEDFIKAMAI	
KCNK4_2	GRLRDKAVPV	Yes
KCNK5	YNKADNPRGT	
KCNK6	GPEREAPRSA	
KCNK7	APVLGPTTPA	
KCNQ2	PGTFRVTSQL	
KCNQ3	SIWTPSNKPT	
Kir2.2	VRPYRRESEI	Yes
Kir3.1	LRKMNSDRFT	
Kir3.2_1	EGIVEATGQF	
Kir3.2_2	VANLENESKV	Yes
Kir3.2_3	NPEELTERNG	
Kir3.3	LPPPESESKV	
Kir3.4	SVSQATRGS	
Kir4.1	SALSVRISNV	Yes
Kir4.2	RSLLLQQSNV	Yes
Kir5.1	LNRISMESQM	
Kir6.1	PEGNQCPSES	
Kir6.2	KFSISPDSLS	
Kv1.1	VNKSLLTDV	Yes
Kv1.2	VNITKMLTDV	Yes
Kv1.3	VNIKKIFTDV	Yes
Kv1.5	CLDTSRETDL	Yes
Kv1.6	YAEKRMLTEV	Yes
Kv1.7	PAGKHMVTEV	Yes
Kv2.1	AHGSTRDQSI	Yes
Kv3.1	GRKPLRGMSI	Yes
Kv3.3_1	RAPPTLPSIL	
Kv3.3_2	FGERDSETQV	Yes
Kv4.1	LPETVKISSL	Yes
Kv4.2	GGNIVRVSAL	Yes
Kv6.3	SRSLSAEFLN	
Kv8.1	RSSGGDDFWF	
Kv9.1	PREPAKSHSY	
KVLQT1	VPQTGPDEGS	
<b>Receptor Tyrosine Kinases</b>		
AXL	PAPPQEDGA	
CSF-1R	LLQPNNYQFC	
DDR1	FLADDALNTV	Yes
DDR2	HLLLLQQGAE	
EGFR	APPSSEFIGA	Yes
EphA1	ILCSIQGFKD	
EphA2	DQVNTVGIPI	
EphA3	TQSKNGPVPV	Yes

Name	Sequence	FP-positive
EphA4	QQMHGRMVPV	
EphA5	VQMVNGMVPV	
EphA6	MHIQEKGFBV	Yes
EphA7_2	LVTNEHLSVL	
EphB3	QMNQTLFPVQV	Yes
EphB4	GGTGGPAQQF	
EphB6_1	HLRQPGSVEV	Yes
EphB6_2	FTEHSRPEVC	
EphB6_3	PQGELSSQLS	
ErbB2	PEYLGLDVPV	
FGFR2	YPHINGSVKT	
FGFR3	GPPSNGGPRT	
FGFR4	PFPFSDSQTT	
IRR	YSAPNGGPGH	
PDGFRa_1	SSDLVEDSFL	Yes
PDGFRa_2	HSGKYDLSVV	
PTK7	LGDSPADSKQ	
RET	AAKLMDTFDS	
ROR1	HTESMISAEV	Yes
ROR2	TEAAHVQLEA	
Ros-1	AHREHGDVSE	
RYK	EFHAALGAYV	Yes
TIE1	AGIDATAEEA	
TIE2	GIDCSAEAAA	
TrkA	APPSYLDVLG	
TYRO3	QQGLLPHSSC	
VEGFR2	SGTTLRSPPV	
VEGFR3	GSTFFADSSY	
<b>Semaphorins</b>		
Sema3a	HEFERAPRSV	
Sema3b	ERGPRSAAHW	
Sema3f	RNRRHHPPDT	
Sema4a	DNNHLGAEVA	

Name	Sequence	FP-positive
Sema4b	LGSEIRDSVV	Yes
Sema4c	PDSNPEESSV	Yes
Sema4f	PLATCDETSI	Yes
Sema5a	FTDLNNYDEY	
Sema6a	TSMKPNDACT	
Sema6b	TGERTAPPVP	
Sema6c	PAPHGGHFNF	Yes
<b>Sodium Channels</b>		
Nav1.6	RQKEVRESKC	
Nav1.9b	DVPKIKVHCD	
Nav2	EEKASIQTQI	Yes
NHE1	EGEPFIPKGQ	
<b>Syndecans</b>		
Syndecan 3	KPDKQEEFYA	Yes
<b>TRP Channels</b>		
TRPC1	SKYAMFYPRN	
TRPC2	EGDLETKGES	
TRPC3	KLNPSVLRCE	
TRPC5	GQEEQVTRRL	Yes
TRPC6	LEPKLEESRR	
TRPM3	DPAEHPPFYSV	Yes
TRPM4	VSVRKQSGSC	
TRPM5	SQPLLETGST	
TRPM6	RSSLEDHTRL	Yes
TRPM7	EATNSVRLML	Yes
TRPM8	LLKEIANNIK	
TRPP2	SGNGSANVHA	
TRPV3	ELDEFPETSV	Yes
TRPV4	PKWRTDDAPL	
TRPV6	EDGEGWEYQI	Yes