

# HIBADH (D-11): sc-398288

## BACKGROUND

HIBADH (3-hydroxyisobutyrate dehydrogenase) is a 336 amino acid mitochondrial enzyme that catalyzes the NAD<sup>+</sup>-dependent, reversible oxidation of 3-hydroxyisobutyrate to methylmalonate semialdehyde, an intermediate of valine catabolism. The enzyme functions as a homodimer between a pH of 7.0 and 10.0, with optimal activity between 8.8 and 9.0. It was previously hypothesized that defects in the gene encoding HIBADH may be the cause of 3-hydroxyisobutyric aciduria, a rare disorder that is characterized by a variety of clinical manifestations such as neurodevelopmental problems and dysmorphic features. However, it was shown that HIBADH activity was equal in patients with 3-hydroxyisobutyric aciduria as compared with controls.

## REFERENCES

1. Rougraff, P.M., et al. 1989. Cloning and sequence analysis of a cDNA for 3-hydroxyisobutyrate dehydrogenase. Evidence for its evolutionary relationship to other pyridine nucleotide-dependent dehydrogenases. *J. Biol. Chem.* 264: 5899-5903.
2. Lokanath, N.K., et al. 2003. Crystallization and preliminary X-ray crystallographic studies of NADP-dependent 3-hydroxyisobutyrate dehydrogenase from *Thermus thermophilus* HB8. *Acta Crystallogr. D Biol. Crystallogr.* 59: 2294-2296.
3. Lehoczky, J.A., et al. 2004. Conserved expression domains for genes upstream and within the HoxA and HoxD clusters suggests a long-range enhancer existed before cluster duplication. *Evol. Dev.* 6: 423-430.

## CHROMOSOMAL LOCATION

Genetic locus: HIBADH (human) mapping to 7p15.2; Hibadh (mouse) mapping to 6 B3.

## SOURCE

HIBADH (D-11) is a mouse monoclonal antibody raised against amino acids 1-157 mapping at the N-terminus of HIBADH of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HIBADH (D-11) is available conjugated to agarose (sc-398288 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398288 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398288 PE), fluorescein (sc-398288 FITC), Alexa Fluor® 488 (sc-398288 AF488), Alexa Fluor® 546 (sc-398288 AF546), Alexa Fluor® 594 (sc-398288 AF594) or Alexa Fluor® 647 (sc-398288 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398288 AF680) or Alexa Fluor® 790 (sc-398288 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

HIBADH (D-11) is recommended for detection of HIBADH 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 HIBADH siRNA (h): sc-89756, HIBADH siRNA (m): sc-145957, HIBADH shRNA Plasmid (h): sc-89756-SH, HIBADH shRNA Plasmid (m): sc-145957-SH, HIBADH shRNA (h) Lentiviral Particles: sc-89756-V and HIBADH shRNA (m) Lentiviral Particles: sc-145957-V.

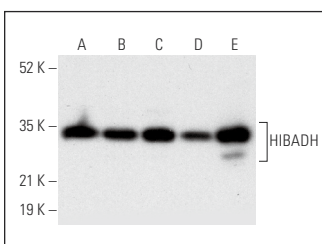
Molecular Weight of HIBADH: 35 kDa.

Positive Controls: A549 cell lysate: sc-2413, Hep G2 cell lysate: sc-2227 or CCD-1064Sk cell lysate: sc-2263.

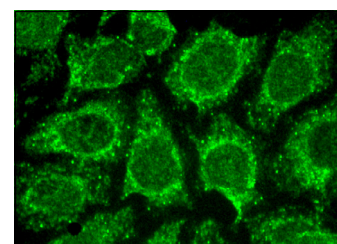
## RECOMMENDED SUPPORT REAGENTS

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



HIBADH (D-11): sc-398288. Western blot analysis of HIBADH expression in CCD-1064Sk (A), BJ (B), Hep G2 (C) and A549 (D) whole cell lysates and human liver tissue extract (E).



HIBADH (D-11): sc-398288. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Park, S., et al. 2022. Transcription factors TEAD2 and E2A globally repress acetyl-CoA synthesis to promote tumorigenesis. *Mol. Cell* 82: 4246-4261.e11.

## RESEARCH USE

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