SANTA CRUZ BIOTECHNOLOGY, INC.

Aldolase A (C-10): sc-390733

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Fructose 1,6-bisphosphate aldolase catalyses the reversible condensation of glycerone-P and glyceraldehyde 3-phosphate into fructose 1,6-bisphosphate. Fructose 1,6-bisphosphate aldolase exists as three forms: the muscle-specific Aldolase A; the liver-specific Aldolase B; and the brain-specific Aldolase C. Aldolase A, B and C arose from a common ancestral gene from which Aldolase B first diverged. Aldolase A is one of the most highly-conserved enzymes known, with only about 2% of the residues changing per 100 million years. Aldolase B is regulated by the hormones Insulin and glucagon, and has been implicated in hereditary fructose intolerance disease. Aldolase C is a polypeptide that is exclusively expressed in Purkinje cells. Aldolase C-positive Purkinje cells are organized in the cerebellum as stripes or bands that run from anterior to posterior across the cerebellum and alternate with bands of Aldolase C-negative Purkinje cells.

REFERENCES

1. Izzo, P., et al. 1988. Human Aldolase A gene. Structural organization and tissue-specific expression by multiple promoters and alternate mRNA processing. Eur. J. Biochem. 174: 569-578.
2. Freemont, P.S., et al. 1988. The complete amino acid sequence of human skeletal muscle fructose-bisphosphate aldolase. Biochem. J. 249: 779-788.

CHROMOSOMAL LOCATION

Genetic locus: ALDOA (human) mapping to 16p11.2; Aldoa (mouse) mapping to 7 F3.

SOURCE

Aldolase A (C-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 319-336 of Aldolase A of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Aldolase A (C-10) is available conjugated to agarose (sc-390733 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390733 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390733 PE), fluorescein (sc-390733 FITC), Alexa Fluor® 488 (sc-390733 AF488), Alexa Fluor® 546 (sc-390733 AF546), Alexa Fluor® 594 (sc-390733 AF594) or Alexa Fluor® 647 (sc-390733 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390733 AF680) or Alexa Fluor® 790 (sc-390733 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390733 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

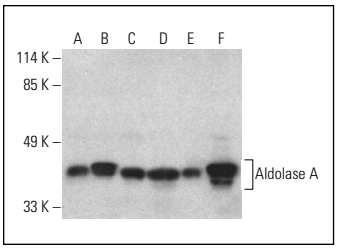
Aldolase A (C-10) is recommended for detection of Aldolase A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). Aldolase A (C-10) is also recommended for detection of Aldolase A in additional species, including equine, bovine and avian.

Suitable for use as control antibody for Aldolase A siRNA (h): sc-29664, Aldolase A siRNA (m): sc-29665, Aldolase A shRNA Plasmid (h): sc-29664-SH, Aldolase A shRNA Plasmid (m): sc-29665-SH, Aldolase A shRNA (h) Lentiviral Particles: sc-29664-V and Aldolase A shRNA (m) Lentiviral Particles: sc-29665-V.

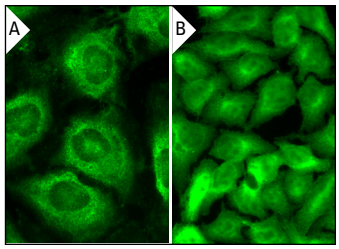
Molecular Weight of Aldolase A: 40 kDa.

Positive Controls: A-673 cell lysate: sc-2414, Caki-1 cell lysate: sc-2224 or A549 cell lysate: sc-2413.

DATA



Aldolase A (C-10) HRP: sc-390733 HRP. Direct western blot analysis of Aldolase A expression in HeLa (**A**), HCT-116 (**B**), Caki-1 (**C**), A-673 (**D**), A549 (**E**) and MCF7 (**F**) whole cell lysates.



Aldolase A (C-10): sc-390733. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic and nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Cangelosi, D., et al. 2019. A proteomic analysis of GSD-1a in mouse livers: evidence for metabolic reprogramming, inflammation, and macrophage polarization. J. Proteome Res. 18: 2965-2978.
2. De Lira, M.N., et al. 2020. Neutral sphingomyelinase-2 (NSM 2) controls T cell metabolic homeostasis and reprogramming during activation. Front. Mol. Biosci. 7: 217.
3. Gutiérrez, S., et al. 2021. *Salmonella typhimurium* impairs glycolysis-mediated acidification of phagosomes to evade macrophage defense. PLoS Pathog. 17: e1009943.
4. Sim, J.R., et al. 2022. Amelioration of SARS-CoV-2 infection by ANO6 phospholipid scramblase inhibition. Cell Rep. 40: 111117.
5. Li, L., et al. 2023. Identification of cancer protein biomarker based on cell specific peptide and its potential role in predicting tumor metastasis. J. Proteomics 275: 104826.

RESEARCH USE

For research use only, not for use in diagnostic procedures.