SANTA CRUZ BIOTECHNOLOGY, INC.

SNAP 25 (20): sc-136267

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 exocytosis by competing with SNAP 25 and syntaxins for VAMP binding.

REFERENCES

1. Elferink, L.A., Peterson, M.R. and Scheller, R.H. 1993. A role for synaptotagmin (p65) in regulated exocytosis. Cell 72: 153-159.
2. Bennett, M.K., Garcia-Arraras, J.E., Elferink, L.A., Peterson, K., Fleming, A.M., Hazuka, C.D. and Scheller, R.H. 1993. The syntaxin family of vesicular transport receptors. Cell 74: 863-873.
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4. Hayashi, T., McMahon, H., Yamasaki, S., Binz, T., Hata, Y., Sudhof, T.C. and Niemann, H. 1994. Synaptic vesicle membrane fusion complex: action of clostridial neurotoxins on assembly. EMBO J. 13: 5051-5061.
5. Edelmann, L., Hanson, P.I., Chapman, E.R. and Jahn, R. 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 SNAP 25 forms high affinity α-SNAP binding site. J. Biol. Chem. 270: 2213-2217.
7. Lin, R.C. and Scheller, R.H. 1997. Structural organization of the synaptic exocytosis core complex. Neuron 19: 1087-1094.

CHROMOSOMAL LOCATION

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

SOURCE

SNAP 25 (20) is a mouse monoclonal antibody raised against amino acids 8-29 of SNAP 25 of mouse origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol, and 0.04% stabilizer protein.

RESEARCH USE

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

APPLICATIONS

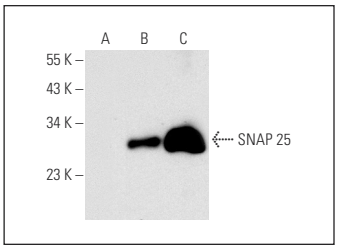
SNAP 25 (20) is recommended for detection of SNAP 25 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

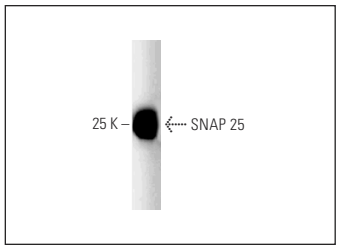
Molecular Weight of SNAP 25: 25 kDa.

Positive Controls: SNAP 25 (h2): 293 Lysate: sc-129798, rat cerebellum extract: sc-2398 or mouse brain extract: sc-2253.

DATA



SNAP 25 (20): sc-136267. Western blot analysis of SNAP 25 expression in non-transfected: sc-110760 (**A**) and human SNAP 25 transfected: sc-129798 (**B**) 293 whole cell lysates and mouse brain tissue extract (**C**).



SNAP 25 (20): sc-136267. Western blot analysis of SNAP 25 expression in rat cerebrum tissue extract.

SELECT PRODUCT CITATIONS

1. Marrocco, J., Mairesse, J., Ngomba, R.T., Silletti, V., Van Camp, G., Bouwalerh, H., Summa, M., Pittaluga, A., Nicoletti, F., Maccari, S. and Morley-Fletcher, S. 2012. Anxiety-like behavior of prenatally stressed rats is associated with a selective reduction of glutamate release in the ventral hippocampus. J. Neurosci. 32: 17143-17154.
2. Bloemer, J., Pinky, P.D., Smith, W.D., Bhattacharya, D., Chauhan, A., Govindarajulu, M., Hong, H., Dhanasekaran, M., Judd, R., Amin, R.H., Reed, M.N. and Suppiramaniam, V. 2019. Adiponectin knockout mice display cognitive and synaptic deficits. Front. Endocrinol. 10: 819.
3. Marrocco, J., Verhaeghe, R., Bucci, D., Di Menna, L., Traficante, A., Bouwalerh, H., Van Camp, G., Ghiglieri, V., Picconi, B., Calabresi, P., Ravasi, L., Cisani, F., Bagheri, F., Pittaluga, A., Bruno, V., et al. 2020. Maternal stress programs accelerated aging of the basal ganglia motor system in offspring. Neurobiol. Stress 13: 100265.
4. Hidisoglu, E., Kantar, D., Ozdemir, S. and Yargicoglu, P. 2022. Cognitive dysfunctions and spontaneous EEG alterations induced by hippocampal amyloid pathology in rats. Adv. Med. Sci. 67: 328-337.

STORAGE

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