

SHANK3 Antibody

Catalog # ASC11481

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9BYB0
Other Accession	NP_001073889 , 122937241
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	191338
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SHANK3 antibody can be used for detection of SHANK3 by Western blot at 1 μ g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 μ g/mL. For immunofluorescence start at 2.5 μ g/mL.

Additional Information

Gene ID	85358
Other Names	SH3 and multiple ankyrin repeat domains protein 3, Shank3, Proline-rich synapse-associated protein 2, ProSAP2, SHANK3, KIAA1650, PROSAP2, PSAP2
Target/Specificity	SHANK3; At least three alternatively spliced transcript isoforms of SHANK3 are known to exist.
Reconstitution & Storage	SHANK3 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	SHANK3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SHANK3
Synonyms	KIAA1650, PROSAP2, PSAP2
Function	Major scaffold postsynaptic density protein which interacts with multiple proteins and complexes to orchestrate the dendritic spine and synapse formation, maturation and maintenance. 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 through the interaction with Arp2/3 and WAVE1 complex as well as the promotion of the F-actin clusters. By way of this control of actin dynamics, participates in the regulation of developing neurons growth cone motility and the NMDA receptor-signaling. Also modulates GRIA1 exocytosis and GRM5/MGLUR5 expression and signaling to control the AMPA and metabotropic glutamate receptor-mediated synaptic transmission and plasticity. May be required at an early stage of synapse formation and be inhibited by IGF1 to promote synapse maturation.

Cellular Location

Cytoplasm. Postsynaptic density. Cell projection, dendritic spine. Note=In neuronal cells, extends into the region subjacent to the postsynaptic density (PSD).

Tissue Location

Expressed in the cerebral cortex and the cerebellum

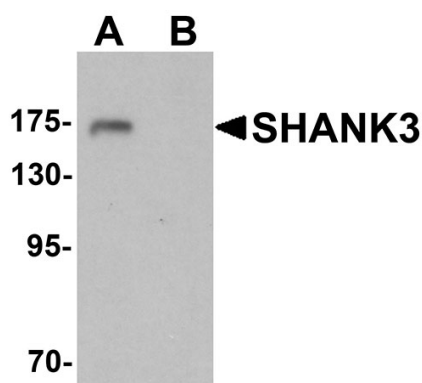
Background

SHANK3 Antibody: SH3 and multiple ankyrin repeat domains 3 (SHANK3), a member of the Shank gene family, plays a role in synapse formation and dendritic spine maturation. Shank proteins (Shank 1-3) containing PDZ domains are scaffold proteins of the postsynaptic density (PSD) that connect neurotransmitter receptors and ion channels proteins to the actin cytoskeleton and G-protein-coupled signaling pathways. 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. Mutations of SHANK3 are a cause of autism spectrum disorder (ASD) and the neurological symptoms of 22q13.3 deletion syndrome.

References

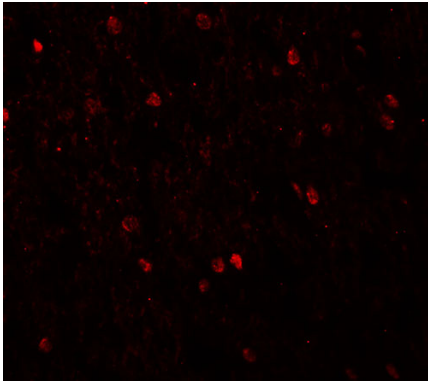
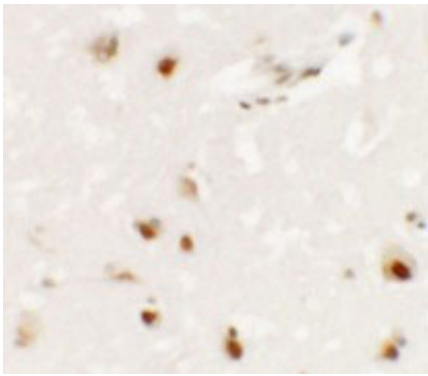
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- Lim S, Naisbitt S, Yoon J, et al. Characterization of the Shank family of synaptic proteins. Multiple genes, alternative splicing and differential expression in brain and development. *J. Biol. Chem.* 1999; 274:29510-8.
- Durand CM, Betancur C, Boeckers TM, et al. Mutations in the gene encoding the synaptic scaffolding protein SHANK3 are associated with autism spectrum disorders. *Nat. Genet.* 2007; 39: 25-7.

Images



Western blot analysis of SHANK3 in 3T3 cell lysate with SHANK3 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.

Immunohistochemistry of SHANK3 in human brain tissue with SHANK3 antibody at 2.5 µg/mL.



Immunofluorescence of SHANK3 in human brain tissue with SHANK3 antibody at 20 $\mu\text{g/mL}$.

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