SANTA CRUZ BIOTECHNOLOGY, INC.

JAK3 (B-12): sc-6932

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

JAK3 (Janus kinase 3) belongs to the family of non-receptor Janus tyrosine kinases, which regulate a spectrum of cellular functions downstream of activated cytokine receptors in the lympho-hematopoietic system. Immunological stimuli, such as interferons and cytokines, induce recruitment of Stat transcription factors to cytokine receptor-associated JAK3. JAK3 then phosphorylates proximal Stat factors, which subsequently dimerize, translocate to the nucleus and bind to *cis* elements upstream of target gene promoters to regulate transcription. The canonical JAK/Stat pathway is integral to maintaining a normal immune system, stimulating proliferation, differentiation, survival and host resistance to pathogens. Altering JAK/Stat signaling to reduce cytokine induced pro-inflammatory responses represents an attractive target for anti-inflammatory therapies.

CHROMOSOMAL LOCATION

Genetic locus: JAK3 (human) mapping to 19p13.11; Jak3 (mouse) mapping to 8 B3.3.

SOURCE

JAK3 (B-12) is a mouse monoclonal antibody specific for an epitope between amino acids 1095-1124 at the C-terminus of JAK3 of human origin.

PRODUCT

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

JAK3 (B-12) is available conjugated to agarose (sc-6932 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-6932 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-6932 PE), fluorescein (sc-6932 FITC) or Alexa Fluor® 488 (sc-6932 AF488) or Alexa Fluor® 647 (sc-6932 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-6932 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

JAK3 (B-12) is recommended for detection of JAK3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Suitable for use as control antibody for JAK3 siRNA (h): sc-29379, JAK3 siRNA (m): sc-35721, JAK3 shRNA Plasmid (h): sc-29379-SH, JAK3 shRNA Plasmid (m): sc-35721-SH, JAK3 shRNA (h) Lentiviral Particles: sc-29379-V and JAK3 shRNA (m) Lentiviral Particles: sc-35721-V.

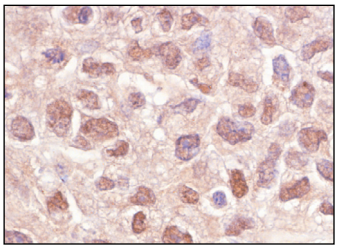
Molecular Weight of JAK3: 116 kDa.

Positive Controls: HuT 78 whole cell lysate: sc-2208, MOLT-4 cell lysate: sc-2233 or HeLa whole cell lysate: sc-2200.

STORAGE

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

DATA



JAK3 (B-12): sc-6932. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung tumor showing nuclear localization.

SELECT PRODUCT CITATIONS

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2. Choudhary, C., et al. 2007. Activation mechanisms of Stat5 by oncogenic Flt3-ITD. Blood 110: 370-374.
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4. Bixler, G.V., et al. 2011. Chronic Insulin treatment of diabetes does not fully normalize alterations in the retinal transcriptome. BMC Med. Genomics 4: 40.
5. Davoodi-Semiromi, A., et al. 2012. The tyrphostin agent AG490 prevents and reverses type 1 diabetes in NOD mice. PLoS ONE 7: e36079.
6. Chetcuti, A., et al. 2014. Can archival tissue reveal answers to modern research questions? Computer-aided histological assessment of neuroblastoma tumours collected over 60 years. Microarrays 3: 72-88.
7. Ehrentraut, S., et al. 2016. Th17 cytokine differentiation and loss of plasticity after SOCS1 inactivation in a cutaneous T-cell lymphoma. Oncotarget 7: 34201-34216.
8. Gigante, M., et al. 2016. MiR-29b and miR-198 overexpression in $CD8^+$ T cells of renal cell carcinoma patients down-modulates JAK3 and MCL-1 leading to immune dysfunction. J. Transl. Med. 14: 84.
9. Chen, W., et al. 2018. ROCK2, but not ROCK1 interacts with phosphorylated STAT3 and co-occupies TH17/TFH gene promoters in TH17-activated human T cells. Sci. Rep. 8: 16636.
10. Kim, B.H., et al. 2020. Tubulosine selectively inhibits JAK3 signalling by binding to the ATP-binding site of the kinase of JAK3. J. Cell. Mol. Med. 24: 7427-7438.

RESEARCH USE

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