abcam

ab227986

Anti-JNK2 antibody [EP1595Y] - 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	EP1595Y
Purification technique	Affinity purification Protein A
Concentration	1.027 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

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

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

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

ELISA

Tested

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

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
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 (Low endotoxin, Azide free), is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

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

Target data

See full target information MAPK9

Function

Serine/threonine-protein kinase involved in various processes such as cell proliferation, differentiation, migration, transformation and programmed cell death (PubMed:10376527, PubMed:15805466, PubMed:17525747, PubMed:19675674, PubMed:20595622, PubMed:21364637, PubMed:22441692, PubMed:34048572). 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. In this cascade, two dual specificity kinases MAP2K4/MKK4 and MAP2K7/MKK7 phosphorylate and activate MAPK9/JNK2 (PubMed:10376527, PubMed:15805466, PubMed:17525747, PubMed:19675674, PubMed:20595622, PubMed:21364637, PubMed:22441692, PubMed:34048572). In turn, MAPK9/JNK2 phosphorylates a number of transcription factors, primarily components of AP-1 such as JUN and ATF2 and thus regulates AP-1 transcriptional activity (PubMed:10376527). In response to oxidative or ribotoxic stresses, inhibits rRNA synthesis by phosphorylating and inactivating the RNA polymerase 1-specific transcription initiation factor RRN3 (PubMed:15805466). Promotes stressed cell apoptosis by phosphorylating key regulatory factors including TP53 and YAP1 (PubMed:17525747, PubMed:21364637). In T-cells, MAPK8 and MAPK9 are required for polarized differentiation of T-helper cells into Th1 cells (PubMed:19290929).

Upon T-cell receptor (TCR) stimulation, is activated by CARMA1, BCL10, MAP2K7 and MAP3K7/TAK1 to regulate JUN protein levels (PubMed:19290929). Plays an important role in the osmotic stress-induced epithelial tight-junctions disruption (PubMed:20595622). When activated, promotes beta-catenin/CTNNB1 degradation and inhibits the canonical Wnt signaling pathway (PubMed:19675674). Also participates in neurite growth in spiral ganglion neurons (By similarity). Phosphorylates the CLOCK-BMAL1 heterodimer and plays a role in the regulation of the circadian clock (PubMed:22441692). Phosphorylates POU5F1, which results in the inhibition of POU5F1's transcriptional activity and enhances its proteasomal degradation (By similarity). Phosphorylates ALKBH5 in response to reactive oxygen species (ROS), promoting ALKBH5 sumoylation and inactivation (PubMed:34048572). MAPK9 isoforms display different binding patterns: alpha-1 and alpha-2 preferentially bind to JUN, whereas beta-1 and beta-2 bind to ATF2. However, there is no correlation between binding and phosphorylation, which is achieved at about the same efficiency by all isoforms. JUNB is not a substrate for JNK2 alpha-2, and JUND binds only weakly to it.

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

ab227986 is the carrier-free version of ab76125.

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	C-Jun N-terminal kinase 2 also known as JNK2 is a member of the MAPK (mitogen-activated protein kinase) family. JNK2 plays a significant role in transmitting signals within cells. It is a protein with a mass of approximately 48 kDa and exists in various tissues including the brain heart and liver. JNK2 is ubiquitously expressed and has two main isoforms produced by alternative splicing. These isoforms are involved in different biological functions emphasizing the protein's versatility.
Biological function summary	C-Jun N-terminal kinase 2 is key in regulating processes such as cell growth apoptosis and differentiation. JNK2 is part of the MAP kinase signal transduction pathways and forms interactions with several proteins including the scaffolding proteins known as JNK-interacting proteins (JIPs). These complexes help coordinate the response of JNK2 in cellular stress and inflammatory responses. JNK2 is also critical in modulating the expression of genes by activating transcription factors such as c-Jun and ATF2.
Pathways	JNK2 operates within the MAPK signaling pathway by integrating various upstream signals to exert effects on gene expression. JNK2 phosphorylates and activates transcription factors playing an important role in cellular responses to stress. It is closely connected to other proteins within the pathway such as JNK1 and JNK3 together contributing to the complex regulation of stress-induced apoptosis and pro-inflammatory responses. These interactions highlight JNK2's essential function across multiple signaling networks.
Associated diseases and disorders	Research connects c-Jun N-terminal kinase 2 to both cancer and neurodegenerative diseases. Its role in controlling apoptosis and cell proliferation links JNK2 to tumor progression where abnormal JNK2 activity can lead to oncogenesis. Additionally in neurodegenerative diseases like Alzheimer's dysregulated JNK2 signaling may accelerate neuronal death. JNK2's association with other proteins involved in these disorders such as amyloid precursor protein in Alzheimer's disease highlights its influence in pathological processes.

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

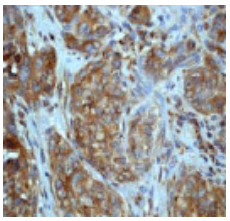
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images

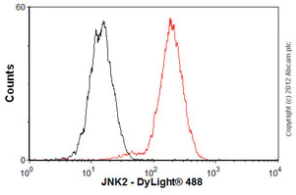


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-JNK2 antibody [EP1595Y] - BSA and Azide free (ab227986)

JNK2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-JNK2 antibody

This IHC data was generated using the same anti-JNK2 antibody clone, EP1595Y, in a different buffer formulation (cat# ab76125).
ab76125 at 1/100 dilution staining JNK2 in human breast carcinoma by Immunohistochemistry, Paraffin-embedded tissue.

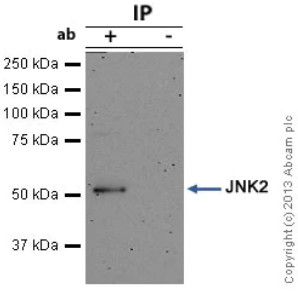
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-JNK2 antibody [EP1595Y] - BSA and Azide free (ab227986)

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

Overlay histogram showing HeLa cells stained with ab76125 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab76125, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76125).



Immunoprecipitation - Anti-JNK2 antibody [EP1595Y] - BSA and Azide free (ab227986)

JNK2 was immunoprecipitated using 0.5mg Hela whole cell extract, 5µg of Rabbit monoclonal to JNK2 and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).
The antibody was incubated under agitation with Protein G beads for 10min, Hela whole cell extract lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70°C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab76125.

Secondary: Mouse monoclonal [SB62a] Secondary Antibody to Rabbit IgG light chain (HRP) (ab99697).

Band: 48kDa; JNK2

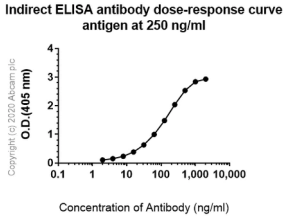
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76125).
All lanes:
Immunoprecipitation - Anti-JNK2 antibody [EP1595Y] (ab76125)

Developed using the ECL technique.

Performed under reducing conditions.

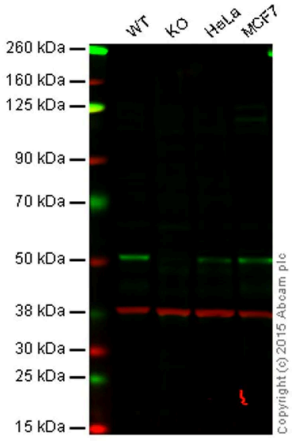
Predicted band size: 48 kDa

Exposure time: 20min



ELISA - Anti-JNK2 antibody [EP1595Y] - BSA and Azide free (ab227986)

This data was developed using ab76125, the same antibody clone in a different buffer formulation.ELISA analysis of Human JNK2 recombinant protein at 250 ng/mL with ab76125. An Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1/2500 dilution was used as the secondary antibody.



Western blot - Anti-JNK2 antibody [EP1595Y] - BSA and Azide free (ab227986)

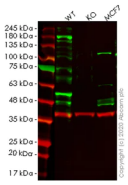
JNK2 Western blot staining using rabbit Anti-JNK2 antibody

This WB data was generated using the same anti-JNK2 antibody clone, EP1595Y, in a different buffer formulation (cat# ab76125).
Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: JNK2 knockout HAP1 cell lysate (20 µg)
Lane 3: HeLa cell lysate (20 µg)
Lane 4: MCF7 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab76125 observed at 54 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab76125 was shown to specifically react with JNK2 when JNK2 knockout samples were used. Wild-type and JNK2 knockout samples were subjected to SDS-PAGE. ab76125 and ab8245 (loading control to GAPDH) were diluted 1/2500 and 1/2000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-JNK2 antibody [EP1595Y] (ab76125)

Predicted band size: 48 kDa



Western blot - Anti-JNK2 antibody [EP1595Y] - BSA and Azide free (ab227986)

JNK2 Western blot staining using rabbit Anti-JNK2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab76125).
Lanes 1-3: Merged signal (red and green). Green - ab76125 observed at 48 kDa. Red - loading control ab8245 observed at 36 kDa.

ab76125 Anti-JNK2 antibody [EP1595Y] was shown to specifically react with JNK2 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266355 (knockout cell lysate ab257527) was used. Wild-type and JNK2 knockout samples were subjected to SDS-PAGE. ab76125 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-JNK2 antibody [EP1595Y] (ab76125) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
Western blot - Human MAPK9 (JNK2) knockout HEK-293T cell line (ab266355)

Lane 2:
MAPK9 knockout HEK293T cell lysate at 20 µg

Lane 3:
MCF7 cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 48 kDa

Observed band size: 48 kDa

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