SANTA CRUZ BIOTECHNOLOGY, INC.

JNK3 (G-18): sc-46014

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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 10 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. JNK3 (MK10, MAPK10, PRKM10) is activated by pro-inflammatory cytokines and environmental stresss by phosphorylating transcription factors such as c-Jun and ATF2. This is important for AP-1 transcriptional activity regulation. JNK3 is crucial for neuronal apoptosis (stress-induced).

REFERENCES

1. Gupta, S., et al. 1996. Selective interaction of JNK protein kinase isoforms with transcription factors. EMBO J. 15: 2760-2670.
2. Dong, C., et al. 1998. Defective T cell differentiation in the absence of Jnk1. Science 282: 2092-2095.
3. Xie, X., et al. 1998. Crystal structure of JNK3: a kinase implicated in neuronal apoptosis. Structure 6: 983-991.
4. 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.
5. Lisnock, J., et al. 2000. Activation of JNK3 α 1 requires both MKK4 and MKK7: kinetic characterization of *in vitro* phosphorylated JNK3 α 1. Biochemistry 39: 3141-3148.
6. Dong, C., et al. 2000. JNK is required for effector T-cell function but not for T-cell activation. Nature 405: 91-94.

CHROMOSOMAL LOCATION

Genetic locus: MAPK10 (human) mapping to 4q21.3; Mapk10 (mouse) mapping to 5 E5.

SOURCE

JNK3 (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of JNK3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46014 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

JNK3 (G-18) is recommended for detection of all JNK3 p46 and p54 isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

JNK3 (G-18) is also recommended for detection of all JNK3 p46 and p54 isoforms in additional species, including equine, canine, bovine, porcine and avian.

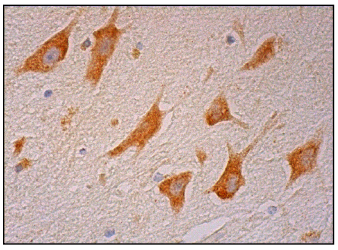
Suitable for use as control antibody for JNK3 siRNA (h): sc-39103, JNK3 siRNA (m): sc-39104, JNK3 shRNA Plasmid (h): sc-39103-SH, JNK3 shRNA Plasmid (m): sc-39104-SH, JNK3 shRNA (h) Lentiviral Particles: sc-39103-V and JNK3 shRNA (m) Lentiviral Particles: sc-39104-V.

Molecular Weight of JNK3 p46 isoform: 46 kDa.

Molecular Weight of JNK3 p54 isoform: 54 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

DATA



JNK3 (G-18): sc-46014. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.