SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptopodin (D-9): sc-515842

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 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. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Synaptopodin (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 660-684 within an internal region of Synaptopodin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Synaptopodin (D-9) is available conjugated to agarose (sc-515842 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515842 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515842 PE), fluorescein (sc-515842 FITC), Alexa Fluor® 488 (sc-515842 AF488), Alexa Fluor® 546 (sc-515842 AF546), Alexa Fluor® 594 (sc-515842 AF594) or Alexa Fluor® 647 (sc-515842 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515842 AF680) or Alexa Fluor® 790 (sc-515842 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

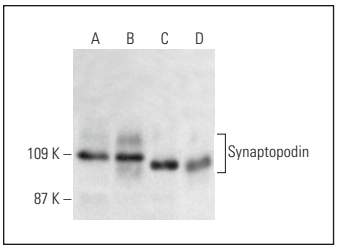
Synaptopodin (D-9) is recommended for detection of Synaptopodin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

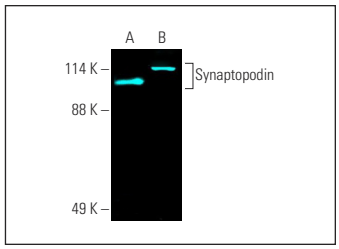
Molecular Weight of Synaptopodin: 100 kDa.

Positive Controls: A549 cell lysate: sc-2413, HeLa whole cell lysate: sc-2200 or rat brain extract: sc-2392.

DATA



Synaptopodin (D-9): sc-515842. Western blot analysis of Synaptopodin expression in A549 (**A**) and HeLa (**B**) whole cell lysates and rat brain (**C**) and human skeletal muscle (**D**) tissue extracts.



Synaptopodin (D-9) Alexa Fluor® 647: sc-515842 AF647. Direct fluorescent western blot analysis of Synaptopodin expression in rat brain tissue extract (**A**) and HeLa whole cell lysate (**B**). Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Isabel, B.M., et al. 2018. Alterations in neuronal cytoskeletal and astrocytic proteins content in the brain of the autistic-like mouse strain C58/J. Neurosci. Lett. 682: 32-38.
2. Beaudreuil, S., et al. 2019. Circulating CASK is associated with recurrent focal segmental glomerulosclerosis after transplantation. PLoS ONE 14: e0219353.
3. Lin, C.L., et al. 2019. A KDM6A-KLF10 reinforcing feedback mechanism aggravates diabetic podocyte dysfunction. EMBO Mol. Med. 11: e9828.
4. Lin, Q., et al. 2020. Sestrin-2 regulates podocyte mitochondrial dysfunction and apoptosis under high-glucose conditions via AMPK. Int. J. Mol. Med. 45: 1361-1372.
5. Chen, L., et al. 2020. DUSP6 protects murine podocytes from high glucose-induced inflammation and apoptosis. Mol. Med. Rep. 22: 2273-2282.

RESEARCH USE

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