

# JNK3 (4G6): sc-81469

## 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 JNK1 $\alpha$ 1, JNK1 $\beta$ 1, JNK2 $\alpha$ 1, JNK2 $\beta$ 1 and JNK3 $\alpha$ 1, which represent the p46 isoforms, and JNK1 $\alpha$ 2, JNK1 $\beta$ 2, JNK2 $\alpha$ 2, JNK2 $\beta$ 2 and JNK3 $\beta$ 2, 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 (NOx) 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 stresses by phosphorylating transcription factors such as c-Jun and ATF-2. This is important for AP-1 transcriptional activity regulation. JNK3 is crucial for neuronal apoptosis (stress-induced).

## REFERENCES

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- Dong, C., et al. 1998. Defective T cell differentiation in the absence of JNK1. *Science* 282: 2092-2095.
- Xie, X., et al. 1998. Crystal structure of JNK3: a kinase implicated in neuronal apoptosis. *Structure* 6: 983-991.
- 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.
- Dong, C., et al. 2000. JNK is required for effector T cell function but not for T cell activation. *Nature* 405: 91-94.
- Lisnock, J. et al. 2000. Activation of JNK3  $\alpha$  1 requires both MKK4 and MKK7: kinetic characterization of *in vitro* phosphorylated JNK3  $\alpha$  1. *Biochemistry* 39: 3141-3148.
- 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: MAPK10 (human) mapping to 4q21.3; Mapk10 (mouse) mapping to 5 E5.

## SOURCE

JNK3 (4G6) is a mouse monoclonal antibody raised against the N-terminus of JNK3 of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

## APPLICATIONS

JNK3 (4G6) is recommended for detection of JNK3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

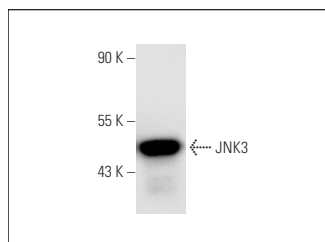
Suitable for use as control antibody for JNK3 siRNA (h): sc-39103, JNK3 siRNA (m): sc-39104, JNK3 shRNA Plasmid (h): sc-39103-SH, JNK3 shRNA Plasmid (m): sc-39104-SH, JNK3 shRNA (h) Lentiviral Particles: sc-39103-V and JNK3 shRNA (m) Lentiviral Particles: sc-39104-V.

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 (4G6): sc-81469. Western blot analysis of JNK3 expression in HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS


- Pan, J., et al. 2015. Small peptide inhibitor of JNK3 protects dopaminergic neurons from MPTP induced injury via inhibiting the ASK1-JNK3 signaling pathway. *PLoS ONE* 10: e0119204.
- Wei, X., et al. 2018. Targeting the Dvl-1/ $\beta$ -arrestin2/JNK3 interaction disrupts Wnt5a-JNK3 signaling and protects hippocampal CA1 neurons during cerebral ischemia reperfusion. *Neuropharmacology* 135: 11-21.

## 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.



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.