abcam

ab312900

Alexa Fluor® 488 Anti-ENPP1/PC1 antibody [EPR22262-22]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR22262-22
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/50
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information ENPP1

Function Nucleotide pyrophosphatase that generates diphosphate (PPi) and functions in bone mineralization and soft tissue calcification by regulating pyrophosphate levels (By similarity). PPi inhibits bone mineralization and soft tissue calcification by binding to nascent hydroxyapatite crystals, thereby preventing further growth of these crystals (PubMed:11004006). Preferentially hydrolyzes ATP, but can also hydrolyze other nucleoside 5' triphosphates such as GTP, CTP and UTP to their corresponding monophosphates with release of pyrophosphate, as well as diadenosine polyphosphates, and also 3',5'-cAMP to AMP (PubMed:25344812,

PubMed:27467858, PubMed:28011303, PubMed:35147247, PubMed:8001561). May also be involved in the regulation of the availability of nucleotide sugars in the endoplasmic reticulum and Golgi, and the regulation of purinergic signaling (PubMed:27467858, PubMed:8001561). Inhibits ectopic joint calcification and maintains articular chondrocytes by repressing hedgehog signaling; it is however unclear whether hedgehog inhibition is direct or indirect (By similarity). Appears to modulate insulin sensitivity and function (PubMed:10615944). Also involved in melanogenesis (PubMed:28964717). Also able to hydrolyze 2',3'-cGAMP (cyclic GMP-AMP), a second messenger that activates TMEM173/STING and triggers type-I interferon production (PubMed:25344812). 2',3'-cGAMP degradation takes place in the lumen or extracellular space, and not in the cytosol where it is produced; the role of 2',3'-cGAMP hydrolysis is therefore unclear (PubMed:25344812). Not able to hydrolyze the 2',3'-cGAMP linkage isomer 3'-3'-cGAMP (PubMed:25344812).

Storage

Shipped at conditions	Blue Ice
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, Store in the dark

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.

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Supplementary info

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

Activity summary	ENPP1 also known as PC-1 is a type II transmembrane glycoprotein with a molecular weight of approximately 130 kDa. It is expressed in various tissues including the liver kidney and bone. ENPP1 exhibits the enzymatic activity of nucleotide pyrophosphatase/phosphodiesterase which hydrolyzes ATP to AMP and diphosphate. This activity is important for the regulation of extracellular nucleotide levels and mineralization processes. Researchers often utilize the ENPP1 assay to study its function and activity.
Biological function summary	ENPP1 significantly influences bone mineralization and soft tissue calcification. It interacts with proteins like ectonucleoside triphosphate diphosphohydrolase-1 (ENTPD1) impacting cellular uptake of calcified materials. The protein is also involved in the regulatory networks responsible for controlling insulin signaling impacting metabolic processes. ENPP1 may form complexes with other proteins which can finely tune its biological activity and effects.
Pathways	ENPP1 plays a role in the insulin signaling pathway and the pyrophosphate pathway. Via its participation in insulin signaling ENPP1 regulates glucose metabolism and influences insulin sensitivity. It affects pathways related to mineral metabolism where it interacts with proteins like ENPP3. By regulating extracellular pyrophosphate levels ENPP1 contributes to inorganic phosphate homeostasis and influences skeletal development and maintenance.
Associated diseases and disorders	ENPP1 has associations with type 2 diabetes and generalized arterial calcification of infancy (GACI). Its role in type 2 diabetes relates to its ability to inhibit insulin receptor function therefore contributing to insulin resistance. ENPP1 also connects to proteins involved in vascular calcification such as matrix Gla protein (MGP) in the context of GACI. These associations highlight the importance of ENPP1 in metabolic and calcification disorders.

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.

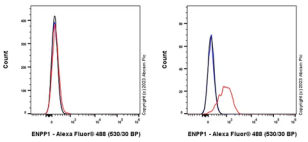
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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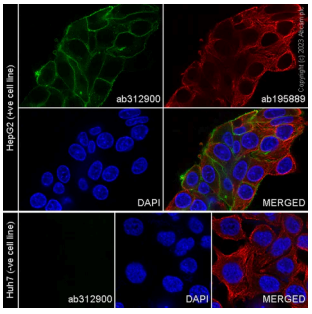
2 product images



Flow Cytometry - Alexa Fluor® 488 Anti-ENPP1/PC1 antibody [EPR22262-22] (ab312900)

ENPP1/PC1 Flow Cytometry staining of MDA-MB-231 (human breast adenocarcinoma epithelial cell, Left) / HepG2 (human hepatocellular carcinoma epithelial cell, Right) using rabbit Anti-ENPP1/PC1 antibody

Flow cytometric analysis of permeabilized MDA-MB-231 (human breast adenocarcinoma epithelial cell, Left) / HepG2 (human hepatocellular carcinoma epithelial cell, Right) cells labelling ENPP1/PC1 with ab312900 at 1/50 dilution (1 ug)/Red (Red) compared with a Rabbit monoclonal IgG (ab199091) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Negative control: MDA-MB-231.



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-ENPP1/PC1 antibody [EPR22262-22] (ab312900)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cells labelling ENPP1/PC1 with ab312900 at 1/50 (10.0 µg/ml) dilution (Green). Confocal image showing membranous staining in HepG2 cells. Negative control: Huh7 (PMID:32425926)Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 (2.5 µg/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

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