

JAK3 (N-19): sc-34482

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. Negoro, S., et al. 2000. Activation of JAK/STAT pathway transduces cytoprotective signal in rat acute myocardial infarction. *Cardiovasc. Res.* 47: 797-805.
5. Bianchi, M., et al. 2000. Inhibition of IL-2-induced Jak-STAT signaling by glucocorticoids. *Proc. Natl. Acad. Sci. USA* 97: 9573-9578.
6. Brown, G.R., et al. 2000. Naphthyl ketones: a new class of Janus kinase 3 inhibitors. *Bioorg. Med. Chem. Lett.* 10: 575-579.

CHROMOSOMAL LOCATION

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

SOURCE

JAK3 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of JAK3 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-34482 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

JAK3 (C-14) 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), 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).

JAK3 (C-14) is also recommended for detection of JAK3 in additional species, including equine, canine, bovine and porcine.

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.

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) 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.

PROTOCOLS

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



Try **JAK3 (B-12): sc-6932** or **JAK3 (A1-14-16): sc-56921**, our highly recommended monoclonal alternatives to JAK3 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **JAK3 (B-12): sc-6932**.