

JAK2 (HR-758): sc-278

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 (HR-758) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-278 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

JAK2 (HR-758) 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).

JAK2 (HR-758) is also recommended for detection of JAK2 in additional species, including equine, canine, bovine and porcine.

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: K-562 whole cell lysate: sc-2203, CCRF-CEM cell lysate: sc-2225 or MCF7 whole cell lysate: sc-2206.

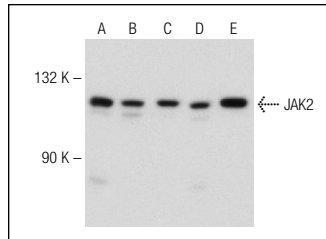
STORAGE

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

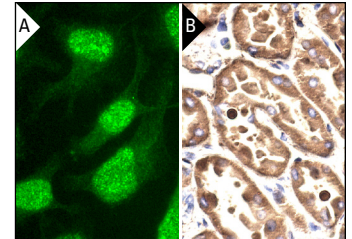
RESEARCH USE

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

DATA



JAK2 (HR-758): sc-278. Western blot analysis of JAK2 expression in K-562 (A), CCRF-CEM (B), Daudi (C), MEG-01 (D) and MCF7 (E) whole cell lysates.



JAK2 (HR-758): sc-278. Immunofluorescence staining of formalin-fixed HeLa cells showing JAK2 nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

1. Haque, S.J., et al. 1997. Receptor associated constitutive protein tyrosine phosphatase activity controls the kinase function of JAK1. *Proc. Natl. Acad. Sci. USA* 94: 8563-8568.
2. Haller, F., et al. 2008. Increased KIT signalling with up-regulation of cyclin D correlates to accelerated proliferation and shorter disease-free survival in gastrointestinal stromal tumours (GISTs) with KIT exon 11 deletions. *J. Pathol.* 216: 225-235.
3. Coope, A., et al. 2008. AdipoR1 mediates the anorexigenic and Insulin/leptin-like actions of adiponectin in the hypothalamus. *FEBS Lett.* 582: 1471-1476.
4. Sandur, S.K., et al. 2010. 5-hydroxy-2-methyl-1,4-naphthoquinone, a vitamin K3 analogue, suppresses STAT3 activation pathway through induction of protein tyrosine phosphatase, SHP-1: potential role in chemosensitization. *Mol. Cancer Res.* 8: 107-118.
5. Kannappan, R., et al. 2010. γ -tocotrienol but not γ -tocopherol blocks STAT3 cell signaling pathway through induction of protein-tyrosine phosphatase SHP-1 and sensitizes tumor cells to chemotherapeutic agents. *J. Biol. Chem.* 285: 33520-33528.
6. Barclay, J.L., et al. 2010. *In vivo* targeting of the growth hormone receptor (GHR) Box1 sequence demonstrates that the GHR does not signal exclusively through JAK2. *Mol. Endocrinol.* 24: 204-217.
7. Razolli, D.S., et al. 2012. Hypothalamic action of glutamate leads to body mass reduction through a mechanism partially dependent on JAK2. *J. Cell. Biochem.* 113: 1182-1189.


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