abcam

# ab75751

# Anti-Aldolase B + Aldolase C antibody [EPR3138Y]

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR3138Y |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.151 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/100 - 1/250 |
| **Notes** | Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/100 - 1/250 |
| **Notes** | Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 - 1/250 |
| **Notes** | Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | **For unpurified use at 1/500 - 1/1000.** |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/1000 |
| **Notes** | **For unpurified use at 1/500 - 1/1000.** |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | **For unpurified use at 1/500 - 1/1000.** |

## Flow Cyt

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

## Target data

See full target information ALDOB

| | |
|---|---|
| **Function** | Catalyzes the aldol cleavage of fructose 1,6-biphosphate to form two triosephosphates dihydroxyacetone phosphate and D-glyceraldehyde 3-phosphate in glycolysis as well as the reverse stereospecific aldol addition reaction in gluconeogenesis. In fructolysis, metabolizes fructose 1-phosphate derived from the phosphorylation of dietary fructose by fructokinase into dihydroxyacetone phosphate and D-glyceraldehyde (PubMed:10970798, PubMed:12205126, PubMed:20848650). Acts as an adapter independently of its enzymatic activity, exerts a tumor suppressor role by stabilizing the ternary complex with G6PD and TP53 to inhibit G6PD activity and keep oxidative pentose phosphate metabolism in check (PubMed:35122041). |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Notes

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | Aldolase B also known as fructose-bisphosphate aldolase B and Aldolase C or fructose-bisphosphate aldolase C are key enzymes in glycolysis and gluconeogenesis pathways. These enzymes are part of the aldolase family and share high sequence homology. Aldolase B has a molecular mass of approximately 36-40 kDa and is primarily expressed in the liver whereas Aldolase C is majorly found in the brain particularly within neurons. They function to catalyze the cleavage of fructose-16-bisphosphate into glyceraldehyde-3-phosphate and dihydroxyacetone phosphate critical steps in energy metabolism. |
| **Biological function summary** | Aldolase B and C perform major roles in cellular energy production and metabolism. Aldolase B facilitates the conversion of fructose into glycolytic intermediates aiding glycogen synthesis and gluconeogenesis in the liver. Aldolase C contributes to glucose metabolism in the brain supporting neural activities and functions. While they do not form stable complexes these enzymes occasionally interact transiently with other metabolic proteins to fulfill cellular functions. |
| **Pathways** | Aldolase B and C integrate into glycolysis and gluconeogenesis fundamental biological pathways for energy conversion. Aldolase B enables fructose utilization by linking with enzymes like fructokinase and glucose-6-phosphatase during gluconeogenesis. Aldolase C participates in the glycolytic pathway associated with enzymes such as hexokinase supporting glucose breakdown during brain metabolism. Both enzymes maintain energy homeostasis within their respective tissues contributing to overall metabolic balance. |
| **Associated diseases and disorders** | Aldolase B relates closely to hereditary fructose intolerance a genetic condition characterized by an inability to metabolize fructose properly in the liver. The deficiency or dysfunction of Aldolase B results in toxic accumulations impacting liver function. Aldolase C is associated with glioblastoma where its increased expression plays a role in tumor metabolism and growth. In the context of hereditary fructose intolerance Aldolase B is linked to fructokinase due to their sequential mechanisms in fructose metabolism while Aldolase C's association in glioblastoma connects with altered metabolic pathways within cancerous cells. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

We do not recommend this combination. It is not covered by our product promise.

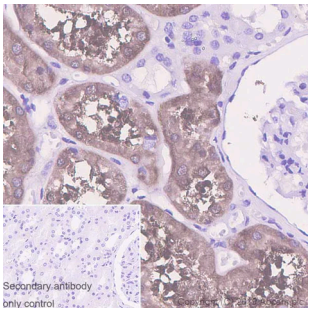
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
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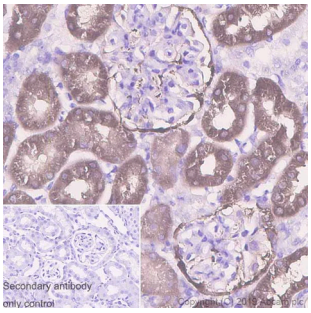
## 6 product images




### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751)

Aldolase B + Aldolase C Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aldolase B + Aldolase C antibody

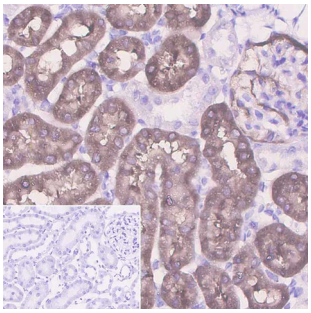
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue sections labeling Aldolase B with Purified ab75751 at 1:100 dilution (1.47 µg/ml). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751)

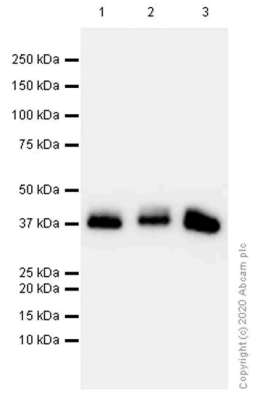
Aldolase B + Aldolase C Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aldolase B + Aldolase C antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue sections labeling Aldolase B with Purified ab75751 at 1:100 dilution (1.47 µg/ml). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat kidney tissue sections labeling Aldolase B with Purified ab75751 at 1:100 dilution (1.47 µg/ml). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.




## Western blot - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751)

Blocking Buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751) at 1/1000 dilution

Lane 1:
Human kidney lysate at 20 µg

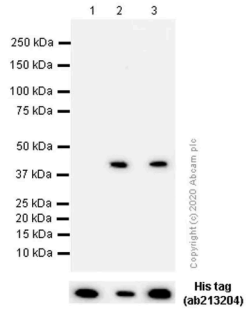
Lane 2:
Mouse kidney lysate at 20 µg

Lane 3:
Rat kidney lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 39 kDa




## Western blot - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751) at 1/200 dilution

Lane 1:
His-tagged human Aldolase A full-length recombinant protein at 0.01 µg

Lane 2:
His-tagged human Aldolase B full-length recombinant protein at 0.01 µg

Lane 3:
His-tagged human Aldolase C full-length recombinant protein at 0.01 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 40 kDa

Exposure time: 40s

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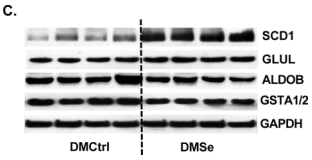



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## Western blot - Anti-Aldolase B + Aldolase C antibody [EPR3138Y] (ab75751)

Aldolase B + Aldolase C Western blot staining using rabbit Anti-Aldolase B + Aldolase C antibody

Aldolase B + Aldolase C western blot using anti-Aldolase B + Aldolase C antibody [EPR3138Y] ab75751. Publication image and figure legend from Wang, C., Yang, S., et al., 2014, PLoS One, PubMed 24983750.

ab75751 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab75751 please see the product overview.

Hepatic genes and proteins differentially expressed between DMCtrl and DMSe groups.(A) The heat map depicts differences in mRNA expression levels according to brightness (green, downregulated; red, upregulated compared with DMCtrl mice). (B) qRT-PCR analysis of Scd1, Pltp, Aldob, Glul, Gsta1 and InsR, which were selected to validate the cDNA microarray data from the liver. The data indicate excellent consistency between the two techniques. Three replicates were performed for each mouse (eight mice per group). Gapdh was used as an internal reference gene. The results are presented as the relative changes in mRNA expression levels in DMSe vs. DMCtrl mice. (C) Representative western blots and (D) quantitation of selected proteins. There was agreement in the expression levels of GLUL and ALDOB as detected using 2D-DIGE and western blot analyses. SCD1 and GSTA1/2 displayed the same differences in expression level seen in the microarray data. GAPDH was used as an internal reference. The intensity of protein bands was quantified by densitometry using Gel-Pro Analyzer software v. 4.1 (Media Cybernetics, Washington, USA), and the results are presented as the ratio of densitometric values from DMSe to DMCtrl. The asterisk (*) represents values shown to be significantly different from DMCtrl by the Student t test (*p<0.05, **p<0.01, ***p<0.001).

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