abcam

ab220363

Anti-PC1/3 antibody [EPR21908]

Recombinant | RabMAb

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	EPR21908
Purification technique	Affinity purification Protein A
Concentration	0.505 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Rat

Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Expected

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

IHC-Fr

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Rat
Dilution info	1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/50

Notes	-

Expected

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

Target data

See full target information PCSK1

Function	Involved in the processing of hormone and other protein precursors at sites comprised of pairs of basic amino acid residues. Substrates include POMC, renin, enkephalin, dynorphin, somatostatin, insulin and AGRP.

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

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.

Supplementary info

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

Activity summary	PC1/3 also known as Proprotein Convertase 1 or PCSK1 is a member of the proprotein convertase family which is responsible for processing precursor proteins into their active forms. This protein with a mass of approximately 84 kDa is expressed in neuroendocrine and endocrine tissues. PC1/3 operates primarily in the secretory pathways of these tissues cleaving prohormones and other precursor proteins at specific sites to generate active peptides and proteins essential for various physiological processes.
Biological function summary	The proprotein convertase enzyme PC1/3 plays a critical role in activating hormone precursors. It is involved in the conversion of proinsulin to insulin as well as the processing of proopiomelanocortin (POMC) to generate peptides like ACTH and beta-endorphin. PC1/3 does not generally form part of a complex but interacts closely with other convertases for complete prohormone processing. This enzyme is essential for maintaining homeostasis in hormone regulation and is an important player in metabolic control.
Pathways	Specific functions of PC1/3 are closely tied to metabolic and neuroendocrine pathways. It is significant in the insulin signaling pathway where its role in converting proinsulin to insulin directly impacts glucose metabolism. Additionally PC1/3 contributes to neuropeptide signaling pathways by processing neuroendocrine peptides which influence appetite and energy homeostasis. PC1/3 works alongside proteins like PC2 another proprotein convertase to ensure comprehensive processing of peptide hormones.
Associated diseases and disorders	Malfunction or deficiency in PC1/3 activity is associated with disorders such as obesity and hypogonadotropic hypogonadism. Obesity can result from improper proinsulin processing affecting insulin regulation. Hypogonadotropic hypogonadism may occur due to faulty prohormone processing impacting gonadotropin-releasing hormone production. PC1/3 interactions with other convertases like PC2 highlight its involvement in regulatory networks that maintain metabolic and reproductive health.

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.

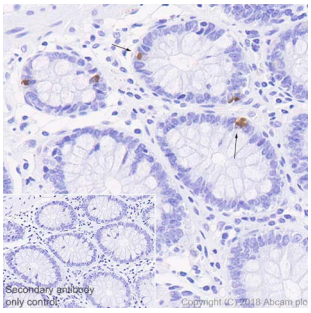
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

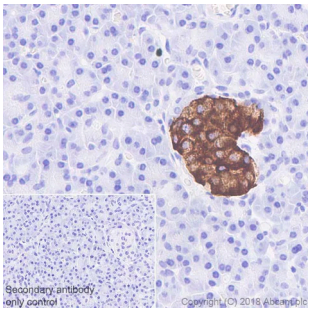
---

12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PC1/3 antibody [EPR21908] (ab220363)

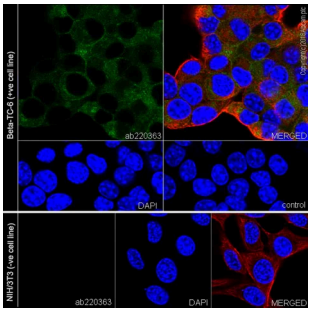
Immunohistochemical analysis of paraffin-embedded human colon tissue labeling PC1/3 with ab220363 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Sporadic cytoplasmic staining (arrows) in human colon (PMID: 18706454) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat-mediated antigen retrieval using ab93678 (citrate buffer, pH 6.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PC1/3 antibody

Immunohistochemical analysis of paraffin-embedded human pancreas tissue labeling PC1/3 with ab220363 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining in human pancreatic islets (PMID: 7925129; PMID: 21190012) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat-mediated antigen retrieval using ab93678 (citrate buffer, pH 6.0).



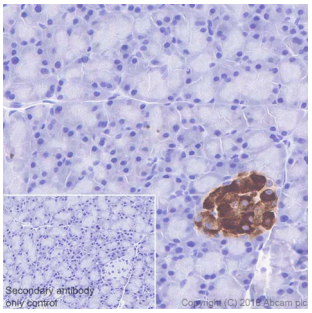
Immunocytochemistry/ Immunofluorescence - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PC1/3 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Beta-TC-6 (mouse pancreas insulinoma beta cell) cells labeling PC1/3 with ab220363 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining in Beta-TC-6 cell line.

Negative cell control: NIH/3T3 (PMID: 9405066; PMID:15143067).

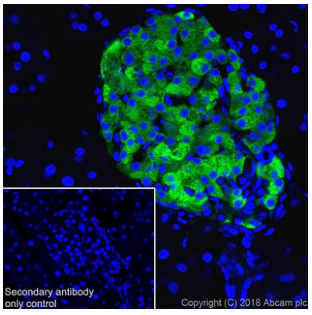
Counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at a 1/200 dilution (red). The nuclear counter stain is DAPI (blue). The negative control is the secondary antibody only.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PC1/3 antibody

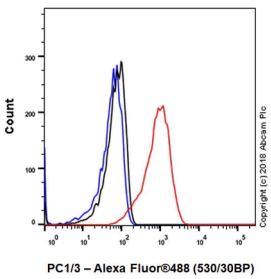
Immunohistochemical analysis of paraffin-embedded rat pancreas tissue labeling PC1/3 with ab220363 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Cytoplasmic staining in rat pancreatic islets (PMID: 7925129; PMID: 21190012) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat-mediated antigen retrieval using ab93678 (citrate buffer, pH 6.0).



Immunohistochemistry (Frozen sections) - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Immunohistochemistry (Frozen sections) staining using rabbit Anti-PC1/3 antibody

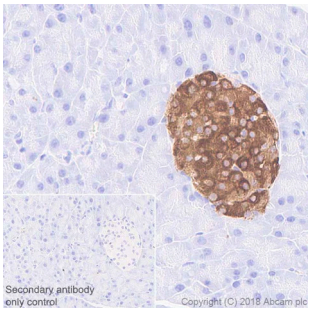
Immunohistochemical analysis of frozen mouse pancreas tissue labeling PC1/3 with ab220363 at 1/500 dilution (green), followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at a 1/1000 dilution. Positive cytoplasmic staining in mouse pancreatic islet (PMID: 25976560) is observed. Counter stained with DAPI (blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit used at a 1/1000 dilution.
Perform heat-mediated antigen retrieval by using Tris-EDTA buffer (10mM Tris base pH 9.0, 1mM EDTA, 0.05% Tween 20).



Flow Cytometry (Intracellular) - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Flow Cytometry (Intracellular) staining using rabbit Anti-PC1/3 antibody

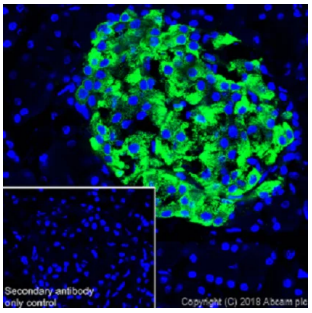
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized Beta-TC-6 (mouse pancreas insulinoma beta cell) cell line labeling PC1/3 with ab220363 at 1/50 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PC1/3 antibody

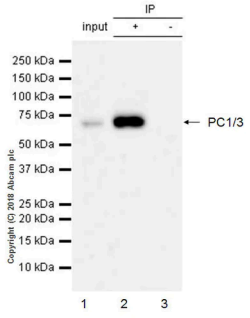
Immunohistochemical analysis of paraffin-embedded mouse pancreas tissue labeling PC1/3 with ab220363 at 1/500 dilution, followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP). Cytoplasmic staining in mouse pancreatic islets (PMID: 7925129; PMID: 21190012) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP).
Perform heat-mediated antigen retrieval using ab93678 (citrate buffer, pH 6.0).



Immunohistochemistry (Frozen sections) - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Immunohistochemistry (Frozen sections) staining using rabbit Anti-PC1/3 antibody

Immunohistochemical analysis of frozen rat pancreas tissue labeling PC1/3 with ab220363 at 1/500 dilution (green), followed by ab150077 AlexaFluor®488 Goat anti-Rabbit secondary at a 1/1000 dilution. Positive cytoplasmic staining in rat pancreatic islet (PMID: 25976560) is observed. Counter stained with DAPI (blue).
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab150077 AlexaFluor®488 Goat anti-Rabbit used at a 1/1000 dilution.
Perform heat-mediated antigen retrieval by using Tris-EDTA buffer (10mM Tris base pH 9.0, 1mM EDTA, 0.05% Tween 20).



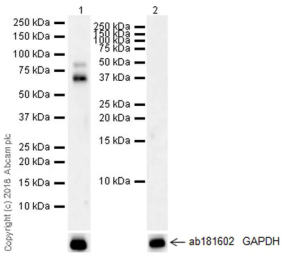
Immunoprecipitation - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 was immunoprecipitated from 0.35 mg Beta-TC-6 (mouse pancreas insulinoma beta cell) whole cell lysate with ab220363 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab220363 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1000 dilution.
Lane 1: Beta-TC-6 (mouse pancreas insulinoma beta cell) whole cell lysate 10 µg (Input).
Lane 2: ab220363 IP in Beta-TC-6 whole cell lysate (+).
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab220363 in Beta-TC-6 whole cell lysate (-).

Blocking/Dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 minutes.

The PC1/3 protein undergoes multiple intracellular cleavage steps to its 66 kDa mature form (PMID: 26778167).
All lanes:
Immunoprecipitation - Anti-PC1/3 antibody [EPR21908] (ab220363)

Predicted band size: 84 kDa



Western blot - Anti-PC1/3 antibody [EPR21908] (ab220363)

Blocking/Dilution buffer and concentration: 5% NFDM/TBST.
The PC1/3 protein undergoes multiple intracellular cleavage steps to its 66 kDa mature form; the 87 kDa represents the ProPC1/3 intermediate (PMID: 26778167).

This blot was developed using a higher sensitivity ECL substrate.

Negative control: NIH/3T3 (PMID: 9405066; PMID:15143067).

All lanes:
Western blot - Anti-PC1/3 antibody [EPR21908] (ab220363) at 1/1000 dilution

Lane 1:
Beta-TC-6 (mouse pancreas insulinoma beta cell) whole cell lysate at 10 µg

Lane 2:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 10 µg

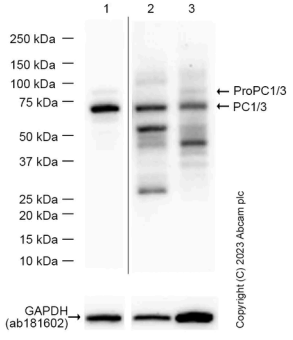
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 84 kDa

Exposure time: 125s



Western blot - Anti-PC1/3 antibody [EPR21908] (ab220363)

Blocking and Diluting Buffer: 5% NFDM /TBST 87 kDa ProPC1/3; 66 kDa mature form (PMID: 26778167) Lane1 Expsoure Time: 20 seconds Lane2 and Lane3 were developed using a high sensitivity ECL substrate.
All lanes:
Western blot - Anti-PC1/3 antibody [EPR21908] (ab220363) at 1/1000 dilution

Lane 1:
Beta-TC-6 (mouse pancreas insulinoma beta cell) whole cell lysate at 20 µg

Lane 2:
Mouse pancreas lysate at 20 µg

Lane 3:
Mouse brain lysate at 20 µg

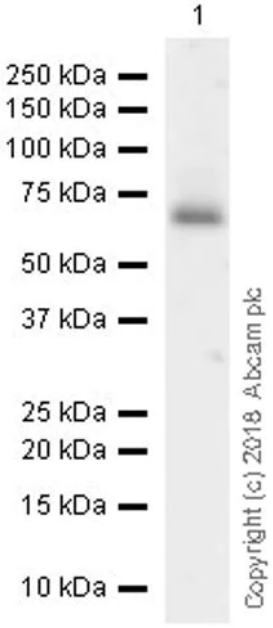
Secondary

All lanes:
Western blot - PE Anti-ENPP3/B10 antibody [NP4D6] (ab90751) at 1/20000 dilution

Predicted band size: 87 kDa

Observed band size: 66 kDa

Exposure time: 80s



Western blot - Anti-PC1/3 antibody [EPR21908] (ab220363)

PC1/3 Western blot staining of Mouse hypothalamus lysate using rabbit Anti-PC1/3 antibody

Blocking/Dilution buffer and concentration: 5% NFDM/TBST.
The 66 kDa band is the mature form of PC1/3 (PMID: 26778167).

This blot was developed using a higher sensitivity ECL substrate.

All lanes:
Western blot - Anti-PC1/3 antibody [EPR21908] (ab220363) at 1/1000 dilution

All lanes:
Mouse hypothalamus lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 84 kDa

Exposure time: 3min

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