

DOHH (B-12): sc-376929

BACKGROUND

DOHH (deoxyhypusine hydroxylase/monooxygenase), also known as HLRC1 (HEAT-like (PBS lyase) repeat containing 1), is a metalloenzyme involved in hypusine synthesis. It contains eight tandem HEAT-repeats, four at the N-terminus and four at the C-terminus. DOHH is an important player in mediating the posttranslational modifications of eIF5a to form hypusine. The first step of this reaction is catalyzed by DHS (deoxyhypusine synthase), which is responsible for transferring the aminobutyl moiety of spermidine to a lysine residue of eIF5a to form a deoxyhypusine-containing eIF5a intermediate. DOHH catalyzes the second step, hydroxylating the intermediate to form the hypusine residue thereby activating eIF5a. DHS, DOHH and eIF5a are evolutionarily conserved proteins that are essential for cell proliferation. Inhibition of DOHH can result in cell cycle arrest at the G₁/S boundary. This suggests a potential use of DOHH inhibitors in antitumor therapy.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611262. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Brochier, C., et al. 2004. Horizontal gene transfer and archaeal origin of deoxyhypusine synthase homologous genes in bacteria. *Gene* 330: 169-176.
3. Sommer, M.N., et al. 2004. Screening assay for the identification of deoxyhypusine synthase inhibitors. *J. Biomol. Screen.* 9: 434-438.
4. Park, M.H. 2006. The post-translational synthesis of a polyamine-derived amino acid, hypusine, in the eukaryotic translation initiation factor 5A (eIF5A). *J. Biochem.* 139: 161-169.

CHROMOSOMAL LOCATION

Genetic locus: DOHH (human) mapping to 19p13.3.

SOURCE

DOHH (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 271-299 at the C-terminus of DOHH of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DOHH (B-12) is available conjugated to agarose (sc-376929 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376929 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376929 PE), fluorescein (sc-376929 FITC), Alexa Fluor® 488 (sc-376929 AF488), Alexa Fluor® 546 (sc-376929 AF546), Alexa Fluor® 594 (sc-376929 AF594) or Alexa Fluor® 647 (sc-376929 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376929 AF680) or Alexa Fluor® 790 (sc-376929 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376929 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

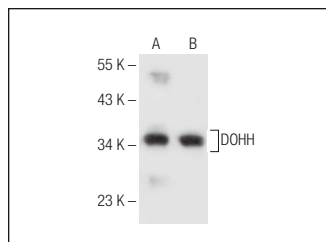
DOHH (B-12) is recommended for detection of DOHH of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (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 DOHH siRNA (h): sc-62222, DOHH shRNA Plasmid (h): sc-62222-SH and DOHH shRNA (h) Lentiviral Particles: sc-62222-V.

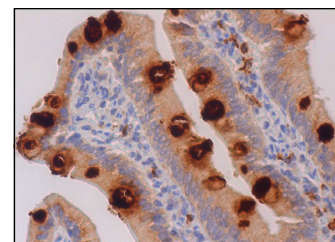
Molecular Weight of DOHH: 33 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, MIA PaCa-2 cell lysate: sc-2285 or BE (2)-M17 whole cell lysate: sc-364358.

DATA



DOHH (B-12): sc-376929. Western blot analysis of DOHH expression in SK-N-SH (A) and BE (2)-M17 (B) whole cell lysates.



DOHH (B-12): sc-376929. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Muramatsu, T., et al. 2016. The hypusine cascade promotes cancer progression and metastasis through the regulation of RhoA in squamous cell carcinoma. *Oncogene* 35: 5304-5316.
2. O'Doherty, C., et al. 2020. LC-MS proteomic profiling of Caco-2 human intestinal cells exposed to the copper-chelating agent, triethylenetetramine: a preliminary study. *Biochem. Biophys. Res. Commun.* 524: 847-852.
3. Essletzbichler, P., et al. 2023. A genome-wide CRISPR functional survey of the human phagocytosis molecular machinery. *Life Sci. Alliance* 6: e202201715.

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.