SANTA CRUZ BIOTECHNOLOGY, INC.

IDH3A (A-10): sc-398021

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

IDH3A (isocitrate dehydrogenase [NAD] subunit a (mitochondrial), NAD^+-specific ICDH) is a 366 amino acid protein encoded by the human gene IDH3A. IDH3A 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 Km 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.

CHROMOSOMAL LOCATION

Genetic locus: IDH3A (human) mapping to 15q25.1; Idh3a (mouse) mapping to 9 A5.3.

SOURCE

IDH3A (A-10) is a mouse monoclonal antibody raised against amino acids 71-120 mapping within an internal region of IDH3A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IDH3A (A-10) is available conjugated to agarose (sc-398021 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398021 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398021 PE), fluorescein (sc-398021 FITC), Alexa Fluor® 488 (sc-398021 AF488), Alexa Fluor® 546 (sc-398021 AF546), Alexa Fluor® 594 (sc-398021 AF594) or Alexa Fluor® 647 (sc-398021 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398021 AF680) or Alexa Fluor® 790 (sc-398021 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IDH3A (A-10) is recommended for detection of IDH3A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 IDH3A siRNA (h): sc-62489, IDH3A siRNA (m): sc-62490, IDH3A shRNA Plasmid (h): sc-62489-SH, IDH3A shRNA Plasmid (m): sc-62490-SH, IDH3A shRNA (h) Lentiviral Particles: sc-62489-V and IDH3A shRNA (m) Lentiviral Particles: sc-62490-V.

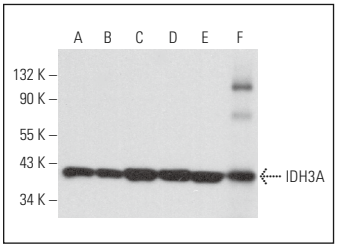
Molecular Weight of IDH3A: 40 kDa.

Positive Controls: L6 whole cell lysate: sc-364196, 3T3-L1 cell lysate: sc-2243 or RAW 264.7 whole cell lysate: sc-2211.

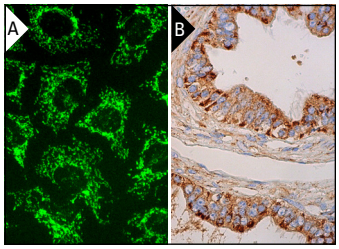
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



IDH3A (A-10): sc-398021. Western blot analysis of IDH3A expression in HeLa (**A**), MCF7 (**B**), RAW 264.7 (**C**), 3T3-L1 (**D**) and L6 (**E**) whole cell lysates and mouse heart tissue extract (**F**).



IDH3A (A-10): sc-398021. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Domingo-Vidal, M., et al. 2022. Monocarboxylate transporter 4 in cancer-associated fibroblasts is a driver of aggressiveness in aerodigestive tract cancers. Front. Oncol. 12: 906494.
2. Gonthier, K., et al. 2023. Isocitrate dehydrogenase 1 sustains a hybrid cytoplasmic-mitochondrial tricarboxylic acid cycle that can be targeted for therapeutic purposes in prostate cancer. Mol. Oncol. 17: 2109-2125.
3. Takenaka, T., et al. 2023. Glycolytic system in axons supplement decreased ATP levels after axotomy of the Peripheral Nerve. eNeuro 10: ENEURO.0353-22.2023.

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.