

# STOP (D-8): sc-390711

## BACKGROUND

Microtubules in the cytoplasm of mammalian cells usually depolymerize rapidly when exposed to cold temperature or to assembly-inhibiting drugs. Some cell types, however, contain sub-populations of microtubules called "cold-stable microtubules" that resist these depolymerizing conditions. This stabilization is due mainly to polymer association with a 952 amino acid neuronal protein designated STOP (stable tubule only polypeptide). The central region of STOP contains five tandem repeats of 46 amino acids. STOP also contains a SH3-binding motif near its N-terminus. It is present in the cell body and throughout the axon. The STOP protein action can be extreme, inducing resistance at temperatures as low as -80° C.

## REFERENCES

1. Job, D., et al. 1987. High concentrations of STOP protein induce a microtubule super-stable state. *Biochem. Biophys. Res. Commun.* 148: 429-434.
2. Margolis, R.L., et al. 1987. Purification and assay of cold-stable microtubules and STOP protein. *Methods Enzymol.* 134: 160-170.
3. Pirollet, F., et al. 1989. Monoclonal antibody to microtubule-associated STOP protein: affinity purification of neuronal STOP activity and comparison of antigen with activity in neuronal and nonneuronal cell extracts. *Biochemistry* 28: 835-842.
4. Margolis, R.L., et al. 1991. Specific association of STOP protein with microtubules *in vitro* and with stable microtubules in mitotic spindles of cultured cells. *EMBO J.* 9: 4095-4102.
5. Bongiovanni, G., et al. 1994. Some common properties between a brain protein that is modified by posttranslational arginylation and the microtubule-associated STOP protein. *J. Neurochem.* 63: 2295-2299.
6. Denarier, E., et al. 1998. Nonneuronal isoforms of STOP protein are responsible for microtubule cold stability in mammalian fibroblasts. *Proc. Natl. Acad. Sci. USA* 95: 6055-6060.
7. Guillaud, L., et al. 1998. STOP proteins are responsible for the high degree of microtubule stabilization observed in neuronal cells. *J. Cell Biol.* 142: 167-179.
8. Slaughter, T. and Black, M.M. 2003. STOP (stable-tubule-only-polypeptide) is preferentially associated with the stable domain of axonal microtubules. *J. Neurocytol.* 32: 399-413.
9. Galiano, M.R., et al. 2004. Astrocytes and oligodendrocytes express different STOP protein isoforms. *J. Neurosci. Res.* 78: 329-337.

## CHROMOSOMAL LOCATION

Genetic locus: MAP6 (human) mapping to 11q13.5; Map6 (mouse) mapping to 7 E2.

## SOURCE

STOP (D-8) is a mouse monoclonal antibody raised against amino acids 61-290 mapping near the N-terminus of STOP of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

STOP (D-8) is recommended for detection of STOP of mouse, rat and human 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 STOP siRNA (h): sc-63359, STOP siRNA (m): sc-63360, STOP shRNA Plasmid (h): sc-63359-SH, STOP shRNA Plasmid (m): sc-63360-SH, STOP shRNA (h) Lentiviral Particles: sc-63359-V and STOP shRNA (m) Lentiviral Particles: sc-63360-V.

Molecular Weight of STOP: 145 kDa.

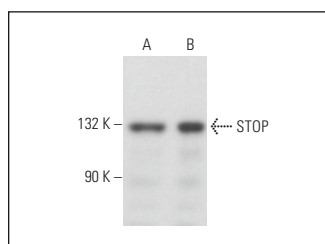
Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or rat hippocampus tissue extract.

## RECOMMENDED SUPPORT REAGENTS

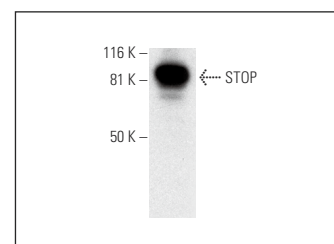
To ensure optimal results, the following support reagents are recommended:

- 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



STOP (D-8): sc-390711. Western blot analysis of STOP expression in mouse brain (A) and rat hippocampus (B) tissue extracts.



STOP (D-8): sc-390711. Western blot analysis of STOP expression in rat brain tissue extract.

## 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.