abcam

ab255599

Anti-Granzyme B antibody [EPR22645-244]

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	EPR22645-244
Purification technique	Affinity purification Protein A
Concentration	0.8 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

IHC-P

Not recommended

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/800
Notes	-

Target data

See full target information Gzmb

Function	Abundant protease in the cytosolic granules of cytotoxic T-cells and NK-cells which activates caspase-independent pyroptosis when delivered into the target cell through the immunological synapse (PubMed:3555842, PubMed:35705808). It cleaves after Asp (PubMed:35705808). Once delivered into the target cell, acts by catalyzing cleavage of gasdermin-E (GSDME), releasing the pore-forming moiety of GSDME, thereby triggering pyroptosis and target cell death (By similarity). Seems to be linked to an activation cascade of caspases (aspartate-specific cysteine proteases) responsible for apoptosis execution (By similarity). Cleaves caspase-3 and -9 (CASP3 and CASP9, respectively) to give rise to active enzymes mediating apoptosis (PubMed:35705808). Cleaves and activates CASP7 in response to bacterial infection, promoting plasma membrane repair (PubMed:35705808).

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	Granzyme B also known as GZMB GB11 or granzyme B protein is a serine protease with a molecular mass of approximately 32 kDa. It is expressed mainly in cytotoxic T lymphocytes and natural killer (NK) cells. This enzyme plays a mechanical role in inducing apoptosis in target cells serving as an effector protein in the immune system's defense against virally infected cells or transformed cancer cells. The activity of granzyme B relies on its ability to cleave after aspartate residues in substrate proteins leading to the activation of apoptotic pathways.
Biological function summary	Granzyme B participates prominently in the immune response by activating caspases particularly caspase-3 which promotes the breakdown of cellular components necessary for apoptosis. Granzyme B does not function in isolation but acts in concert with other immune system factors such as perforin to effectively induce cell death. Perforin creates pores in the target cell membrane allowing granzyme B to enter and instigate the apoptosis sequence. The enzyme also contributes to the processing of cytokines which enhances the immune response further.
Pathways	Studies have determined that granzyme B is critical in the apoptosis pathway particularly in the granule exocytosis pathway. It closely interacts with proteins such as perforin and other granzymes to mediate apoptosis in target cells. Granzyme B also plays a role in the inflammatory response and can influence pathways associated with cytotoxic T cell signaling. Its pathway interactions ensure effective elimination of damaged or infected cells maintaining tissue homeostasis.
Associated diseases and disorders	Granzyme B has associations with autoimmune diseases and cancer. Abnormally high levels of granzyme B can contribute to tissue damage and inflammation in autoimmune conditions like rheumatoid arthritis. In the context of cancer granzyme B aids in tumor surveillance and destruction when functioning correctly but impaired granzyme B activity can lead to evasion of immune detection by cancerous cells. Perforin also plays a role in these conditions closely working with granzyme B to either protect against or drive 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.

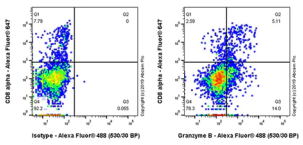
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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2 product images

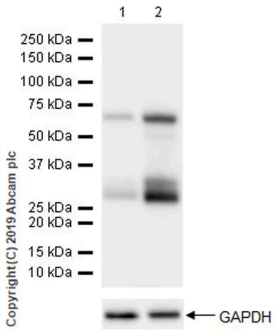


Flow Cytometry (Intracellular) - Anti-Granzyme B antibody [EPR22645-244] (ab255599)

Granzyme B Flow Cytometry (Intracellular) staining using rabbit Anti-Granzyme B antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed, 0.1% Tween-20 permeabilized Mouse splenocyte (treated with 2.5ug/ml Concanavalin A for 72h) cells labelling Granzyme B with ab255599 at 1/800 dilution (Right) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left).
Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

Cells were surface stained with anti-CD8 alpha conjugated to Alexa Fluor® 647.Then fixed with 2% PFA for 10min and intracellularly stained with rabbit IgG (Left) or ab255599 (Right).



Western blot - Anti-Granzyme B antibody [EPR22645-244] (ab255599)

The expression of Granzyme B is elevated in stimulated splenocytes. Granzyme B forms a complex with its protease inhibitor. The molecular weight observed is consistent with what has been described in the literature (PMID: 8663264, PMID: 17116752, PMID: 21919028, PMID: 9774654).
Blocking/Diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Granzyme B antibody [EPR22645-244] (ab255599) at 1/1000 dilution

Lane 1:
Untreated mouse splenocyte lysate at 20 µg

Lane 2:
Mouse splenocyte (treated with 2.5µg/ml Concanavalin for 72 hours) 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: 28 kDa

Observed band size: 27 kDa, 65 kDa

Exposure time: 3s

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