abcam

ab126751

Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101]

Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) is a rabbit monoclonal antibody detecting Monoamine Oxidase A/MAO-A in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 40 publications

Recombinant | RabMAb | KO Validated | 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	EPR7101
Purification technique	Affinity purification Protein A
Dissociation constant	5.1 x 10^{-11} M
Concentration	0.15 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/400
Notes	**For unpurified use at 1/50 - 1/100.** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/400
Notes	**For unpurified use at 1/50 - 1/100.** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/400
Notes	**For unpurified use at 1/50 - 1/100.** Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information MAOA

Function	Catalyzes the oxidative deamination of primary and some secondary amine such as neurotransmitters, with concomitant reduction of oxygen to hydrogen peroxide and has important functions in the metabolism of neuroactive and vasoactive amines in the central nervous system and peripheral tissues (PubMed:18391214,

PubMed:20493079, PubMed:24169519, PubMed:8316221). Preferentially oxidizes serotonin (PubMed:20493079, PubMed:24169519). Also catalyzes the oxidative deamination of kynuramine to 3-(2-aminophenyl)-3-oxopropanal that can spontaneously condense to 4-hydroxyquinoline (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

What is this antibody validated in?
Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of Monoamine Oxidase A/MAO-A?
Anti-Monoamine Oxidase A/MAO-A [EPR7101] (ab126751) specifically detects a band for Monoamine Oxidase A/MAO-A (UniProt: P21397) at a molecular weight of 60kDa.

Trusted by the scientific community
Anti-Monoamine Oxidase A/MAO-A [EPR7101] (ab126751) was first used in a scientific publication in 2012 and has been cited over 40 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) has been confirmed by Western blot testing in MAOA Knockout HAP1 cells.

Other related products
We have a range of other formats of antibody clone [EPR7101] also available for your convenience: ab126751, Alexa Fluor® 647 - ab200752, HRP - ab200928, Carrier free - ab240031, APC - ab310819, PE - ab310897, Alexa Fluor® 488 - ab310971, Alexa Fluor® 594 - ab311690, Alexa Fluor® 555 - ab313175

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	Monoamine Oxidase A (MAO-A) also known as MAO protein is an enzyme that degrades neurotransmitters through oxidative deamination. It possesses a mass of approximately 59 kDa. This enzyme is found localized in the outer mitochondrial membrane of cells specifically in high concentrations in the brain liver and intestine. MAO-A plays an important role in the breakdown of monoamine neurotransmitters such as serotonin norepinephrine and dopamine which are critical for normal brain function.
Biological function summary	MAO-A acts to maintain proper neurotransmitter levels by catalyzing the oxidative deamination of monoamines. It is not part of a larger protein complex but functions independently to influence monoamine balance. Through its enzymatic activity MAO-A regulates several physiological processes including mood and emotional responses by controlling neurotransmitter availability and preventing their accumulation to neurotoxic levels.
Pathways	MAO-A operates within the catabolic pathways that reduce the bioavailability of monoamines. It pairs with proteins like Catechol-O-methyltransferase (COMT) in the metabolic degradation of catecholamines. This pathway is integral to managing the equilibrium of mood-related neurotransmitters and involves complex interactions with other enzymatic systems including MAO-B which targets different substrates.
Associated diseases and disorders	MAO-A is closely associated with psychiatric conditions such as depression and anxiety. Altered MAO-A activity can dysregulate monoamine levels contributing to these disorders. Additionally research links MAO-A dysregulation to neurodegenerative diseases like Parkinson's disease where imbalances in monoamine levels play a role. This enzyme interacts with proteins involved in early stages of these diseases highlighting its potential as a target for therapeutic interventions using MAO inhibitors.

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

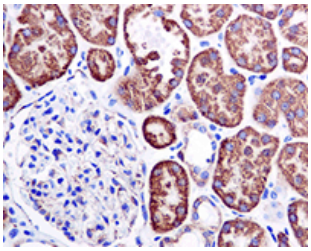
We do not recommend this combination. It is not covered by our product promise.

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.

Full details and terms and conditions can be found here:
Terms & Conditions.

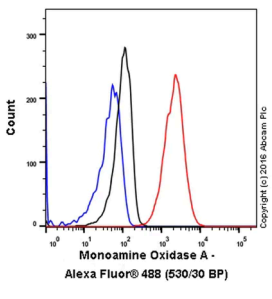
13 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

ab126751 (unpurified), at 1/50 dilution, staining Monoamine Oxidase A/MAO-A in paraffin embedded Human kidney tissue by Immunohistochemistry.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



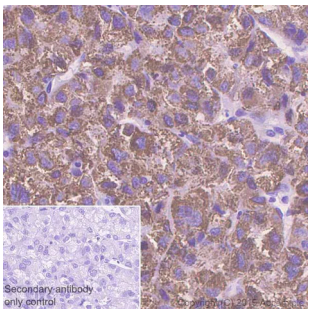
Flow Cytometry (Intracellular) - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Flow Cytometry (Intracellular) staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

ab126751 (purified) staining Monoamine Oxidase A/MAO-A in the human cell line HepG2 (human hepatocellular carcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and the sample was incubated with the primary antibody at a dilution of 1/20. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody.

Isoytype control: Rabbit monoclonal IgG (Black)

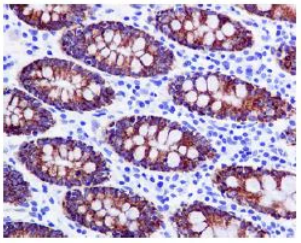
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

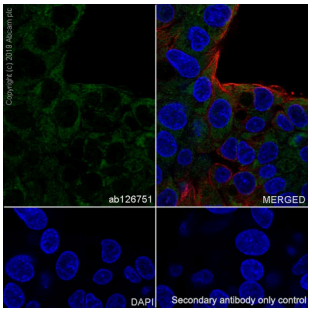
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human hepatocellular carcinoma tissue sections labeling Monoamine Oxidase A/MAO-A with Purified ab126751 at 1:400 dilution (0.38 µg/ml). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used for detection. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

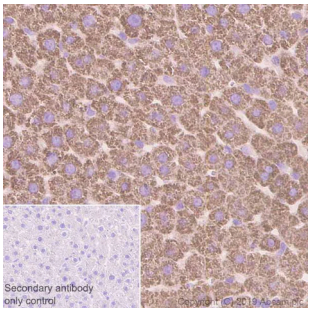
ab126751 (unpurified), at 1/50 dilution, staining Monoamine Oxidase A/MAO-A in paraffin embedded Human colon tissue by Immunohistochemistry.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

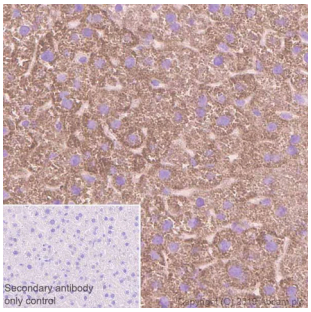
Immunocytochemistry/ Immunofluorescence analysis of HepG2 (Human hepatocellular carcinoma epithelial cell) cells labeling Monoamine Oxidase A/MAO-A with Purified ab126751 at 1:100 dilution (1.5 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

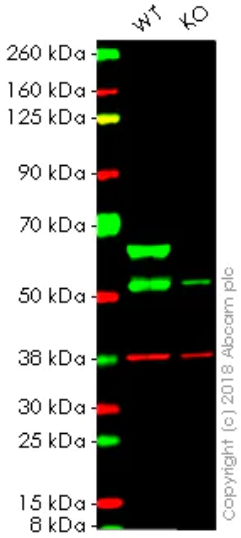
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat liver tissue sections labeling Monoamine Oxidase A/MAO-A with Purified ab126751 at 1:400 dilution (0.38 µg/ml). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used for detection. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

Monoamine Oxidase A/MAO-A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Monoamine Oxidase A/MAO-A antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse liver tissue sections labeling Monoamine Oxidase A/MAO-A with Purified ab126751 at 1:400 dilution (0.38 µg/ml). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used for detection. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

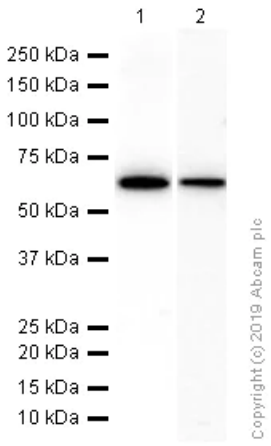
Lanes 1 - 2: Merged signal (red and green). Green - ab126751 observed at 60 kDa. Red - loading control, ab8245, observed at 0 kDa.
ab126751 was shown to recognize Monoamine Oxidase A in wild-type HAP1 cells as signal was lost at the expected MW in MAOA (Monoamine Oxidase A) knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and MAOA (Monoamine Oxidase A) knockout samples were subjected to SDS-PAGE. ab126751 and ab8245 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
MAOA (Monoamine Oxidase A) knockout HAP1 whole cell lysate at 20 µg

Predicted band size: 60 kDa



Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

All lanes:
Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) at 1/1000 dilution

Lane 1:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysates at 15 µg

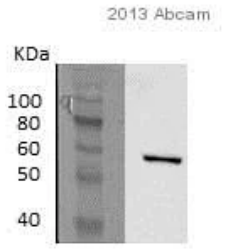
Lane 2:
Rat brain lysates at 15 µg

Secondary

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

Predicted band size: 60 kDa

Observed band size: 60 kDa



This image is courtesy of an anonymous customer review

Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

All lanes:
Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) at 1/2000 dilution

All lanes:
Mouse brain cortex tissue lysate - whole at 20 µg

Secondary

All lanes:
HRP-conjugated Goat anti-rabbit IgG polyclonal at 1/2000 dilution

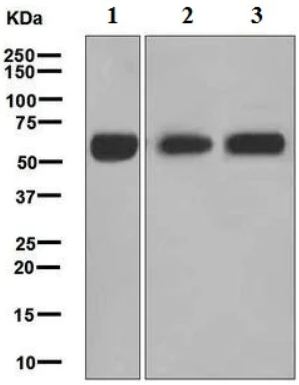
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 60 kDa

Observed band size: 60 kDa

Exposure time: 1min



Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

All lanes:
Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) at 1/1000 dilution

Lane 1:
HepG2 lysate at 10 µg

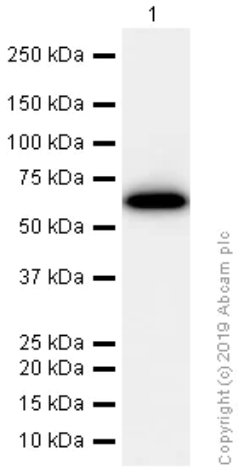
Lane 2:
NCI-H460 lysate at 10 µg

Lane 3:
Fetal liver lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 60 kDa



Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

All lanes:
Western blot - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751) at 1/10000 dilution

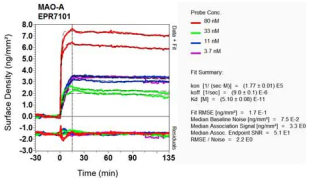
All lanes:
Mouse brain lysates at 15 µg

Secondary

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

Predicted band size: 60 kDa

Observed band size: 60 kDa



OI-RD Scanning - Anti-Monoamine Oxidase A/MAO-A antibody [EPR7101] (ab126751)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.