abcam

ab239865

Anti-Prohibitin antibody [EP2803Y] - 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	EP2803Y
Purification technique	Affinity purification Protein A
Concentration	1.032 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

WB

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse

Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information PHB1

Function

Protein with pleiotropic attributes mediated in a cell-compartment- and tissue-specific manner, which include the plasma membrane-associated cell signaling functions, mitochondrial chaperone, and transcriptional co-regulator of transcription factors in the nucleus (PubMed:11302691, PubMed:20959514, PubMed:28017329, PubMed:31522117). Plays a role in adipose tissue and glucose homeostasis in a sex-specific manner (By similarity). Contributes to pulmonary vascular remodeling by accelerating proliferation of pulmonary arterial smooth muscle cells (By similarity). In the mitochondria, together with PHB2, forms large ring complexes (prohibitin complexes) in the inner mitochondrial membrane (IMM) and functions as a chaperone protein that stabilizes mitochondrial respiratory enzymes and maintains mitochondrial integrity in the IMM, which is required for mitochondrial morphogenesis, neuronal survival, and normal lifespan (Probable). The prohibitin complex, with DNAJC19, regulates cardiolipin remodeling and the protein turnover of OMA1 in a cardiolipin-binding manner (By similarity). Regulates mitochondrial respiration activity playing a role in cellular aging (PubMed:11302691). The prohibitin complex plays a role of mitophagy receptor involved in targeting mitochondria for autophagic degradation (PubMed:28017329). Involved in mitochondrial-mediated antiviral innate immunity, activates RIG-I-mediated signal transduction and production of IFNB1 and pro-inflammatory cytokine IL6 (PubMed:31522117). In the nucleus, acts as a transcription coregulator, enhances promoter binding by TP53, a transcription factor it activates, but reduces the promoter binding by E2F1, a transcription factor it represses (PubMed:14500729). Interacts with STAT3 to affect IL17 secretion in T-helper Th17 cells (PubMed:31899195). In the plasma membrane, cooperates with CD86 to mediate CD86-signaling in B lymphocytes that regulates the level of IgG1 produced through the activation of distal signaling intermediates (By similarity). Upon CD40 engagement, required to activate NF-kappa-B signaling pathway via phospholipase C and protein kinase C activation (By similarity).

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

ab239865 is the carrier-free version of ab75766.

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	Prohibitin often known as PHB is a 30 kDa protein that plays significant mechanical roles in cellular processes. It is widely present in various tissues and cells acting as a mitochondrial marker and associates with other mitochondrial markers. Prohibitin protein exists in a highly conserved structure which makes it essential across different species. It localizes within the inner mitochondrial membrane where it exerts functions important for cellular energy homeostasis and mitochondrial stability.

Biological function summary	The protein is involved in the regulation of mitochondrial respiratory function and stabilization of mitochondrial nucleoid. Prohibitin protein forms a complex with related proteins contributing to the maintenance of mitochondrial morphology and integrity. Its role extends to cell cycle control and apoptosis making it a significant player in cellular proliferation and survival. Additionally it influences cellular senescence and stress responses offering protection against various stressors.
Pathways	Prohibitin integrates into mitochondrial dynamics and energy production pathways. It participates in the regulation of oxidative phosphorylation a core component for ATP generation. Prohibitin collaborates with proteins like co-chaperones and complexes such as the inner mitochondrial membrane complex which further illustrates its integration into cellular pathways. The interplay of these proteins and pathways underlines Prohibitin's role in maintaining mitochondrial function.
Associated diseases and disorders	Prohibitin shows notable connections to cancer and neurodegenerative diseases. Its dysregulation links to the progression of cancers where it interacts with the retinoblastoma protein influencing cellular proliferation pathways. In neurodegenerative diseases Prohibitin participates in mechanisms that may affect the development of conditions like Alzheimer's disease associated with its role in mitochondrial dysfunction and oxidative stress. These interactions highlight Prohibitin's importance in both health and disease contexts and its potential as a therapeutic target.

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

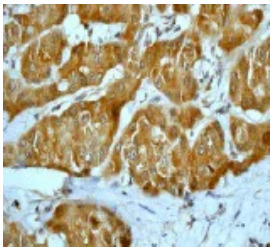
We do not recommend this combination. It is not covered by our product promise.

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:

19 product images

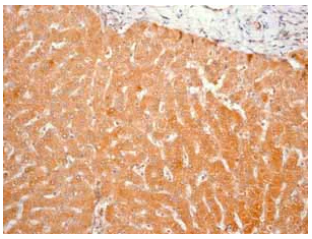


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human hepatocellular tissue labelling Prohibitin with ab75766 at 1/250.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

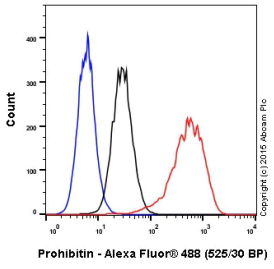


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of normal human liver tissue labelling Prohibitin with ab75766.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



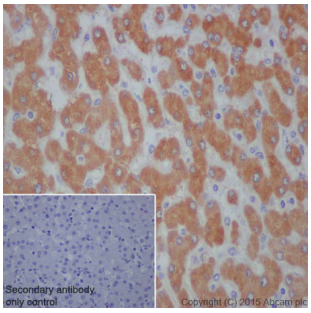
Flow Cytometry (Intracellular) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

ab75766 staining Prohibitin in the human cell line A431 (human epidermoid carcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and the sample was incubated with the primary antibody at a dilution of 1/120. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/500 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

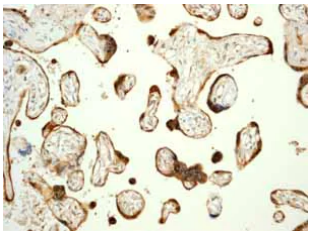


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

ab75766 staining Prohibitin in human liver tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/500. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody.
Negative control 1: PBS in place of primary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

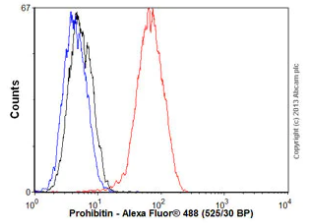


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of normal human placenta tissue labelling Prohibitin with ab75766.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

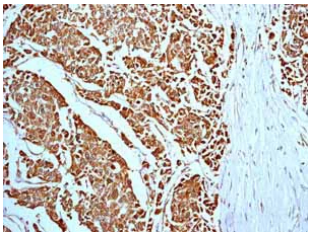
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Overlay histogram showing HepG2 cells stained with ab75766 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab75766, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HepG2 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

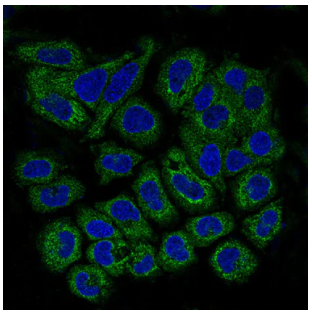


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast carcinoma tissue labelling Prohibitin with ab75766.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

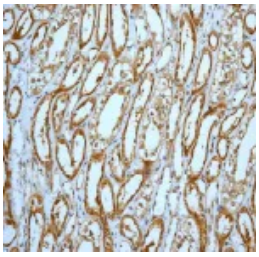
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

Prohibitin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prohibitin antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa cells labelling Prohibitin with ab75766 at 1/100. An Alexa Fluor® 488-conjugated anti-rabbit IgG was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

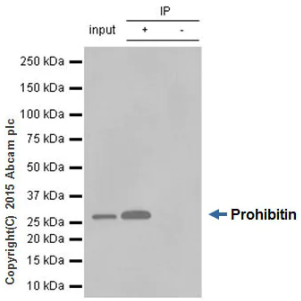


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue labelling Prohibitin with ab75766 at 1/250.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



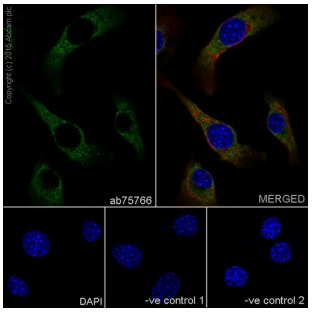
Immunoprecipitation - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

ab75766 immunoprecipitating Prohibitin. 10µg of cell lysate was incubated with primary antibody at a dilution of 1/40 and VeriBlot for IP Detection Reagent (HRP) (ab131366) at a dilution of 1/10000.
Lane 1: HEK293 (human embryonic kidney) whole cell lysate (10ug)
Lane 2: HEK293 (human embryonic kidney) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab75766 in HEK293 (human embryonic kidney) whole cell lysate

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).
All lanes:
Immunoprecipitation - Anti-Prohibitin antibody [EP2803Y] (ab75766)

Predicted band size: 30 kDa

Observed band size: 30 kDa

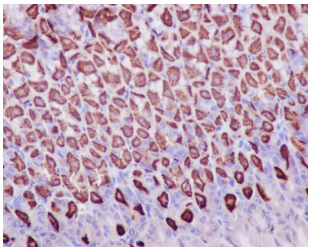


Immunocytochemistry/ Immunofluorescence - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

Prohibitin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prohibitin antibody

ab75766 staining Prohibitin in NIH/3T3 (mouse embryonic fibroblast) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody. ab7291 (1/1000) and ab150120 (1/1000) were used as counterstains for primary antibody ab75766 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.
Negative control 1: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
Negative control 2: Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

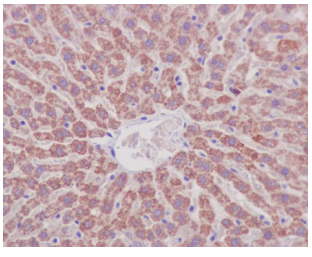


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse stomach tissue labelling Prohibitin with ab75766 at 1/250.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



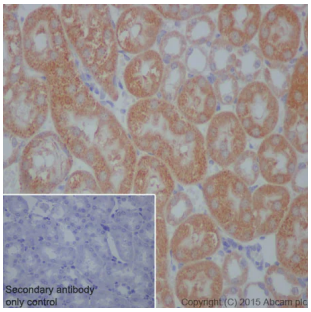
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat liver tissue labelling Prohibitin with ab75766 at 1/250.

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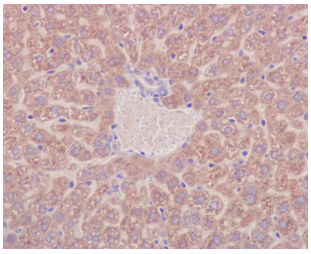


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Prohibitin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Prohibitin antibody

ab75766 staining Prohibitin in mouse kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/500. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody.
Negative control 1: PBS in place of primary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

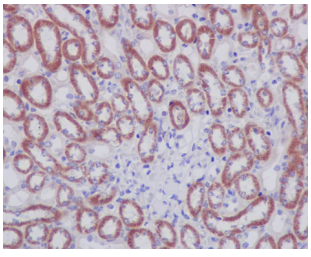


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Prohibitin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Prohibitin antibody

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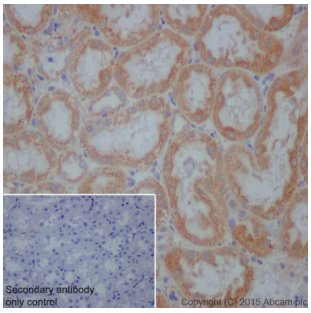


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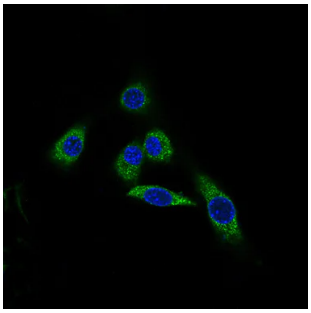


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Negative control 1: PBS in place of primary antibody.

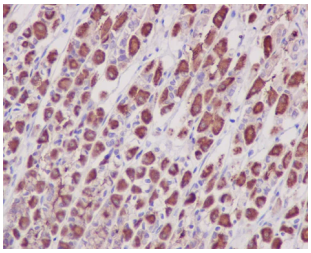
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Immunocytochemistry/ Immunofluorescence - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

Prohibitin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prohibitin antibody

Immunocytochemistry/Immunofluorescence analysis of NIH-3T3 cells labelling Prohibitin with ab75766 at 1/100. An Alexa Fluor® 488-conjugated anti-rabbit IgG was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] - BSA and Azide free (ab239865)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat stomach tissue labelling Prohibitin with ab75766 at 1/250.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab75766).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

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