

SYNPO Antibody

Catalog # ASC11234

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q8N3V7
Other Accession	NP_001159680 , 261278297
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	99463
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SYNPO antibody can be used for detection of SYNPO by Western blot at 1 - 2 μ g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 μ g/mL. For immunofluorescence start at 20 μ g/mL.

Additional Information

Gene ID	11346
Other Names	Synaptopodin, SYNPO, KIAA1029
Target/Specificity	SYNPO; At least three isoforms of SYNPO are known to exist; this antibody will detect all three isoforms. SYNPO antibody is predicted to not cross-react with other SYNPO family member proteins.
Reconstitution & Storage	SYNPO 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	SYNPO Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SYNPO
Synonyms	KIAA1029
Function	Actin-associated protein that may play a role in modulating actin-based shape and motility of dendritic spines and renal podocyte foot processes. Seems to be essential for the formation of spine apparatuses in spines of telencephalic neurons, which is involved in synaptic plasticity (By similarity).
Cellular Location	Cytoplasm, cytoskeleton {ECO:0000250 UniProtKB:Q8CC35}. Cell junction,

tight junction {ECO:0000250|UniProtKB:Q8CC35}. Perikaryon {ECO:0000250|UniProtKB:Q8CC35}. Cell projection, dendritic spine {ECO:0000250|UniProtKB:Q8CC35}. Postsynaptic density {ECO:0000250|UniProtKB:Q8CC35}. Synapse {ECO:0000250|UniProtKB:Q8CC35}. Cytoplasm, cytosol. Note=Localized at the tight junction of cells. In brain, localized to the postsynaptic densities and in the perikarya. Associated with dendritic spines of a subset of synapses. {ECO:0000250|UniProtKB:Q8CC35}

Tissue Location Expressed in cerebral cortex.

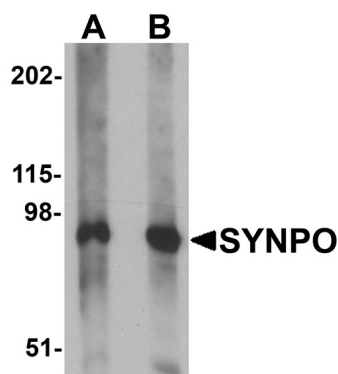
Background

SYNPO Antibody: SYNPO, also known as synaptopodin, is an actin-associated protein in telencephalic dendrites and renal podocytes. SYNPO is tightly associated with the dendritic spine apparatus, and mice lacking the SYNPO gene lack the apparatus. These SYNPO-null mice also demonstrate an impaired ability to express long-term potentiation as well as deficits in spatial memory tasks, indicating that SYNPO is involved in the regulation of synaptic plasticity. Recent studies suggest that SYNPO is linked to neuronal calcium stores and plays a role in the calcium store-associated ability of neurons to undergo long-term plasticity.

References

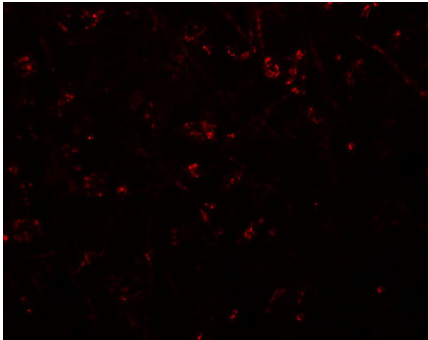
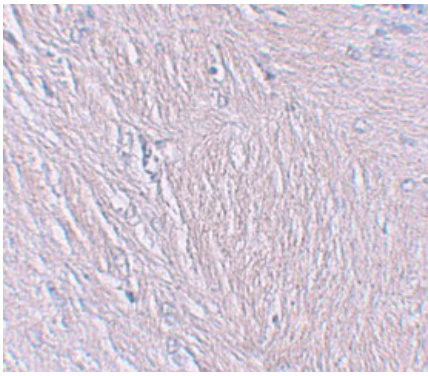
Mundel P, Heid HW, Mundel TM, et al. Synaptopodin: an actin-associated protein in telencephalic dendrites and renal podocytes. *J. Cell Biol.* 1997; 139:193-204.
Deller T, Merten T, Roth SU, et al. Actin-associated protein synaptopodin in the rat hippocampal formation: localization in the spine neck and close association with the spine apparatus of principal neurons. *J. Compl. Neurol.* 2000; 418:164-81.
Deller T, Korte M, Chabanis S, et al. Synaptopodin-deficient mice lack a spine apparatus and show deficits in synaptic plasticity. *Proc. Natl. Acad. Sci. USA* 2003; 100:10494-9.
Jedlicka P, Schwarzacher SW, Winkels R, et al. Impairment of in vivo theta-burst long-term potentiation and network excitability in the dentate gyrus of synaptopodin-deficient mice lacking the spine apparatus and the cisternal organelle. *Hippocampus* 2009; 19:130-40.

Images



Western blot analysis of SYNPO in rat brain tissue lysate with SYNPO antibody at (A) 1 and (B) 2 µg/mL.

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



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

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