

p-JAK2 (Tyr 1007/Tyr 1008)-R: sc-16566-R

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. Within the JAK2 kinase domain, there is a region that has considerable sequence homology to the regulatory region of the Insulin receptor. Among a variety of sites, Tyrosines 1007 and 1008 are sites of *trans*- or autophosphorylation *in vivo* and *in vitro* kinase reactions.

CHROMOSOMAL LOCATION

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

SOURCE

p-JAK2 (Tyr 1007/Tyr 1008)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 1007 and Tyr 1008 phosphorylated 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-16566 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-JAK2 (Tyr 1007/Tyr 1008)-R is recommended for detection of Tyr 1007 and Tyr 1008 dually phosphorylated 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-JAK2 (Tyr 1007/Tyr 1008)-R is also recommended for detection of correspondingly phosphorylated JAK2 in additional species, including equine, canine, bovine, porcine and avian.

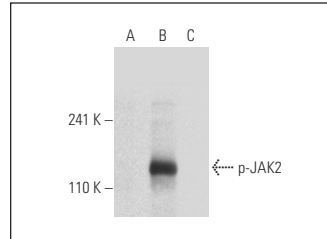
Suitable for use as control antibody for JAK2 siRNA (h): sc-39099, JAK2 siRNA (m): sc-39100, JAK2 shRNA Plasmid (h): sc-39099-SH, JAK2 shRNA Plasmid (m): sc-39100-SH, JAK2 shRNA (h) Lentiviral Particles: sc-39099-V and JAK2 shRNA (m) Lentiviral Particles: sc-39100-V.

Molecular Weight of p-JAK2: 128 kDa.

STORAGE

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

DATA



Western blot analysis of JAK2 phosphorylation in untreated (A), mouse LIF (sc-4989) treated (B) and LIF and Lambda protein phosphatase (sc-200312A) treated (C) 3T3-L1 whole cell lysates. Antibody tested: p-JAK2 (Tyr 1007/Tyr 1008)-R: sc-16566-R (A,B,C).

SELECT PRODUCT CITATIONS

1. Heiss, S., et al. 2005. Myelodysplastic/myeloproliferative disease with erythropoietic hyperplasia (erythroid preleukemia) and the unique translocation (8;9)(p23;p24): first description of a case. *Hum. Pathol.* 36: 1148-1151.
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. Girasol, A., et al. 2009. Fyn mediates leptin actions in the thymus of rodents. *PLoS ONE* 4: e7707.
4. Romanatto, T., et al. 2009. Deletion of tumor necrosis factor- α receptor 1 (TNFR1) protects against diet-induced obesity by means of increased thermogenesis. *J. Biol. Chem.* 284: 36213-36222.
5. Arruda, A.P., et al. 2011. Low-grade hypothalamic inflammation leads to defective thermogenesis, insulin resistance, and impaired insulin secretion. *Endocrinology* 152: 1314-1326.
6. Fujiwara, Y., et al. 2011. Corosolic acid inhibits glioblastoma cell proliferation by suppressing the activation of signal transducer and activator of transcription-3 and nuclear factor- κ B in tumor cells and tumor-associated macrophages. *Cancer Sci.* 102: 206-211.
7. Cintra, D.E., et al. 2012. Unsaturated fatty acids revert diet-induced hypothalamic inflammation in obesity. *PLoS ONE* 7: e30571.
8. 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.

RESEARCH USE

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