

p-JAK1 (Tyr 1022/Tyr 1023): sc-16773

BACKGROUND

JAK1 (Janus kinase 1) belongs to the 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 JAK1. JAK1 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. Upon ligand binding, JAK1 undergoes tyrosine phosphorylation and catalytic activation in an interdependent manner. Phosphorylation of tyrosine residues at positions 1022 and 1023 is believed to function in the activation of catalytic events. 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: JAK1 (human) mapping to 1p31.3; Jak1 (mouse) mapping to 4 C6.

SOURCE

p-JAK1 (Tyr 1022/Tyr 1023) is available as either goat (sc-16773) or rabbit (sc-16773-R) polyclonal antibody raised against a short amino acid sequence containing Tyr 1034 and Tyr 1035 dually phosphorylated JAK1 of human origin.

PRODUCT

Each vial contains either 100 µg (sc-16773) or 200 µg (sc-16773-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16773 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-JAK1 (Tyr 1022/Tyr 1023) is recommended for detection of Tyr 1022 and Tyr 1023 dually phosphorylated JAK1 (also designated as Tyr 1034 and Tyr 1035) 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-JAK1 (Tyr 1022/Tyr 1023) is also recommended for detection of correspondingly dually phosphorylated JAK1 in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for JAK1 siRNA (h): sc-35719, JAK1 siRNA (m): sc-35720, JAK1 shRNA Plasmid (h): sc-35719-SH, JAK1 shRNA Plasmid (m): sc-35720-SH, JAK1 shRNA (h) Lentiviral Particles: sc-35719-V and JAK1 shRNA (m) Lentiviral Particles: sc-35720-V.

Molecular Weight of p-JAK1: 130 kDa.

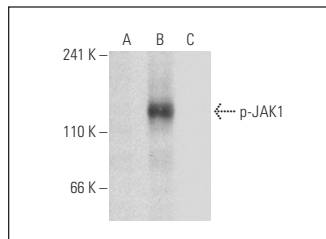
RESEARCH USE

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



Western blot analysis of JAK1 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-JAK1 (Tyr 1022/Tyr 1023)-R: sc-16773-R (A,B,C).

SELECT PRODUCT CITATIONS

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- Stevens, C.N., et al. 2010. T-cell receptor early signalling complex activation in response to interferon- α receptor stimulation. *Biochem. J.* 428: 429-437.
- Macha, M.A., et al. 2011. Guggulsterone (GS) inhibits smokeless tobacco and nicotine-induced NF κ B and STAT3 pathways in head and neck cancer cells. *Carcinogenesis* 32: 368-380.
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