

## DESCRIPTION

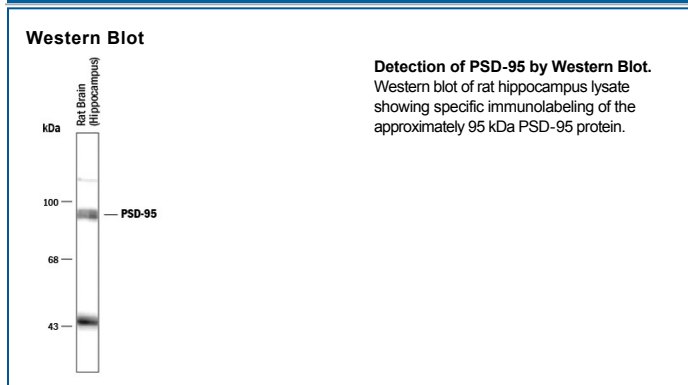
<b>Species Reactivity</b>	Human/Mouse/Rat
<b>Specificity</b>	Human, mouse, and rat ~95 kDa PSD-95 in Western blots.
<b>Source</b>	Polyclonal Rabbit IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	PSD-95
<b>Formulation</b>	100 mL in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 mg/mL BSA and 50% glycerol. See Certificate of Analysis for details.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1:1000 dilution	See Below

## DATA



## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	For long-term storage, $\leq -20^{\circ}$ C is recommended. Product is stable at $\leq -20^{\circ}$ C for at least 1 year.

## BACKGROUND

PSD-95 (postsynaptic density-95 kDa; also SAP90) is a 95 kDa member of the MAGUK (membrane-associated guanylate kinase) family of molecules. It is a multidomain protein that serves as a scaffold, or anchor, for the organization of structural and signal transduction pathways in neurons. It is capable of forming multimers, generating large complexes that impact the size and strength of synapses. The molecule is highly conserved across species, being 99% amino acid identical, human to rodent. In rats, PSD-95 is 724 amino acids (aa) in length, and contains three consecutive 80 aa PDZ domains (aa 65 - 393), followed by an SH3 domain (aa 432-490) and a C-terminal guanylate kinase domain (aa 534-709). The PDZ (PSD/Disks-large/ZO-1) domains in PSD-95 are globular structures that bind NMDA receptor subunits and neuroligin (a transmembrane intercellular neuron adhesion molecule). The SH3 domain binds proline-rich motifs on enzymes, and may interact with either kainate receptor subunits or SHANK, another scaffold protein. The guanylate kinase binds microtubules-associated protein and kainate receptor subunits. PSD-95 is regulated by palmitoylation on C3 and C5. When present, palmitate promotes AMPA receptor clustering and neurotransmission. Phosphorylation also regulates PSD-95 activity. Both S290 and S295 are known to be phosphorylated. These modifications are suggested to retain PSD-95 in the synapse and/or regulate PDZ interactions with target proteins.

### References:

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- Kim, E. and M. Sheng (2004) *Nat. Rev. Neurosci.* **5**:771.
- Hata, Y. and Y. Takai (1999) *Cell. Mol. Life Sci.* **56**:461.
- Fukata, M. *et al.* (2004) *Neuron* **44**:987.
- Sabio, G. *et al.* (2004) *Biochem. J.* **380**:19.
- Jaffe, H. *et al.* (2004) *Biochem. Biophys. Res. Commun.* **321**:210.