

# JAK3 (L-20): sc-1079

## 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.

## REFERENCES

1. Heim, M.H. 1996. The Jak-STAT pathway: specific signal transduction from the cell membrane to the nucleus. *Eur. J. Clin. Invest.* 26: 1-12.
2. Decker, T., et al. 1997. Jaks, Stats and the immune system. *Immunobiology* 198: 99-111.
3. Leonard, W.J., et al. 1998. Jaks and STATs: biological implications. *Annu. Rev. Immunol.* 16: 293-322.
4. Kirken, R.A., et al. 2000. Functional uncoupling of the janus kinase 3-stat5 pathway in malignant growth of human T cell leukemia virus type 1-transformed human T cells. *J. Immunol.* 165: 5097-5104.

## CHROMOSOMAL LOCATION

Genetic locus: Jak3 (mouse) mapping to 8 B3.3.

## SOURCE

JAK3 (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of JAK3 of mouse 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-1079 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

JAK3 (L-20) is recommended for detection of JAK3 of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

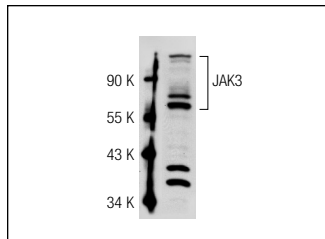
Suitable for use as control antibody for JAK3 siRNA (m): sc-35721, JAK3 shRNA Plasmid (m): sc-35721-SH and JAK3 shRNA (m) Lentiviral Particles: sc-35721-V.

Molecular Weight of JAK3: 106 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



JAK3 (L-20): sc-1079. Western blot analysis of JAK3 expression in HuT 78 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Yu, C.L., et al. 1997. Involvement of proteasomes in regulating JAK-Stat pathways upon interleukin-2 stimulation. *J. Biol. Chem.* 272: 14017-14020.
2. Bingisser, R.M., et al. 1998. Macrophage-derived nitric oxide regulates T cell activation via reversible disruption of the JAK3/Stat5 signaling pathway. *J. Immunol.* 160: 5729-5734.
3. Cetkovic-Cvrlje, M., et al. 2002. Treatment of post-bone marrow transplant acute graft-versus-host disease with a rationally designed JAK3 inhibitor. *Leuk. Lymphoma* 43: 1447-1453.
4. Rovida, E., et al. 2014. The mitogen-activated protein kinase ERK5 regulates the development and growth of hepatocellular carcinoma. *Gut*. E-Published.

## 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.



Try **JAK3 (B-12): sc-6932** or **JAK3 (A1-14-16): sc-56921**, our highly recommended monoclonal alternatives to JAK3 (L-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **JAK3 (B-12): sc-6932**.