

Septin 3 (G-6): sc-74431

BACKGROUND

The septins are a family of GTPase enzymes, some of which are required for cytokinesis and others of which are associated with exocytosis. Members of the septin family can form heteropolymer complexes and also play a role in the organization of new growth in organisms. The transcriptional regulation of all septins is complex, resulting in alternatively spliced variants. At least three septins (Septin 1, 2 and 4) are associated with a τ -based paired helical filament core and may contribute to the formation of neurofibrillary tangle as integral constituents of paired helical filaments. Septin 3 (G-Septin), a GTP-binding protein, is highly expressed in brain and is regulated by protein kinase G in neurons. The human SEPT4 (H5/PNUTL2/CDCREL-2) gene encodes ARTS (for apoptosis-related protein in the TGF β signaling pathway), which is expressed in many cells and acts to enhance cell death induced by TGF β or, to a lesser extent, by other apoptotic agents. ARTS is localized to mitochondria and translocates to the nucleus when apoptosis occurs. Septin 5 is a major form of the CDCREL-1 septin in the adult neocortex of mammals. Human Septin 6 protein contains an ATP-GTP binding motif and three nuclear targeting sequences in its C-terminus. Septin 6 is the third septin member that is fused to the MLL protein, in addition to hCDCREL and MSF.

REFERENCES

1. Kinoshita, A., et al. 1998. Identification of septins in neurofibrillary tangles in Alzheimer's disease. *Am. J. Pathol.* 153: 1551-1560.
2. Xue, J., et al. 2000. Phosphorylation of a new brain-specific septin, G-Septin, by cGMP-dependent protein kinase. *J. Biol. Chem.* 275: 10047-10056.
3. Toda, S., et al. 2000. Reciprocal expression of infant- and adult-preferring transcripts of CDCREL1 septin gene in the rat neocortex. *Biochem. Biophys. Res. Commun.* 273: 723-728.

CHROMOSOMAL LOCATION

Genetic locus: SEPT3 (human) mapping to 22q13.2; Sept3 (mouse) mapping to 15 E1.

SOURCE

Septin 3 (G-6) is a mouse monoclonal antibody raised against amino acids 1-50 of Septin 3 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.

Septin 3 (G-6) is available conjugated to agarose (sc-74431 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74431 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74431 PE), fluorescein (sc-74431 FITC), Alexa Fluor[®] 488 (sc-74431 AF488), Alexa Fluor[®] 546 (sc-74431 AF546), Alexa Fluor[®] 594 (sc-74431 AF594) or Alexa Fluor[®] 647 (sc-74431 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-74431 AF680) or Alexa Fluor[®] 790 (sc-74431 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

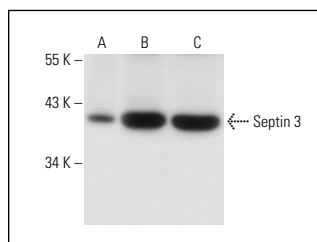
Septin 3 (G-6) is recommended for detection of Septin 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 Septin 3 siRNA (h): sc-36474, Septin 3 siRNA (m): sc-36475, Septin 3 shRNA Plasmid (h): sc-36474-SH, Septin 3 shRNA Plasmid (m): sc-36475-SH, Septin 3 shRNA (h) Lentiviral Particles: sc-36474-V and Septin 3 shRNA (m) Lentiviral Particles: sc-36475-V.

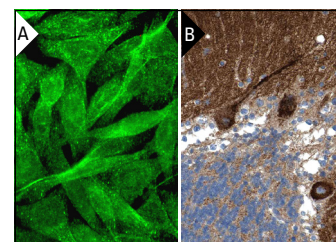
Molecular Weight of Septin 3: 40 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, rat brain extract: sc-2392 or mouse cerebellum extract: sc-2403.

DATA



Septin 3 (G-6): sc-74431. Western blot analysis of Septin 3 expression in NTERA-2 cl.D1 whole cell lysate (A) and mouse cerebellum (B) and rat brain (C) tissue extracts.



Septin 3 (G-6): sc-74431. Immunofluorescence staining of formalin-fixed SW480 cells showing membrane and cytoskeleton localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of cells in granular and molecular layers and Purkinje cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Tóth, V., et al. 2022. Neuronal-specific Septin 3 binds Atg8/LC3B, accumulates and localizes to autophagosomes during induced autophagy. *Cell. Mol. Life Sci.* 79: 471.

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.