

CROT (H-1): sc-365976

BACKGROUND

CROT (carnitine O-octanoyltransferase), also called COT (carnitine octanoyltransferase), is a member of the carnitine/choline acetyltransferase protein family, which also includes CAT, CPTI, CPTI-M and CPTII. Carnitine/choline acetyltransferase family members are essential for the β -oxidation of fatty acids. CROT localizes to peroxisomes and is highly expressed in liver, kidney and proximal intestinal epithelium. CROT plays a role in lipid metabolism, catalyzing the reversible conversion of acyl-CoAs to their corresponding carnitine esters—a crucial step in facilitating the transport of fatty acids out of peroxisomes to mitochondria, where they can be further degraded. With a preference for straight and branched medium-chain acyl-CoAs (C6-C10 chain length), CROT plays an important role in energy metabolism in eukaryotes. In addition, CROT activity can be inhibited by malonyl-CoA.

REFERENCES

1. Ferdinandusse, S., et al. 1999. Molecular cloning and expression of human carnitine octanoyltransferase: evidence for its role in the peroxisomal β -oxidation of branched-chain fatty acids. *Biochem. Biophys. Res. Commun.* 263: 213-218.
2. van der Leij, F.R., et al. 2000. Genomics of the human carnitine acyltransferase genes. *Mol. Genet. Metab.* 71: 139-153.
3. Jong-Yeon, K., et al. 2002. Long- and medium-chain fatty acid oxidation is increased in exercise-trained human skeletal muscle. *Metab. Clin. Exp.* 51: 460-464.
4. Jogl, G., et al. 2004. Structure and function of carnitine acyltransferases. *Ann. N.Y. Acad. Sci.* 1033: 17-29.
5. Cordente, A.G., et al. 2004. Redesign of carnitine acetyltransferase specificity by protein engineering. *J. Biol. Chem.* 279: 33899-33908.
6. Cordente, A.G., et al. 2006. Mutagenesis of specific amino acids converts carnitine acetyltransferase into carnitine palmitoyltransferase. *Biochemistry* 45: 6133-6141.
7. Alfirevic, A., et al. 2007. Tacrine-induced liver damage: an analysis of 19 candidate genes. *Pharmacogenet. Genomics* 17: 1091-1100.

CHROMOSOMAL LOCATION

Genetic locus: CROT (human) mapping to 7q21.12; Crot (mouse) mapping to 5 A1.

SOURCE

CROT (H-1) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of CROT of human origin.

PRODUCT

Each vial contains 200 μ g IgM kappa light chain in 1.0 ml 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.

APPLICATIONS

CROT (H-1) is recommended for detection of CROT of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 CROT siRNA (h): sc-89588, CROT siRNA (m): sc-142579, CROT shRNA Plasmid (h): sc-89588-SH, CROT shRNA Plasmid (m): sc-142579-SH, CROT shRNA (h) Lentiviral Particles: sc-89588-V and CROT shRNA (m) Lentiviral Particles: sc-142579-V.

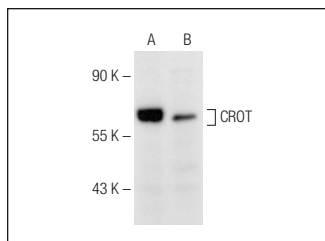
Molecular Weight of CROT: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or RAW 264.7 whole cell lysate: sc-2211.

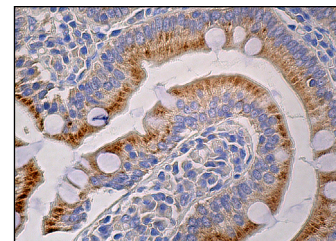
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CROT (H-1): sc-365976. Western blot analysis of CROT expression in A-431 (A) and RAW 264.7 (B) whole cell lysates.



CROT (H-1): sc-365976. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Tiwari, S., et al 2020. Gender-specific changes in energy metabolism and protein degradation as major pathways affected in livers of mice treated with ibuprofen. *Sci. Rep.* 10: 3386.

RESEARCH USE

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