

# DHS (G-12): sc-365076

## BACKGROUND

Deoxyhypusine synthase (DHS) is crucial for the post-translational formation of hypusine, a modification of a specific lysine residue in eukaryotic initiation factor 5A (eIF-5A). Hypusine is formed by posttranslational modifications involving two enzymatic steps catalyzed by DHS and deoxyhypusine hydroxylase (DOHH). eIF-5A is essential for eukaryotic cell proliferation. Deoxyhypusine synthase, 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 eIF-5A protein, to create the intermediate deoxyhypusine residue.

## REFERENCES

- Huang, J.K., et al. 2004. Molecular cloning of bovine eIF5A and deoxyhypusine synthase cDNA. *DNA Seq.* 15: 26-32.
- Xu, A., et al. 2004. Identification of mRNA that binds to eukaryotic initiation factor 5A by affinity co-purification and differential display. *Biochem. J.* 384: 585-590.
- Sommer, M.N., et al. 2004. Screening assay for the identification of deoxyhypusine synthase inhibitors. *J. Biomol. Screen.* 9: 434-438.
- Molitor, I.M., et al. 2004. Translation initiation factor eIF-5A from *Plasmodium falciparum*. *Mol. Biochem. Parasitol.* 137: 65-74.
- 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.
- Huang, J.K., et al. 2004. Higher activity of recombinant bovine deoxyhypusine synthase vs. human deoxyhypusine synthase. *Protein Expr. Purif.* 35: 32-38.
- Hauber, I., et al. 2005. Identification of cellular deoxyhypusine synthase as a novel target for antiretroviral therapy. *J. Clin. Invest.* 115: 76-85.
- Nishimura, K., et al. 2005. Independent roles of eIF5A and polyamines in cell proliferation. *Biochem. J.* 385: 779-785.
- 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; Dhps (mouse) mapping to 8 C3.

## SOURCE

DHS (G-12) 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 IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

DHS (G-12) is recommended for detection of DHS 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 DHS siRNA (h): sc-60535, DHS siRNA (m): sc-60536, DHS shRNA Plasmid (h): sc-60535-SH, DHS shRNA Plasmid (m): sc-60536-SH, DHS shRNA (h) Lentiviral Particles: sc-60535-V and DHS shRNA (m) Lentiviral Particles: sc-60536-V.

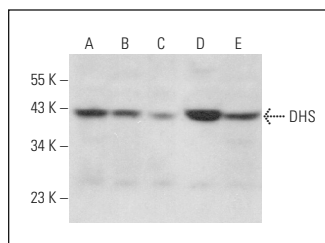
Molecular Weight of DHS: 40 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, KNRK whole cell lysate: sc-2214 or 3611-RF whole cell lysate: sc-2215.

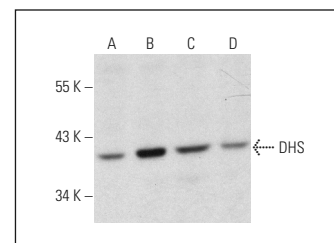
## RECOMMENDED SUPPORT REAGENTS

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 (G-12): sc-365076. Western blot analysis of DHS expression in SolB (A), BC<sub>3</sub>H1 (B), C2C12 (C), 3611-RF (D) and A-10 (E) whole cell lysates.



DHS (G-12): sc-365076. Western blot analysis of DHS expression in SolB (A), NIH/3T3 (B), KNRK (C) and L8 (D) whole cell lysates.

## 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](http://www.scbt.com) for detailed protocols and support products.