

DHS (F-10): sc-271871

BACKGROUND

Deoxyhypusine synthase (DHS) is crucial for the posttranslational formation of hypusine, a modification of a specific lysine residue in eukaryotic initiation factor 5A (eIF5A). Hypusine is formed by posttranslational modifications involving two enzymatic steps catalyzed by DHS and deoxyhypusine hydroxylase (DOHH). eIF5A is essential for eukaryotic cell proliferation. DHS, which belongs to the deoxyhypusine synthase family of proteins, is important for the first step in the hypusine biosynthesis pathway. It acts as a catalyst for the NAD-dependent oxidative cleavage of spermidine and the ensuing transfer of the butylamine moiety of spermidine to the eIF5A protein, to create the intermediate deoxyhypusine residue.

REFERENCES

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2. Huang, J.K., et al. 2004. Molecular cloning of bovine eIF5A and deoxyhypusine synthase cDNA. *DNA Seq.* 15: 26-32.
3. Umland, T.C., et al. 2004. A new crystal structure of deoxyhypusine synthase reveals the configuration of the active enzyme and of an enzyme-NAD inhibitor ternary complex. *J. Biol. Chem.* 279: 28697-28705.
4. Sommer, M.N., et al. 2004. Screening assay for the identification of deoxyhypusine synthase inhibitors. *J. Biomol. Screen.* 9: 434-438.
5. Molitor, I.M., et al. 2004. Translation initiation factor eIF5A from *Plasmodium falciparum*. *Mol. Biochem. Parasitol.* 137: 65-74.
6. Huang, J.K., et al. 2004. Higher activity of recombinant bovine deoxyhypusine synthase vs. human deoxyhypusine synthase. *Protein Expr. Purif.* 35: 32-38.
7. Nishimura, K., et al. 2005. Independent roles of eIF5A and polyamines in cell proliferation. *Biochem. J.* 385: 779-785.
8. Hauber, I., et al. 2005. Identification of cellular deoxyhypusine synthase as a novel target for antiretroviral therapy. *J. Clin. Invest.* 115: 76-85.
9. Park, J.H., et al. 2006. Molecular cloning, expression, and structural prediction of deoxyhypusine hydroxylase: a HEAT-repeat-containing metalloenzyme. *Proc. Natl. Acad. Sci. USA* 103: 51-56.

CHROMOSOMAL LOCATION

Genetic locus: DHPS (human) mapping to 19p13.2.

SOURCE

DHS (F-10) is a mouse monoclonal antibody raised against amino acids 70-369 mapping at the C-terminus of DHS 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.

APPLICATIONS

DHS (F-10) is recommended for detection of DHS of 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 DHS siRNA (h): sc-60535, DHS shRNA Plasmid (h): sc-60535-SH and DHS shRNA (h) Lentiviral Particles: sc-60535-V.

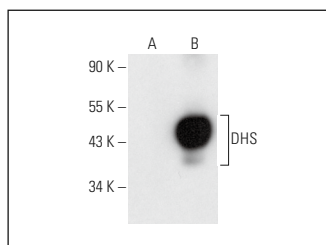
Molecular Weight of DHS: 40 kDa.

Positive Controls: DHS (h): 293T Lysate: sc-177128.

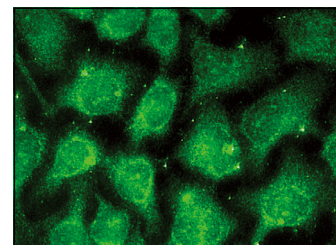
RECOMMENDED SUPPORT REAGENTS

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



DHS (F-10): sc-271871. Western blot analysis of DHS expression in non-transfected: sc-117752 (A) and human DHS transfected: sc-177128 (B) 293T whole cell lysates.



DHS (F-10): sc-271871. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

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.