abcam

ab110303

Anti-CPS1 antibody [2E4AE11]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Clone number	2E4AE11
Purification technique	Affinity purification
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110303 was produced in vitro using hybridomas grown in serum-free medium.Purity: >95% by SDS-PAGE.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	10 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

ICC

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1 µg/mL
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

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

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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

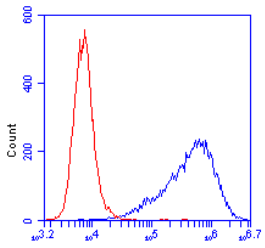
We do not recommend this combination. It is not covered by our product promise.

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.

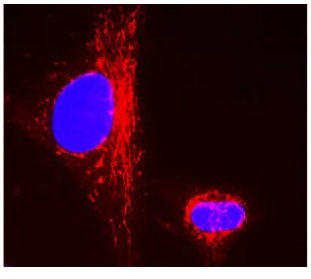
4 product images



Flow Cytometry - Anti-CPS1 antibody [2E4AE11] (ab110303)

CPS1 Flow Cytometry staining using mouse Anti-CPS1 antibody

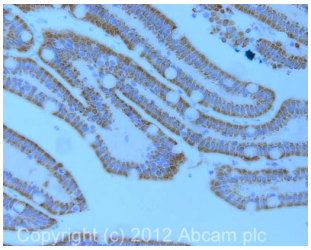
Flow cytometric analysis using ab110303 at 1µg/ml staining CPS1 in HeLa cells (blue). Isotype control antibody (red).



Immunocytochemistry - Anti-CPS1 antibody [2E4AE11] (ab110303)

CPS1 Immunocytochemistry staining using mouse Anti-CPS1 antibody

Immunocytochemistry analysis using ab110303 at 10µg/ml staining CPS1 in HDFn cells (paraformaldehyde fixed and Triton X-100 permeabilized). The secondary antibody was (red) Alexa Fluor® 594 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. 10% Goat serum was used as the blocking agent for all blocking steps. DAPI was used to stain the cell nuclei (blue). Target protein locates mainly in mitochondria.

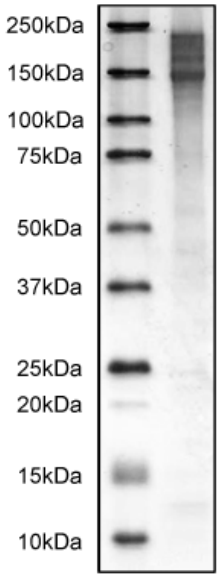


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CPS1 antibody [2E4AE11] (ab110303)

IHC image of ab110303 staining in human duodenum formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab110303, 10µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

Immunoprecipitation - Anti-CPS1 antibody [2E4AE11] (ab110303)



Detection of ab110303 by immunoprecipitation staining of 164kDa CPS1, a liver mitochondrial marker in human liver mitochondrial lysate.
All lanes:
Immunoprecipitation - Anti-CPS1 antibody [2E4AE11] (ab110303)

Predicted band size: 165 kDa

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