SANTA CRUZ BIOTECHNOLOGY, INC.

SNAP 25 (B-8): sc-390644

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Syntaxins were originally thought to be docking proteins, but have now been categorized as anchoring proteins that anchor themselves to the cytoplasmic surfaces of cellular membranes. Syntaxins have been shown to bind to various proteins involved in exocytosis, including VAMPs (vesicle-associated membrane proteins), NSF (N-ethylmaleimide-sensitive factor), SNAP 25, SNAPs (soluble NSF attachment proteins) and synaptotagmin. VAMPs, also designated synaptobrevins, including VAMP-1 and VAMP-2, and synaptotagmin, a protein that may function as an inhibitor of exocytosis, are vesicular proteins. SNAPs, including α- and γ-SNAP, are cytoplasmic proteins that bind to a membrane receptor complex composed of VAMP, SNAP 25 and syntaxin. SNAPs mediate the membrane binding of NSF, which is essential for membrane fusion reactions. An additional protein designated synaptophysin may regulate exo-cytosis by competing with SNAP 25 and syntaxins for VAMP binding.

REFERENCES

1. Elferink, L.A., et al. 1993. A role for synaptotagmin (p65) in regulated exocytosis. Cell 72: 153-159.
2. Bennett, M.K., et al. 1993. The Syntaxin family of vesicular transport receptors. Cell 74: 863-873.
3. Hayashi, T., et al. 1994. Synaptic vesicle membrane fusion complex: action of clostridial neurotoxins on assembly. EMBO J. 13: 5051-5061.
4. Yamaguchi, K. and Akagawa, K. 1994. Exocytosis relating proteins in the nervous system. Neurosci. Res. 20: 289-292.
5. Edelmann, L., et al. 1995. Synaptobrevin binding to synaptophysin: a potential mechanism for controlling the exocytosis fusion machine. EMBO J. 14: 224-231.
6. McMahon, H.T. and Sudhof, T.C. 1995. Synaptic core complex of synaptobrevin, Syntaxin, and SNAP25 forms high affinity α-SNAP binding site. J. Biol. Chem. 270: 2213-2217.

CHROMOSOMAL LOCATION

Genetic locus: SNAP25 (human) mapping to 20p12.2; Snap25 (mouse) mapping to 2 F3.

SOURCE

SNAP 25 (B-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 173-206 at the C-terminus of SNAP 25 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390644 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

SNAP 25 (B-8) is recommended for detection of SNAP 25 (including SNAP 25A and SNAP 25B splice variants) 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), 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).

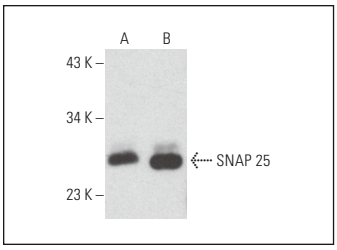
SNAP 25 (B-8) is also recommended for detection of SNAP 25 (including SNAP 25A and SNAP 25B splice variants) in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SNAP 25 siRNA (h): sc-36517, SNAP 25 siRNA (m): sc-36516, SNAP 25 shRNA Plasmid (h): sc-36517-SH, SNAP 25 shRNA Plasmid (m): sc-36516-SH, SNAP 25 shRNA (h) Lentiviral Particles: sc-36517-V and SNAP 25 shRNA (m) Lentiviral Particles: sc-36516-V.

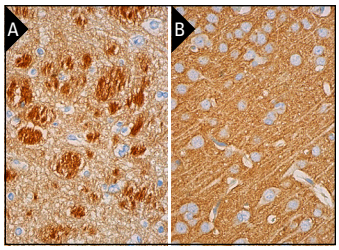
Molecular Weight of SNAP 25: 25 kDa.

Positive Controls: mouse brain extract: sc-2253 or human brain extract: sc-364375.

DATA



SNAP 25 (B-8): sc-390644. Western blot analysis of SNAP 25 expression in mouse brain (**A**) and human brain (**B**) tissue extracts.



SNAP 25 (B-8): sc-390644. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing neuropil staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing neuropil staining (**B**).

SELECT PRODUCT CITATIONS

1. Ohmichi, T., et al. 2019. Quantification of brain-derived extracellular vesicles in plasma as a biomarker to diagnose Parkinson's and related diseases. Parkinsonism Relat. Disord. 61: 82-87.
2. Sharma, R., et al. 2023. PIMT controls insulin synthesis and secretion through PDX1. Int. J. Mol. Sci. 24: 8084.
3. Ishimoto, T., et al. 2024. TrkB phosphorylation in serum extracellular vesicles correlates with cognitive function enhanced by ergothioneine in humans. NPJ Sci. Food. 8: 11.

STORAGE

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