SANTA CRUZ BIOTECHNOLOGY, INC.

IDH1 (C-16): sc-49994

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The Power to Question

BACKGROUND

The Isocitrate dehydrogenase (IDHC or IDH) cytoplasmic enzyme is a homodimer of 416 residues that belongs to the isocitrate and isopropylmalate dehydrogenases family. IDHC catalyzes the third step of the citric acid cycle, which involves the oxidative decarboxylation of isocitrate, forming α-ketoglutarate and CO2 in a two step reaction. The first step involves the oxidation of isocitrate to the intermediate oxalosuccinate, while the second step involves the production of α-ketoglutarate. During this process, either NADH or NADPH is produced along with CO2. Ca^{2+} can bind to IDHC as a complex with isocitrate, acting as a competitive inhibitor of Mg2+. The IDHC enzyme is inactivated by phosphorylation at Ser 113 and contains a clasp-like domain wherein both polypeptide chains in the dimer interlock. IDHC is expressed in a wide range of species and also in organisms that lack a complete citric acid cycle.

REFERENCES

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3. Nekrutenko, A., Hillis, D.M., Patton, J.C., Bradley, R.D. and Baker, R.J. 1999. Cytosolic isocitrate dehydrogenase in humans, mice, and voles and phylogenetic analysis of the enzyme family. J. Mol. Evol. 15: 1674-1684.
4. Geisbrecht, B.V. and Gould, S.J. 1999. The human PICD gene encodes a cytoplasmic and peroxisomal $NADP^+$-dependent isocitrate dehydrogenase. J. Biol. Chem. 274: 30527-30533.
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6. Banerjee, S. 2005. Comparison of *Mycobacterium tuberculosis* isocitrate dehydrogenases (ICD-1 and ICD-2) reveals differences in coenzyme affinity, oligomeric state, pH tolerance and phylogenetic affiliation. BMC Biochem. 6: 20.
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CHROMOSOMAL LOCATION

Genetic locus: IDH1 (human) mapping to 2q34; Idh1 (mouse) mapping to 1 C3.

SOURCE

IDH1 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of IDH1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-49994 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IDH1 (C-16) is recommended for detection of IDH1 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).

IDH1 (C-16) is also recommended for detection of IDH1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for IDH1 siRNA (h): sc-60829, IDH1 siRNA (m): sc-60830, IDH1 shRNA Plasmid (h): sc-60829-SH, IDH1 shRNA Plasmid (m): sc-60830-SH, IDH1 shRNA (h) Lentiviral Particles: sc-60829-V and IDH1 shRNA (m) Lentiviral Particles: sc-60830-V.

Molecular weight of IDH1: 45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, SW480 cell lysate: sc-2219 or DU 145 cell lysate: sc-2268.

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.