abcam

ab220362

Anti-NUMB antibody [EPR21988]

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	EPR21988
Purification technique	Affinity purification Protein A
Concentration	0.484 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat

Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/600
Notes	-

Expected

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

Target data

See full target information NUMB

Function Regulates clathrin-mediated receptor endocytosis (PubMed:18657069). Plays a role in the process of neurogenesis (By similarity). Required throughout embryonic neurogenesis to maintain neural progenitor cells, also called radial glial cells (RGCs), by allowing their daughter cells to choose progenitor over neuronal cell fate (By similarity). Not required for the proliferation of neural progenitor cells before the onset of neurogenesis. Also involved postnatally in the subventricular zone (SVZ) neurogenesis by regulating SVZ neuroblasts survival and ependymal wall integrity (By similarity). May also mediate local repair of brain ventricular wall damage (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	NUMB also known as numb protein is a cytoplasmic protein involved in cell fate determination. It has an approximate molecular mass of 75 kDa. NUMB plays a critical role in asymmetric cell division particularly during neural development. The protein is expressed in various tissues including the brain heart and liver but most prominently in neural tissues. NUMB influences the timing of differentiation and proliferation by interacting with several cellular components.
Biological function summary	NUMB proteins are important to regulating cell fate decisions. NUMB primarily functions as a part of a larger complex including proteins like Notch and Eps15. In neural stem cells NUMB acts as an inhibitor of the Notch signaling pathway. It also regulates endocytosis and the signaling pathways that contribute to maintaining cellular diversity during development. NUMB interactions influence processes like cell adhesion and migration which are essential for proper tissue formation.
Pathways	NUMB proteins play significant roles within the Notch and Hedgehog signaling pathways. These are critical pathways for developmental processes. In the Notch pathway NUMB negatively regulates Notch receptor activity preventing Notch-mediated gene expression. NUMB interacts with other proteins such as alpha-adaptin and LNX1 through these pathways helping regulate the endocytic trafficking of key signaling molecules. In the Hedgehog pathway NUMB affects signal transduction though its role is less defined compared to its involvement in the Notch pathway.
Associated diseases and disorders	NUMB proteins have been implicated in breast cancer and Alzheimer's disease. In breast cancer alterations in NUMB expression or function can contribute to tumor progression due to dysregulation of the Notch pathway. Its interaction with proteins like MDM2 influences the stability and activity of p53 an important tumor suppressor. In Alzheimer's disease NUMB's involvement in endocytic processes

may impact amyloid precursor protein processing and beta-amyloid plaque formation which are central to the disease pathology.

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

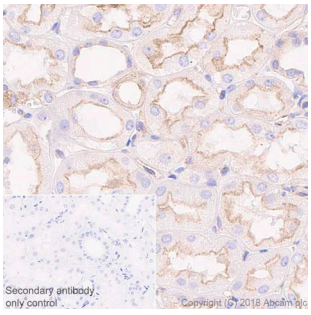
We do not recommend this combination. It is not covered by our product promise.

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.

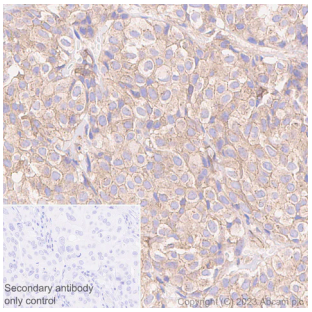
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NUMB antibody [EPR21988] (ab220362)

Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling NUMB with ab220362 at 1/1000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human kidney tubules (PMID:27016419) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

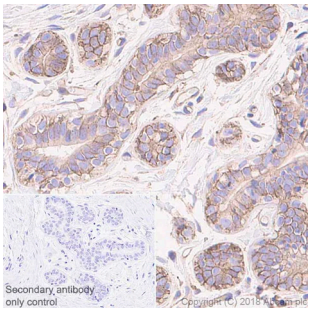
Perform heat-mediated antigen retrieval using Universal HIER antigen retrieval reagents (10X) (ab208572).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NUMB antibody [EPR21988] (ab220362)

NUMB Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of human breast carcinoma using rabbit Anti-NUMB antibody

Immunohistochemical analysis of paraffin-embedded human breast carcinoma labeling NUMB with ab220362 at 1/1000 dilution. The section was incubated with ab220362 at 4°C overnight. Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody used - Goat Anti-Rabbit IgG H&L (HRP polymer) (ab214880).

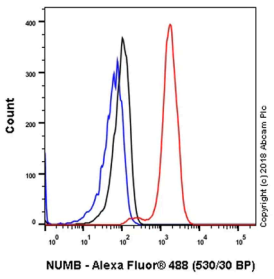


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NUMB antibody [EPR21988] (ab220362)

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

Immunohistochemical analysis of paraffin-embedded human breast tissue labeling NUMB with ab220362 at 1/1000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human breast tissue (PMID: 15492044) is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

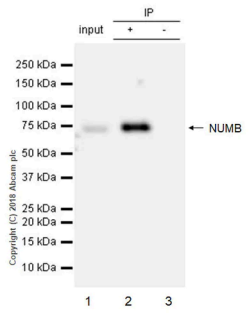
Perform heat-mediated antigen retrieval using Universal HIER antigen retrieval reagents (10X) (ab208572).



Flow Cytometry (Intracellular) - Anti-NUMB antibody [EPR21988] (ab220362)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized Ramos (Human Burkitt's lymphoma B lymphocyte) cell line labeling NUMB with ab220362 at 1/600 (red) compared with a Rabbit monoclonal IgG (ab172730) (black) and an unlabeled control (cellsincubated withsecondary antibody only) (blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077), at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-NUMB antibody [EPR21988] (ab220362)

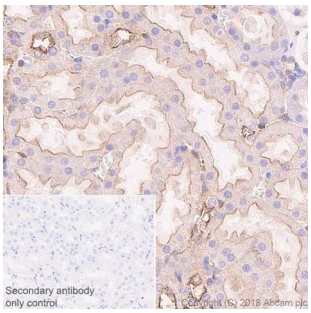
NUMB was immunoprecipitated from 0.35 mg HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate with ab220362 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab220362 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1/5000 dilution.
Lane 1: HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate 10 µg(Input).
Lane 2: ab220362 IP in HeLa whole cell lysate (+).
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab220362 in HeLa whole cell lysate (-).

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

All lanes:

Immunoprecipitation - Anti-NUMB antibody [EPR21988] (ab220362)

Predicted band size: 71 kDa

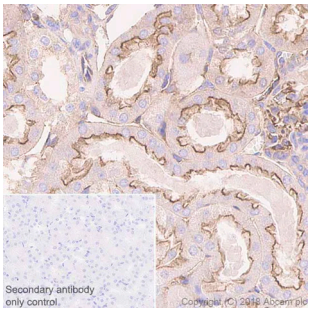


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NUMB antibody [EPR21988] (ab220362)

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

Immunohistochemical analysis of paraffin-embedded rat kidney tissue labeling NUMB with ab220362 at 1/1000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on rar kidney tubules (PMID:27016419) is observed.
Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Perform heat-mediated antigen retrieval using Universal HIER antigen retrieval reagents (10X) (ab208572).

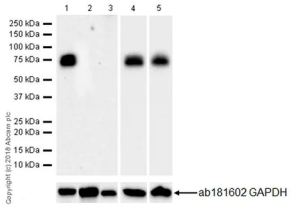


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NUMB antibody [EPR21988] (ab220362)

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

Immunohistochemical analysis of paraffin-embedded mouse kidney tissue labeling NUMB with ab220362 at 1/1000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on mouse kidney tubules (PMID:27016419) is observed.
Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Perform heat-mediated antigen retrieval using Universal HIER antigen retrieval reagents (10X) (ab208572).



Western blot - Anti-NUMB antibody [EPR21988] (ab220362)

NUMB Western blot staining using rabbit Anti-NUMB antibody

Blocking/diluting buffer and concentration: 5% NFDM/TBST.
Exposure time: Line 1-3: 3 minutes; Line 4: 15 seconds; Line 5: 37 seconds.

Negative controls: SK-BR-3, T-47D (PMID: 20443831).

All lanes:
Western blot - Anti-NUMB antibody [EPR21988] (ab220362) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
SK-BR-3 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
T-47D (human ductal breast epithelial tumor epithelial cell) whole cell lysate at 20 µg

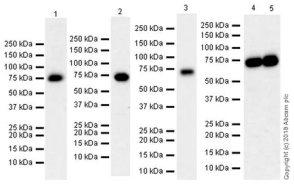
Lane 4:
Ramos (human Burkitt's lymphoma B lymphocyte) whole cell lysate at 20 µg

Lane 5:
SK-OV-3 (human ovarian cancer epithelial cell) whole cell lysate at 20 µg

Secondary

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

Predicted band size: 71 kDa



Western blot - Anti-NUMB antibody [EPR21988] (ab220362)

NUMB Western blot staining using rabbit Anti-NUMB antibody

Blocking/diluting buffer and concentration: 5% NFDM/TBST
Exposure time: Line 1-2: 3 minutes; Line 3: 93 seconds; Line 4-5: 3 minutes.

All lanes:
Western blot - Anti-NUMB antibody [EPR21988] (ab220362) at 1/1000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Rat brain lysate at 10 µg

Lane 3:
Mouse lung lysate at 10 µg

Lane 4:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 10 µg

Lane 5:
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

Predicted band size: 71 kDa

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