

JAK2 (C-10): sc-390539



The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: JAK2 (human) mapping to 9p24.1; Jak2 (mouse) mapping to 19 C1.

SOURCE

JAK2 (C-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 752-780 of JAK2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

JAK2 (C-10) is available conjugated to agarose (sc-390539 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390539 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390539 PE), fluorescein (sc-390539 FITC), Alexa Fluor® 488 (sc-390539 AF488), Alexa Fluor® 546 (sc-390539 AF546), Alexa Fluor® 594 (sc-390539 AF594) or Alexa Fluor® 647 (sc-390539 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390539 AF680) or Alexa Fluor® 790 (sc-390539 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, JAK2 (C-10) is available conjugated to biotin (sc-390539 B), 200 µg/ml, for WB, IHC(P) and ELISA.

Blocking peptide available for competition studies, sc-390539 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

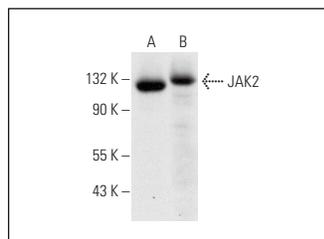
JAK2 (C-10) is recommended for detection of JAK2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for JAK2 siRNA (h): sc-39099, JAK2 siRNA (m): sc-39100, JAK2 siRNA (r): sc-270385, JAK2 shRNA Plasmid (h): sc-39099-SH, JAK2 shRNA Plasmid (m): sc-39100-SH, JAK2 shRNA Plasmid (r): sc-270385-SH, JAK2 shRNA (h) Lentiviral Particles: sc-39099-V, JAK2 shRNA (m) Lentiviral Particles: sc-39100-V and JAK2 shRNA (r) Lentiviral Particles: sc-270385-V.

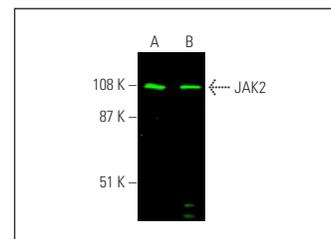
Molecular Weight of JAK2: 128 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, MEG-01 cell lysate: sc-2283 or HEL 92.1.7 cell lysate: sc-2270.

DATA



JAK2 (C-10): sc-390539. Western blot analysis of JAK2 expression in HEL 92.1.7 (A) and MEG-01 (B) whole cell lysates.



JAK2 (C-10): sc-390539. Near-infrared western blot analysis of JAK2 expression in PDGF treated NIH/3T3 (A) and HEL 92.1.7 (B) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Li, R., et al. 2016. Type I CRISPR-Cas targets endogenous genes and regulates virulence to evade mammalian host immunity. *Cell Res.* 26: 1273-1287.
2. Byun, S., et al. 2018. Postprandial FGF19-induced phosphorylation by Src is critical for FXR function in bile acid homeostasis. *Nat. Commun.* 9: 2590.
3. Eid, R.A., et al. 2019. A high-fat diet rich in corn oil induces cardiac fibrosis in rats by activating JAK2/Stat3 and subsequent activation of ANG II/TGF-1β/Smad3 pathway: the role of ROS and IL-6 *trans*-signaling. *J. Food Biochem.* 43: e12952.
4. Laudisi, F., et al. 2019. Progranulin sustains Stat3 hyper-activation and oncogenic function in colorectal cancer cells. *Mol. Oncol.* 13: 2142-2159.
5. Odermatt, T.S., et al. 2020. Adipocyte-specific gp130 signalling mediates exercise-induced weight reduction. *Int. J. Obes.* 44: 707-714.

RESEARCH USE

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