abcam

ab225572

Anti-JNK1 + JNK2 + JNK3 antibody [EPR16797-211] - 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	EPR16797-211
Purification technique	Affinity purification Protein A
Concentration	1.016 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse, Rat, Chicken, Dog, Cow, African green monkey, Zebrafish, Xenopus tropicalis
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	Rat, Chicken, Dog, Cow, African green monkey, Zebrafish, Xenopus tropicalis
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat, Chicken, Dog, Cow, African green monkey, Zebrafish, Xenopus tropicalis
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-

Notes	-

WB

Tested

Species	Human, Recombinant full length protein - Human, Mouse, Rat, Chicken, Dog, Cow, African green monkey, Zebrafish, Xenopus tropicalis
Dilution info	-
Notes	-

Predicted

Species	Monkey
Dilution info	-
Notes	-

Target data

See full target information MAPK8

Function

Serine/threonine-protein kinase involved in various processes such as cell proliferation, differentiation, migration, transformation and programmed cell death. Extracellular stimuli such as pro-inflammatory cytokines or physical stress stimulate the stress-activated protein kinase/c-Jun N-terminal kinase (SAP/JNK) signaling pathway (PubMed:28943315). In this cascade, two dual specificity kinases MAP2K4/MKK4 and MAP2K7/MKK7 phosphorylate and activate MAPK8/JNK1. In turn, MAPK8/JNK1 phosphorylates a number of transcription factors, primarily components of AP-1 such as JUN, JDP2 and ATF2 and thus regulates AP-1 transcriptional activity (PubMed:18307971). Phosphorylates the replication licensing factor CDT1, inhibiting the interaction between CDT1 and the histone H4 acetylase HBO1 to replication origins (PubMed:21856198). Loss of this interaction abrogates the acetylation required for replication initiation (PubMed:21856198). Promotes stressed cell apoptosis by phosphorylating key regulatory factors including p53/TP53 and Yes-associates protein YAP1 (PubMed:21364637). In T-cells, MAPK8 and MAPK9 are required for polarized differentiation of T-helper cells into Th1 cells. Contributes to the survival of erythroid cells by phosphorylating the antagonist of cell death BAD upon EPO stimulation (PubMed:21095239). Mediates starvation-induced BCL2 phosphorylation, BCL2 dissociation from BECN1, and thus activation of autophagy (PubMed:18570871). Phosphorylates STMN2 and hence regulates microtubule dynamics, controlling neurite elongation in cortical neurons (By similarity). In the developing brain, through its cytoplasmic activity on STMN2, negatively regulates the rate of exit from multipolar stage and of radial migration from the ventricular zone (By similarity). Phosphorylates several other substrates including heat shock factor protein 4 (HSF4), the deacetylase SIRT1, ELK1, or the E3

ligase ITCH (PubMed:16581800, PubMed:17296730, PubMed:20027304). Phosphorylates the CLOCK-BMAL1 heterodimer and plays a role in the regulation of the circadian clock (PubMed:22441692). Phosphorylates the heat shock transcription factor HSF1, suppressing HSF1-induced transcriptional activity (PubMed:10747973). Phosphorylates POU5F1, which results in the inhibition of POU5F1's transcriptional activity and enhances its proteasomal degradation (By similarity). Phosphorylates JUND and this phosphorylation is inhibited in the presence of MEN1 (PubMed:22327296). In neurons, phosphorylates SYT4 which captures neuronal dense core vesicles at synapses (By similarity). Phosphorylates EIF4ENIF1/4-ET in response to oxidative stress, promoting P-body assembly (PubMed:22966201). Phosphorylates SIRT6 in response to oxidative stress, stimulating its mono-ADP-ribosyltransferase activity (PubMed:27568560). Phosphorylates NLRP3, promoting assembly of the NLRP3 inflammasome (PubMed:28943315). Phosphorylates ALKBH5 in response to reactive oxygen species (ROS), promoting ALKBH5 sumoylation and inactivation (PubMed:34048572). JNK1 isoforms display different binding patterns: beta-1 preferentially binds to c-Jun, whereas alpha-1, alpha-2, and beta-2 have a similar low level of binding to both c-Jun or ATF2. However, there is no correlation between binding and phosphorylation, which is achieved at about the same efficiency by all isoforms.

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

ab225572 is the carrier-free version of ab179461.

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	JNK1 JNK2 and JNK3 collectively known as c-Jun N-terminal kinases are important members of the mitogen-activated protein kinase (MAPK) family. JNK1 JNK2 and JNK3 have molecular weights of approximately 46 to 55 kDa with JNK1 being around 46 kDa JNK2 about 54 kDa and JNK3 also around 54 kDa. They are expressed differently across tissues: JNK1 and JNK2 are widely present in many tissues while JNK3 is mostly in brain heart and testis. These kinases primarily phosphorylate serine and threonine residues acting on various transcription factors including c-Jun to regulate cellular processes.
Biological function summary	These kinases function as significant regulators of cellular responses to stress and cytokines. They do not act alone but often form part of larger signaling complexes that include other MAPKs and various scaffold proteins. Their roles are substantial in cell differentiation proliferation apoptosis and migration. Precise regulation by JNK molecules influences these critical cellular events which play a role in maintaining homeostasis and response to external stresses.
Pathways	JNK proteins are central to the MAPK signaling pathway and are tightly linked to the MAPK/ERK pathway. Activation of the JNK pathways leads to the regulation of various other proteins including those in the apoptosis pathway such as Bcl-2 and Bax. These interactions focus on cellular stress response regulation and contribute to processes like inflammation stress-induced apoptosis and some metabolic processes.
Associated diseases and disorders	JNKs have important roles in inflammatory diseases and neurodegenerative disorders such as Alzheimer's disease and Parkinson’s disease. Their activity links to the regulation of pro-inflammatory cytokines and neuronal apoptosis. JNK1 and JNK2 are particularly connected to inflammatory responses whereas JNK3 with its expression in the brain has associations with neuronal death in neurodegenerative diseases. Modulating JNK activity may offer therapeutic approaches for these conditions targeting pathways involving proteins like TNF-alpha and Aβ-amyloid.

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

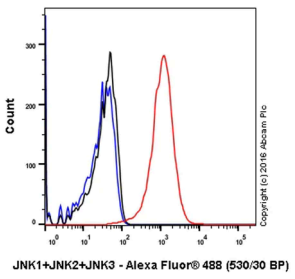
We do not recommend this combination. It is not covered by our product promise.

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.

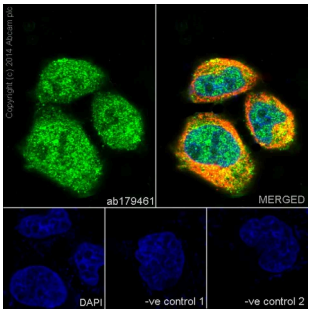
3 product images



Flow Cytometry (Intracellular) - Anti-JNK1 + JNK2 + JNK3 antibody [EPR16797-211] - BSA and Azide free (ab225572)

JNK1 + JNK2 + JNK3 Flow Cytometry (Intracellular) staining using rabbit Anti-JNK1 + JNK2 + JNK3 antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling JNK1+JNK2+JNK3 with purified ab179461 at 1/180 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179461).

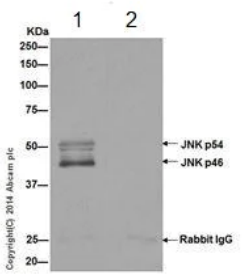


Immunocytochemistry/ Immunofluorescence - Anti-JNK1 + JNK2 + JNK3 antibody [EPR16797-211] - BSA and Azide free (ab225572)

JNK1 + JNK2 + JNK3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-JNK1 + JNK2 + JNK3 antibody

This ICC/IF data was generated using the same anti-JNK1/2/3 antibody clone [EPR16797-211] in a different buffer formulation (cat# ab179461).

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling JNK1+JNK2+JNK3 with ab179461 at 1/250 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/400 dilution (green). Confocal image showing both cytoplasmic and nuclear staining on HeLa cells. The nuclear counterstain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:-
-ve control 1: - ab179461 at 1/250 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
-ve control 2: - ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/400 dilution.



Immunoprecipitation - Anti-JNK1 + JNK2 + JNK3 antibody [EPR16797-211] - BSA and Azide free (ab225572)

JNK1+JNK2+JNK3 were immunoprecipitated from 1mg of Jurkat (Human T cell leukemia cells from peripheral blood) whole cell extract with ab179461 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab179461 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution. Lane 1: Jurkat whole cell extract. Lane 2: PBS instead of Jurkat whole cell extract.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

JNKs originate from three genes that yield ten isoforms through alternative mRNA splicing, including JNK1α1, JNK1β1, JNK2α1, JNK2β1 and JNK3α1, which represent the p46 isoforms, and JNK1α2, JNK1β2, JNK2α2, JNK2β2 and JNK3β2, which represent the p54 isoforms.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab179461).

All lanes:
Immunoprecipitation - Anti-JNK1 + JNK2 + JNK3 antibody [EPR16797-211] (ab179461)

Predicted band size: 48 kDa

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