

DCI (K-15): sc-242553

BACKGROUND

DCI (dodecenoyl-CoA isomerase) is a 302 amino acid protein that localizes to the mitochondrial matrix and belongs to the enoyl-CoA hydratase/isomerase family. Existing as a homotrimer, DCI functions to catalyze the transformation of both 3-*trans* and 3-*cis* double bonds into 2-*trans* double bonds in a variety of enoyl-CoA proteins. The catalytic activity of DCI is essential for the beta-oxidation of unsaturated fatty acids and for proper lipid metabolism. DCI exists as 2 alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 16, which houses over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Kilponen, J.M., Häyrynen, H.M., Rehn, M. and Hiltunen, J.K. 1994. cDNA cloning and amino acid sequence of human mitochondrial δ 3 δ 2-enoil-CoA isomerase: comparison of the human enzyme with its rat counterpart, mitochondrial short-chain isomerase. *Biochem. J.* 300: 1-5.
2. Janssen, U., Fink, T., Lichter, P. and Stoffel, W. 1994. Human mitochondrial 3,2-*trans*-enoil-CoA isomerase (DCI): gene structure and localization to chromosome 16p13.3. *Genomics* 23: 223-228.
3. He, X.Y. and Yang, S.Y. 1997. Glutamate-119 of the large α -subunit is the catalytic base in the hydration of 2-*trans*-enoil-coenzyme A catalyzed by the multienzyme complex of fatty acid oxidation from *Escherichia coli*. *Biochemistry* 36: 11044-11049.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600305. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Partanen, S.T., Novikov, D.K., Popov, A.N., Mursula, A.M., Hiltunen, J.K. and Wierenga, R.K. 2004. The 1.3 Å crystal structure of human mitochondrial Delta3-Delta2-enoil-CoA isomerase shows a novel mode of binding for the fatty acyl group. *J. Mol. Biol.* 342: 1197-1208.

CHROMOSOMAL LOCATION

Genetic locus: ECI1 (human) mapping to 16p13.3; Eci1 (mouse) mapping to 17 A3.3.

SOURCE

DCI (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DCI of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-242553 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DCI (K-15) is recommended for detection of DCI 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).

DCI (K-15) is also recommended for detection of DCI in additional species, including equine and avian.

Suitable for use as control antibody for DCI siRNA (h): sc-93112, DCI siRNA (m): sc-142898, DCI shRNA Plasmid (h): sc-93112-SH, DCI shRNA Plasmid (m): sc-142898-SH, DCI shRNA (h) Lentiviral Particles: sc-93112-V and DCI shRNA (m) Lentiviral Particles: sc-142898-V.

Molecular Weight of DCI: 33 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.

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 or our catalog for detailed protocols and support products.