SANTA CRUZ BIOTECHNOLOGY, INC.

Shank 2 (A-11): sc-271834

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 βPIX 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.

REFERENCES

1. Lim, S., et al. 1999. Characterization of the Shank family of synaptic proteins. Multiple genes, alternative splicing, and differential expression in brain and development. J. Biol. Chem. 274: 29510-29518.
2. Sheng, M., et al. 2000. The Shank family of scaffold proteins. J. Cell Sci. 113: 1851-1856.
3. Tobaben, S., et al. 2000. The G protein-coupled receptor CL1 interacts directly with proteins of the Shank family. J. Biol. Chem. 275: 36204-36210.
4. Sala, C., et al. 2001. Regulation of dendritic spine morphology and synaptic function by Shank and Homer. Neuron 31: 115-130.

CHROMOSOMAL LOCATION

Genetic locus: SHANK2 (human) mapping to 11q13.3; Shank2 (mouse) mapping to 7 F5.

SOURCE

Shank 2 (A-11) is a mouse monoclonal antibody raised against amino acids 996-1110 mapping near the C-terminus of Shank 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Shank 2 (A-11) is available conjugated to agarose (sc-271834 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271834 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271834 PE), fluorescein (sc-271834 FITC), Alexa Fluor® 488 (sc-271834 AF488), Alexa Fluor® 546 (sc-271834 AF546), Alexa Fluor® 594 (sc-271834 AF594) or Alexa Fluor® 647 (sc-271834 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271834 AF680) or Alexa Fluor® 790 (sc-271834 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Shank 2 (A-11) is recommended for detection of Shank 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 2 siRNA (h): sc-42198, Shank 2 siRNA (m): sc-42199, Shank 2 shRNA Plasmid (h): sc-42198-SH, Shank 2 shRNA Plasmid (m): sc-42199-SH, Shank 2 shRNA (h) Lentiviral Particles: sc-42198-V and Shank 2 shRNA (m) Lentiviral Particles: sc-42199-V.

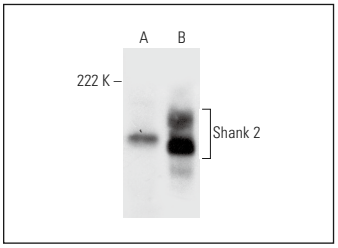
Molecular Weight of Shank 2 doublet: 165/180 kDa.

Positive Controls: IMR-32 whole cell lysate: sc-2409, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

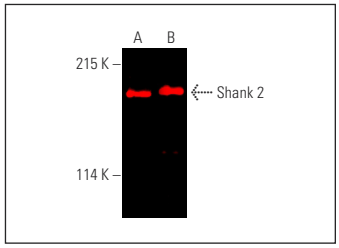
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 2 (A-11): sc-271834. Western blot analysis of Shank 2 expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.



Shank 2 (A-11): sc-271834. Near-infrared western blot analysis of Shank 2 expression in rat brain tissue extract (**A**) and IMR-32 whole cell lysate (**B**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Sasaki, K., et al. 2020. Shank 2 binds to aPKC and controls tight junction formation with Rap1 signaling during establishment of epithelial cell polarity. Cell Rep. 31: 107407.
2. Camillo, C., et al. 2021. LPHN2 inhibits vascular permeability by differential control of endothelial cell adhesion. J. Cell Biol. 220: e202006033.

STORAGE

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