Supporting Information

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Fig. S1. Anti-pTrkB^{Y515} does not cross react with TrkA in hippocampus. Coimmunoprecipitation was used to evaluate the specificity of the pTrkB^{Y515} antisera used in localization studies. Acute hippocampal slices were homogenized and protein levels were normalized before incubation with anti-rabbit pTrkB^{Y515} (overnight at 4 °C). Control samples were incubated with IgG. Immunocomplexes were then incubated with protein A agarose (80µl/mL; Upstate) for 2 h at 4 °C, washed, collected through centrifugation with Spin Filters and Collection Tubes (CytoSignal) and eluted in reducing sample buffer. Samples were processed for Western blot analysis using rabbit antisera against TrkA or TrkB. As shown, immunoprecipitation with anti-phospho-TrkB^{Y515} (+) or IgG (–) pulldown immunoreactivity for TrkB (see 145 kDa band, *Right*) but not TrkA (*Left*).



Fig. S2. Open field environment used for behavioral testing. Illustration of the Plexiglas test chamber containing a enclosed dark compartment (about 1/5 of the whole chamber). Floor and wall dimensions are 91.4 cm long, 45.7 cm wide, and 40.6 cm high. The top of the chamber is open and objects on the wall of the test room wall are visible from within the chamber. The same test system was used in Fig. 1. Artwork by Anita Y. Chen.



Fig. S3. TrkB and pTrk^{Y490} immunoreactivity have similar distributions in hippocampus and are localized to postsynaptic elements. (*A* and *B*) (*Left*) Low magnification view of assembled high power photomicrographs shows immunolabeling for TrkB (*A*) and pTrk (*B*) across str. oriens (so), str. pyramidale (sp), str. radiatum (sr), str. lacunosum moleculare (slm), dentate str. moleculare (sm), str. granulosum (sg), and hilus (h) in an adult rat hippocampal slice. (Scale bar: 100 μ m.) (*A* and *B*) (*Right*) High power image of the area within the white box on left shows immunolabeling for total TrkB and pTrk^{Y490}, in *A* and *B*, respectively. (Scale bar: 20 μ m.) (*C*) Immunostaining for pTrkB (red), the excitatory synaptic scaffold protein PSD95 (green) and the merged image of the two (Merge) in proximal str. radiatum of hippocampal field CA1b, shows that pTrk^{Y490} is localized in a subpopulation of PSD95+ postsynaptic elements (colocalized puncta appear yellow in the Merge image). (Calibration, 10 μ m.)



Fig. 54. Src immunoreactivity is punctate and concentrated in postsynaptic elements. (*A*) Immunostaining for total Src in stratum radiatum of hippocampal field CA1 of an adult rat hippocampal slice. Photomicrographs show distributions of Src (red), PSD95 (green), and overlapped immunolabeling (yellow shows colocalization in the Merge, arrows). (Scale bar: 10 μm.) (*B*) Immunostaining for pSrc^{Y418} in stratum radiatum of hippocampal field CA1. Photomicrographs show distributions of pSrc^{Y418} (red), PSD95 (green), and overlapped immunolabeling (yellow in Merge, arrows). (Scale bar: 10 μm.)