

Synaptotagmin V (F-7): sc-398837

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.

REFERENCES

- Hilbush, B.S. and Morgan, J.I. 1994. A third Synaptotagmin gene, Syt3, in the mouse. *Proc. Natl. Acad. Sci. USA* 91: 8195-8199.
- Li, C., et al. 1995. Ca²⁺-dependent and -independent activities of neural and non-neural synaptotagmins. *Nature* 375: 594-599.
- Kishore, B.K., et al. 1998. Expression of Synaptotagmin VIII in rat kidney. *Am. J. Physiol.* 275: F131-F142.
- Xi, D., et al. 1999. Analysis of Synaptotagmin I-IV messenger RNA expression and developmental regulation in the rat hypothalamus and pituitary. *Neuroscience* 88: 425-435.

CHROMOSOMAL LOCATION

Genetic locus: Syt5 (mouse) mapping to 7 A1.

SOURCE

Synaptotagmin V (F-7) is a mouse monoclonal antibody raised against amino acids 57-115 mapping within an internal region of Synaptotagmin V of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Synaptotagmin V (F-7) is available conjugated to agarose (sc-398837 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398837 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398837 PE), fluorescein (sc-398837 FITC), Alexa Fluor® 488 (sc-398837 AF488), Alexa Fluor® 546 (sc-398837 AF546), Alexa Fluor® 594 (sc-398837 AF594) or Alexa Fluor® 647 (sc-398837 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398837 AF680) or Alexa Fluor® 790 (sc-398837 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Synaptotagmin V (F-7) is recommended for detection of Synaptotagmin V of mouse and rat origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for Synaptotagmin V siRNA (m): sc-41319, Synaptotagmin V siRNA (r): sc-270041, Synaptotagmin V shRNA Plasmid (m): sc-41319-SH, Synaptotagmin V shRNA Plasmid (r): sc-270041-SH, Synaptotagmin V shRNA (m) Lentiviral Particles: sc-41319-V and Synaptotagmin V shRNA (r) Lentiviral Particles: sc-270041-V.

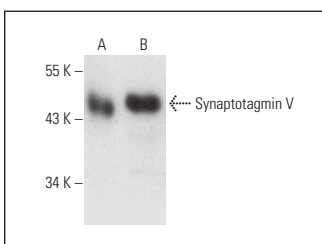
Molecular Weight of Synaptotagmin V: 48 kDa.

Positive Controls: rat cerebellum extract: sc-2398, mouse brain extract: sc-2253 or mouse cerebellum extract: sc-2403.

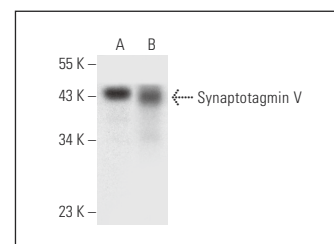
RECOMMENDED SUPPORT REAGENTS

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



Synaptotagmin V (F-7): sc-398837. Western blot analysis of Synaptotagmin V expression in mouse brain (A) and rat brain (B) tissue extracts.



Synaptotagmin V (F-7): sc-398837. Western blot analysis of Synaptotagmin V expression in rat cerebellum (A) and mouse cerebellum (B) tissue extracts.

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 for detailed protocols and support products.