abcam

ab79757

Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker

Lab Essentials | Recombinant | RabMAb | 20ul selling size

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	EPR3377
Purification technique	Affinity purification Protein A
Specificity	The cross-reactivity with ENO2 is weaker than that with ENO1 and ENO3.
Concentration	0.116 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/500

Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified use at 1/100 - 1/250.**

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-

Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	**For unpurified use at 1/5000 - 1/20000.**

Species	Rat
Dilution info	1/1000
Notes	**For unpurified use at 1/5000 - 1/20000.**

Species	Human
Dilution info	1/1000
Notes	**For unpurified use at 1/5000 - 1/20000.**

Species	Recombinant fragment - Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information ENO2

Function	Enolase that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate in glycolysis and the reverse reaction in gluconeogenesis (By similarity). Has neurotrophic and neuroprotective properties on a broad spectrum of central nervous system (CNS) neurons. Binds, in a calcium-dependent manner, to cultured neocortical neurons and promotes cell survival (By similarity).

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	Neuron-specific enolase (NSE) also known simply as enolase-2 is a glycolytic enzyme with a molecular weight of approximately 47 kDa. This protein mainly facilitates the conversion of 2-phosphoglycerate to phosphoenolpyruvate in the glycolytic pathway. NSE is expressed significantly in neural tissues and neuroendocrine cells. Researchers often utilize it in various assays including NSE IHC and NSE ELISA to assess its expression levels in different tissue types.
Biological function summary	NSE plays a major role in cellular metabolism particularly in neurons where it aids energy production through glycolysis. It forms part of a dimeric complex bonding typically with itself or other enolase isoforms for proper function. As an important enzyme in the metabolic pathway NSE helps ensure neurons and associated cells maintain energy homeostasis which is fundamental for sustenance and normal cellular functions.
Pathways	NSE is an integral component of glycolysis a metabolic pathway pivotal in cellular energy production. The process collaborates closely with other glycolytic enzymes like pyruvate kinase and hexokinase to facilitate efficient energy release from glucose. Through these interactions NSE guarantees the smooth continuation of glycolysis highlighting its importance within cellular metabolism frameworks.
Associated diseases and disorders	NSE serves as a marker for neuroblastoma and small cell lung cancer. Elevated NSE levels suggest potential malignancies due to its release into the bloodstream from damaged neural and neuroendocrine cells. Moreover it often appears alongside proteins like neuron-specific markers such as synaptophysin in diagnostic assays. Understanding its involvement in these conditions helps clinicians diagnose and monitor the progression of certain cancers effectively.

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.

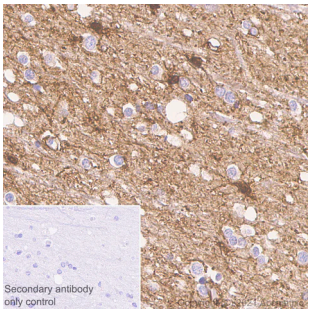
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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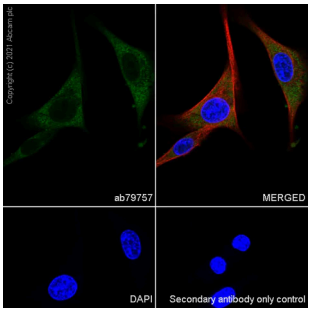
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

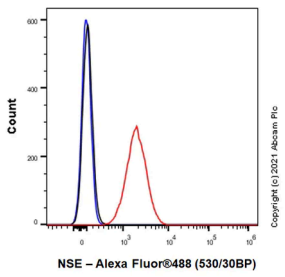
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cerebrum tissue sections labeling ENO1 + ENO2 + ENO3 with purified ab79757 at 1/500 dilution (0.20 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunocytochemistry/ Immunofluorescence - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

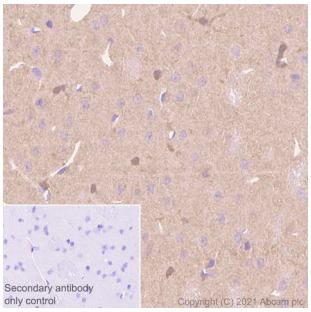
Immunocytochemistry analysis of U-87 MG (Human glioblastoma-astrocytoma epithelial cell) cells labeling ENO1 + ENO2 + ENO3 with purified ab79757 at 1/50 dilution (2.0 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/mL) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Flow Cytometry (Intracellular) staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

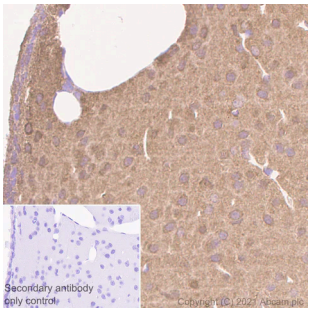
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling NSE with purified ab79757 at 1/20 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabelled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

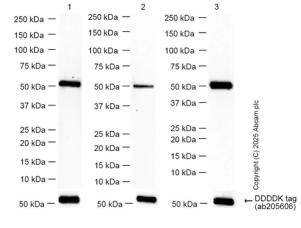
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat cerebrum tissue sections labeling ENO1 + ENO2 + ENO3 with purified ab79757 at 1/500 dilution (0.20 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse cerebrum tissue sections labeling ENO1 + ENO2 + ENO3 with purified ab79757 at 1/500 dilution (0.20 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Western blot staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Anti-DDDDK tag antibody [6F7] - Loading Control (ab205606) staining at 1/1000 dilution.

The cross-reactivity with ENO2 is weaker than that with ENO1 and ENO3

All lanes:
Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757) at 1/1000 dilution

Lane 1:
Recombinant human ENO1 protein with C-DDDDK tag at 10 ng

Lane 2:
Recombinant human ENO2 protein with C-DDDDK tag at 10 ng

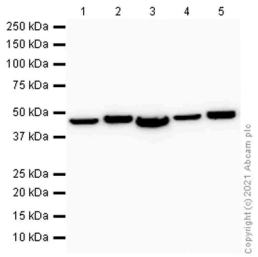
Lane 3:
Recombinant human ENO3 protein with C-DDDDK tag at 10 ng

Secondary

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

Observed band size: 50 kDa

Exposure time: 180s



Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Western blot staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

All lanes:
Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757) at 1/1000 dilution

Lane 1:
SH-SY5Y (Human neuroblastoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Y79 (Human retinoblastoma retinoblastoma) whole cell lysate at 20 µg

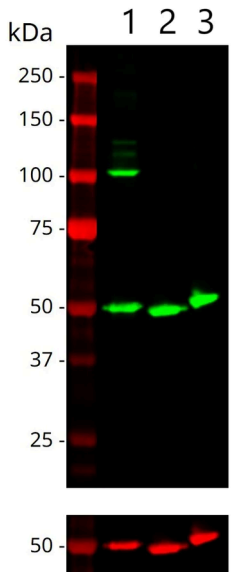
Lane 4:
Mouse brain lysate at 20 µg

Lane 5:
Rat brain lysate at 20 µg

Secondary

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

Predicted band size: 47 kDa



Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Western blot staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

Mouse anti-6x HisTag was used as a loading control.
All lanes:
Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757) at 1/1000 dilution

Lane 1:
Human ENO3 protein (His Tag) at 0.2 µg

Lane 2:
Human ENO2 protein (His Tag) at 0.2 µg

Lane 3:
Human ENO1 protein (His Tag) at 0.2 µg

Predicted band size: 47 kDa

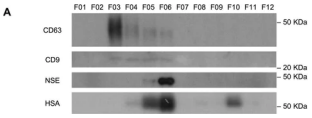


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Western blot - Anti-ENO1 + ENO2 + ENO3 antibody [EPR3377] - Neuronal Marker (ab79757)

ENO1 + ENO2 + ENO3 Western blot staining using rabbit Anti-ENO1 + ENO2 + ENO3 antibody

NSE western blot using anti-NSE antibody [EPR3377] - Neuronal Marker ab79757. Publication image and figure legend from Prieto-Fernández, E., Aransay, A. M., et al., 2019, Theranostics, PubMed 31367240.

ab79757 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 ab79757 please see the product overview.

Size-exclusion chromatography analysis of CSF. A, Western blot analysis of CD63, CD9, neuron-specific enolase (NSE), and human serum albumin (HSA) proteins. Molecular weights are shown in KDa. B, the number of TaqMan RT-qPCR replicates (from a total of 12) in which the studied miRNAs were detected. C, quantification (relative to ath-miR-159a) of miR-21-5p, miR-451a, and miR-92a-3p and D, of miR-1911-5p, miR-22-3p, and miR-30c-5p.

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