abcam

ab94576

Anti-SHANK1 antibody [N22/21]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Protein within Rat Shank1 aa 450 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link Q9WV48
Clone number	N22/21
Purification technique	Affinity purification Protein G
Specificity	ab94576 does not react with SHANK2 and SHANK3
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Rat
Dilution info	1-10 µg/mL
Notes	-

Expected

Species	Human, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

Species	Human, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information SHANK1

Function	Seems to be an adapter protein in the postsynaptic density (PSD) of excitatory synapses that interconnects receptors of the postsynaptic membrane including NMDA-type and metabotropic glutamate receptors via complexes with GKAP/PSD-95 and Homer, respectively, and the actin-based cytoskeleton. Plays a role in the structural and functional organization of the dendritic spine and synaptic junction.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

The clone number has been updated from S22-21 to N22/21, both clone numbers name the same antibody clone.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	SHANK1 also known as SH3 and multiple ankyrin repeat domains protein 1 plays an important role in the structural organization of synapses. It is a scaffold protein found in postsynaptic density where it interacts with other molecules to maintain synaptic architecture. The protein has a molecular mass of approximately 240 kDa. Expression of SHANK1 is most abundant in the brain especially in the hippocampus and cortex where it is essential for establishing and stabilizing synaptic connections during neuronal development.
Biological function summary	SHANK1 participates in the formation of macromolecular complexes that are critical for synaptic signaling and plasticity. It forms complexes with other postsynaptic proteins including PSD-95 and Homer which together coordinate the organization of synaptic receptors and signaling molecules. This interaction determines synaptic strength and plays a role in the modulation of synaptic transmission influencing the communication between neurons.
Pathways	SHANK1 is involved in the glutamatergic synaptic transmission pathway which is important for neural communication and cognitive functions such as learning and memory. Through this pathway SHANK1 interacts with NMDA receptors and mGluR receptors facilitating the propagation of excitatory signals. It also connects with proteins like SAPAP and cortactin which help stabilize the synaptic complex influencing cytoskeletal dynamics and synaptic plasticity.
Associated diseases and disorders	SHANK1 has been implicated in autism spectrum disorders and schizophrenia where disrupted synaptic signaling plays an important role. Mutations in SHANK1 or its regulatory interactions can lead to altered neuronal connectivity and synaptic function which contribute to the pathology of these conditions. The protein's interaction with SHANK3 and other synaptic proteins like neuroligin emphasizes its role in synaptic disorders as these partners also participate in maintaining synaptic structure and function.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

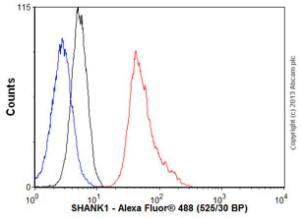
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

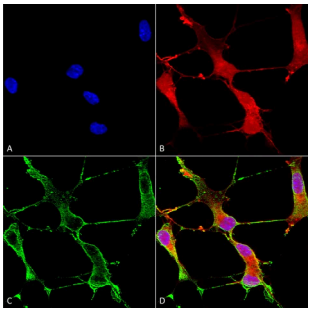
3 product images



Flow Cytometry - Anti-SHANK1 antibody [N22/21] (ab94576)

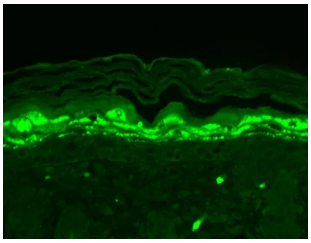
SHANK1 Flow Cytometry staining using mouse Anti-SHANK1 antibody

Overlay histogram showing SH-SH5Y cells stained with ab94576 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab94576, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in SH-SY5Y cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-SHANK1 antibody [N22/21] (ab94576)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed Neuroblastoma cells (SH-SY5Y) labeling SHANK1 with ab94576 at 1/50 dilution. Secondary antibody: AlexaFluor® 488 at 1/1000 dilution. (A) Hoechst (blue) nuclear stain. (B) Phalloidin-iFluor 647 (red) F-Actin stain. (C) SHANK1 Antibody (D) Composite. (A) Hoechst (blue) nuclear stain. (B) Phalloidin-iFluor 647 (red) F-Actin stain. (C) SHANK1 Antibody (D) Composite.



Immunohistochemistry paraffin embedded sections - Anti-SHANK1 antibody [N22/21] (ab94576)

SHANK1 Immunohistochemistry paraffin embedded sections staining using mouse Anti-SHANK1 antibody

paraffin-embedded, bouin's-fixed mouse backskin stained for SHANK1 using ab94576 at 1/100 dilution in immunohistochemical analysis. FITC Goat Anti-Mouse (green) at 1/50 dilution was used as the secondary antibody. Filaggrinlike staining (upper layer aggregations of staining) is observed.

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