SANTA CRUZ BIOTECHNOLOGY, INC.

JAK2 (C-20): sc-294

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.

CHROMOSOMAL LOCATION

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

SOURCE

JAK2 (C-20) is an either rabbit (sc-294) or goat (sc-294-G) affinity purified polyclonal antibody raised against a peptide mapping at the C-terminus of JAK2 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.

JAK2 (C-20) is available conjugated to agarose (sc-294 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-294 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

JAK2 (C-20) 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: CCRF-CEM cell lysate: sc-2225 or NIH/3T3 whole cell lysate: sc-2210.

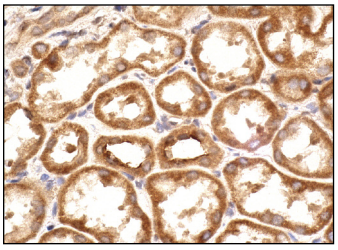
RESEARCH USE

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

STORAGE

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

DATA



JAK2 (C-20): sc-294. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Lacronique, V., et al. 1997. A TEL/JAK2 fusion protein with constitutive kinase activity in human leukemia. Science 278: 1309-1312.
2. Tang, Y., et al. 2009. Curcumin eliminates leptin's effects on hepatic stellate cell activation via interrupting leptin signaling. Endocrinology 150: 3011-3020.
3. Hertzberg, L., et al. 2010. Down syndrome acute lymphoblastic leukemia, a highly heterogeneous disease in which aberrant expression of CRLF2 is associated with mutated JAK2: a report from the international BFM study group. Blood 115: 1006-1017.
4. Faouzi, M., et al. 2010. Intermediate Ca^{2+}-sensitive K^+ channels are necessary for prolactin-induced proliferation in breast cancer cells. J. Membr. Biol. 234: 47-56.
5. Béguelin, W., et al. 2010. Progesterone receptor induces ErbB-2 nuclear translocation to promote breast cancer growth via a novel transcriptional effect: ErbB-2 function as a coactivator of Stat3. Mol. Cell. Biol. 30: 5456-5472.
6. García-Martínez, J.M., et al. 2010. A non-catalytic function of the Src family tyrosine kinases controls prolactin-induced Jak2 signaling. Cell. Signal. 22: 415-426.
7. Su, K.H., et al. 2011. β common receptor integrates the erythropoietin signaling in activation of endothelial nitric oxide synthase. J. Cell. Physiol. 226: 3330-3339.
8. Prchal-Murphy, M., et al. 2012. TYK2 kinase activity is required for functional type I interferon responses *in vivo*. PLoS ONE 7: e39141.