

# Synaptopodin (P-19): sc-21537

## 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 (P-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-21537 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Synaptopodin (P-19) 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), immunohistochemistry (including paraffin-embedded sections) (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 (P-19) is also recommended for detection of Synaptopodin in additional species, including equine.

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.

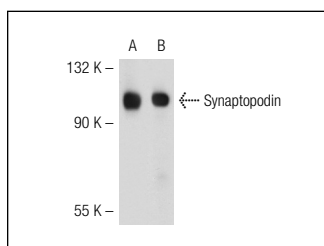
Molecular Weight of Synaptopodin: 100 kDa.

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

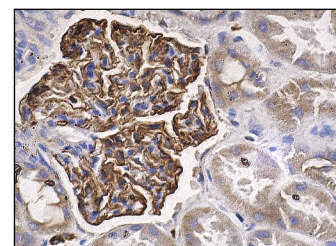
## RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



Synaptopodin (P-19): sc-21537. Western blot analysis of Synaptopodin expression in mouse brain (A) and rat brain (B) tissue extracts.



Synaptopodin (P-19): sc-21537. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane staining of glomerular cells.

## SELECT PRODUCT CITATIONS

- Green, L.M., et al. 2009. Dynamic interaction between WT1 and BASP1 in transcriptional regulation during differentiation. *Nucleic Acids Res.* 37: 431-440.
- Krautkrämer, E., et al. 2011. Pathogenic old world hantaviruses infect renal glomerular and tubular cells and induce disassembling of cell-to-cell contacts. *J. Virol.* 85: 9811-9823.
- Müller-Krebs, S., et al. 2012. Human RAGE antibody protects against AGE-mediated podocyte dysfunction. *Nephrol. Dial. Transplant.* 27: 3129-3136.
- Zhang, B., et al. 2012. The calcineurin-NFAT pathway allows for urokinase receptor-mediated  $\beta$ 3 integrin signaling to cause podocyte injury. *J. Mol. Med.* 90: 1407-1420.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.