

JAK3 (H-20): sc-1080

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 lymphohematopoietic 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 (human) mapping to 19p13.1.

SOURCE

JAK3 (H-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-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-1080 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.

PROTOCOLS

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

APPLICATIONS

JAK3 (H-20) is recommended for detection of JAK3 of 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 (H-20) 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 shRNA Plasmid (h): sc-29379-SH and JAK3 shRNA (h) Lentiviral Particles: sc-29379-V.

Molecular Weight of JAK3: 116 kDa.

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

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.

SELECT PRODUCT CITATIONS

1. Huang, J.S., et al. 1999. Role of the Janus kinase (JAK)/signal transducers and activators of transcription (Stat) cascade in advanced glycation end-product-induced cellular mitogenesis in NRK-49F cells. *Biochem. J.* 342: 231-238.
2. Qiu, L., et al. 2006. Autocrine release of interleukin-9 promotes JAK3-dependent survival of ALK⁺ anaplastic large-cell lymphoma cells. *Blood* 108: 2407-2415.
3. Samaan, A., et al. 2007. Constitutive and induced activation of JAK/Stat pathway in leukemogenic and asymptomatic human T cell lymphotropic virus type 1 (HTLV-1) transformed rabbit cell lines. *Immunol. Lett.* 109: 113-119.
4. Lhoták, S., et al. 2012. ER stress contributes to renal proximal tubule injury by increasing SREBP-2-mediated lipid accumulation and apoptotic cell death. *Am. J. Physiol. Renal Physiol.* 303: F266-F278.


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