abcam

ab129377

Anti-JNK1 antibody [1E5]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human MAPK8. The exact immunogen used to generate this antibody is proprietary information. Database link P45983
Clone number	1E5
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Species	Mouse
Dilution info	1/500 - 1/2000
Notes	-

Species	Rat
Dilution info	1/500 - 1/2000
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 duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	JNK1 also known as c-Jun N-terminal kinase 1 is a member of the mitogen-activated protein kinase (MAPK) family with a molecular weight of approximately 46 kDa. It is expressed in various tissues throughout the body including the brain heart liver and skeletal muscle. JNK1 exists in multiple isoforms due to alternative splicing. The JNK1 protein is activated by dual phosphorylation on threonine and tyrosine residues a process integral to its function as a stress-activated protein kinase. Commonly used research tools include JNK antibodies and phospho JNK antibodies which help detect the activated forms of this kinase during cellular studies.
Biological function summary	This kinase plays an important role in processes such as inflammation apoptosis and cellular stress responses. JNK1 is not just an isolated enzyme. It forms complexes with other proteins under specific conditions facilitating diverse cellular responses. For example JNK1 activation influences transcription factors like c-Jun by phosphorylating them impacting gene expression related to cell survival and death. This activity establishes JNK1 as a significant player in routine cell functioning and response to external environmental stressors.
Pathways	The kinase is part of the MAPK signaling pathways and the stress-activated protein kinase (SAPK) pathways. These pathways involve multiple signaling cascades important for transmitting extracellular signals into the cellular environment. JNK1 interacts with proteins like MKK4 and MKK7 which are upstream activators and ATF2 a downstream target. This positioning makes JNK1 an essential signaling node that translates extracellular stressors into cellular responses providing adaptability to cells amidst changing conditions.
Associated diseases and disorders	JNK1 has connections to disorders such as cancer and neurodegenerative diseases. Abnormal activation of JNK1 can lead to irregular cell proliferation making it pertinent in cancer. Similarly in neurodegenerative diseases like Alzheimer's JNK1's involvement in neuronal apoptosis turns critical. It regulates tau phosphorylation connecting JNK1 with tauopathies observed in Alzheimer's disease. Researchers often investigate these associations to understand the mechanisms that underpin these conditions and develop targeted therapies.

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.

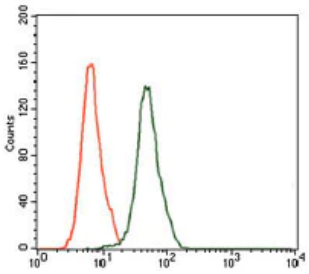
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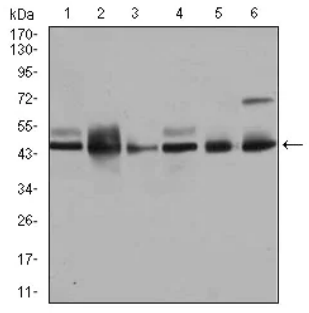
3 product images



Flow Cytometry - Anti-JNK1 antibody [1E5] (ab129377)

JNK1 Flow Cytometry staining using mouse Anti-JNK1 antibody

ab129377 at 1/200 dilution (green) or negative control (red) staining JNK1 in HeLa cells by flow cytometry.



Western blot - Anti-JNK1 antibody [1E5] (ab129377)

All lanes:
Western blot - Anti-JNK1 antibody [1E5] (ab129377) at 1/500 dilution

Lane 1:
A431 cell lysate

Lane 2:
K562 cell lysate

Lane 3:
HeLa cell lysate

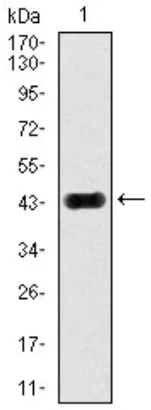
Lane 4:
NIH3T3 cell lysate

Lane 5:
PC-12 cell lysate

Lane 6:

MCF-7 cell lysate

Predicted band size: 48 kDa



Western blot - Anti-JNK1 antibody [1E5] (ab129377)

The expected molecular weight of the recombinant protein is 43 kDa.
All lanes:
Western blot - Anti-JNK1 antibody [1E5] (ab129377) at 1/500 dilution

All lanes:
Human Recombinant fragment of JNK1 (aa 227-380)

Predicted band size: 48 kDa

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