

DOHH (E-2): sc-271868

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 posttranslational 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; Dohh (mouse) mapping to 10 C1.

SOURCE

DOHH (E-2) is a mouse monoclonal antibody raised against amino acids 1-302 representing full length DOHH 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.

DOHH (E-2) is available conjugated to agarose (sc-271868 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271868 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271868 PE), fluorescein (sc-271868 FITC), Alexa Fluor® 488 (sc-271868 AF488), Alexa Fluor® 546 (sc-271868 AF546), Alexa Fluor® 594 (sc-271868 AF594) or Alexa Fluor® 647 (sc-271868 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271868 AF680) or Alexa Fluor® 790 (sc-271868 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DOHH (E-2) is recommended for detection of DOHH 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 DOHH siRNA (h): sc-62222, DOHH siRNA (m): sc-62223, DOHH shRNA Plasmid (h): sc-62222-SH, DOHH shRNA Plasmid (m): sc-62223-SH, DOHH shRNA (h) Lentiviral Particles: sc-62222-V and DOHH shRNA (m) Lentiviral Particles: sc-62223-V.

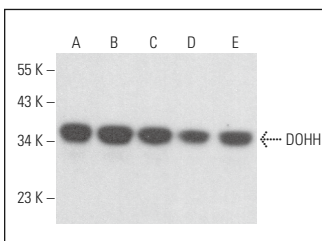
Molecular Weight of DOHH: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or MDA-MB-231 cell lysate: sc-2232.

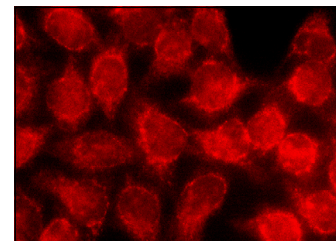
RECOMMENDED SUPPORT REAGENTS

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



DOHH (E-2): sc-271868. Western blot analysis of DOHH expression in K-562 (A), HeLa (B), MDA-MB-231 (C), IMR-32 (D) and T98G (E) whole cell lysates.



DOHH (E-2): sc-271868. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Guo, Q., et al. 2022. Deoxyhypusine hydroxylase as a novel pharmacological target for ischemic stroke via inducing a unique post-translational hypusination modification. *Pharmacol. Res.* 176: 106046.
2. Ofek, P., et al. 2023. Deoxyhypusine hydroxylase: a novel therapeutic target differentially expressed in short-term vs long-term survivors of glioblastoma. *Int. J. Cancer* 153: 654-668.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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