

p-JAK2 (Tyr 1007): sc-101717

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 *in vitro* kinase reactions.

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. Feng, J., et al. 1997. Activation of JAK2 catalytic activity requires phosphorylation of Y1007 in the kinase activation loop. *Mol. Cell. Biol.* 17: 2497-2501.
4. Leonard, W.J., et al. 1998. JAKs and Stats: biological implications. *Annu. Rev. Immunol.* 16: 293-322.

CHROMOSOMAL LOCATION

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

SOURCE

p-JAK2 (Tyr 1007) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 1007 phosphorylated JAK2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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

p-JAK2 (Tyr 1007) is recommended for detection of Tyr 1007/Tyr 1008 phosphorylated JAK2 of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

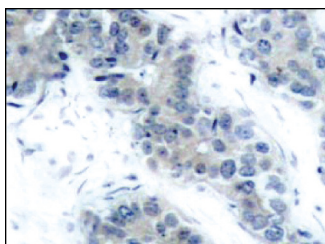
Suitable for use as control antibody for JAK2 siRNA (h): sc-39099, JAK2 siRNA (m): sc-39100, JAK2 siRNA (r): sc-270385, JAK2 shRNA Plasmid (h): sc-39099-SH, JAK2 shRNA Plasmid (m): sc-39100-SH, JAK2 shRNA Plasmid (r): sc-270385-SH, JAK2 shRNA (h) Lentiviral Particles: sc-39099-V, JAK2 shRNA (m) Lentiviral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

Molecular Weight of p-JAK2: 128 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 2) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-JAK2 (Tyr 1007): sc-101717. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Nyga, R., et al. 2005. Activated STAT5 proteins induce activation of the PI 3-kinase/Akt and Ras/MAPK pathways via the Gab2 scaffolding adapter. *Biochem. J.* 390: 359-366.
2. Ikezoe, T., et al. 2011. Expression of p-JAK2 predicts clinical outcome and is a potential molecular target of acute myelogenous leukemia. *Int. J. Cancer* 12: 2512-2521.
3. Vindrieux, D., et al. 2013. PLA2R1 mediates tumor suppression by activating JAK2. *Cancer Res.* 73: 6334-6345.