Aldolase C (H-11): sc-271593

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: ALDOC (human) mapping to 17q11.2; Aldoc (mouse) mapping to 11 B5.

SOURCE

Aldolase C (H-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 77-112 within an internal region of Aldolase C 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.

Aldolase C (H-11) is available conjugated to agarose (sc-271593 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271593 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271593 PE), fluorescein (sc-271593 FITC), Alexa Fluor® 488 (sc-271593 AF488), Alexa Fluor® 546 (sc-271593 AF546), Alexa Fluor® 594 (sc-271593 AF594) or Alexa Fluor® 647 (sc-271593 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271593 AF680) or Alexa Fluor® 790 (sc-271593 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271593 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

Aldolase C (H-11) is recommended for detection of Aldolase C 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).

Aldolase C (H-11) is also recommended for detection of Aldolase C in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Aldolase C siRNA (h): sc-29668, Aldolase C siRNA (m2): sc-270351, Aldolase C shRNA Plasmid (h): sc-29668-SH, Aldolase C shRNA Plasmid (m2): sc-270351-SH, Aldolase C shRNA (h) Lentiviral Particles: sc-29668-V and Aldolase C shRNA (m2) Lentiviral Particles: sc-270351-V.

Molecular Weight of Aldolase C: 40 kDa.

Positive Controls: mouse brain extract: sc-2253, rat cerebellum extract: sc-2398 or RAW 264.7 whole cell lysate: sc-2211.

DATA
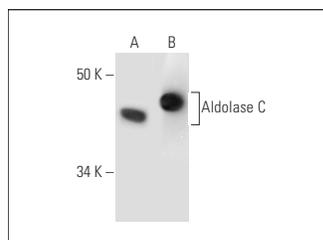
Aldolase C (H-11): sc-271593. Western blot analysis of Aldolase C expression in mouse brain (**A**) and human hippocampus (**B**) tissue extracts.

Aldolase C (H-11): sc-271593. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing staining of neurofilaments.

SELECT PRODUCT CITATIONS

1. Yamamoto, T., et al. 2019. Premotor cortical-cerebellar reorganization in a macaque model of primary motor cortical lesion and recovery. J. Neurosci. 39: 8484-8496.

2. Henschke, J.U., et al. 2020. Disynaptic cerebrocerebellar pathways originating from multiple functionally distinct cortical areas. Elife 9: e59148.

3. Hu, X., et al. 2021. Differential Kat3 usage orchestrates the integration of cellular metabolism with differentiation. Cancers 13: 5884.

4. Shen, J., et al. 2022. Histone chaperone FACT complex coordinates with HIF to mediate an expeditious transcription program to adapt to poorly oxygenated cancers. Cell Rep. 38: 110304.

5. Hou, Y., et al. 2023. METTL14 modulates glycolysis to inhibit colorectal tumorigenesis in p53-wild-type cells. EMBO Rep. E-published.

RESEARCH USE

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