SANTA CRUZ BIOTECHNOLOGY, INC.

cHMGCS (A-6): sc-166763

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HMG-CoA synthase exists as both a mitochondrial (mHMGCS) and cytoplasmic (cHMGCS) enzyme that condenses acetyl-CoA with acetoacetyl-CoA to form HMG-CoA. The HMG-CoA produced by cHMGCS is transformed into mevalonate by HMG-CoA reductase, which starts isoprenoid biosynthesis. End products of the isoprenoid pathway include cholesterol, ubiquinone, dolichol, isopentenyl adenosine and farnesyl groups. mHMGCS, together with HMG-CoA Lyase, is responsible for ketone body biosynthesis. mHMGCS is expressed in liver and kidney. Fasting, cAMP and fatty acids increase the level of transcription of mHMGCS, while feeding and Insulin repress it. A regulatory element within the mHMGCS promoter confers transcriptional regulation by PPAR, RXR, COUP-TF and HNF-4.

REFERENCES

1. Ayte, J., et al. 1990. Rat mitochondrial and cytosolic 3-hydroxy-3-methylglutaryl-CoA synthases are encoded by two different genes. Proc. Natl. Acad. Sci. USA 87: 3874-3878.
2. Russ, A.P., et al. 1992. Amplification and direct sequencing of a cDNA encoding human cytosolic 3-hydroxy-3-methylglutaryl-coenzyme A synthase. Biochim. Biophys. Acta 1132: 329-331.

CHROMOSOMAL LOCATION

Genetic locus: HMGCS1 (human) mapping to 5p12; Hmgcs1 (mouse) mapping to 13 D2.3.

SOURCE

cHMGCS (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 450-520 at the C-terminus of cHMGCS 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.

cHMGCS (A-6) is available conjugated to agarose (sc-166763 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166763 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166763 PE), fluorescein (sc-166763 FITC), Alexa Fluor® 488 (sc-166763 AF488), Alexa Fluor® 546 (sc-166763 AF546), Alexa Fluor® 594 (sc-166763 AF594) or Alexa Fluor® 647 (sc-166763 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166763 AF680) or Alexa Fluor® 790 (sc-166763 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166763 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

cHMGCS (A-6) is recommended for detection of cHMGCS 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), 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).

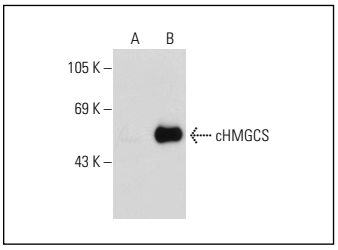
cHMGCS (A-6) is also recommended for detection of cHMGCS in additional species, including bovine.

Suitable for use as control antibody for cHMGCS siRNA (h): sc-44506, cHMGCS siRNA (m): sc-44507, cHMGCS shRNA Plasmid (h): sc-44506-SH, cHMGCS shRNA Plasmid (m): sc-44507-SH, cHMGCS shRNA (h) Lentiviral Particles: sc-44506-V and cHMGCS shRNA (m) Lentiviral Particles: sc-44507-V.

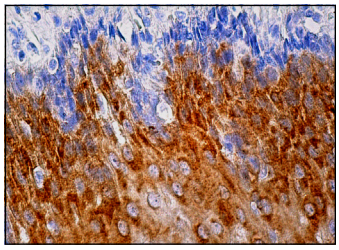
Molecular Weight of cHMGCS: 65 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, rat liver extract: sc-2395 or cHMGCS (m): 293T Lysate: sc-119231.

DATA



cHMGCS (A-6): sc-166763. Western blot analysis of cHMGCS expression in non-transfected: sc-117752 (**A**) and mouse cHMGCS transfected: sc-119231 (**B**) 293T whole cell lysates.



cHMGCS (A-6): sc-166763. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Brisdelli, F., et al. 2019. Proteomic analysis of quercetin-treated K562 cells. Int. J. Mol. Sci. 21: 32.
2. Zhou, S., et al. 2020. Dipyridamole enhances the cytotoxicities of trametinib against colon cancer cells through combined targeting of HMGCS1 and MEK pathway. Mol. Cancer Ther. 19: 135-146.
3. Soundararajan, A., et al. 2022. Multiomics analysis reveals the mechanical stress-dependent changes in trabecular meshwork cytoskeletal-extracellular matrix interactions. Front. Cell Dev. Biol. 10: 874828.
4. Andrades, E., et al. 2023. Loss of dyskerin facilitates the acquisition of metastatic traits by altering the mevalonate pathway. Life Sci. Alliance 6: e202201692.
5. Lu, F., et al. 2024. Dysregulation of brain cholesterol biosynthetic pathway following hypoxia ischemia in neonatal mice. Dev. Neurosci. 20: 1-17.

RESEARCH USE

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