SANTA CRUZ BIOTECHNOLOGY, INC.

VAMP-1/2 (3H3117): sc-73249

BACKGROUND

Syntaxins were originally thought to be docking proteins, but have more recently 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 (synaptosomal-associated protein of 25 kDa), 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., et al. 1993. A role for Synapto-tagmin (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. Yamaguchi, K., et al. 1994. Exocytosis relating proteins in the nervous system. Neurosci. Res. 20: 289-292.
4. Hayashi, T., et al. 1994. Synaptic vesicle membrane fusion complex: action of clostridial neurotoxins on assembly. EMBO J. 13: 5051-5061.
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., et al. 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., et al. 1997. Structural organization of the synaptic exocytosis core complex. Neuron 19: 1087-1094.

CHROMOSOMAL LOCATION

Genetic locus: VAMP1 (human) mapping to 12p13.31, VAMP2 (human) mapping to 17p13.1; Vamp1 (mouse) mapping to 6 F3, Vamp2 (mouse) mapping to 11 B3.

SOURCE

VAMP-1/2 (3H3117) is a mouse monoclonal antibody raised against synaptic vesicle-containing fractions of immunoprecipitated human brain homogenate.

PRODUCT

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

STORAGE

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

APPLICATIONS

VAMP-1/2 (3H3117) is recommended for detection of VAMP-1 (amino acids 1-118) and VAMP-2 (amino acids 33-96) 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).

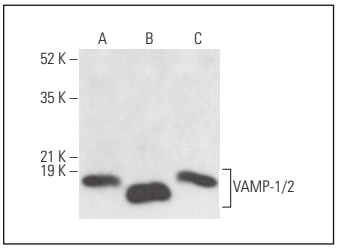
Molecular Weight of VAMP-1/2: 18 kDa.

Positive Controls: AN3 CA cell lysate: sc-24662, Raji whole cell lysate: sc-364236 or U-87 MG cell lysate: sc-2411.

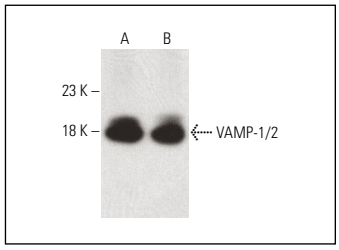
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



VAMP-1/2 (3H3117): sc-73249. Western blot analysis of VAMP-1/2 expression in AN3 CA (**A**), U-87 MG (**B**) and Raji (**C**) whole cell lysates.



VAMP-1/2 (3H3117): sc-73249. Western blot analysis of VAMP-1/2 expression in mouse brain (**A**) and rat brain (**B**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Cercós, M.G., et al. 2017. Abnormally increased secretion in olfactory neuronal precursors from a case of schizophrenia is modulated by melatonin: a pilot study. Int. J. Mol. Sci. 18: 1439.
2. Flintoaca Alexandru, P.R., et al. 2023. EDEM1 regulates the insulin mRNA level by inhibiting the endoplasmic reticulum stress-induced IRE1/JNK/c-Jun pathway. iScience 26: 107956.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.