

Shank 3 (E-1): sc-377470

BACKGROUND

SH3 and multiple ankyrin repeat domains 1-3 (Shank1-3) of the Shank/ProSAP family are molecular scaffolds in the postsynaptic density (PSD). The PSD is an electron-dense structure underneath the postsynaptic plasma membrane of excitatory synapses that anchors and clusters glutamate receptors opposite to the presynaptic neurotransmitter release site. Shank proteins contain PDZ modular domains that coordinate the synaptic localization of ion channels, receptors, signaling enzymes, and cell adhesion molecules. The PDZ domain mediates protein-protein interactions via the recognition of a conserved sequence motif at the C-terminus of their target protein(s). Shank recruits β PIX and PAK to spines to regulate postsynaptic structure and interacts with NMDA receptor and metabotropic glutamate receptor complexes. Transcript splice variation in the Shank family influences the spectrum of Shank-interacting proteins in the PSDs of adult and developing brain to ensure normal development.

CHROMOSOMAL LOCATION

Genetic locus: SHANK3 (human) mapping to 22q13.33; Shank3 (mouse) mapping to 15 E3.

SOURCE

Shank 3 (E-1) is a mouse monoclonal antibody raised against amino acids 1431-1590 mapping near the C-terminus of isoform 2 of Shank 3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Shank 3 (E-1) is recommended for detection of Shank 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Shank 3 siRNA (h): sc-42200, Shank 3 siRNA (m): sc-42201, Shank 3 siRNA (r): sc-270274, Shank 3 shRNA Plasmid (h): sc-42200-SH, Shank 3 shRNA Plasmid (m): sc-42201-SH, Shank 3 shRNA Plasmid (r): sc-270274-SH, Shank 3 shRNA (h) Lentiviral Particles: sc-42200-V, Shank 3 shRNA (m) Lentiviral Particles: sc-42201-V and Shank 3 shRNA (r) Lentiviral Particles: sc-270274-V.

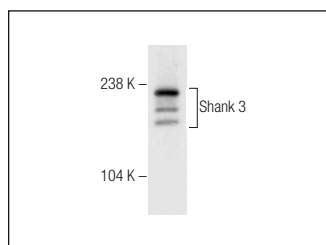
Molecular Weight of Shank 3: 180 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

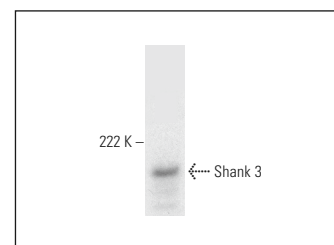
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Shank 3 (E-1): sc-377470. Western blot analysis of Shank 3 expression in mouse brain tissue extract.



Shank 3 (E-1): sc-377470. Western blot analysis of Shank 3 expression in rat brain tissue extract.

SELECT PRODUCT CITATIONS

- Huang, M., et al. 2019. Metabotropic glutamate receptor 5 signalling induced NMDA receptor subunits alterations during the development of morphine-induced antinociceptive tolerance in mouse cortex. *Biomed. Pharmacother.* 110: 717-726.
- Vaden, J.H., et al. 2019. Chronic over-expression of ubiquitin impairs learning, reduces synaptic plasticity, and enhances GRIA receptor turnover in mice. *J. Neurochem.* 148: 386-399.
- Xu, Y., et al. 2022. Expression of SH3 and multiple ankyrin repeat domains protein 3 in mouse retina. *Front. Cell. Neurosci.* 16: 795668.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.