

Syntaxin 1 (HPC-1): sc-12736

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.

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 (HPC-1) is a mouse monoclonal antibody raised against full length Syntaxin-1 of rat origin.

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.

Syntaxin 1 (HPC-1) is available conjugated to agarose (sc-12736 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-12736 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-12736 PE), fluorescein (sc-12736 FITC), Alexa Fluor[®] 488 (sc-12736 AF488), Alexa Fluor[®] 546 (sc-12736 AF546), Alexa Fluor[®] 594 (sc-12736 AF594) or Alexa Fluor[®] 647 (sc-12736 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-12736 AF680) or Alexa Fluor[®] 790 (sc-12736 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Syntaxin 1 (HPC-1) is recommended for detection of Syntaxin 1A and Syntaxin 1B of mouse, rat and human 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)], 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).

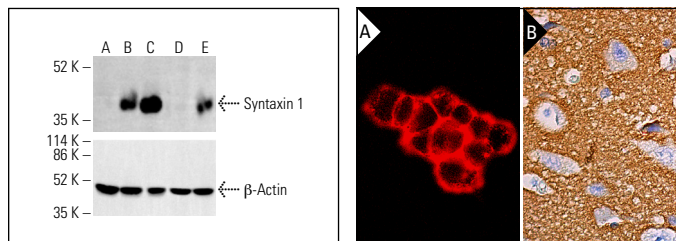
Molecular Weight of Syntaxin 1: 31 kDa.

Positive Controls: rat brain extract: sc-2392, PC-12 cell lysate: sc-2250 or mouse brain extract: sc-2253.

STORAGE

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

DATA



Syntaxin 1 (HPC-1): sc-12736. Western blot analysis of Syntaxin 1 expression in untreated HeLa (A), chemically treated HeLa (B, C), untreated K-562 (D) and chemically treated K-562 (E) whole cell lysates. Detection reagent used: m-IgG₁ BP-HRP: sc-525408. β -Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

Syntaxin 1 (HPC-1): sc-12736. Immunofluorescence staining of methanol-fixed PC-12 cells showing membrane staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing neuropil staining (B).

SELECT PRODUCT CITATIONS

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- Cai, B.B., et al. 2017. Botulinum neurotoxin type A-cleaved SNAP25 is confined to primary motor neurons and localized on the plasma membrane following intramuscular toxin injection. *Neuroscience* 352: 155-169.
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- Bon, C., et al. 2019. SINEUP non-coding RNAs rescue defective frataxin expression and activity in a cellular model of Friedreich's ataxia. *Nucleic Acids Res.* 47: 10728-10743.
- Kovári, B., et al. 2020. Syntaxin 1: a novel robust immunophenotypic marker of neuroendocrine tumors. *Int. J. Mol. Sci.* 21: 1213.
- Urbina, F.L., et al. 2021. TRIM67 regulates exocytic mode and neuronal morphogenesis via SNAP47. *Cell Rep.* 34: 108743.
- Taura, Y., et al. 2023. Myosin Va, a novel interaction partner of STXBP1, is required to transport Syntaxin1A to the plasma membrane. *Neuroscience* 524: 256-268.
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RESEARCH USE

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