

SYP (A-9): sc-365488

BACKGROUND

Synaptic vesicles participate in a cycle of fusion with the plasma membrane and reformation by endocytosis. Synaptic vesicle protein synaptophysin (SYP) is targeted to early endosomes in transfected fibroblasts and in neuroendocrine cells. SYP is an N-glycosylated integral membrane protein found in neurons and endocrine cells that associates into hexamers to form a large conductance channel. SYP contains four transmembrane domains and may function as a gap junction-like channel. Membrane cholesterol specifically interacts with SYP to play a role in vesicle formation. Synaptobrevin (VAMP) also binds to SYP and the resultant complex is upregulated during neuronal development, but is absent in exocytosis fusion complex. Thus, the synaptophysin-synaptobrevin complex is not essential for exocytosis, but rather provides a pool of synaptobrevin for exocytosis. In addition, the tail domain of brain Myosin V also forms a stable complex with synaptobrevin II and SYP, and this complex is disassembled upon the depolarization-induced entry of Ca^{2+} into intact nerve endings.

CHROMOSOMAL LOCATION

Genetic locus: SYP (human) mapping to Xp11.23; Syp (mouse) mapping to X A1.1.

SOURCE

SYP (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 289-312 at the C-terminus of SYP of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365488 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SYP (A-9) is recommended for detection of SYP 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).

Suitable for use as control antibody for SYP siRNA (h): sc-36597, SYP siRNA (m): sc-36596, SYP shRNA Plasmid (h): sc-36597-SH, SYP shRNA Plasmid (m): sc-36596-SH, SYP shRNA (h) Lentiviral Particles: sc-36597-V and SYP shRNA (m) Lentiviral Particles: sc-36596-V.

Molecular Weight of SYP: 38-48 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, SH-SY5Y cell lysate: sc-3812 or Y79 cell lysate: sc-2240.

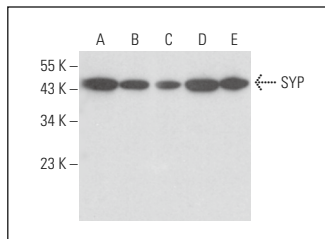
RESEARCH USE

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

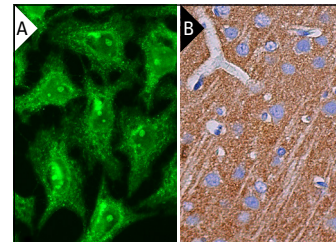
STORAGE

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

DATA



SYP (A-9): sc-365488. Western blot analysis of SYP expression in Y79 (A), SH-SY5Y (B), C2C12 (C), Neuro-2A (D) and SK-N-SH (E) whole cell lysates.



SYP (A-9): sc-365488. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing neuropil staining (B).

SELECT PRODUCT CITATIONS

- Qiao, H., et al. 2016. Sex-determining region Y-box 9 acts downstream of NADPH oxidase to influence the effect of leptin on PPAR γ 1 expression in hepatic stellate cells. *Biochim. Biophys. Acta* 1862: 2186-2196.
- Qiao, H., et al. 2018. NADPH oxidase signaling pathway mediates mesenchymal stem cell-induced inhibition of hepatic stellate cell activation. *Stem Cells Int.* 2018: 1239143.
- Fan, Y.G., et al. 2019. Paricalcitol accelerates BACE1 lysosomal degradation and inhibits calpain-1 dependent neuronal loss in APP/PS1 transgenic mice. *EBioMedicine* 45: 393-407.
- Fan, Y.G., et al. 2020. Vitamin D deficiency exacerbates Alzheimer-like pathologies by reducing antioxidant capacity. *Free Radic. Biol. Med.* 161: 139-149.
- Qu, X., et al. 2021. Levistolide A attenuates Alzheimer's pathology through activation of the PPAR γ pathway. *Neurotherapeutics* 18: 326-339.
- Zhao, X., et al. 2021. Baicalein alleviates depression-like behavior in rotenone-induced Parkinson's disease model in mice through activating the BDNF/TrkB/CREB pathway. *Biomed. Pharmacother.* 140: 111556.
- Singh, N., et al. 2021. The long noncoding RNA H19 regulates tumor plasticity in neuroendocrine prostate cancer. *Nat. Commun.* 12: 7349.

PROTOCOLS

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



See **SYP (D-4): sc-17750** for SYP antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.