SANTA CRUZ BIOTECHNOLOGY, INC.

JNK1 (G-4): sc-398989

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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.
6. Han, S.Y., et al. 2002. Differential gene regulation by specific gain-of-function JNK1 proteins expressed in Swiss 3T3 fibroblasts. J. Biol. Chem. 277: 47167-47174.
7. Chou, F.P., et al. 2002. Induced proliferation of human MRC-5 cells by nitrogen oxides via direct and indirect activation of MEKK1, JNK, and p38 signals. Toxicol. Appl. Pharmacol. 181: 203-208.

CHROMOSOMAL LOCATION

Genetic locus: MAPK8 (human) mapping to 10q11.22; Mapk8 (mouse) mapping to 14 B.

SOURCE

JNK1 (G-4) is a mouse monoclonal antibody raised against amino acids 358-397 mapping near the C-terminus of JNK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

JNK1 (G-4) is recommended for detection of JNK1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

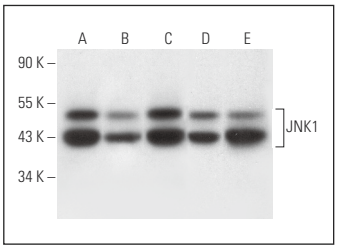
Suitable for use as control antibody for JNK1 siRNA (h): sc-29380, JNK1 siRNA (m): sc-29381, JNK1 siRNA (r): sc-156089, JNK1 shRNA Plasmid (h): sc-29380-SH, JNK1 shRNA Plasmid (m): sc-29381-SH, JNK1 shRNA Plasmid (r): sc-156089-SH, JNK1 shRNA (h) Lentiviral Particles: sc-29380-V, JNK1 shRNA (m) Lentiviral Particles: sc-29381-V and JNK1 shRNA (r) Lentiviral Particles: sc-156089-V.

Molecular Weight of p46 isoform: 46 kDa.

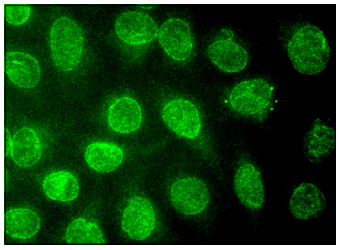
Molecular Weight of p54 isoform: 54 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

DATA



JNK1 (G-4): sc-398989. Western blot analysis of JNK1 expression in HeLa (**A**), A-431 (**B**), SK-N-MC (**C**), Jurkat (**D**) and PC-12 (**E**) whole cell lysates.



JNK1 (G-4): sc-398989. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Shillingford, S., et al. 2022. A novel site on dual-specificity phosphatase MKP7/DUSP16 is required for catalysis and MAPK binding. J. Biol. Chem. 298: 102617.

STORAGE

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

RESEARCH USE

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

CONJUGATES

See **JNK (D-2): sc-7345** for JNK antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.