

# Syntaxin 1 (4E209): sc-73098

## 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  $\alpha$ - and  $\gamma$ -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.
3. Yamaguchi, K. and Akagawa, K. 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. and Sudhof, T.C. 1995. Synaptic core complex of synaptobrevin, Syntaxin and SNAP25 forms high affinity  $\alpha$ -SNAP binding site. *J. Biol. Chem.* 270: 2213-2217.

## 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 F2.

## SOURCE

Syntaxin 1 (4E209) is a mouse monoclonal antibody raised against synaptic vesicle-containing fractions of immunoprecipitated human brain homogenate.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> 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.

## RESEARCH USE

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

## APPLICATIONS

Syntaxin 1 (4E209) 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  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

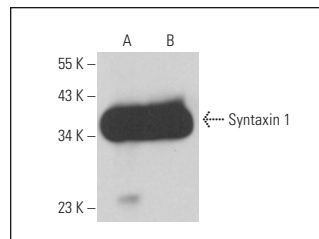
Molecular Weight of Syntaxin 1: 35 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or SH-SY5Y cell lysate: sc-3812.

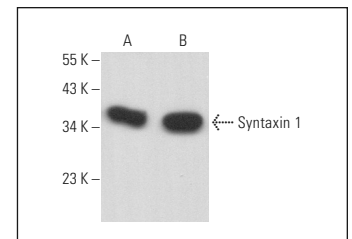
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 (4E209): sc-73098. Western blot analysis of Syntaxin 1 expression in mouse brain (A) and human brain (B) tissue extracts.



Syntaxin 1 (4E209): sc-73098. Western blot analysis of Syntaxin 1 expression in mouse brain (A) and rat brain (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Hajmrle, C., et al. 2016. Interleukin-1 signaling contributes to acute islet compensation. *JCI Insight* 1: e86055.
2. Fu, J., et al. 2017. Kv2.1 clustering contributes to Insulin exocytosis and rescues human  $\beta$ -cell dysfunction. *Diabetes* 66: 1890-1900.
3. Zhang, T., et al. 2020. APC mutations in human colon lead to decreased neuroendocrine maturation of ALDH<sup>+</sup> stem cells that alters GLP-2 and SST feedback signaling: clue to a link between WNT and retinoic acid signalling in colon cancer development. *PLoS ONE* 15: e0239601.



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.