

Anti-PSD95 Picoband Antibody

Catalog # ABO12488

Product Information

Application	WB, IHC-P
Primary Accession	P78352
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Disks large homolog 4(DLG4) detection. Tested with WB, IHC-P in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	1742
Other Names	Disks large homolog 4, Postsynaptic density protein 95, PSD-95, Synapse-associated protein 90, SAP-90, SAP90, DLG4, PSD95
Calculated MW	80495
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 μ g/ml, Human, By Heat Western blot, 0.1-0.5 μ g/ml, Human, Rat
Subcellular Localization	Cell membrane ; Peripheral membrane protein . Cell junction, synapse, postsynaptic cell membrane, postsynaptic density . Cell projection, axon . Cell junction, synapse . High levels in postsynaptic density of neurons in the forebrain. Also in presynaptic region of inhibitory synapses formed by cerebellar basket cells on axon hillocks of Purkinje cells.
Tissue Specificity	Brain.
Source	Eukaryota
Protein Name	Disks large homolog 4
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na ₂ HPO ₄ , 0.05mg NaN ₃ .
Immunogen	E.coli-derived human PSD95 recombinant protein (Position: H581-L724). Human PSD95 shares 100% amino acid (aa) sequence identity with both mouse and rat PSD95.

Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins.
Storage	At -20 °C for one year. After r ° Constitution, at 4 °C for one month. It ° Can also be aliquotted and stored frozen at -20 °C for a longer time.Avoid repeated freezing and thawing.

Protein Information

Name	DLG4 (HGNC:2903)
Synonyms	PSD95
Function	Postsynaptic scaffolding protein that plays a critical role in synaptogenesis and synaptic plasticity by providing a platform for the postsynaptic clustering of crucial synaptic proteins. Interacts with the cytoplasmic tail of NMDA receptor subunits and shaker-type potassium channels. Required for synaptic plasticity associated with NMDA receptor signaling. Overexpression or depletion of DLG4 changes the ratio of excitatory to inhibitory synapses in hippocampal neurons. May reduce the amplitude of ASIC3 acid-evoked currents by retaining the channel intracellularly. May regulate the intracellular trafficking of ADR1B. Also regulates AMPA-type glutamate receptor (AMPA) immobilization at postsynaptic density keeping the channels in an activated state in the presence of glutamate and preventing synaptic depression (By similarity). Under basal conditions, cooperates with FYN to stabilize palmitoyltransferase ZDHHC5 at the synaptic membrane through FYN-mediated phosphorylation of ZDHHC5 and its subsequent inhibition of association with endocytic proteins (PubMed: 26334723).
Cellular Location	Cell membrane; Lipid-anchor; Cytoplasmic side. Postsynaptic density {ECO:0000250 UniProtKB:P31016}. Synapse Cytoplasm {ECO:0000250 UniProtKB:P31016}. Cell projection, axon {ECO:0000250 UniProtKB:P31016}. Cell projection, dendritic spine {ECO:0000250 UniProtKB:P31016}. Cell projection, dendrite {ECO:0000250 UniProtKB:P31016}. Presynapse {ECO:0000250 UniProtKB:P31016}. Note=High levels in postsynaptic density of neurons in the forebrain. Also in presynaptic region of inhibitory synapses formed by cerebellar basket cells on axon hillocks of Purkinje cells. Suppression of neuronal activity induces synaptic accumulation and clustering of DLG4. {ECO:0000250 UniProtKB:P31016}
Tissue Location	Brain.

Background

DLG4 discs large homolog 4, also known as PSD95 or SAP-90, is a protein that in humans is encoded by the DLG4 gene. It is a member of the membrane-associated guanylate kinase (MAGUK) family. This gene is mapped to 17p13.1. DLG4 can heteromultimerize with another MAGUK protein, DLG2, and is recruited into NMDA receptor and potassium channel clusters. These two MAGUK proteins may interact at postsynaptic sites to form a multimeric scaffold for the clustering of receptors, ion channels, and associated signaling proteins. Overexpression of DLG4 in hippocampal neurons could drive maturation of glutamatergic synapses. DLG4 can orchestrate synaptic development and it has a role in synapse stabilization and plasticity. Ubiquitination of DLG4 through an MDM2-mediated pathway can regulate AMPA receptor surface expression during synaptic plasticity.

Images

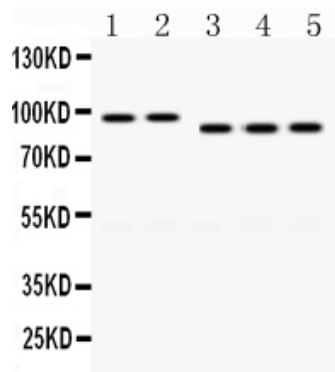


Figure 1. Western blot analysis of PSD95 using anti-PSD95 antibody (ABO12488). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1: Rat Skeletal Muscle Tissue Lysate, Lane 2: Rat Cardiac Muscle Tissue Lysate, Lane 3: HELA Whole Cell Lysate, Lane 4: A549 Whole Cell Lysate, Lane 5: 293T Whole Cell Lysate. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PSD95 antigen affinity purified polyclonal antibody (Catalog # ABO12488) at 0.5 μ g/mL overnight at 4 $^{\circ}$ C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for PSD95 at approximately 95, 85KD. The expected band size for PSD95 is at 95, 80KD.

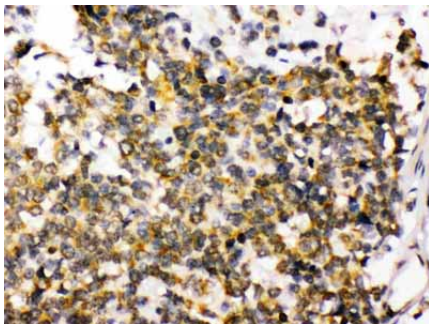


Figure 2. IHC analysis of PSD95 using anti-PSD95 antibody (ABO12488). PSD95 was detected in paraffin-embedded section of Human Glioma Tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 μ g/ml rabbit anti-PSD95 Antibody (ABO12488) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

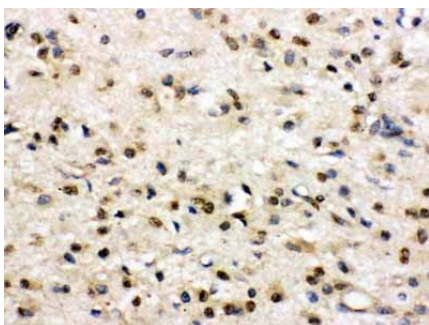
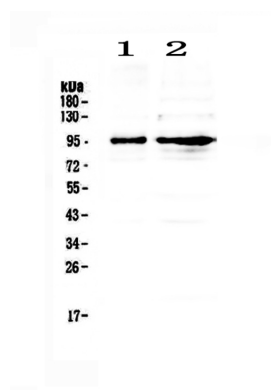


Figure 3. IHC analysis of PSD95 using anti-PSD95 antibody (ABO12488). PSD95 was detected in paraffin-embedded section of Human Glioma Tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 μ g/ml rabbit anti-PSD95 Antibody (ABO12488) overnight at 4 $^{\circ}$ C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37 $^{\circ}$ C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) with DAB as the chromogen.

Figure 4. Western blot analysis of PSD95 using anti-PSD95 antibody (ABO12488). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1: rat brain tissue lysates, Lane 2: mouse brain tissue lysates. After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane



was incubated with rabbit anti- PSD95 antigen affinity purified polyclonal antibody (Catalog # ABO12488) at 0.5 μ g/mL overnight at 4 °C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for PSD95 at approximately 95KD. The expected band size for PSD95 is at 80KD.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.