

SYP (4H255): sc-58301

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 (4H255) is a mouse monoclonal antibody raised against synaptic vesicle containing fractions immunoprecipitated from brain homogenates of human origin.

PRODUCT

Each vial contains 200 µg IgM 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.

APPLICATIONS

SYP (4H255) is recommended for detection of SYP of mouse, rat, human and bovine 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.

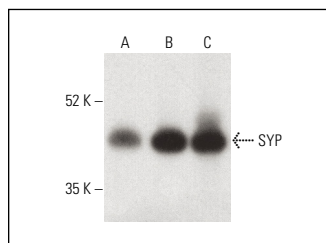
Molecular Weight of SYP: 38-48 kDa.

Positive Controls: human brain extract: sc-364375, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

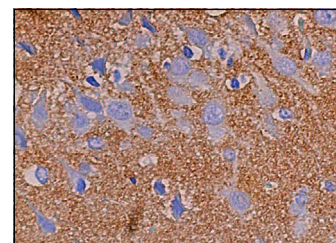
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



SYP (4H255): sc-58301. Western blot analysis of SYP expression in human brain (A), mouse brain (B) and rat brain (C) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



SYP (4H255): sc-58301. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing neuropil staining.

SELECT PRODUCT CITATIONS

1. Chow, Z., et al. 2021. PI3K/mTOR dual inhibitor PF-04691502 is a schedule-dependent radiosensitizer for gastroenteropancreatic neuroendocrine tumors. *Cells* 10: 1261.
2. Hidisoglu, E., et al. 2022. Cognitive dysfunctions and spontaneous EEG alterations induced by hippocampal amyloid pathology in rats. *Adv. Med. Sci.* 67: 328-337.
3. Dias-Carvalho, A., et al. 2022. Chemobrain: mitoxantrone-induced oxidative stress, apoptotic and autophagic neuronal death in adult CD-1 mice. *Arch. Toxicol.* 96: 1767-1782.

RESEARCH USE

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

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.