

# mHMGCS (A-20): sc-32424

## 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

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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.
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4. Hegardt, F.G., et al. 1998. Transcriptional regulation of mitochondrial HMG-CoA synthase in the control of ketogenesis. *Biochimie* 80: 803-806.
5. Rodriguez, J.C., et al. 1998. The hepatocyte nuclear factor 4 (HNF-4) represses the mitochondrial HMG-CoA synthase gene. *Biochem. Biophys. Res. Commun.* 242: 692-696.
6. Hegardt, F.G., et al. 1999. Mitochondrial 3-hydroxy-3-methylglutaryl-CoA synthase: a control enzyme in ketogenesis. *Biochem. J.* 338: 569-582.
7. Mascaro, C., et al. 2000. Sterol regulatory element binding protein-mediated effect of fluvastatin on cytosolic 3-hydroxy-3-methylglutaryl-coenzyme A synthase transcription. *Arch. Biochem. Biophys.* 374: 286-292.
8. Kim, H.J., et al. 2002. Sterol regulatory element-binding proteins (SREBPs) as regulators of lipid metabolism: polyunsaturated fatty acids oppose cholesterol-mediated induction of SREBP-1 maturation. *Ann. N.Y. Acad. Sci.* 967: 34-42.

## CHROMOSOMAL LOCATION

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

## SOURCE

mHMGCS (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of mHMGCS of human origin.

## STORAGE

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

## 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-32424 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

mHMGCS (A-20) is recommended for detection of mitochondrial HMG-CoA Synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

mHMGCS (A-20) is also recommended for detection of mitochondrial HMG-CoA Synthase in additional species, including equine, canine, bovine and porcine.

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.

## 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) 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.

## 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) or our catalog for detailed protocols and support products.