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Monoclonal Antibody to DLG4 / PSD95 - Purified

Alternate names:	DLGH4, Disks large homolog 4, PSD-95, Postsynaptic density protein 95, SAP-90, SAP90, Synapse-associated protein 90
Catalog No.:	SM5003P
Quantity:	0.1 ml
Concentration:	1.0 mg/ml
Background:	Post Synaptic Density 95 kDa (PSD-95), also known as synapse associated protein 90 kDa (SAP90), is one of a family of membrane-associated proteins found in the postsynaptic density in forebrain neurons and certain presynaptic structures in the cerebellum. Like other members of the family, PSD-95 has three 90 amino acid repeats called PDZ domains followed by an SH3 domain and a yeast guanylate kinase homology (GuK) domain. PSD-95 is believed to participate in the clustering of certain proteins, including NMDA receptors, Shaker-type potassium channels at the synaptic membrane in central nervous system (CNS) neurons. There are two principal modes of interaction between PSD-95 and other proteins. NMDA receptors and shaker-type potassium channels both share C-terminal sequence homology consisting of a threonine/serine-X-valine-COOH (T/SXV) motif. Other neuronal proteins that share this motif (beta 1 adrenergic receptor, some serotonin receptors, some sodium channel subunits, and additional potassium channel subunits), and some of these proteins may interact with PSD-95 by binding to its PDZ domains. Neuronal nitric oxide synthase (nNOS), which lacks the T/SXV motif but which has its own PDZ domain, has been shown to associate with PSD-95 in vitro through a pseudo-homotypic PDZ-PDZ interaction.
Uniprot ID:	Q62108
NCBI:	NP_001103222.1
GeneID:	13385
Host / Isotype:	Mouse / IgG2a
Recommended Isotype Controls:	AM03096PU-N
Clone:	7E3-1B8
Immunogen:	Purified recombinant rat PSD-95.
Format:	**State:** Liquid purified IgG fraction. **Buffer System:** PBS buffer with 0.05% Sodium Azide as preservative.
Applications:	Immunoprecipitation. Immunocytochemistry (1/200). Immunofluorescence (1/200): Staining of PSD-95 in rat hippocampal cells with this antibody yields a staining pattern coincident with NMDA receptor; fixation with cold methanol is recommended.

Western Blot (1/2000): Detects an ~95 kDa protein representing PSD-95 from rat brain extracts.
Flow Cytometry (2 µg/test).
Immunohistochemistry on frozen sections.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody detects Post Synaptic Density 95 kDa (PSD-95).
Species: Human, Xenopus, Mouse and Rat.
Other species not tested.

Storage: Store the antibody undiluted (in aliquots) at -20°C.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Gomperts SN. Clustering membrane proteins: It's all coming together with the PSD-95/SAP90 protein family. Cell. 1996 Mar 8;84(5):659-62. PubMed PMID: 8625403.
2. Stöhr H, Stojic J, Weber BH. Cellular localization of the MPP4 protein in the mammalian retina. Invest Ophthalmol Vis Sci. 2003 Dec;44(12):5067-74. PubMed PMID: 14638699.
3. Colledge M, Snyder EM, Crozier RA, Soderling JA, Jin Y, Langeberg LK, et al. Ubiquitination regulates PSD-95 degradation and AMPA receptor surface expression. Neuron. 2003 Oct 30;40(3):595-607. PubMed PMID: 14642282.
4. Cuadra AE, Kuo SH, Kawasaki Y, Bredt DS, Chetkovich DM. AMPA receptor synaptic targeting regulated by stargazin interactions with the Golgi-resident PDZ protein nPIST. J Neurosci. 2004 Aug 25;24(34):7491-502. PubMed PMID: 15329396.
5. Takahashi H, Sekino Y, Tanaka S, Mizui T, Kishi S, Shirao T. Drebrin-dependent actin clustering in dendritic filopodia governs synaptic targeting of postsynaptic density-95 and dendritic spine morphogenesis. J Neurosci. 2003 Jul 23;23(16):6586-95. PubMed PMID: 12878700.
6. Prange O, Wong TP, Gerrow K, Wang YT, El-Husseini A. A balance between excitatory and inhibitory synapses is controlled by PSD-95 and neuroligin. Proc Natl Acad Sci U S A. 2004 Sep 21;101(38):13915-20. Epub 2004 Sep 9. PubMed PMID: 15358863.

Pictures:

Figure 1. Immunofluorescence staining of PSD-95 using SM5003P.