abcam

ab75766

Anti-Prohibitin antibody [EP2803Y]

Recombinant | RabMAb | 20ul selling size

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), 0.12% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP2803Y
Purification technique	Affinity purification Protein A
Concentration	0.646 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

IP

Tested

Species	Human
Dilution info	1/40
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/10000 - 1/20000
Notes	-

Species	Human
Dilution info	1/10000 - 1/20000
Notes	-

Expected

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

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/120
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. Unpurified format: 1/1000

Expected

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

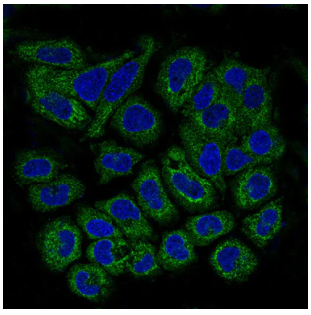
We do not recommend this combination. It is not covered by our product promise.

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:
Terms & Conditions.

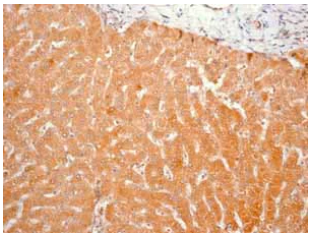
22 product images



Immunocytochemistry/ Immunofluorescence - Anti-Prohibitin antibody [EP2803Y] (ab75766)

Prohibitin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prohibitin antibody

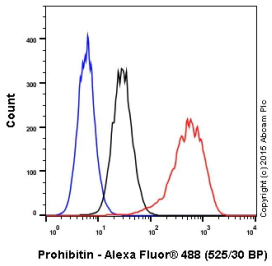
Immunocytochemistry/Immunofluorescence analysis of HeLa (human epithelial cell line from cervix adenocarcinoma) cells labelling Prohibitin with ab75766 at 1/100. An Alexa Fluor® 488-conjugated anti-rabbit IgG was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of normal liver tissue labelling Prohibitin with ab75766.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

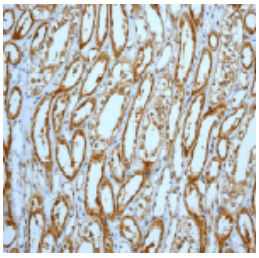


Flow Cytometry (Intracellular) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

ab75766 staining Prohibitin in the human cell line A431 (human epidermoid carcinomacell line) 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)

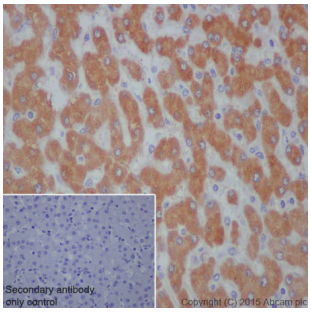
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

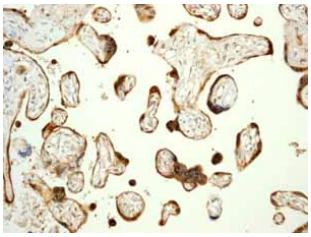
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

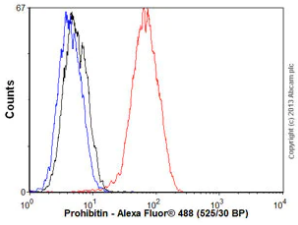
ab75766 staining Prohibitin in human liver tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

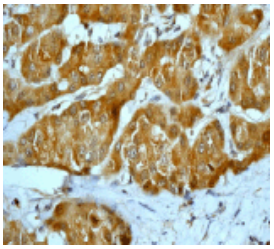
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of normal placenta tissue labelling Prohibitin with ab75766.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

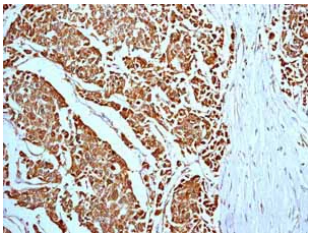
Overlay histogram showing HepG2 (human liver hepatocellular carcinoma cell line) cells stained with ab75766 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

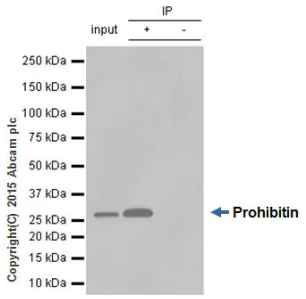
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human hepatocellular tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of breast carcinoma tissue labelling Prohibitin with ab75766.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



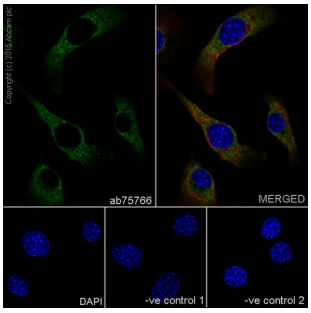
Immunoprecipitation - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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: HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate (10ug)
Lane 2: HEK-293 whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab75766 in HEK-293 whole cell lysate

All lanes:
Immunoprecipitation - Anti-Prohibitin antibody [EP2803Y] (ab75766)

Predicted band size: 30 kDa

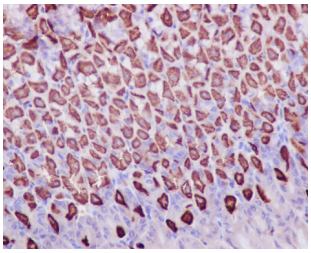
Observed band size: 30 kDa



Immunocytochemistry/ Immunofluorescence - Anti-Prohibitin antibody [EP2803Y] (ab75766)

Prohibitin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prohibitin antibody

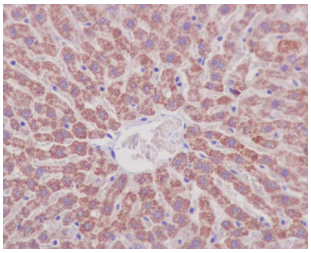
ab75766 staining Prohibitin in NIH/3T3 (mouse embryo fibroblast cell line) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti rabbit 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)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

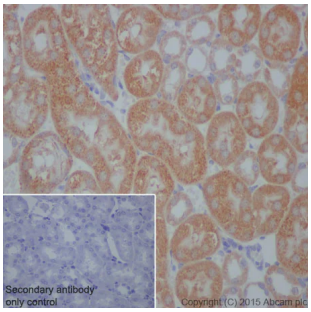
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse stomach tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

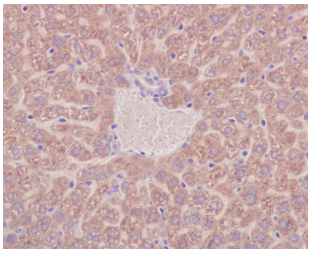
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat liver tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

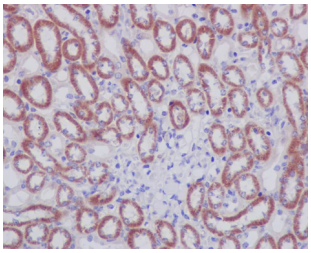
ab75766 staining Prohibitin in mouse kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

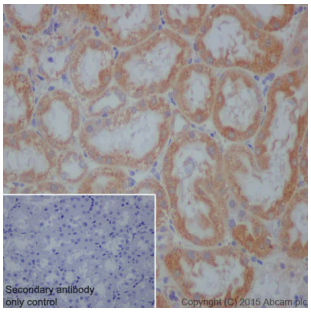
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse liver tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

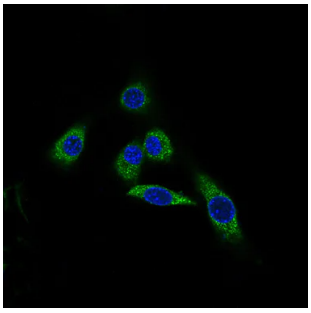
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

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

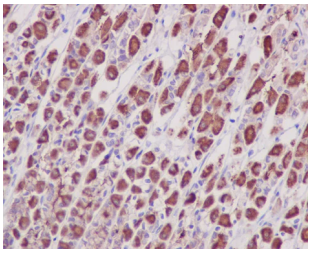
ab75766 staining Prohibitin in rat kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution 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.



Immunocytochemistry/ Immunofluorescence - Anti-Prohibitin antibody [EP2803Y] (ab75766)

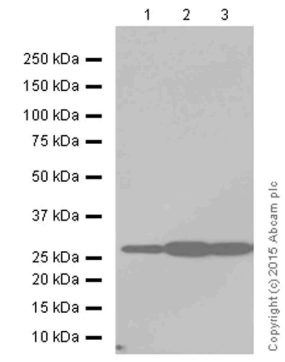
Prohibitin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Prohibitin antibody

Immunocytochemistry/Immunofluorescence analysis of NIH/3T3 (mouse embryo fibroblast cell line) cells labelling Prohibitin with ab75766 at 1/100. An Alexa Fluor® 488-conjugated anti-rabbit IgG was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Prohibitin antibody [EP2803Y] (ab75766)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat stomach tissue labelling Prohibitin with ab75766 at 1/250.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-Prohibitin antibody [EP2803Y] (ab75766)

All lanes:
Western blot - Anti-Prohibitin antibody [EP2803Y] (ab75766) at 1/20000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma cell line) whole cell lysates at 20 µg

Lane 2:
A431 (human epidermoid carcinoma cell line) whole cell lysates at 20 µg

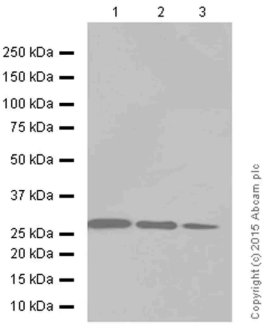
Lane 3:
HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 30 kDa

Observed band size: 30 kDa



Western blot - Anti-Prohibitin antibody [EP2803Y] (ab75766)

All lanes:
Western blot - Anti-Prohibitin antibody [EP2803Y] (ab75766) at 1/20000 dilution

Lane 1:
NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysates at 20 µg

Lane 2:
Mouse kidney tissue lysates at 20 µg

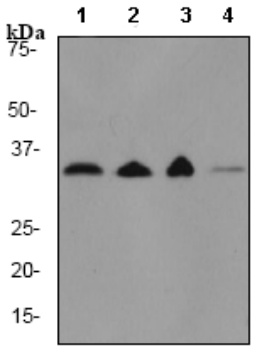
Lane 3:
Rat brain tissue lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 30 kDa

Observed band size: 30 kDa



Western blot - Anti-Prohibitin antibody [EP2803Y] (ab75766)

Prohibitin Western blot staining using rabbit Anti-Prohibitin antibody

All lanes:
Western blot - Anti-Prohibitin antibody [EP2803Y] (ab75766) at 1/20000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma cell line) cell lysate at 10 µg

Lane 2:
A431 (human epidermoid carcinoma cell line) cell lysate at 10 µg

Lane 3:
HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) cell lysate at 10 µg

Lane 4:
Ramos (human Burkitt's lymphoma cell line) cell lysate at 10 µg

Secondary

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

Predicted band size: 30 kDa

Observed band size: 30 kDa

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