

mHMGCS (m2): 293T Lysate: sc-121641

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. Apte, 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.
3. Mascaro, C., et al. 1995. Molecular cloning and tissue expression of human mitochondrial 3-hydroxy-3-methylglutaryl-CoA synthase. *Arch. Biochem. Biophys.* 317: 385-390.
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. 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.* 96734-96742.

CHROMOSOMAL LOCATION

Genetic locus: Hmgcs2 (mouse) mapping to 3 F2.2.

PRODUCT

mHMGCS (m2): 293T Lysate represents a lysate of mouse mHMGCS transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

mHMGCS (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive mHMGCS antibodies. Recommended use: 10-20 µl per lane.

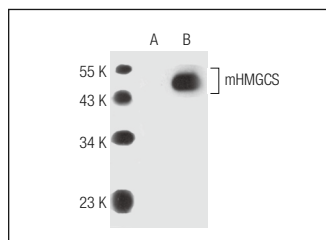
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

mHMGCS (G-11): sc-376092 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse mHMGCS expression in mHMGCS transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



mHMGCS (G-11): sc-376092. Western blot analysis of mHMGCS expression in non-transfected: sc-117752 (A) and mouse mHMGCS transfected: sc-121641 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.