abcam

ab235873

Anti-GPNMB antibody [EPR22011-47]

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), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR22011-47
Purification technique	Affinity purification Protein A
Concentration	0.535 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/500 - 1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Target data

See full target information GPNMB

Function	Could be a melanogenic enzyme.

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	GPNMB also known as osteoactivin is a type I transmembrane glycoprotein with a molecular mass of approximately 115 kDa. This protein is highly expressed in various tissues including the bone skin and brain. It also shows notable presence in certain immune cells such as dendritic cells and macrophages. GPNMB localizes mainly on the cell membrane and within lysosomal compartments indicating its involvement in cellular and signaling processes.
Biological function summary	GPNMB plays versatile roles in promoting cell growth differentiation and repair. It is involved in processes like tissue regeneration possibly due to its role in cell adhesion and migration. The protein also partakes in osteoclast differentiation and bone resorption therefore linking to skeletal homeostasis. GPNMB forms part of a broader protein complex at the cellular junctions interacting with integrins to mediate its functions.
Pathways	GPNMB features prominently in osteoclastogenesis and melanoma metastasis pathways. It cooperates with RANKL an important protein in bone metabolism by influencing osteoclast differentiation and activation. In the context of melanoma GPNMB's action in pathways may enhance tumor proliferation and invasion possibly interacting with signaling molecules like AKT or ERK although the specifics remain actively researched.
Associated diseases and disorders	GPNMB has significant links to both osteoarthritis and certain types of cancer particularly breast cancer and melanoma. In osteoarthritis GPNMB expression often increases reflecting involvement in cartilage degradation processes. Its overexpression correlates with tumor progression in melanoma potentially driven by its interaction with integrin β1 which assists in cellular adhesion and migration within the tumor microenvironment.

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.

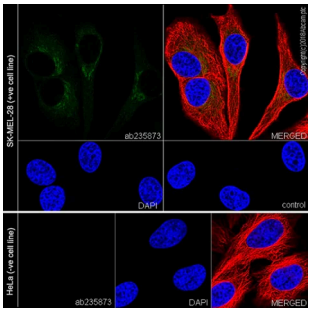
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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5 product images



Immunocytochemistry/ Immunofluorescence - Anti-GPNMB antibody [EPR22011-47] (ab235873)

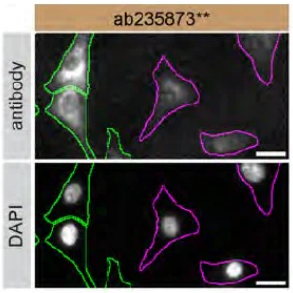
GPNMB Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GPNMB antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized SK-MEL-28 (human malignant melanoma) and HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling GPNMB with ab235873 at 1/500 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 SK-MEL-28 cell line.

Negative control: HeLa （PMID: 20056711.

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

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

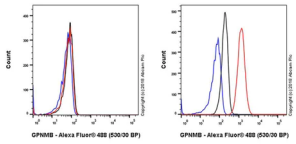


Immunocytochemistry/ Immunofluorescence - Anti-GPNMB antibody [EPR22011-47] (ab235873)

GPNMB Immunocytochemistry/ Immunofluorescence staining of U-87 MG cells using rabbit Anti-GPNMB antibody

ab235873 was shown to react with GPNMB in wild-type U-87 MG cells in immunocytochemistry with loss of signal observed in a GPNMB siRNA knockdown cell line. Wild-type and siRNA knockdown cells were mixed and pelleted at a 1:1 ratio on coverslips. The cells were fixed with 4% paraformaldehyde (15 min) then permeabilized with 0.1% Triton X-100 (10min) and then blocked with 1x PBS, 0.01% Triton X-100, 5% BSA, 5% NGS. The cells were then incubated with ab235873 at 1/250 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat anti-rabbit secondary antibody to (Alexa Fluor® 555) at 0.5 µg/ml. Acquisition of the green (wild-type), red (antibody staining) and far-red (siRNA knockdown) channels was performed. Representative grayscale images of the red channel are shown. Wild-type and siRNA knockdown are outlined with yellow and magenta dashed line, respectively. Schematic representation of the mosaic strategy used is shown on the bottom-right panel. Image was acquired with a Zeiss(LSM-880).

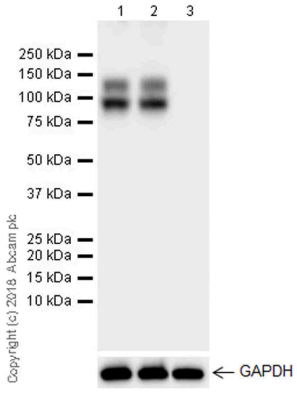
This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Flow Cytometry (Intracellular) - Anti-GPNMB antibody [EPR22011-47] (ab235873)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell, Left panel) andSK-MEL-28 (human malignant melanoma, Right panel) labeling GPNMB with ab235873 at 1/500 (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (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.
Negative control: HeLa (PMID: 20056711).



Western blot - Anti-GPNMB antibody [EPR22011-47] (ab235873)

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular mass observed is consistent with what has been described in the literature (PMID: 19320736).

Negative control: HeLa (PMID: 20056711).

All lanes:
Western blot - Anti-GPNMB antibody [EPR22011-47] (ab235873) at 1/1000 dilution

Lanes 1 - 2:
SK-MEL-28 (human malignant melanoma) whole cell lysate at 10 µg

Lane 3:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 10 µg

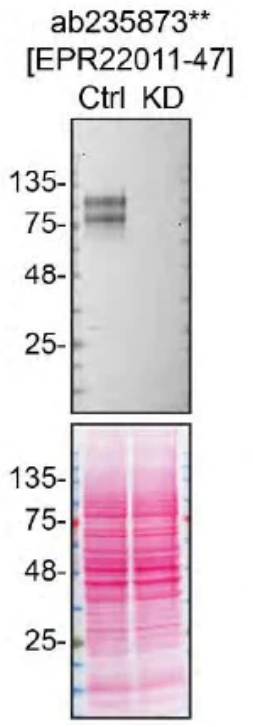
Secondary

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

Predicted band size: 64 kDa

Observed band size: 120 kDa, 95 kDa

Exposure time: 26s



Western blot - Anti-GPNMB antibody [EPR22011-47] (ab235873)

ab235873 was shown to react with GPNMB in wild-type U-87 MG cells in Western blot with loss of signal observed in a GPNMB siRNA knockdown cell line. Cell lysates from wild-type U-87 MG transfected with either scrambled siRNA or GPNMB siRNA were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab235873 overnight at 4 °C at a 1/500 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-GPNMB antibody [EPR22011-47] (ab235873) at 1/500 dilution

Lane 1:
Wild-type U-87 MG transfected with scrambled siRNA control lysate at 60 µg

Lane 2:
U-87 MG transfected with siRNA specifically targeting GPNMB cell lysate at 60 µg

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