

# Synaptojanin 1 (5H1): sc-32770

## BACKGROUND

The inositol polyphosphate 5-phosphatases selectively remove the phosphate from the 5-position of various phosphatidylinositols, which generate second messengers in response to extracellular signals. Synaptojanins are characterized by an N-terminal SAC1-like sequence, a central 5-phosphate domain, and a unique C-terminal sequence and have been shown to use phosphatidylinositol 4,5-bisphosphate as a substrate. Synaptojanins exist as two isoforms, Synaptojanin 1 and 2, which differ in the C-terminal domain, and each isoform has multiple variants produced by alternative splicing. Synaptojanin 1 is expressed as two major forms: the shorter is found in brain while the longer is expressed in peripheral tissues. Eight splice variants of synaptojanin 2 have been detected, including a brain specific isoform. Synaptojanins are thought to participate in the endocytosis of synaptic vesicles and the regulation of the actin cytoskeleton.

## CHROMOSOMAL LOCATION

Genetic locus: SYNJ1 (human) mapping to 21q22.11; Synj1 (mouse) mapping to 16 C3.3.

## SOURCE

Synaptojanin 1 (5H1) is a mouse monoclonal antibody raised against amino acids 1156-1286 of the 145 kDa isoform of Synaptojanin 1 of rat origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Synaptojanin 1 (5H1) is available conjugated to agarose (sc-32770 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32770 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32770 PE), fluorescein (sc-32770 FITC), Alexa Fluor® 488 (sc-32770 AF488), Alexa Fluor® 546 (sc-32770 AF546), Alexa Fluor® 594 (sc-32770 AF594) or Alexa Fluor® 647 (sc-32770 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32770 AF680) or Alexa Fluor® 790 (sc-32770 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Synaptojanin 1 (5H1) is recommended for detection of the 145 kDa isoform of Synaptojanin 1 of mouse, rat and, to a lesser extent, 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Synaptojanin 1 siRNA (h): sc-39079, Synaptojanin 1 siRNA (m): sc-153973, Synaptojanin 1 shRNA Plasmid (h): sc-39079-SH, Synaptojanin 1 shRNA Plasmid (m): sc-153973-SH, Synaptojanin 1 shRNA (h) Lentiviral Particles: sc-39079-V and Synaptojanin 1 shRNA (m) Lentiviral Particles: sc-153973-V.

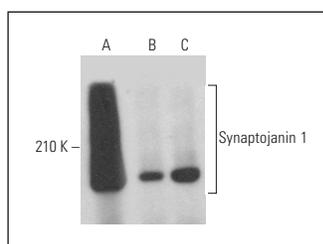
Molecular Weight of Synaptojanin 1: 145/170 kDa.

Positive Controls: rat brain extract: sc-2392, EOC 20 whole cell lysate: sc-364187 or mouse brain extract: sc-2253.

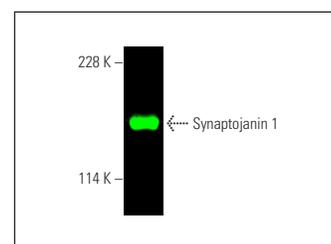
## RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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.

## DATA



Synaptojanin 1 (5H1): sc-32770. Western blot analysis of Synaptojanin 1 expression in rat brain (A), mouse brain (B) and rat hippocampus (C) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Synaptojanin 1 (5H1): sc-32770. Near-infrared western blot analysis of Synaptojanin 1 expression in rat brain tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

## SELECT PRODUCT CITATIONS

- Richter, K., et al. 2018. VGLUT1 binding to endophilin or intersectin1 and dynamin phosphorylation in a diurnal context. *Neuroscience* 371: 29-37.
- Ando, K., et al. 2020. The lipid phosphatase Synaptojanin 1 undergoes a significant alteration in expression and solubility and is associated with brain lesions in Alzheimer's disease. *Acta Neuropathol. Commun.* 8: 79.
- Zou, L., et al. 2021. Asparagine endopeptidase cleaves synaptojanin 1 and triggers synaptic dysfunction in Parkinson's disease. *Neurobiol. Dis.* 154: 105326.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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