abcam

ab316862

Anti-GM-CSF antibody [EPR28743-78]

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	EPR28743-78
Purification technique	Affinity purification Protein A
Concentration	0.508 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/5000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/200 - 1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CSF2

Function	Cytokine that stimulates the growth and differentiation of hematopoietic precursor cells from various lineages, including granulocytes, macrophages, eosinophils and erythrocytes.

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	GM-CSF also known as Granulocyte-Macrophage Colony-Stimulating Factor is a glycoprotein with a mass of approximately 23 kDa. This protein plays a mechanical role in stimulating the differentiation and proliferation of hematopoietic progenitor cells into granulocytes and macrophages. Its expression occurs in various cell types including macrophages T cells endothelial cells and fibroblasts. GM-CSF interacts with its specific receptor known as CSF2 receptor to exert its effects.
Biological function summary	GM-CSF influences the immune system by enhancing the functional capacity of mature neutrophils macrophages and eosinophils. GM-CSF protein acts alone and not as part of a larger protein complex. It is important in regulating immune responses and inflammation. Due to its role in promoting the survival and activation of these immune cells GM-CSF is important for mounting an effective immune defense in response to infections and other challenges.
Pathways	GM-CSF signaling is integral to the JAK-STAT pathway. This pathway is essential for transmitting signals from surface receptors like GM-CSF receptors into the nucleus

	thereby inducing gene expression that leads to cell survival and proliferation. GM-CSF also intersects with the ERK1/ERK2 MAPK pathway which is involved in regulating cellular processes such as division and differentiation. The GM-CSF receptor shares similarities with other cytokine receptors involved in these pathways making it related to various cytokines through its downstream signaling effects.
Associated diseases and disorders	GM-CSF has a well-established connection to diseases like rheumatoid arthritis and multiple sclerosis. In rheumatoid arthritis overproduction of GM-CSF is linked to chronic inflammation and joint damage. In multiple sclerosis GM-CSF might contribute to the pathological immune responses against the central nervous system. Antibodies targeting GM-CSF or its receptor represent a therapeutic strategy for these autoimmune diseases. By modulating GM-CSF activity therapeutic approaches aim to reduce inflammation and autoimmunity highlighting the protein's importance in disease progression.

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

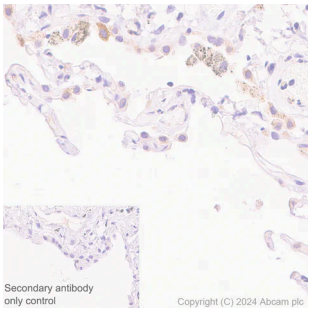
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

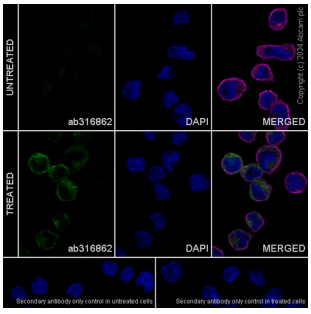
Immunohistochemical analysis of paraffin-embedded Human lung tissue labeling GM-CSF with ab316862 at 1/200 (2.54 ug/ml) dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Positive staining on human lung (PMID: 32719685).
The section was incubated with ab316862 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



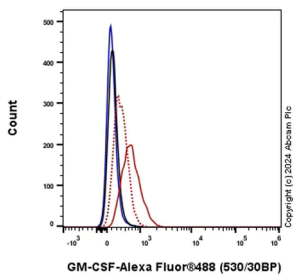
Immunocytochemistry/ Immunofluorescence - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HuT-78 (human Sezary syndrome cutaneous T lymphocyte) cells labelling GM-CSF with ab316862 at 1/50 (10.16 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green).

Confocal image showing increased cytoplasmic staining in HuT-78 cells treated with Phorbol-12-myristate-13-acetate (80 nM) and Ionomycin (3 uM) for 5 hours, then add Brefeldin A (300 ng/ml) for 4 hours (shown in green). The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2ug/ml dilution.

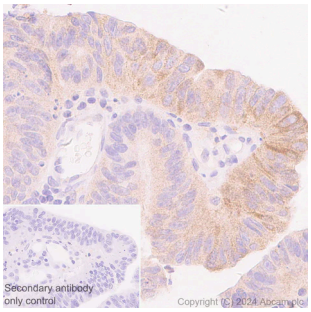


Flow Cytometry (Intracellular) - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

GM-CSF Flow Cytometry (Intracellular) staining of HuT-78(human Sezary syndrome cutaneous T lymphocyte) treated with 80nM TPA and 3uM onomycin for 5h and add 300ng/ml BFA for 4h (Red)/Untreated HuT-78 (Dotted red) using rabbit Anti-GM-CSF antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HuT-78(human Sezary syndrome cutaneous T lymphocyte) treated with 80nM TPA and 3uM onomycin for 5h and add 300ng/ml BFA for 4h (Red)/Untreated HuT-78 (Dotted red) cells labelling GM-CSF with ab316862 at 1/5000 dilution (0.01ug)/Red and dotted red (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat anti-Rabbit IgG (Alexa Fluor® 488, ab150077) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

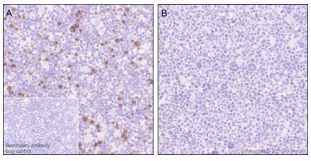
Immunohistochemical analysis of paraffin-embedded Human colon carcinoma tissue labeling GM-CSF with ab316862 at 1/200 (2.54 ug/ml) dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Positive staining on human colon carcinoma (PMID: 31908491).
The section was incubated with ab316862 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

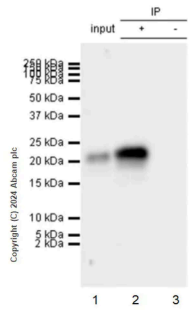
Immunohistochemical analysis of paraffin-embedded (A) HuT-78 (human Sezary syndrome cutaneous T lymphocyte) treated with TPA (80nM/5 hours) and ionomycin (30µM/5 hours) add BFA (300ngml/4 hours). (A) HuT-78 untreated with TPA (80nM/5 hours) and ionomycin (30µM/5 hours) add BFA (300ngml/4 hours). tissue labeling GM-CSF with ab316862 at 1/2000 (0.254 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on (A) HuT-78 treated with TPA (80nM/5 hours) and ionomycin (30µM/5 hours) add BFA (300ngml/4 hours). No staining on (B) HuT-78 untreated with TPA (80nM/5 hours) and ionomycin (30µM/5 hours) add BFA (300ngml/4 hours).
The section was incubated with ab316862 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunoprecipitation - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

GM-CSF was immunoprecipitated from 0.35 mg HuT-78 (human Sezary syndrome cutaneous T lymphocyte) treated with 80nM TPA and 30uM Ionomycin for 5h, 300ng/ml BFA was then added for additional 4h, whole cell lysate with ab316862 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab316862 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: HuT-78 (human Sezary syndrome cutaneous T lymphocyte) treated with 80nM TPA and 30uM Ionomycin for 5h, 300ng/ml BFA was then added for additional 4h, whole cell lysate
Lane 2: ab316862 IP in HuT-78 (human Sezary syndrome cutaneous T lymphocyte) treated with 80nM TPA and 30uM Ionomycin for 5h, 300ng/ml BFA was then added for additional 4h, whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab316862 in HuT-78 treated with 80nM TPA and 30uM Ionomycin for 5h, 300ng/ml BFA was then added for additional 4h whole cell lysate

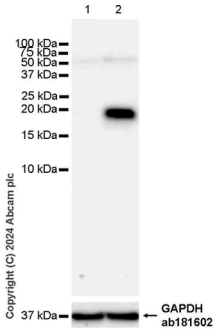
All lanes:
Immunoprecipitation - Anti-GM-CSF antibody [EPR28743-78] (ab316862) at 1/30 dilution

All lanes:
HuT-78 (human Sezary syndrome cutaneous T lymphocyte) treated with 80nM TPA and 30uM Ionomycin for 5h, 300ng/ml BFA was then added for additional 4h, whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



Western blot - Anti-GM-CSF antibody [EPR28743-78] (ab316862)

GM-CSF Western blot staining using rabbit Anti-GM-CSF antibody

The identity of the higher MW band at approximately 50 kDa is unknown.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-GM-CSF antibody [EPR28743-78] (ab316862) at 1/1000 dilution

Lane 1:
Untreated HuT-78 (human Sezary syndrome cutaneous T lymphocyte), whole cell lysate at 20 µg

Lane 2:
HuT-78 treated with 80nM TPA and 30uM Ionomycin for 5h, /ml BFA was then added for additional 4h, whole cell lysate at 20 µg

Secondary

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

Observed band size: 20 kDa, 36 kDa

Exposure time: 37s

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