

# DOHH (M-19): sc-55161

## 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 G<sub>1</sub>/S boundary. This suggests a potential use of DOHH inhibitors in antitumor therapy.

## REFERENCES

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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.
5. 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.
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7. Kim, Y.S., et al. 2006. Deoxyhypusine hydroxylase is a Fe(II)-dependent, HEAT-repeat enzyme. Identification of amino acid residues critical for Fe(II) binding and catalysis [corrected]. *J. Biol. Chem.* 281: 13217-13225.
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## CHROMOSOMAL LOCATION

Genetic locus: Dohh (mouse) mapping to 10 C1.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55161 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## SOURCE

DOHH (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of DOHH of mouse origin.

## APPLICATIONS

DOHH (M-19) is recommended for detection of DOHH of mouse and rat origin by Western Blotting (starting dilution 1:200, 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 (m): sc-62223, DOHH shRNA Plasmid (m): sc-62223-SH and DOHH shRNA (m) Lentiviral Particles: sc-62223-V.

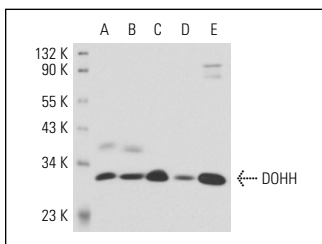
Molecular Weight of DOHH: 33 kDa.

Positive Controls: BC<sub>3</sub>H1 cell lysate: sc-2299, KNRK whole cell lysate: sc-2214 or mouse brain extract: sc-2253.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



DOHH (M-19): sc-55161. Western blot analysis of DOHH expression in BC<sub>3</sub>H1 (A), EOC 20 (B) and KNRK (C) whole cell lysates and mouse prostate (D) and mouse brain (E) tissue extracts.

## 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.