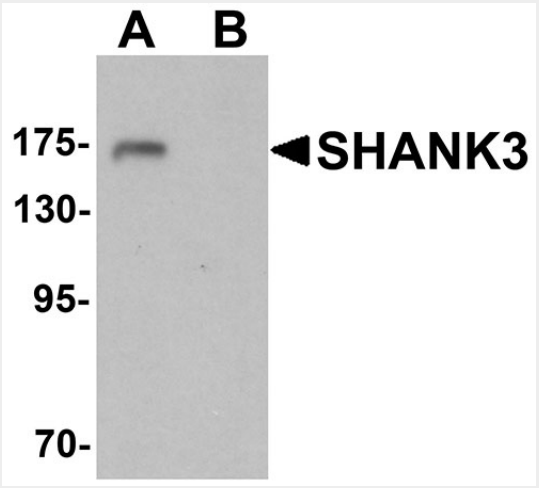
10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.622.0609

SHANK3 Antibody
Catalog # ASC11481

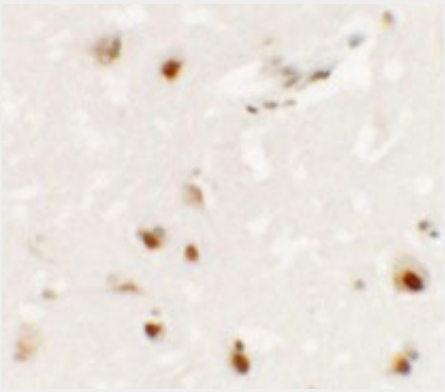
Specification

SHANK3 Antibody - Product Information

Application	**WB, IHC, IF**
Primary Accession	Q9BYB0
Other Accession	NP_001073889, 122937241
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**SHANK3 antibody can be used for detection of SHANK3 by Western blot at 1 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL. For immunofluorescence start at 2.5 µg/mL.**



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.

SHANK3 Antibody - Additional Information

Gene ID **85358**

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℃ for three months and -20℃, 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.

SHANK3 Antibody - Protein Information

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.622.0609

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.

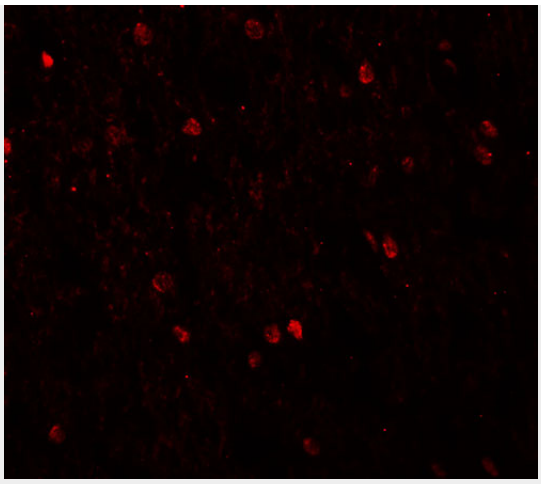
Cellular Location
Cytoplasm. Cell junction, synapse, postsynaptic density Cell projection, dendritic spine. Note=In neuronal cells, extends into the region subjacent to the postsynaptic density (PSD)

Tissue Location
Expressed in the cerebral cortex and the cerebellum

SHANK3 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety



Immunofluorescence of SHANK3 in human brain tissue with SHANK3 antibody at 20 µg/mL.

SHANK3 Antibody - 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.

SHANK3 Antibody - References

Sheng M and Kim E. The Shank family of scaffold proteins. J. Cell Sci. 2000; 113:1851-6.
Park E, Na M, Choi J. The Shank family of postsynaptic density proteins interacts with and promotes synaptic accumulation of the PIX guanine nucleotide exchange factor for Rac1 and Cdc42. J. Biol. Chem. 2004; 278:19220-9
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.

- Cell Culture

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.