



Mouse monoclonal antibody to Aldolase C

Catalogue No.: M-1693-100

Description: Å

Aldolases are glycolytic enzyme that catalyzes the reversible aldol cleavage of fructose 1,6-bisphosphate and fructose-1-phosphate to dihydroxyacetone phosphate and either glyceraldehyde 3-phosphate or glyceraldehyde, respectively. Three aldolase isozymes are found in mammals specifically aldolases A, B, and C, each of which is encoded by a separate gene. Aldolase A is generally considered to be a muscle enzyme. Northern analysis of cultured cells suggests that it is present in both neurons and glia (1). Aldolase B is considered to be a liver-specific enzyme and it is transcriptionally activated by signals from hormones and dietary factors (2). In the adult, aldolase C is the brain-specific isozyme, with low but detectable activity in fetal tissues (1, 3-6). Aldolase C shares 81% amino acid identity with aldolase A and 70% identity with aldolase B. Earlier studies using isozyme-specific antibodies report its location in gray matter astrocytes and cells of the pia mater (5, 8). In situ hybridization of mouse central nervous system using isozyme-specific probes revealed that aldolase A and C are expressed in complementary cell types: aldolase A mRNA is found in neurons; aldolase C message is detected in astrocytes, some cells of the pia mater, and Purkinje cells (9). Aldolase C can in some situations be used as an astrocyte marker. However Purkinje cells of the cerebellum contain high levels of the enzyme, so the enzyme is not totally astrocyte specific.

Unit size: 100 ug

Antigen: N-terminal 20 amino acids of aldolase C protein.

Antibody Type: Monoclonal

Isotype: IgG1

Produced in: Mouse

Applications: Western Blotting (WB) and Immunocytochemistry (IC). A dilution of 1:1,000 - 1:2,000 is recommended for WB. A dilution of 1:500 - 1:1,000 is recommended for IC. Biosensis recommends optimal dilutions/concentrations should be determined by the end user.

Specificity: The antibody reacts with a 40 kDa band by Western blot on a crude bovine cerebellum homogenate. It has also been used successfully for immunocytochemistry.

Species Against: The antibody has been directly tested for reactivity in bovine. It is expected that it will work on other mammal tissues.

Antibody Against: Aldolase C

Form: Lyophilised. The antibody has been purified from tissue culture supernatant.

Appearance: Lyophilised

Reconstitution: Reconstitute in sterile distilled water. Centrifuge to remove any insoluble material.

Storage: After reconstitution of lyophilised antibody, aliquot and store at -20C for a higher stability. Avoid freeze-thaw cycles.

Expiry Date: 12 months after purchase

General References: 1. Popovici T, Berwald-Netter Y, Vibert M, Kahn A, Skala H. Localization of aldolase C mRNA

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in brain cells. FEBS Lett. 268, 189-193 (1990).

2. Weber A, Marie J, Cottureau D, Simon M, Besmond C, Dreyfus J. & Kahn A. Dietary Control of Aldolase B and L-type Pyruvate Kinase RNAs in Rat. J. Biol. Chem 259, 1798-1802 (1984).

3. Mukai T, Yatsuki H, Masuko S, Arai Y, Joh K & Hori K. The structure of the brain-specific rat aldolase C gene and its regional expression. Biochem. Biophys. Res. Commun. 174, 1035-1042 (1991).

4. Royds J, Ironside J, Warnaar S, Taylor C & Timperle W. Monoclonal antibody to aldolase C: a selective marker for Purkinje cells in the human cerebellum. Neuropathol. Appl. Neurobiol. 13, 11-21(1987).

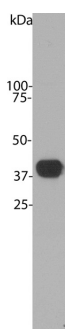
5. Thompson R., Kynoch P. Willson V. Cellular localization of aldolase C subunits in human brain. Brain Res. 232, 489-493 (1982).

6. Schapira F, Reuber M, Hatzfeld A. Resurgence of two fetal-type of aldolases (A and C) in some fast-growing hepatomas. Biochem. Biophys. Res. Commun. 40, 321-327(1970).

7. Arai Y, Kajihara S, Masuda J, Ohishi S, Zen K, Ogata J. Mukai T. Position-independent, high-level, and correct regional expression of the rat aldolase C gene in the central nervous system of transgenic mice. Eur. J. Biochem. 221, 253-260 (1994).

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9. Walther EU, Dichgans M, Maricich SM, Romito RR, Yang F, Dziennis S, Zackson S, Hawkes R, Herrup K. Genomic sequences of aldolase C (Zebirin II) direct lacZ expression exclusively in non-neuronal cells of transgenic mice. Proc Natl Acad Sci U S A. Mar 3;95(5):2615-20(1998).



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homogenate. The antibody recognizes the ~40 kDa protein.

biosensis

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