

IDH3G (C-5): sc-365489

BACKGROUND

IDH3G (isocitrate dehydrogenase [NAD] subunit γ (mitochondrial), NAD⁺-specific ICDH) is a 393 amino acid protein encoded by the human gene IDH3G. IDH3G belongs to the isocitrate and isopropylmalate dehydrogenases family and can bind one magnesium or manganese ion per subunit. It is usually found in the mitochondrion as a heterooligomer of subunits α , β and γ in the apparent ratio of 2:1:1. Human NAD-dependent isocitrate dehydrogenase (IDH) is allosterically activated by ADP by lowering the K_m for isocitrate. NAD-dependent isocitrate dehydrogenase is a tricarboxylic acid cycle enzyme that produces 2-oxoglutarate, an organic acid required by the glutamine synthetase/glutamate synthase cycle to assimilate ammonium.

REFERENCES

- Kim, Y.O., et al. 1995. Characterization of a cDNA clone for human NAD⁺-specific isocitrate dehydrogenase α -subunit and structural comparison with its isoenzymes from different species. *Biochem. J.* 308: 63-68.
- Lee, P. and Colman, R.F. 2006. Thr 373, Asp 375, and Lys 260 are in the coenzyme site of porcine NADP-dependent isocitrate dehydrogenase. *Arch. Biochem. Biophys.* 450: 183-190.
- Liu, W., et al. 2006. Expression of cytosolic NADP⁺-dependent isocitrate dehydrogenase in bovine mammary epithelium: modulation by regulators of differentiation and metabolic effectors. *Exp. Biol. Med.* 231: 599-610.
- Soundar, S., et al. 2006. Identification of Mn²⁺-binding aspartates from α , β , and γ subunits of human NAD-dependent isocitrate dehydrogenase. *J. Biol. Chem.* 281: 21073-21081.

CHROMOSOMAL LOCATION

Genetic locus: IDH3G (human) mapping to Xq28.

SOURCE

IDH3G (C-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 363-389 at the C-terminus of IDH3G 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.

IDH3G (C-5) is available conjugated to agarose (sc-365489 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365489 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365489 PE), fluorescein (sc-365489 FITC), Alexa Fluor[®] 488 (sc-365489 AF488), Alexa Fluor[®] 546 (sc-365489 AF546), Alexa Fluor[®] 594 (sc-365489 AF594) or Alexa Fluor[®] 647 (sc-365489 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365489 AF680) or Alexa Fluor[®] 790 (sc-365489 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365489 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

IDH3G (C-5) is recommended for detection of IDH3G of human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IDH3G siRNA (h): sc-62493, IDH3G shRNA Plasmid (h): sc-62493-SH and IDH3G shRNA (h) Lentiviral Particles: sc-62493-V.

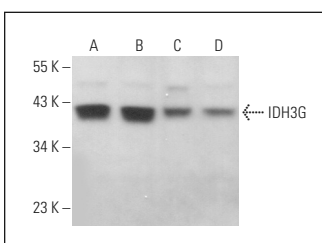
Molecular Weight of IDH3G: 43 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, SK-BR-3 cell lysate: sc-2218 or SJRH30 cell lysate: sc-2287.

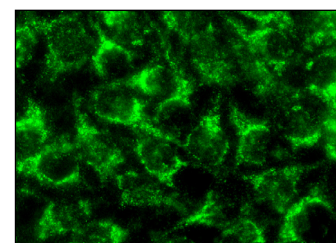
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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.

DATA



IDH3G (C-5): sc-365489. Western blot analysis of IDH3G expression in MCF7 (A), SK-BR-3 (B), HT-1080 (C) and SJRH30 (D) whole cell lysates.



IDH3G (C-5): sc-365489. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Pacheco-Velázquez, S.C., et al. 2022. 17- β Estradiol up-regulates energy metabolic pathways, cellular proliferation and tumor invasiveness in ER⁺ breast cancer spheroids. *Front. Oncol.* 12: 1018137.

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.