abcam

ab248236

Anti-CPS1 antibody [EPR7494] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR7494
Purification technique	Affinity purification Protein A
Concentration	0.938 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab248236 is the carrier-free version of ab128942.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

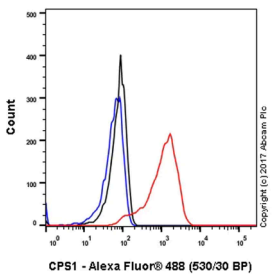
We do not recommend this combination. It is not covered by our product promise.

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

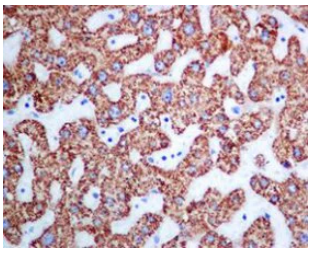


Flow Cytometry (Intracellular) - Anti-CPS1 antibody [EPR7494] - BSA and Azide free (ab248236)

CPS1 Flow Cytometry (Intracellular) staining using rabbit Anti-CPS1 antibody

This data was developed using ab128942, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling CPS1 with unpurified ab128942 at 1/200 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti-rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as

the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.

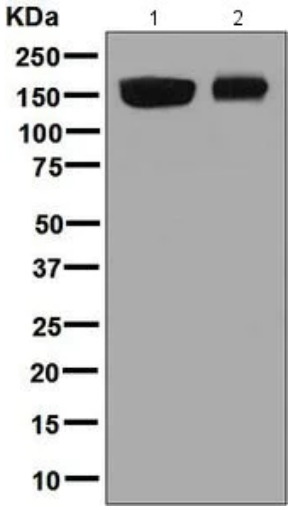


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CPS1 antibody [EPR7494] - BSA and Azide free (ab248236)

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

This data was developed using ab128942, the same antibody clone in a different buffer formulation.
ab128942, at 1/250 dilution, staining CPS1 in paraffin-embedded Human liver tissue by Immunohistochemistry.

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



Western blot - Anti-CPS1 antibody [EPR7494] - BSA and Azide free (ab248236)

This data was developed using ab128942, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-CPS1 antibody [EPR7494] (ab128942) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
Human fetal liver tissue lysate at 10 µg

Secondary

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

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'.