

MSD® PSD-95 Kit

For quantitative determination in human, mouse, and rat whole cell lysate samples



Alzheimer's Disease
BioProcess
Cardiac
Cell Signaling
Clinical Immunology
Cytokines
Growth Factors
Hypoxia
Immunogenicity
Inflammation
Metabolic
Oncology
Toxicology
Vascular

Catalog Numbers

PSD-95 Kit	
Kit Size	Catalog #
1 plate	K150QND-1
5 plates	K150QND-2
25 plates	K150QND-4

Ordering Information

MSD Customer Service
Phone: 1-301-947-2085
Fax: 1-301-990-2776
Email: CustomerService@mesoscale.com
www.mesoscale.com/support

Scientific Support

Phone: 1-301-947-2025
Email: ScientificSupport@mesoscale.com
www.mesoscale.com/support

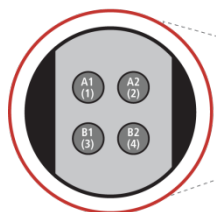
Company Address

MESO SCALE DISCOVERY®
A division of
Meso Scale Diagnostics, LLC.
1601 Research Boulevard
Rockville, MD 20850-3173 USA

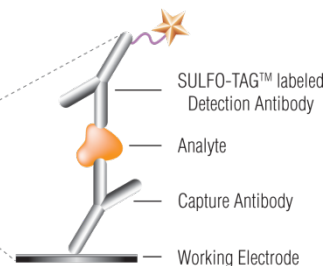
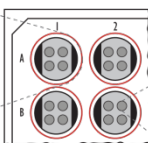
www.mesoscale.com®

For Research Use Only.
Not for use in
diagnostic procedures.

1. PSD-95
2. BSA blocked
3. BSA blocked
4. BSA blocked



MSD MULTI-SPOT®
96-Well 4-Spot Plate

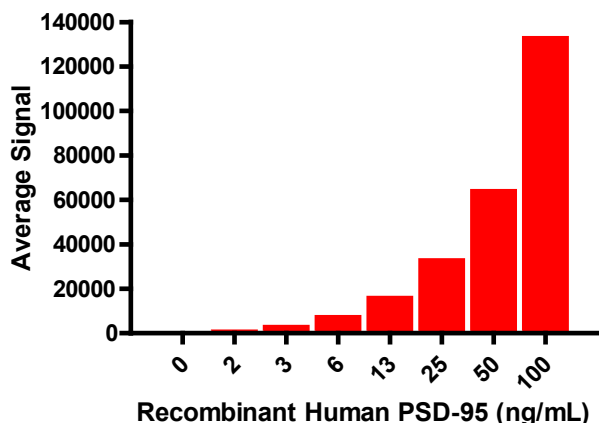


Postsynaptic density protein 95 (PSD-95), also known as SAP-90 (synapse-associated protein 90), belongs to a class of proteins referred to as MAGUKs (membrane-associated guanylate kinases).¹ Canonical MAGUK proteins contain one or three PDZ (PSD-95/discs large/zona occludens-1) domains, an SH3 domain, and a guanylate kinase homology domain. PSD-95 and several other MAGUK and PDZ containing proteins (e.g., PSD-93, SAP-97, SAP-102, MALS/Veli proteins) are enriched in the post synaptic density.^{2,3} These proteins appear to regulate synaptic function by acting as molecular scaffolds for signaling machinery at synapses, in part by interaction of their PDZ domains with carboxy-terminal T/SXV motifs present on synaptic proteins including NMDA receptors and Shaker type K⁺ channels. PSD-95 has also been shown to link NMDA receptors to neuronal nitric oxide synthetase (nNOS), a downstream signal transduction protein, via a novel PDZ:PDZ interaction with nNOS.⁴ PSD-95 interacts with the cytoplasmic tail of NMDA receptor subunits and shaker-type potassium channels, which is important for synaptic plasticity associated with NMDA receptor signaling. Overexpression or depletion of PSD-95 changes the ratio of excitatory to inhibitory synapses in hippocampal neurons. PSD-95 has been associated with autism, drug addiction, learning, and memory. Phosphorylation is critical for the regulation of PSD-95 function.³ The MSD PSD-95 assay is available on 96-well, 4-spot plates. This datasheet outlines the performance of the assay.

Typical Data

Representative results for the PSD-95 Kit are illustrated below. The signal and ratio values provided are examples; individual results will vary depending upon the samples tested.

This assay was developed using recombinant human PSD-95 protein (data shown below) as well as with mouse brain tissue lysates (data not shown). Recombinant protein or mouse brain tissue lysates were added to MSD MULTI-SPOT® 4-spot plates coated with anti-PSD-95 antibody on one of the four spatially distinct electrodes in each well. PSD-95 was detected with anti-PSD-95 antibody conjugated with MSD SULFO-TAG™ label.



Concentration (ng/mL)	PSD-95 Recombinant Protein		
	Average Signal	StdDev	%CV
0	71	7	9.9
1.6	2,726	146	5.3
3.1	4,853	111	2.3
6.3	9,269	171	1.8
13	17,959	277	1.5
25	34,839	1,024	2.9
50	66,028	1,032	1.6
100	134,827	1,485	1.1

Figure 1. Sample data generated with the PSD-95 Kit. Increased signal is observed with the titration of recombinant human PSD-95 protein.

For a complete list of products, please visit our website at www.mesoscale.com.

MSD Phosphoprotein Assays

The MSD Advantage

- **Multiplexing:** Multiple analytes can be measured in one well using typical sample volumes of 25 μ L or less without compromising speed or performance
- **Large dynamic range:** Linear range of up to five logs enables the measurement of native levels of biomarkers in normal and diseased samples without multiple dilutions
- **Minimal background:** The stimulation mechanism (electricity) is decoupled from the response (light signal), minimizing matrix interference
- **Simple protocols:** Only labels bound near the electrode surface are excited, enabling assays with fewer washes
- **Flexibility:** Labels are stable, non-radioactive, and conveniently conjugated to biological molecules

References

1. McGee AW and Bredt DS. Identification of an intramolecular interaction between the SH3 and guanylate kinase domains of PSD-95. J Biol Chem. 1999 Jun 18;274(25):17431-6.
2. Jo K, et al. Characterization of MALS/Velis-1, -2, and -3: a family of mammalian LIN-7 homologs enriched at brain synapses in association with the postsynaptic density-95/NMDA receptor postsynaptic complex. Genes Dev J Neurosci. 1999 Jun 1;19(11):4189-99.
3. Ziff EB. Enlightening the postsynaptic density. Neuron. 1997 Dec;19(6):1163-74.
4. Karen S, et al. PSD-95 Assembles a Ternary Complex with the N-Methyl-D-aspartic Acid Receptor and a Bivalent Neuronal NO Synthase PDZ Domain. J Biol Chem. 1999 Sep 24;274(39):27467-73.

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