

Syntaxin 1 (SP6): sc-20036

BACKGROUND

Correct vesicular transport is essential to the survival of eukaryotic cells. This process is determined by specific pairing of vesicle-associated SNAREs (v-SNAREs) with those on the target membrane (t-SNAREs). This complex then recruits soluble NSF attachment proteins (SNAPs) and N-ethylmaleimide-sensitive factor (NSF) to form the highly stable SNAP receptor (SNARE) complex. The formation of a SNARE complex pulls the vesicle and target membrane together and may provide the energy to drive fusion of the lipid bilayers. SNAPs, including α - and γ -SNAP, are cytoplasmic proteins that bind to a membrane receptor complex composed of VAMP, SNAP 25 and Syntaxin 1. Syntaxins, including Syntaxin 1, comprise a family of proteins involved in the fusion of synaptic vesicles with the plasma membrane. The Syntaxin family displays broad tissue distribution and contains C-terminal hydrophobic domains that direct them to their respective intracellular compartments.

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.
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4. Hayashi, T., et al. 1994. Synaptic vesicle membrane fusion complex: action of clostridial neurotoxins on assembly. *EMBO J.* 13: 5051-5061.
5. Edelman, 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.
7. Lin, R.C. and Scheller, R.H. 1997. Structural organization of the synaptic exocytosis core complex. *Neuron* 19: 1087-1094.
8. Barnard, R.J., et al. 1997. Stimulation of NSF ATPase activity by α -SNAP is required for SNARE complex disassembly and exocytosis. *J. Cell Biol.* 139: 875-883

CHROMOSOMAL LOCATION

Genetic locus: STX1A (human) mapping to 7q11.23, STX1B (human) mapping to 16p11.2; Stx1a (mouse) mapping to 5 G2, Stx1b (mouse) mapping to 7 F3.

SOURCE

Syntaxin 1 (SP6) is a mouse monoclonal antibody raised against synaptic vesicle-containing fractions of immunoprecipitated human brain homogenate.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Syntaxin 1 (SP6) is recommended for detection of Syntaxin 1 of broad species origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

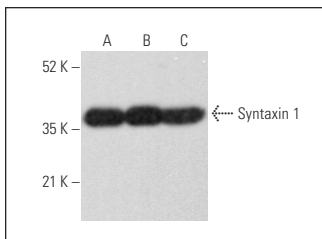
Molecular Weight of Syntaxin 1: 35 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, PC-12 cell lysate: sc-2250 or SK-N-SH cell lysate: sc-2410.

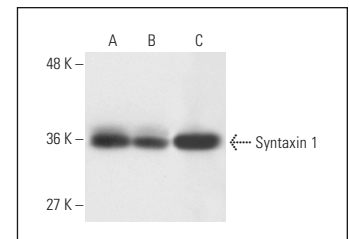
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Syntaxin 1 (SP6): sc-20036. Western blot analysis of Syntaxin 1 expression in human brain (A), rat brain (B) and mouse brain (C) tissue extracts.



Syntaxin 1 (SP6): sc-20036. Western blot analysis of Syntaxin 1 expression in PC-12 (A), SH-SY5Y (B) and SK-N-SH (C) whole cell lysates.

SELECT PRODUCT CITATIONS


1. Nimpf, S., et al. 2019. A putative mechanism for magnetoreception by electromagnetic induction in the pigeon inner ear. *Curr. Biol.* pii: S0960-9822(19)31239-4.

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.



See **Syntaxin 1 (HPC-1): sc-12736** for Syntaxin 1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.