

Synaptotagmin XI (D-5): sc-365991

BACKGROUND

Synaptotagmins are a large 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. Synaptotagmin XI, also known as SYT11 (Synaptotagmin-11), is a 431 amino acid protein that localizes to the membrane and is expressed ubiquitously with highest expression in brain and lung. Unlike other Synaptotagmin proteins, Synaptotagmin XI is suggested to be calcium-independent due to a single point mutation in one of its C2 domains. Synaptotagmin XI interacts with the ubiquitin-E3-ligase Parkin (a juvenile Parkinson's disease gene product), which causes the polyubiquitination and subsequent degradation of Synaptotagmin XI by the proteasome complex. Defects in the gene encoding Synaptotagmin XI are implicated in a number of neurological disorders, including schizophrenia and Parkinson's disease.

REFERENCES

1. von Poser, C., et al. 1997. The evolutionary pressure to inactivate. A subclass of synaptotagmins with an amino acid substitution that abolishes Ca^{2+} binding. *J. Biol. Chem.* 272: 14314-14319.
2. Osborne, S.L., et al. 1999. Calcium-dependent oligomerization of synaptotagmins I and II. Synaptotagmins I and II are localized on the same synaptic vesicle and heterodimerize in the presence of calcium. *J. Biol. Chem.* 274: 59-66.
3. Mizutani, A., et al. 2000. SYNCRIP, a cytoplasmic counterpart of heterogeneous nuclear ribonucleoprotein R, interacts with ubiquitous synaptotagmin isoforms. *J. Biol. Chem.* 275: 9823-9831.
4. Craxton, M., 2001. Genomic analysis of synaptotagmin genes. *Genomics* 77: 43-49.

CHROMOSOMAL LOCATION

Genetic locus: SYT11 (human) mapping to 1q22; Syt11 (mouse) mapping to 3 F1.

SOURCE

Synaptotagmin XI (D-5) is a mouse monoclonal antibody raised against amino acids 353-431 mapping at the C-terminus of Synaptotagmin XI of human origin.

PRODUCT

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

Synaptotagmin XI (D-5) is available conjugated to agarose (sc-365991 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365991 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365991 PE), fluorescein (sc-365991 FITC), Alexa Fluor® 488 (sc-365991 AF488), Alexa Fluor® 546 (sc-365991 AF546), Alexa Fluor® 594 (sc-365991 AF594) or Alexa Fluor® 647 (sc-365991 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365991 AF680) or Alexa Fluor® 790 (sc-365991 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Synaptotagmin XI (D-5) is recommended for detection of Synaptotagmin XI of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

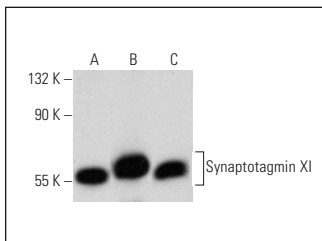
Suitable for use as control antibody for Synaptotagmin XI siRNA (h): sc-88813, Synaptotagmin XI siRNA (m): sc-153977, Synaptotagmin XI siRNA (r): sc-270197, Synaptotagmin XI shRNA Plasmid (h): sc-88813-SH, Synaptotagmin XI shRNA Plasmid (m): sc-153977-SH, Synaptotagmin XI shRNA Plasmid (r): sc-270197-SH, Synaptotagmin XI shRNA (h) Lentiviral Particles: sc-88813-V, Synaptotagmin XI shRNA (m) Lentiviral Particles: sc-153977-V and Synaptotagmin XI shRNA (r) Lentiviral Particles: sc-270197-V.

Molecular Weight of Synaptotagmin XI monomer: 64 kDa.

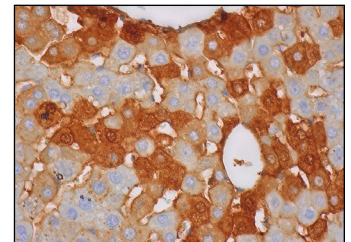
Molecular Weight of Synaptotagmin XI homodimer: 110 kDa.

Positive Controls: rat brain extract: sc-2392, IMR-32 cell lysate: sc-2409 or mouse brain extract: sc-2253.

DATA



Synaptotagmin XI (D-5): sc-365991. Western blot analysis of Synaptotagmin XI expression in human hippocampus (A) and rat brain (B) tissue extracts and human PBL whole cell lysate (C).



Synaptotagmin XI (D-5): sc-365991. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic and membrane staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Fernández-Santiago, R., et al. 2015. Aberrant epigenome in iPSC-derived dopaminergic neurons from Parkinson's disease patients. *EMBO Mol. Med.* 7: 1529-1546.

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.