SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptotagmin I (15): sc-136480

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Synaptotagmins are a large gene family of synaptic vesicle type III integral membrane proteins that function as regulators of both exocytosis and endocytosis and are involved in neurotransmitter secretion from small secretory vesicles. Calcium binds to Synaptotagmin I which triggers neurotransmitter release at the synapse. Synaptotagmin II is phosphorylated by WNK1 in a process that regulates calcium-dependent interactions. Synaptotagmin III is involved in calcium-dependent exocytosis of secretory vesicles in endocrine cells and neurons. Synaptotagmin IV is expressed in neuronal tissues, and has the highest mRNA levels in the hippocampus. The proximity of the Synaptotagmin IV gene to markers of several psychiatric disorders suggest an involvement of Synaptotagmin IV in human disease. Synaptotagmin V is a dense-core vesicle-specific protein that regulates a specific type of calcium-regulated secretion. Synaptotagmin VI interacts with adaptor protein-2 in a calcium-independent manner. Synaptotagmin VII is widely expressed in non-neuronal tissues.

CHROMOSOMAL LOCATION

Genetic locus: SYT1 (human) mapping to 12q21.2; Syt1 (mouse) mapping to 10 D1.

SOURCE

Synaptotagmin I (15) is a mouse monoclonal antibody raised against amino acids 250-259 of Synaptotagmin I of human origin.

PRODUCT

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

Synaptotagmin I (15) is available conjugated to agarose (sc-136480 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136480 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

RESEARCH USE

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

APPLICATIONS

Synaptotagmin I (15) is recommended for detection of Synaptotagmin I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Synaptotagmin I siRNA (h): sc-41310, Synaptotagmin I siRNA (m): sc-41311, Synaptotagmin I siRNA (r): sc-270316, Synaptotagmin I shRNA Plasmid (h): sc-41310-SH, Synaptotagmin I shRNA Plasmid (m): sc-41311-SH, Synaptotagmin I shRNA Plasmid (r): sc-270316-SH, Synaptotagmin I shRNA (h) Lentiviral Particles: sc-41310-V, Synaptotagmin I shRNA (m) Lentiviral Particles: sc-41311-V and Synaptotagmin I shRNA (r) Lentiviral Particles: sc-270316-V.

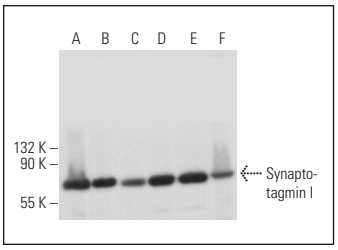
Molecular Weight of Synaptotagmin I: 65 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or rat cerebellum extract: sc-2398.

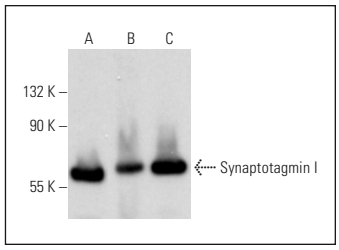
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Synaptotagmin I (15): sc-136480. Western blot analysis of Synaptotagmin I expression in rat brain (**A**), human cerebral cortex (**B**), rat cerebellum (**C**), rat hippocampus (**D**), mouse brain (**E**) and human cerebellum (**F**) tissue extracts.



Synaptotagmin I (15): sc-136480. Western blot analysis of Synaptotagmin I expression in rat brain (**A**), human cerebellum (**B**) and human cerebral cortex (**C**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Sarkar, S., et al. 2016. Expression of microRNA-34a in Alzheimer's disease brain targets genes linked to synaptic plasticity, energy metabolism, and resting state network activity. Brain Res. 1646: 139-151.
2. Almeida, M.F., et al. 2016. BDNF trafficking and signaling impairment during early neurodegeneration is prevented by moderate physical activity. IBRO Rep. 1: 19-31.
3. Mohseni Ahooyi, T., et al. 2019. Perturbation of synapsins homeostasis through HIV-1 Tat-mediated suppression of BAG3 in primary neuronal cells. Cell Death Dis. 10: 473.
4. Ishizuka, Y. and Bramham, C.R. 2019. A simple DMSO-based method for cryopreservation of primary hippocampal and cortical neurons. J. Neurosci. Methods 333: 108578.
5. Valencia, M., et al. 2019. Environmental enrichment restores the reduced expression of cerebellar synaptophysin and the motor coordination impairment in rats prenatally treated with betamethasone. Physiol. Behav. 209: 112590.

STORAGE

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

PROTOCOLS

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