SANTA CRUZ BIOTECHNOLOGY, INC.

SYP (SVP38): sc-12737

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 intergral 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 juction-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 (SVP38) is a mouse monoclonal antibody raised against Synaptophysin of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SYP (SVP38) is available conjugated to agarose (sc-12737 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-12737 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-12737 PE), fluorescein (sc-12737 FITC), Alexa Fluor® 488 (sc-12737 AF488), Alexa Fluor® 546 (sc-12737 AF546), Alexa Fluor® 594 (sc-12737 AF594) or Alexa Fluor® 647 (sc-12737 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-12737 AF680) or Alexa Fluor® 790 (sc-12737 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SYP (SVP38) 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 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

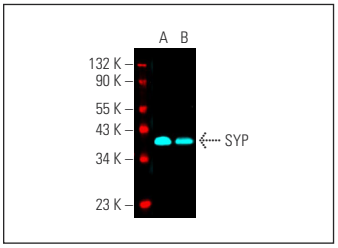
Molecular Weight of SYP: 38-48 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

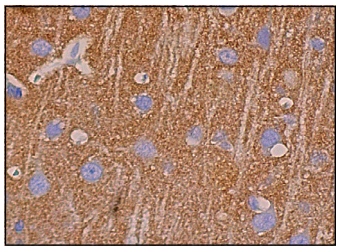
STORAGE

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

DATA



SYP (SVP38) Alexa Fluor® 647: sc-12737 AF647. Direct fluorescent western blot analysis of SYP expression in mouse brain (**A**) and rat brain (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 790: sc-516731.



SYP (SVP38): sc-12737. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing neuropil staining.

SELECT PRODUCT CITATIONS

1. Sokolov, M., et al. 2002. Massive light-driven translocation of transducin between the two major compartments of rod cells: a novel mechanism of light adaptation. Neuron 34: 95-106.
2. Cheng, C.L., et al. 2013. Cell-specific markers for the identification of retinal cells by immunofluorescence microscopy. Methods Mol. Biol. 935: 185-199.
3. Harrison, D., et al. 2014. RAF1 activation reduces neuroendocrine tumor markers in lung carcinoid tumor UMC-11 cells. Scijet. 3: 53-57.
4. Wang, J., et al. 2015. Exposure to swainsonine impairs adult neurogenesis and spatial learning and memory. Toxicol. Lett. 232: 263-270.
5. Ohgomori, T., et al. 2017. Differential involvement of vesicular and glial glutamate transporters around spinal α-motoneurons in the pathogenesis of SOD1G93A mouse model of amyotrophic lateral sclerosis. Neuroscience 356: 114-124.
6. Hashimoto, M., et al. 2018. Anatomical evidence for a direct projection from Purkinje cells in the mouse cerebellar vermis to medial parabrachial nucleus. Front. Neural Circuits 12: 6.
7. Andrew, R.J., et al. 2019. Reduction of the expression of the late-onset Alzheimer's disease (AD) risk-factor BIN1 does not affect amyloid pathology in an AD mouse model. J. Biol. Chem. 294: 4477-4487.
8. Li, J.G., et al. 2020. A pharmacological chaperone improves memory by reducing Aβ and tau neuropathology in a mouse model with plaques and tangles. Mol. Neurodegener. 15: 1.

RESEARCH USE

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