abcam

ab129076

Anti-CPS1 antibody [EPR7493-3]

Anti-CPS1 antibody [EPR7493-3] (ab129076) is a rabbit monoclonal antibody detecting CPS1 in **Western Blot, Flow Cytometry (Intra), IHC-P**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

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, 50% Tissue culture supernatant, 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	EPR7493-3
Purification technique	Affinity purification Protein A
Concentration	0.129 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	1/100 - 1/250
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Expected

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

WB

Tested

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

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

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	-

Expected

Species	Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CPS1

Function	Involved in the urea cycle of ureotelic animals where the enzyme plays an important role in removing excess ammonia from the cell.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

What is this antibody validated in?
Anti-CPS1 antibody [EPR7493-3] (ab129076) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P) in Human, Mouse, Rat samples.

What is the molecular weight of CPS1?
Anti-CPS1 [EPR7493-3] (ab129076) specifically detects a band for CPS1 (UniProt: P31327) at a molecular weight of 165kDa.

Trusted by the scientific community
Anti-CPS1 [EPR7493-3] (ab129076) was first used in a scientific publication in 2012 and has been cited over 10 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR7493-3] also available for your convenience: ab129076, HRP - ab198969, Carrier free - ab248283, Alexa Fluor® 488 - ab252114, Alexa Fluor® 647 - ab252115, APC - ab319330, PE - ab319467, Alexa Fluor® 594 - ab319823, Alexa Fluor® 555 - ab319964, Alexa Fluor® 750 - ab321026

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	CPS1 also known as carbamoyl-phosphate synthetase 1 is an important mitochondrial enzyme with a mass of around 165 kDa. It acts in the urea cycle by converting ammonia and bicarbonate into carbamoyl phosphate. CPS1 expression occurs in the liver and intestinal enterocytes which situates it in tissues responsible for metabolism and detoxification processes. This enzyme plays a critical role in the removal of excess nitrogen from the body.
Biological function summary	Carbamoyl-phosphate synthetase 1 functions as an initial step enzyme in the urea cycle which is a metabolic pathway for nitrogen disposal. It does not function alone as it forms part of multi-enzyme complexes to enhance efficiency in the cycle. These complexes facilitate the process of converting toxic ammonia into urea which the body can safely excrete. The proper function of CPS1 ensures that ammonia levels remain non-toxic.
Pathways	The urea cycle remains the chief pathway involving CPS1 collaborating with enzymes like ornithine transcarbamylase and argininosuccinate synthetase. This cycle intersects with the mitochondrial respiratory chain showcasing a relationship between CPS1 and cellular energy balance. Besides the urea cycle the enzyme also links to other metabolic functions like gluconeogenesis given its prerequisite for maintaining a stable nitrogen homeostasis.
Associated diseases and disorders	CPS1 deficiencies can lead to urea cycle disorders like hyperammonemia characterized by elevated ammonia levels in blood. This may result in neurological damage if untreated. Another condition related to CPS-1 is pulmonary arterial hypertension where studies suggest mishandling of ammonia may alter blood pressure regulation. Genetic mutations affecting the CPS1 protein often underlie these conditions highlighting the importance of genetic screening in affected individuals.

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

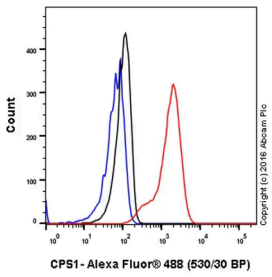
We do not recommend this combination. It is not covered by our product promise.

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.

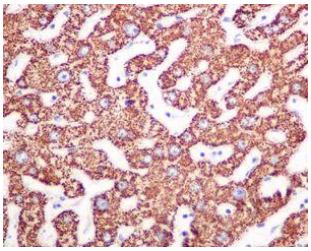
3 product images



Flow Cytometry (Intracellular) - Anti-CPS1 antibody [EPR7493-3] (ab129076)

CPS1 Flow Cytometry (Intracellular) staining of HeLa (Human cervix adenocarcinoma epithelial cell) cells using rabbit Anti-CPS1 antibody

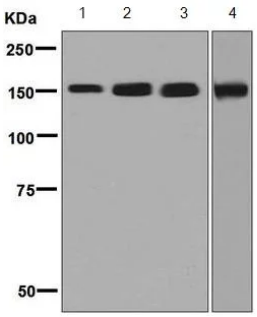
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling CPS1 (red) with ab129076 at a 1/20 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (Black) (ab172730). Blue (unlabeled control) - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CPS1 antibody [EPR7493-3] (ab129076)

CPS1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver tissue using rabbit Anti-CPS1 antibody

ab129076, at 1/100 dilution staining CPS1 in formalin fixed paraffin embedded Human liver tissue by immunohistochemistry
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-CPS1 antibody [EPR7493-3] (ab129076)

CPS1 Western blot staining using rabbit Anti-CPS1 antibody

Lanes 1 - 4:
Western blot - Anti-CPS1 antibody [EPR7493-3] (ab129076) at 1/1000 dilution

Lanes 1 - 4:
Western blot - Anti-CPS1 antibody [EPR7493-3] - BSA and Azide free (ab248283)

Lane 1:
Fetal liver cell lysate

Lane 2:
Mouse liver cell lysate

Lane 3:
Rat liver cell lysate

Lane 4:
HeLa cell lysate

Predicted band size: 165 kDa

Observed band size: 150 kDa

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