SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptopodin (H-140): sc-50459

BACKGROUND

Dendritic spines are dynamic structures that alter their shape and size by remodeling the cytoskeleton in response to changes in synaptic activity. Synaptopodin is a proline-rich, actin-associated protein expressed in mature dendritic spines and renal podocytes. Synaptopodin appears to play a role in the actin-based plasticity of spines by linking actin to the spine apparatus. In the principal neurons of the hippocampus, Synaptopodin preferentially localizes to the spine neck. Synaptopodin expression increases during long-term potentiation (LTP) *in vivo* and elevated levels of Synaptopodin correlate with the persistence of LTP. In renal podocytes, Synaptopodin localizes to the foot processes. Synaptopodin is absent in the sclerosed glomeruli of diopathic nephrotic syndrome. Myopodin, a member of the Synaptopodin family, is expressed in skeletal muscle and cardiac muscle. Like Synaptopodin, Myopodin associates with actin and appears to display actin-bundling activity. Myopodin is frequently absent in invasive prostate cancer and may serve as a prognostic marker for prostate cancers.

REFERENCES

1. Mundel, P., et al. 1997. Synaptopodin: an actin-associated protein in telencephalic dendrites and renal podocytes. J. Cell Biol. 139: 193-204.
2. Deller, T., et al. 2000. Potential role of Synaptopodin in spine motility by coupling actin to the spine apparatus. Hippocampus 10: 569-581.
3. Deller, T., et al. 2000. 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. Comp. Neurol. 418: 164-181.
4. Srivastava, T., et al. 2001. Synaptopodin expression in idiopathic nephrotic syndrome of childhood. Kidney Int. 59: 118-125.
5. Lin, F., et al. 2001. Myopodin, a Synaptopodin homologue, is frequently deleted in invasive prostate cancers. Am. J. Pathol. 159: 1603-1612.

CHROMOSOMAL LOCATION

Genetic locus: SYNPO (human) mapping to 5q33.1; Synpo (mouse) mapping to 18 D3.

SOURCE

Synaptopodin (H-140) is a rabbit polyclonal antibody raised against amino acids 781-920 mapping near the C-terminus of Synaptopodin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

Synaptopodin (H-140) is recommended for detection of Synaptopodin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Synaptopodin (H-140) is also recommended for detection of Synaptopodin in additional species, including canine and bovine.

Suitable for use as control antibody for Synaptopodin siRNA (h): sc-44134, Synaptopodin siRNA (m): sc-44777, Synaptopodin siRNA (r): sc-270158, Synaptopodin shRNA Plasmid (h): sc-44134-SH, Synaptopodin shRNA Plasmid (m): sc-44777-SH, Synaptopodin shRNA Plasmid (r): sc-270158-SH, Synaptopodin shRNA (h) Lentiviral Particles: sc-44134-V, Synaptopodin shRNA (m) Lentiviral Particles: sc-44777-V and Synaptopodin shRNA (r) Lentiviral Particles: sc-270158-V.

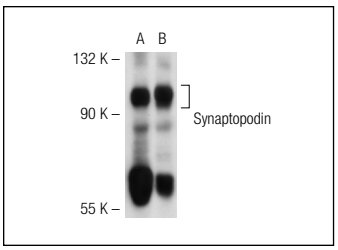
Molecular Weight of Synaptopodin: 100 kDa.

Positive Controls: rat brain extract: sc-2392 or mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Synaptopodin (H-140): sc-50459. Western blot analysis of Synaptopodin expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Bao, H., et al. 2015. Fine-tuning of NFκB by glycogen synthase kinase 3β directs the fate of glomerular podocytes upon injury. Kidney Int. 87: 1176-1190.