SANTA CRUZ BIOTECHNOLOGY, INC.

SYP (H-93): sc-9116

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (H-93) is a rabbit polyclonal antibody raised against amino acids 221-313 of SYP of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose (sc-9116 AC) conjugate for immunoprecipitation, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

SYP (H-93) is recommended for detection of synaptophysin 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SYP (H-93) is also recommended for detection of synaptophysin in additional species, including canine, bovine and porcine.

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.

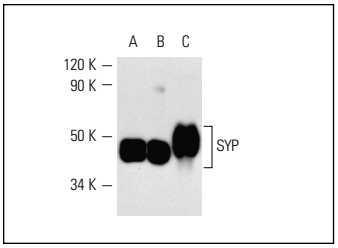
STORAGE

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

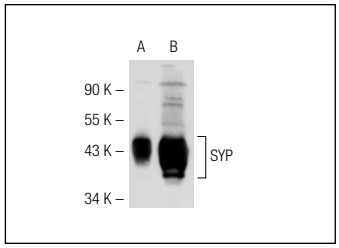
RESEARCH USE

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

DATA



SYP (H-93): sc-9116. Western blot analysis of SYP expression in mouse (**A**) and rat (**B**) brain extracts and PC-12 (**C**) whole cell lysate.



SYP (H-93): sc-9116. Western blot analysis of SYP expression in 293T (**A**) and SH-SY5Y (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Andrieux, A., et al. 2002. The suppression of brain cold-stable microtubules in mice induces synaptic defects associated with neuroleptic-sensitive behavioral disorders. Genes Dev. 16: 2350-2364.
2. Klemmer, P., et al. 2008. Proteomics analysis of immuno-precipitated synaptic protein complexes. J. Proteomics 72: 82-90.
3. Belinson, H., et al. 2008. Activation of the amyloid cascade in apolipoprotein E4 transgenic mice induces lysosomal activation and neurodegeneration resulting in marked cognitive deficits. J. Neurosci. 28: 4690-4701.
4. Harada, K., et al. 2010. Storage of GABA in chromaffin granules and not in synaptic-like microvesicles in rat adrenal medullary cells. J. Neurochem. 114: 617-626.
5. Osawa, Y., et al. 2011. Acid sphingomyelinase regulates glucose and lipid metabolism in hepatocytes through AKT activation and AMP-activated protein kinase suppression. FASEB J. 25: 1133-1144.
6. Saenger, S., et al. 2011. PEGylation enhances the therapeutic potential for Insulin-like growth factor I in central nervous system disorders. Growth Horm. IGF Res. 21: 292-303.
7. Wen, S., et al. 2011. Inhibition of NFκB signaling commits resveratrol-treated medulloblastoma cells to apoptosis without neuronal differentiation. J. Neurooncol. 104: 169-177.
8. Matsuoka, H., et al. 2011. Differential distribution of synaptotagmin-1, -4, -7, and -9 in rat adrenal chromaffin cells. Cell Tissue Res. 344: 41-50.
9. Guedj, F., et al. 2012. DYRK1A: a master regulatory protein controlling brain growth. Neurobiol. Dis. 46: 190-203.