SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptopodin (N-14): sc-21536

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 idiopathic 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.

CHROMOSOMAL LOCATION

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

SOURCE

Synaptopodin (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Synaptopodin of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21536 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Synaptopodin (N-14) 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 (N-14) is also recommended for detection of Synaptopodin in additional species, including canine, bovine and porcine.

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

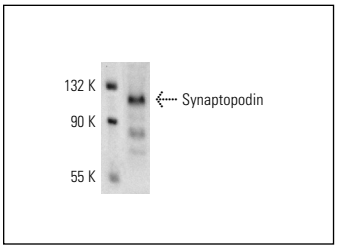
Molecular Weight of Synaptopodin: 100 kDa.

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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Synaptopodin (N-14): sc-21536. Western blot analysis of Synaptopodin expression in rat brain tissue extract.

SELECT PRODUCT CITATIONS

1. Kato, T., et al. 2011. Preservations of nephrin and synaptopodin by recombinant hepatocyte growth factor in podocytes for the attenuations of foot process injury and albuminuria in nephritic mice. Nephrology 16: 310-318.
2. Yaddanapudi, S., et al. 2011. CD2AP in mouse and human podocytes controls a proteolytic program that regulates cytoskeletal structure and cellular survival. J. Clin. Invest. 121: 3965-3980.
3. Zhang, B., et al. 2012. Amiloride off-target effect inhibits podocyte urokinase receptor expression and reduces proteinuria. Nephrol. Dial. Transplant. 27: 1746-1755.
4. Zhang, B., et al. 2012. The calcineurin-NFAT pathway allows for urokinase receptor-mediated β3 integrin signaling to cause podocyte injury. J. Mol. Med. 90: 1407-1420.
5. Liu, S., et al. 2012. Receptor activator of NFκB and podocytes: towards a function of a novel receptor-ligand pair in the survival response of podocyte injury. PLoS ONE 7: e41331.

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.