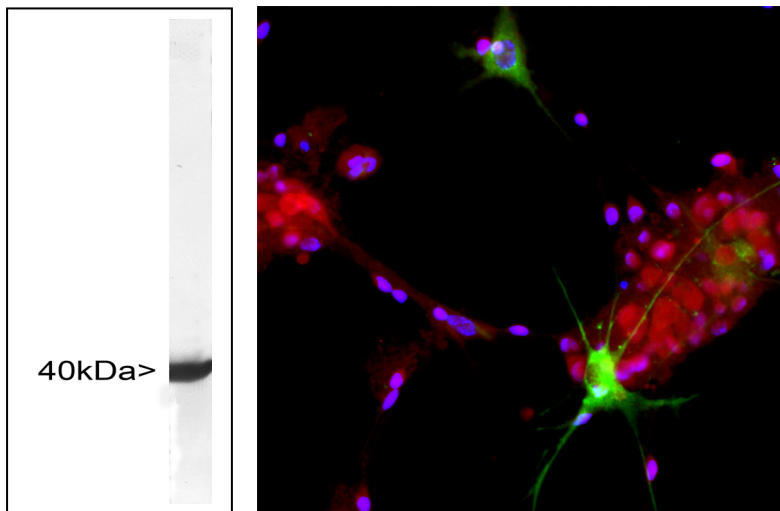


**Catalogue# MCA-1A1: Mouse Monoclonal Antibody to Aldolase C**

**The Immunogen:** Aldolases are glycolytic enzymes that catalyze 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. MCA-1A1 against C-terminal 23 amino acids of aldolase C protein, the sequence is KYEGSGEDGGAAAQSLYIANHAY, so that the epitope is unusually well known. The HGNC name for this protein is ALDOC.



**Left:** Blots of crude rat brain lysates blotted with MCA-1A1. The MCA-1A1 monoclonal binds strongly and cleanly to a band at about 40 kDa. **Right:** View of mixed neuron/glia cultures stained with MCA-1A1 (green) and our rabbit antibody to NeuN/FOX3 antibody (**RPCA-FOX3**, red). MCA-1A1 antibody reveals strong cytoplasmic staining in astrocytes, while Rabbit Fox3/NeuN antibody shows nuclear and distal cytoplasmic staining in neuron cells and is complete absence of astrocytes. Nuclei are labeled with Dapi (blue).

**Antibody Characteristics:** MCA-1A1 was raised against C-terminal 23 amino acids of aldolase C protein, the sequence is KYEGSGEDGGAAAQSLYIANHAY and is an IgG1 type with a  $\kappa$  light chain.

**Suggestions for use:** The antibody is affinity purified at concentration of 1mg/ml. The antibody solution can be used at dilutions of at least 1:500 in immunofluorescence experiments. In western blotting using chemiluminescence it can be used at dilutions of 1:1,000 or lower.

**Storage Instructions:** Shipped on ice. Please store at 4°C for regular uses. For long term storage, please leave frozen at -20°C and avoid freeze/thaw cycles.

**Limitations:** This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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