

DcpS (G-8): sc-271343

BACKGROUND

Eukaryotic cells primarily utilize exoribonucleases and decapping enzymes to degrade their mRNA. DcpS is a scavenger pyrophosphatase that hydrolyzes the residual cap structure following 3' to 5' decay of an mRNA. Following mRNA degradation DcpS releases N-7 methyl guanosine monophosphate and 5'-diphosphate terminated cap or mRNA products. The central histidine within the DcpS HIT motif is critical for decapping activity and defines the HIT motif as a new mRNA decapping domain, making DcpS the first member of the HIT family of proteins with a defined biological function. HIT proteins are homodimeric and contain two conserved 100-amino-acid HIT fold domains with independent active sites that are each sufficient to bind and hydrolyze cognate substrates.

REFERENCES

1. Fireman, P. 1992. Diagnosis of sinusitis in children: emphasis on the history and physical examination. *J. Allergy Clin. Immunol.* 90: 433-436.
2. Wang, Z. and Kiledjian, M. 2001. Functional link between the mammalian exosome and mRNA decapping. *Cell* 107: 751-762.
3. Liu, H., Rodgers, N.D., Jiao, X. and Kiledjian, M. 2002. The scavenger mRNA decapping enzyme DcpS is a member of the HIT family of pyrophosphatases. *EMBO J.* 21: 4699-4708.
4. Wang, Z., Jiao, X., Carr-Schmid, A. and Kiledjian, M. 2002. The hDcp2 protein is a mammalian mRNA decapping enzyme. *Proc. Natl. Acad. Sci. USA* 99: 12663-12668.
5. Gu, M., Fabrega, C., Liu, S.W., Liu, H., Kiledjian, M. and Lima, C.D. 2004. Insights into the structure, mechanism, and regulation of scavenger mRNA decapping activity. *Mol. Cell* 14: 67-80.

CHROMOSOMAL LOCATION

Genetic locus: DCPS (human) mapping to 11q24.2; Dcps (mouse) mapping to 9 A4.

SOURCE

DcpS (G-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 273-311 near the C-terminus of DcpS of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271343 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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.

APPLICATIONS

DcpS (G-8) is recommended for detection of DcpS 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 DcpS siRNA (h): sc-44389, DcpS siRNA (m): sc-44390, DcpS shRNA Plasmid (h): sc-44389-SH, DcpS shRNA Plasmid (m): sc-44390-SH, DcpS shRNA (h) Lentiviral Particles: sc-44389-V and DcpS shRNA (m) Lentiviral Particles: sc-44390-V.

Molecular Weight of DcpS: 40 kDa.

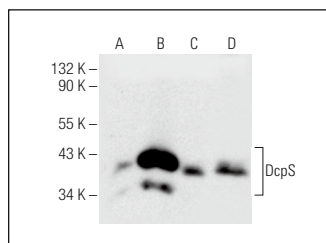
Positive Controls: HeLa whole cell lysate: sc-2200, DcpS (m): 293T Lysate: sc-119688 or PC-12 cell lysate: sc-2250.

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



DcpS (G-8): sc-271343. Western blot analysis of DcpS expression in non-transfected 293T: sc-117752 (A), mouse DcpS transfected 293T: sc-119688 (B), HeLa (C) and PC-12 (D) whole cell lysates.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.