abcam

ab227816

Anti-Progranulin antibody [EPR18539-59] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR18539-59
Purification technique	Affinity purification Protein A
Concentration	1.007 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-

Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	Also recommended for human and rat species for IHC

Target data

See full target information Grn

Function	Secreted protein that acts as a key regulator of lysosomal function and as a growth factor involved in inflammation, wound healing and cell proliferation (PubMed:12524533, PubMed:20026663, PubMed:23041626, PubMed:27789271, PubMed:28073925, PubMed:28453791, PubMed:28541286, PubMed:8496151). Regulates protein trafficking to lysosomes, and also the activity of lysosomal enzymes (PubMed:27789271, PubMed:28453791, PubMed:28541286). Also facilitates the acidification of lysosomes, causing degradation of mature CTSD by CTSB (PubMed:28073925). In addition, functions as a wound-related growth factor that acts directly on dermal fibroblasts and endothelial cells to promote division, migration and the formation of capillary-like tubule structures (PubMed:12524533). Also promotes epithelial cell proliferation by blocking TNF-mediated neutrophil activation preventing release of oxidants and proteases (PubMed:8496151). Moreover, modulates inflammation in neurons by preserving neurons survival, axonal outgrowth and neuronal integrity (PubMed:20026663, PubMed:23041626). Granulin-3. Inhibits epithelial cell proliferation and induces epithelial cells to secrete IL-8. Granulin-7. Stabilizes CTSD through interaction with CTSD leading to maintain its aspartic-type peptidase activity.

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

ab227816 is the carrier-free version of ab187070.

Also recommended for human and rat species for IHC.

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	Granulin also known as progranulin or GRN is a protein with a molecular mass of approximately 68 kDa. This protein is encoded by the GRN gene and is involved in various cellular processes. Granulin is expressed widely within the body particularly in epithelial cells immune cells and neurons. Researchers have developed methods like GRN ELISA and progranulin ELISA to quantitatively measure the levels of granulin in biological samples aiding in further understanding of its role in health and disease.
Biological function summary	Granulin functions as a growth factor involved in tissue repair cell proliferation and inflammation. It does not function as part of a larger protein complex but acts individually in exerting its effects on cells. Granulin influences various aspects of cellular architecture and signaling pathways making it important for maintaining cellular homeostasis. Additionally the granulin protein participates in regulating networks that involve cytokines and growth factors impacting both the innate and adaptive immune responses.
Pathways	Granulin plays significant roles in the MAPK and NF-kB signaling pathways. These pathways critically manage cellular reactions to stress inflammation and other external stimuli. Granulin modulates these processes often interacting with proteins like TNF receptors and interleukins to affect the downstream signaling events. Interactions between granulin and other signaling molecules allow it to integrate into broader networks that oversee various biological responses.
Associated diseases and disorders	Significant links exist between granulin mutations and frontotemporal dementia (FTD) and Alzheimer's disease. Mutations in the GRN gene often lead to reduced granulin levels contributing to neurodegenerative conditions. These mutations affect the protein's normal function promoting pathological mechanisms associated with neuronal deterioration. Granulin interacts with proteins such as TDP-43 in neurodegenerative diseases where alterations might result in protein aggregation and neurotoxicity. Understanding these connections can lead to potential therapeutic interventions targeting granulin-related pathways.

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.

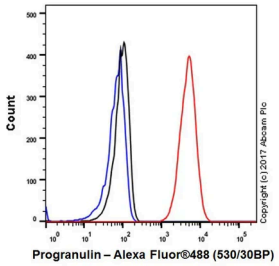
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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3 product images

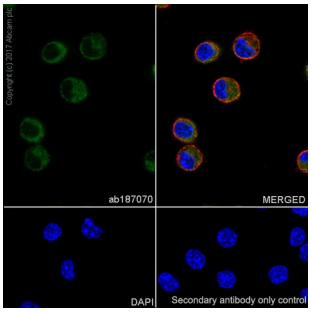


Flow Cytometry (Intracellular) - Anti-Progranulin antibody [EPR18539-59] - BSA and Azide free (ab227816)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized J774A.1 (mouse reticulum cell sarcoma monocyte macrophage) cell line labeling Progranulin with ab187070 at 1/1000 (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 H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution 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 (ab187070).



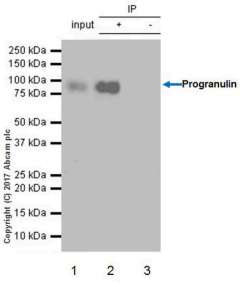
Immunocytochemistry/ Immunofluorescence - Anti-Progranulin antibody [EPR18539-59] - BSA and Azide free (ab227816)

Progranulin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Progranulin antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized J774A.1 (mouse reticulum cell sarcoma monocyte macrophage cell line) cells labeling Progranulin with ab187070 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 on J774A.1 cell line.
The nuclear counter statin is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

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

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187070).



Immunoprecipitation - Anti-Progranulin antibody [EPR18539-59] - BSA and Azide free (ab227816)

Progranulin was immunoprecipitated from 0.35 mg of J774A.1 (mouse reticulum cell sarcoma monocyte macrophage cell line) whole cell lysate with ab187070 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab187070 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10,000 dilution.
Lane 1: J774A.1 lysate 10 µg (Input).

Lane 2: ab187070 IP in J774A.1 lysate (+).

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab187070 in J744A.1 whole cell lysate (-).

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

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187070).

All lanes:
Immunoprecipitation - Anti-Progranulin antibody [EPR18539-59] (ab187070)

Developed using the ECL technique.

Predicted band size: 64 kDa

Observed band size: 88 kDa

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