SANTA CRUZ BIOTECHNOLOGY, INC.

CHDH (C-5): sc-393885

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Choline is an essential micronutrient that is one of the major sources of methyl groups in the human diet and is necessary for the structure and function of all cells. CHDH (choline dehydrogenase) is a 594 amino acid protein belonging to the GMC oxidoreductase family. This flavin adenine dinucleotide (FAD)-dependent enzyme converts choline to betaine aldehyde, which is then oxidized to betaine, one of the precursors of methionine. CHDH activity is highest in the kidney and liver and it is localized to the matrix side of the inner mitochondrial membrane. Since the gene encoding CHDH is regulated by estrogen, CHDH may be a possible marker for early stage ER-positive breast cancer due to its potential to predict anti-estrogen resistance. Polymorphisms in the gene encoding CHDH have been linked to the degree of susceptibility for choline deficiency.

REFERENCES

1. Zeisel, S.H. 2000. Choline: needed for normal development of memory. J. Am. Coll. Nutr. 19: 528S-531S.
2. Huang, S. and Lin, Q. 2003. Functional expression and processing of rat choline dehydrogenase precursor. Biochem. Biophys. Res. Commun. 309: 344-350.
3. Kohlmeier, M., et al. 2005. Genetic variation of folate-mediated one-carbon transfer pathway predicts susceptibility to choline deficiency in humans. Proc. Natl. Acad. Sci. USA 102: 16025-16030.
4. da Costa, K.A., et al. 2006. Common genetic polymorphisms affect the human requirement for the nutrient choline. FASEB J. 20: 1336-1344.

CHROMOSOMAL LOCATION

Genetic locus: CHDH (human) mapping to 3p21.1; Chdh (mouse) mapping to 14 B.

SOURCE

CHDH (C-5) is a mouse monoclonal antibody raised against amino acids 295-594 mapping at the C-terminus of CHDH of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CHDH (C-5) is available conjugated to agarose (sc-393885 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393885 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393885 PE), fluorescein (sc-393885 FITC), Alexa Fluor® 488 (sc-393885 AF488), Alexa Fluor® 546 (sc-393885 AF546), Alexa Fluor® 594 (sc-393885 AF594) or Alexa Fluor® 647 (sc-393885 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393885 AF680) or Alexa Fluor® 790 (sc-393885 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

CHDH (C-5) is recommended for detection of CHDH 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 CHDH siRNA (h): sc-78159, CHDH siRNA (m): sc-142323, CHDH shRNA Plasmid (h): sc-78159-SH, CHDH shRNA Plasmid (m): sc-142323-SH, CHDH shRNA (h) Lentiviral Particles: sc-78159-V and CHDH shRNA (m) Lentiviral Particles: sc-142323-V.

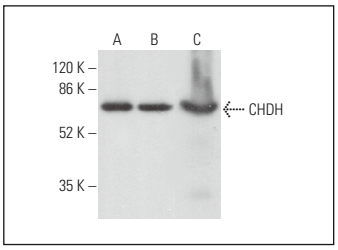
Molecular Weight of CHDH: 65 kDa.

Positive Controls: human kidney extract: sc-363764, Hep G2 cell lysate: sc-2227 or human liver extract: sc-363766.

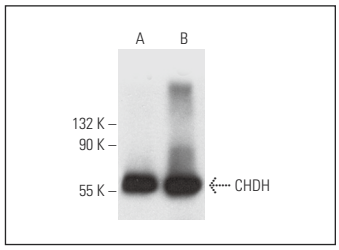
RECOMMENDED SUPPORT REAGENTS

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



CHDH (C-5): sc-393885. Western blot analysis of CHDH expression in Hep G2 (**A**) and Caco-2 (**B**) whole cell lysates and human kidney tissue extract (**C**).



CHDH (C-5): sc-393885. Western blot analysis of CHDH expression in human liver (**A**) and human kidney (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Roci, I., et al. 2020. Mapping choline metabolites in normal and transformed cells. Metabolomics 16: 125.
2. Pukale, D.D., et al. 2024. Investigating post-traumatic syringomyelia and local fluid osmoregulation via a rat model. Fluids Barriers CNS 21: 19.

STORAGE

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