

# Septin 4 (H-120): sc-20179

## 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 Tau-based paired helical filament core and may contribute to the formation of neurofibrillary tangles (NFTs) 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 gene (also known as H5, PNU TL2, CDCrREL-2, ARTS, CE5B3 and MART) encodes ARTS (for apoptosis-related protein in the TGF $\beta$  signaling pathway), which is expressed in many cells and acts to enhance cell death induced by TGF $\beta$  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 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 (in addition to hCDCREL and MSF) that is fused to the MLL protein.

## REFERENCES

- Kinoshita, A., et al. 1998. Identification of septins in neurofibrillary tangles in Alzheimer's disease. *Am. J. Pathol.* 153: 1551-1560.
- 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.
- Larisch, S., et al. 2000. A novel mitochondrial septin-like protein, ARTS, mediates apoptosis dependent on its P-loop motif. *Nat. Cell Biol.* 2: 915-921.

## CHROMOSOMAL LOCATION

Genetic locus: SEPT4 (human) mapping to 17q22; Sept4 (mouse) mapping to 11 C.

## SOURCE

Septin 4 (H-120) is a rabbit polyclonal antibody raised against amino acids 1-120 of Septin 4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4 $^{\circ}$  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.

## APPLICATIONS

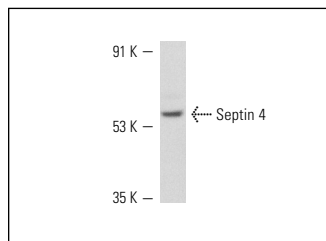
Septin 4 (H-120) is recommended for detection of Septin 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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 4 siRNA (h): sc-36476, Septin 4 siRNA (m): sc-36477, Septin 4 shRNA Plasmid (h): sc-36476-SH, Septin 4 shRNA Plasmid (m): sc-36477-SH, Septin 4 shRNA (h) Lentiviral Particles: sc-36476-V and Septin 4 shRNA (m) Lentiviral Particles: sc-36477-V.

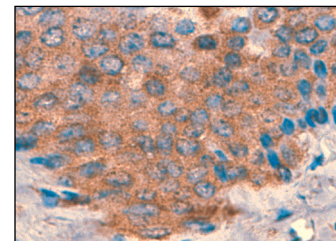
Molecular Weight of Septin 4: 55 kDa.

Positive Controls: mouse brain extract: sc-2253.

## DATA



Septin 4 (H-120): sc-20179. Western blot analysis of Septin 4 expression in mouse brain extract.



Septin 4 (H-120): sc-20179. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse lymph node showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Maimaitiyiming, M., et al. 2008. Biochemical characterization of membrane-associated Septin from rat brain. *J. Neurochem.* 106: 1175-1183.
- Lhuillier, P., et al. 2009. Absence of annulus in human asthenozoospermia: Case Report. *Hum. Reprod.* 24: 1296-1303.
- Kwitny, S., et al. 2010. The annulus of the mouse sperm tail is required to establish a membrane diffusion barrier that is engaged during the late steps of spermiogenesis. *Biol. Reprod.* 82: 669-678.
- Duan, Y.N., et al. 2011. Dynamics of Sept4 expression in fibrotic livers of mice infected with *Schistosoma japonicum*. *Parasitology* 138: 1003-1010.
- Mukawa, C. and Taniguchi, T. 2012. Effects of propofol with hyperthermia in a rat model of endotoxemic shock. *Acta Anaesthesiol. Scand.* 56: 866-871.
- Parakalan, R., et al. 2012. Transcriptome analysis of amoeboid and ramified microglia isolated from the corpus callosum of rat brain. *BMC Neurosci.* 13: 64.
- Blomberg Jensen, M., et al. 2012. Expression of the vitamin D metabolizing enzyme CYP24A1 at the annulus of human spermatozoa may serve as a novel marker of semen quality. *Int. J. Androl.* 35: 499-510.