

CAT (654D2Y): sc-517650

BACKGROUND

Aging affects oxidative metabolism in liver and other tissues. Carnitine acyltransferases are key enzymes of this process in mitochondria. Carnitine acetyltransferase (CAT, CRAT) catalyzes the reversible conversion of acetyl-CoA and carnitine to acetylcarnitine and CoA. The essential functions of CAT are to regenerate CoA, which allows peroxisomal β -oxidation to proceed, and to facilitate transport of acetyl moieties to mitochondria for oxidation. More than 70% of CAT is located in the mitochondrial matrix and it is also located in the endoplasmic reticulum, peroxisomal and mitochondrial inner membrane. An age associated decrease in CAT activity has been reported in many rat systems. The human gene encoding CAT maps to chromosome 9q34.1 and encodes a protein that contains a peroxisomal targeting signal and is expressed mostly in skeletal muscle, and less in heart, liver and pancreas. Total CAT activity is induced by acetate and fatty acids, and repressed by glucose.

REFERENCES

1. Corti, O., Finocchiaro, G., Rossi, E., Zuffardi, O. and DiDonato, S. 1994. Molecular cloning of cDNAs encoding human carnitine acetyltransferase and mapping of the corresponding gene to chromosome 9q34.1. *Genomics* 23: 94-99.
2. Stemple, C.J., Davis, M.A. and Hynes, M.J. 1998. The facC gene of *Aspergillus nidulans* encodes an acetate-inducible carnitine acetyltransferase. *J. Bacteriol.* 180: 6242-6251.
3. Masterson, C. and Wood, C. 2000. Pea chloroplast carnitine acetyltransferase. *Proc. R. Soc. Lond. B. Biol. Sci.* 267: 1-6.
4. Liu, J., Killilea, D.W. and Ames, B.N. 2002. Age-associated mitochondrial oxidative decay: improvement of carnitine acetyltransferase substrate-binding affinity and activity in brain by feeding old rats acetyl-L-carnitine and/or R- α -lipoic acid. *Proc. Natl. Acad. Sci. USA* 99: 1876-1881.
5. SWISS-PROT/TrEMBL (P43155). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: CAT (human) mapping to 11p13; Crat (mouse) mapping to 2 B.

SOURCE

CAT (654D2Y) is a mouse monoclonal antibody raised against a KLH-coupled peptide corresponding to amino acids 152-180 of CAT of human origin.

PRODUCT

Each vial contains 50 μ l IgG_{2a} in μ l ascites of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

CAT (654D2Y) is recommended for detection of CAT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for CAT siRNA (h): sc-41467, CAT siRNA (m): sc-41468, CAT shRNA Plasmid (h): sc-41467-SH, CAT shRNA Plasmid (m): sc-41468-SH, CAT shRNA (h) Lentiviral Particles: sc-41467-V and CAT shRNA (m) Lentiviral Particles: sc-41468-V.

Molecular Weight of CAT: 68 kDa.

PROTOCOLS

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