

# mHMGCS (B-8): sc-393256

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: HMGCS2 (human) mapping to 1p12; Hmgcs2 (mouse) mapping to 3 F2.2.

## SOURCE

mHMGCS (B-8) is a mouse monoclonal antibody raised against amino acids 419-488 mapping near the C-terminus of mHMGCS of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

mHMGCS (B-8) is available conjugated to agarose (sc-393256 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393256 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393256 PE), fluorescein (sc-393256 FITC), Alexa Fluor® 488 (sc-393256 AF488), Alexa Fluor® 546 (sc-393256 AF546), Alexa Fluor® 594 (sc-393256 AF594) or Alexa Fluor® 647 (sc-393256 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393256 AF680) or Alexa Fluor® 790 (sc-393256 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

mHMGCS (B-8) is recommended for detection of mHMGCS 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).

Suitable for use as control antibody for mHMGCS siRNA (h): sc-44503, mHMGCS siRNA (m): sc-44502, mHMGCS shRNA Plasmid (h): sc-44503-SH, mHMGCS shRNA Plasmid (m): sc-44502-SH, mHMGCS shRNA (h) Lentiviral Particles: sc-44503-V and mHMGCS shRNA (m) Lentiviral Particles: sc-44502-V.

Molecular Weight (predicted) of mHMGCS: 57 kDa.

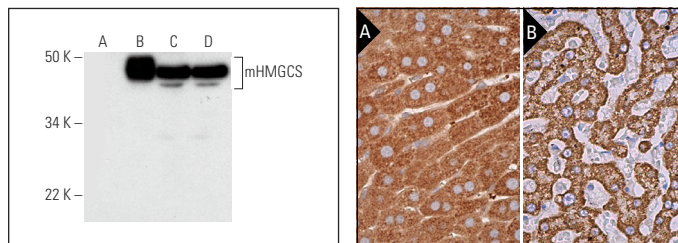
Molecular Weight (observed) of mHMGCS: 47-67 kDa.

Positive Controls: mHMGCS (m): 293T Lysate: sc-121640, mouse liver extract: sc-2256 or human liver extract: sc-363766.

## STORAGE

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

## DATA



mHMGCS (B-8): sc-393256. Western blot analysis of mHMGCS expression in non-transfected: sc-117752 (A) and mouse mHMGCS transfected: sc-121640 (B) 293T whole cell lysates and mouse liver (C) and human liver (D) tissue extracts.

mHMGCS (B-8): sc-393256. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse liver (A) and human liver (B) tissue showing cytoplasmic staining of hepatocytes.

## SELECT PRODUCT CITATIONS

- Wang, F., et al. 2016. HMG-CoA synthase isoenzymes 1 and 2 localize to satellite glial cells in dorsal root ganglia and are differentially regulated by peripheral nerve injury. *Brain Res.* 1652: 62-70.
- Xiang, H., et al. 2018. Glial fibrillary acidic protein promoter determines transgene expression in satellite glial cells following intraganglionic adeno-associated virus delivery in adult rats. *J. Neurosci. Res.* 96: 436-448.
- Asif, S., et al. 2022. Hmgcs2-mediated ketogenesis modulates high-fat diet-induced hepatosteatosis. *Mol. Metab.* 61: 101494.
- Casselbrant, A., et al. 2022. Morphological adaptation in the jejunal mucosa after iso-caloric high-fat versus high-carbohydrate diets in healthy volunteers: data from a randomized crossover study. *Nutrients* 14: 4123.
- Yang, J., et al. 2024. Downregulation of HMGCS2 mediated AECII lipid metabolic alteration promotes pulmonary fibrosis by activating fibroblasts. *Respir. Res.* 25: 176.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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