

JAK2 (N-17): sc-34480

BACKGROUND

JAK2 (Janus kinase 2) belongs to the emerging 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 JAK2. JAK2 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 by 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.

CHROMOSOMAL LOCATION

Genetic locus: JAK2 (human) mapping to 9p24.1; JAK2 (mouse) mapping to 19 C1.

SOURCE

JAK2 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of JAK2 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-34480 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

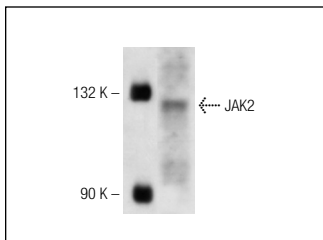
JAK2 (N-17) is recommended for detection of JAK2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 JAK2 siRNA (h): sc-39099, JAK2 siRNA (m): sc-39100, JAK2 shRNA Plasmid (h): sc-39099-SH, JAK2 shRNA Plasmid (m): sc-39100-SH, JAK2 shRNA (h) Lentiviral Particles: sc-39099-V and JAK2 shRNA (m) Lentiviral Particles: sc-39100-V.

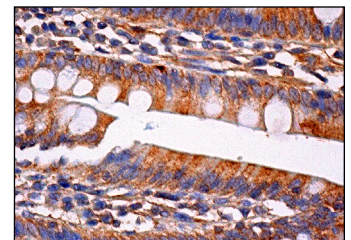
Molecular Weight of JAK2: 128 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or CCRF-CEM cell lysate: sc-2225.

DATA



JAK2 (N-17): sc-34480. Western blot analysis of JAK2 expression in PDGF treated NIH/3T3 whole cell lysate.



JAK2 (N-17): sc-34480. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Takagi, K., et al. 2005. Modulation of TNF- α gene expression by IFN- γ and pamidronate in murine macrophages: regulation by STAT1-dependent pathways. *J. Immunol.* 174: 1801-1810.
2. Lin, K.L., et al. 2010. Naphtho^{1,2-b} furan-4,5-dione disrupts Janus kinase-2 and induces apoptosis in breast cancer MDA-MB-231 cells. *Toxicol. In Vitro* 24: 1158-1167.
3. Ma, W., et al. 2010. JAK2 exon 14 deletion in patients with chronic myeloproliferative neoplasms. *PLoS ONE* 5: e12165.
4. Lee, I.T., et al. 2013. ATP stimulates PGE₂/cyclin D1-dependent VSMCs proliferation via STAT3 activation: role of PKCs-dependent NADPH oxidase/Ros generation. *Biochem. Pharmacol.* 85: 954-964.


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