SANTA CRUZ BIOTECHNOLOGY, INC.

JNK1/3 (F-5): sc-514539

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

c-Jun N-terminal kinases (JNKs) phosphorylate and augment transcriptional activity of c-Jun. 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. JNKs coordinate cell responses to stress and influence regulation of cell growth and transformation. The human JNK1 (PRKM8, SAPK1, MAPK8) gene maps to chromosome 10q11.22 and shares 83% amino acid identity with JNK2. JNK1 is necessary for normal activation and differentiation of CD4 helper T (TH) cells into TH1 and TH2 effector cells. Capsaicin activates JNK1 and p38 in Ras-transformed human breast epithelial cells. Nitrogen oxides (NO_x) upregulate JNK1 in addition to c-Fos, c-Jun and other signaling kinases, including MEKK1 and p38.

REFERENCES

1. Kallunki, T., et al. 1994. JNK2 contains a specificity-determining region responsible for efficient c-Jun binding and phosphorylation. Genes Dev. 8: 2996-3007.
2. Dong, C., et al. 1998. Defective T cell differentiation in the absence of JNK1. Science 282: 2092-2095.
3. Potapova, O., et al. 2000. Inhibition of c-Jun N-terminal kinase 2 expression suppresses growth and induces apoptosis of human tumor cells in a p53-dependent manner. Mol. Cell. Biol. 20: 1713-1722.
4. Dong, C., et al. 2000. JNK is required for effector T-cell function but not for T-cell activation. Nature 405: 91-94.
5. Dreskin, S.C., et al. 2001. Isoforms of Jun kinase are differentially expressed and activated in human monocyte/macrophage (THP-1) cells. J. Immunol. 166: 5646-5653.

CHROMOSOMAL LOCATION

Genetic locus: MAPK8 (human) mapping to 10q11.22, MAPK10 (human) mapping to 4q21.3; Mapk8 (mouse) mapping to 14 B, Mapk10 (mouse) mapping to 5 E5.

SOURCE

JNK1/3 (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 364-385 near the C-terminus of JNK1 p46 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514539 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

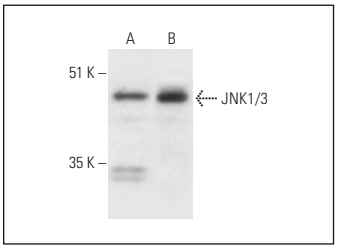
JNK1/3 (F-5) is recommended for detection of all JNK1, JNK3 p46 and p54 isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of p46 isoform: 46 kDa.

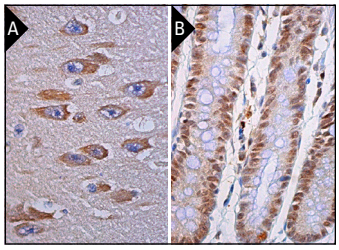
Molecular Weight of p54 isoform: 54 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410 or RAW 264.7 whole cell lysate: sc-2211.

DATA



JNK1/3 (F-5): sc-514539. Western blot analysis of JNK1/3 expression in SK-N-SH (**A**) and RAW 264.7 (**B**) whole cell lysates.



JNK1/3 (F-5): sc-514539. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmmic staining of neuronal cells (**A**) and human rectum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Meyer, M., et al. 2019. Long-term effects of the glucocorticoid receptor modulator cort 113176 in murine motoneuron degeneration. Brain Res. 11: 146551.
2. Cicek, B., et al. 2023. Sorafenib alleviates inflammatory signaling of tumor microenvironment in precancerous lung injuries. Pharmaceuticals 16: 221.
3. Altay, O., et al. 2024. Combined metabolic activators with different NAD^+ precursors improve metabolic functions in the animal models of neurodegenerative diseases. Biomedicines 12: 927.
4. İrak, K., et al. 2024. Investigation of the protective effect of chitosan against arsenic-induced nephrotoxicity and oxidative damage in rat kidney tissue. Pol. J. Vet. Sci. 27: 95-105.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.