

DECR1 (G-10): sc-393473

BACKGROUND

β oxidation refers to the enzymatic process by which acyl-CoA is catalytically broken down to yield acetyl-CoA, the first molecule required for the Krebs cycle. DECR1 (2,4-dienoyl-CoA reductase, mitochondrial), also known as DECR, is a 335 amino acid mitochondrial protein that exists as a homotetramer and belongs to the family of short-chain dehydrogenases/reductases. Expressed in heart, pancreas, liver, lung, kidney and skeletal muscle, DECR1 functions as an auxiliary enzyme of β -oxidation where it participates in the metabolism of unsaturated fatty enoyl-CoA esters. Specifically, DECR1 uses NADP⁺ to catalyze the reduction of 2,4-dienoyl-CoA to yield *trans*-3-enoyl-CoA, which can then be used as an intermediate in the Krebs cycle. Additionally, DECR1 is thought to function as a tumor suppressor, possibly down regulating the expression of Neu and slowing the rate of tumorigenesis.

REFERENCES

1. Roe, C.R., et al. 1990. 2,4-dienoyl-coenzyme A reductase deficiency: a possible new disorder of fatty acid oxidation. *J. Clin. Invest.* 85: 1703-1707.
2. Koivuranta, K.T., et al. 1994. Isolation and characterization of cDNA for human 120 kDa mitochondrial 2,4-dienoyl-coenzyme A reductase. *Biochem. J.* 304: 787-792.
3. Helander, H.M., et al. 1997. Molecular cloning and characterization of the human mitochondrial 2,4-dienoyl-CoA reductase gene (DECR). *Genomics* 46: 112-119.
4. Fillgrove, K.L., et al. 1999. Cloning, expression, and purification of the functional 2,4-dienoyl-CoA reductase from rat liver mitochondria. *Protein Expr. Purif.* 17: 57-63.
5. Fillgrove, K.L. and Anderson, V.E. 2001. The mechanism of dienoyl-CoA reduction by 2,4-dienoyl-CoA reductase is stepwise: observation of a dienolate intermediate. *Biochemistry* 40: 12412-12421.

CHROMOSOMAL LOCATION

Genetic locus: DECR1 (human) mapping to 8q21.3.

SOURCE

DECR1 (G-10) is a mouse monoclonal antibody raised against amino acids 90-335 mapping at the C-terminus of DECR1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DECR1 (G-10) is available conjugated to agarose (sc-393473 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393473 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393473 PE), fluorescein (sc-393473 FITC), Alexa Fluor® 488 (sc-393473 AF488), Alexa Fluor® 546 (sc-393473 AF546), Alexa Fluor® 594 (sc-393473 AF594) or Alexa Fluor® 647 (sc-393473 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393473 AF680) or Alexa Fluor® 790 (sc-393473 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

DECR1 (G-10) is recommended for detection of DECR1 of 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).

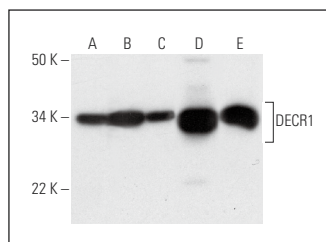
DECR1 (G-10) is also recommended for detection of DECR1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for DECR1 siRNA (h): sc-77514, DECR1 shRNA Plasmid (h): sc-77514-SH and DECR1 shRNA (h) Lentiviral Particles: sc-77514-V.

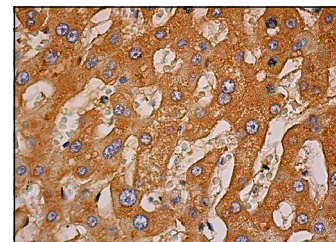
Molecular Weight of DECR1: 36 kDa.

Positive Controls: human liver extract: sc-363766, RT-4 whole cell lysate: sc-364257 or human heart extract: sc-363763.

DATA



DECR1 (G-10): sc-393473. Western blot analysis of DECR1 expression in Hep G2 (A), RT-4 (B) and U-251-MG (C) whole cell lysates and human heart (D) and human liver (E) tissue extracts.



DECR1 (G-10): sc-393473. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Ma, X., et al. 2019. Mechanism of continuous high temperature affecting growth performance, meat quality, and muscle biochemical properties of finishing pigs. *Genes Nutr.* 14: 23.

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.

PROTOCOLS

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