abcam

ab283720

Anti-NFAT1 antibody [EPR24658-43] - BSA and Azide free

Recombinant | RabMAb

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	EPR24658-43
Purification technique	Affinity purification Protein A
Concentration	1.005 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information NFATC2

Function Plays a role in the inducible expression of cytokine genes in T-cells, especially in the induction of the IL-2, IL-3, IL-4, TNF or GM-CSF (PubMed:15790681). Promotes invasive migration through the activation of GPC6 expression and WNT5A signaling pathway (PubMed:21871017). Is involved in the negative regulation of chondrogenesis (PubMed:35789258). Recruited by AKAP5 to ORAI1 pore-forming subunit of CRAC channels in Ca(2+) signaling microdomains where store-operated Ca(2+) influx is coupled to calmodulin and calcineurin signaling and activation of NFAT-dependent transcriptional responses.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab283720 is the carrier-free version of ab283691.

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	NFAT1 also known as NFATc2 is a transcription factor involved in gene regulation with a molecular weight of approximately 100 kDa. It belongs to the NFAT (nuclear factor of activated T-cells) family and is expressed in a variety of tissues including the immune system and the nervous system. NFAT1 plays an essential role in activating specific gene expressions by translocating into the nucleus upon cell stimulation. Researchers frequently use NFAT molecular weight to confirm its presence in protein analyses such as NFAT western blot techniques.
Biological function summary	NFAT1 influences immune response and development. It acts as part of a large complex with other transcription factors to bind DNA and regulate transcription of cytokines and other critical immune molecules. In activated T-cells NFAT1 controls the expression of genes important for immune function including interleukins. In neuronal tissues it contributes to neural growth and survival highlighting its multifunctional nature in different cell types.
Pathways	NFAT1 integrates into the calcineurin signaling pathway and plays a significant role in T-cell activation. It acts downstream of the calcium signaling cascade which leads to dephosphorylation and activation by the phosphatase calcineurin. NFAT1 works closely with proteins like AP-1 and GATA to facilitate the transcription of immune-related genes. These interactions highlight NFAT1's importance in immune signaling pathways which modulate immune surveillance and homeostasis.

Associated diseases and disorders	NFAT1 associates with autoimmune diseases and certain cancers. In autoimmune conditions such as rheumatoid arthritis aberrant NFAT1 function leads to excessive cytokine production exacerbating inflammation. The protein also links to cancer development particularly in lymphoid malignancies where dysregulated NFAT1 activity contributes to uncontrolled cell proliferation. It interacts with oncogenic kinases and other dysregulated proteins in these disorders influencing both their progression and possible therapeutic targeting.

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

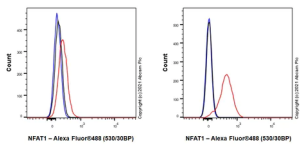
We do not recommend this combination. It is not covered by our product promise.

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.

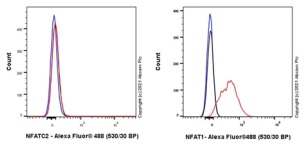
4 product images



Flow Cytometry (Intracellular) - Anti-NFAT1 antibody [EPR24658-43] - BSA and Azide free (ab283720)

NFAT1 Flow Cytometry (Intracellular) staining using rabbit Anti-NFAT1 antibody

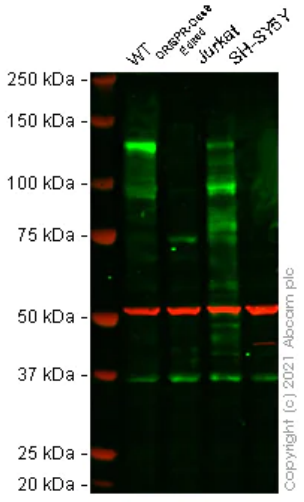
This data was developed using ab283691, the same antibody clone in a different buffer formulation.Flow cytometric analysis of HeLa (human cervix adenocarcinoma epithelial cell, Left) / Ramos (Human Burkitt's lymphoma B lymphocyte, Right) cells labelling NFAT1 with ab283691 at 1/50 dilution (1ug)/ red 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, ab150081) at 1/2000 dilution was used as the secondary antibody. Negative control: Hela (PMID:21078663).



Flow Cytometry (Intracellular) - Anti-NFAT1 antibody [EPR24658-43] - BSA and Azide free (ab283720)

NFAT1 Flow Cytometry (Intracellular) staining using rabbit Anti-NFAT1 antibody

This data was developed using ab283691, the same antibody clone in a different buffer formulation.Flow cytometric analysis of LNCaP (Human prostate carcinoma epithelial cell, Left) / Jurkat (Human T cell leukemia T lymphocyte, Right) cells labelling NFAT1 with ab283691 at 1/50 dilution (1ug) (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, ab150081) at 1/2000 dilution was used as the secondary antibody. Negative control: LNCaP.



Western blot - Anti-NFAT1 antibody [EPR24658-43] - BSA and Azide free (ab283720)

NFAT1 Western blot staining using rabbit Anti-NFAT1 antibody

This data was developed using ab283691, the same antibody clone in a different buffer formulation.
False colour image of Western blot: Anti-NFAT1 antibody [EPR24658-43] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab283691 was shown to bind specifically to NFAT1. A band was observed at 100 kDa in wild-type Raji cell lysates with no signal observed at this size in NFATC2 CRISPR-Cas9 edited cell line ab280906 (CRISPR-Cas9 edited cell lysate ab282940). The band observed in the CRISPR-Cas9 edited lysate lane below 100 kDa is likely to represent a truncated form of NFAT1. This has not been investigated further and the functional properties of the gene product have not been determined. To generate this image, wild-type and NFATC2 CRISPR-Cas9 edited Raji cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.

All lanes:
Western blot - Anti-NFAT1 antibody [EPR24658-43] (ab283691) at 1/1000 dilution

Lane 1:
Wild-type Raji cell lysate at 20 µg

Lane 2:
NFATC2 CRISPR-Cas9 edited Raji cell lysate at 20 µg

Lane 2:
Western blot - Human NFATC2 knockout Raji cell line (ab280906)

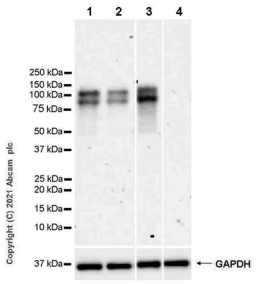
Lane 3:
Jurkat cell lysate at 20 µg

Lane 4:
SH-SY5Y cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 100 kDa

Observed band size: 100 kDa



Western blot - Anti-NFAT1 antibody [EPR24658-43] - BSA and Azide free (ab283720)

NFAT1 Western blot staining using rabbit Anti-NFAT1 antibody

This data was developed using ab283691, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: This blot was developed using a higher-sensitivity ECL substrate.

The molecular weight observed is consistent with what has been described in the literature (PMID:21078663, PMID:25696812).

Negative control: Hela (PMID:21078663)

Exposure time: 3 minutes

All lanes:
Western blot - Anti-NFAT1 antibody [EPR24658-43] (ab283691) at 1/1000 dilution

Lane 1:
Ramos (human Burkitt's lymphoma B lymphocyte), whole cell lysate at 20 µg

Lane 2:
Raji (human Burkitts lymphoma B lymphocyte), whole cell lysate at 20 µg

Lane 3:
Daudi (human Burkitts lymphoma lymphoblast), whole cell lysate at 20 µg

Lane 4:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 100 kDa

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