

Neuronal Scaffold Proteins Antibody Sampler Kit



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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
PSD95 (D27E11) XP [®] Rabbit mAb	3450	40 µl	95 kDa	Rabbit IgG
Homer1 Antibody	8231	40 µl	46 kDa	Rabbit
SHANK2 Antibody	12218	40 µl	165 kDa	Rabbit
Spinophilin (E1E7R) Rabbit mAb	14136	40 µl	130 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Neuronal Scaffold Proteins Antibody Sampler Kit provides an economical means of evaluating four major scaffolding proteins. The kit includes enough primary antibody to perform four western blot experiments.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Background

Scaffold proteins are composed of protein-interaction domains that tether multiple components of a signaling pathway to form signal transduction complexes. This organization of signaling molecules can help enhance signaling specificity and speed. Scaffold proteins are central components in neuronal synapses, where dynamic trafficking of synaptic proteins occurs. Mutations in scaffold proteins could have significant impact on synaptic structure and function. Postsynaptic density protein 95 (PSD95) is a member of the membrane-associated guanylate kinase (MAGUK) family of proteins and a scaffolding protein involved in the assembly and function of the postsynaptic density complex (1,2). SHANK proteins act as scaffolds at the neuronal post-synaptic density (PSD), where they play a critical role in PSD assembly of excitatory synapses during development (3,4). While recruitment of SHANK proteins to the synapse is independent of their interaction with Homer (5), proper synaptic targeting of SHANK1 is mediated by interactions between its PDZ domain and PSD proteins (6). Homer proteins (1-3) are scaffolds, composed of an EVH protein-binding domain, a coiled-coil domain and a leucine zipper domain. The EVH domain is a protein-protein binding module that binds to the proline-rich motifs of G-protein-coupled receptors (GPCRs), inositol 1,4,5-triphosphate (IP3) receptors (IP3Rs), ryanodine receptors, and TRP channels (7,8). The coiled-coil and the leucine zipper domains cause multimerization of Homers and assemble signaling proteins complexes. Spinophilin is a protein phosphatase 1 regulatory protein that interacts with a large number of proteins, including ion channel components and G-protein-coupled receptors (GPCRs). Spinophilin also interacts with actin filaments; phosphorylation of spinophilin at Ser94 and Ser177 disrupts this interaction (9,10).

Background References

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