

# JAK1 (H-106): sc-7228

## 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 position 1,022 and 1,023 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

JAK1 (H-106) is a rabbit polyclonal antibody raised against amino acids 270-375 mapping at the N-terminus of JAK1 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.

Available as agarose (sc-7228 AC) conjugate for immunoprecipitation, 500 µg/0.25 ml agarose in 1 ml.

## APPLICATIONS

JAK1 (H-106) is recommended for detection of JAK1 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).

JAK1 (H-106) is also recommended for detection of JAK1 in additional species, including equine, canine, bovine and porcine.

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 JAK1: 130 kDa.

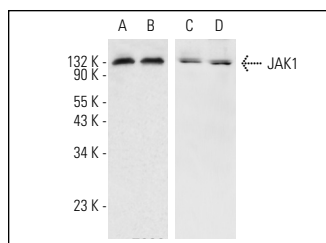
## STORAGE

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

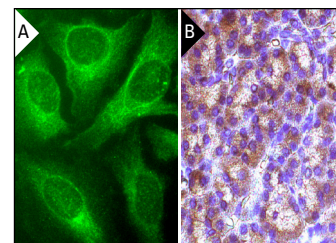
## RESEARCH USE

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

## DATA



JAK1 (H-106): sc-7228. Western blot analysis of JAK1 expression in HuT 78 (A), MOLT-4 (B), A-431 (C) and NIH/3T3 (D) whole cell lysates.



JAK1 (H-106): sc-7228. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Huang, J.S., et al. 1999. Role of the Janus kinase (JAK)/signal transducers and activators of transcription (STAT) cascade in advanced glycation end-product-induced cellular mitogenesis in NRK-49F cells. *Biochem. J.* 342: 231-238.
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- Renga, B., et al. 2012. The HIV matrix protein p17 subverts nuclear receptors expression and induces a STAT1-dependent proinflammatory phenotype in monocytes. *PLoS ONE* 4: e35924.
- Renga, B., et al. 2014. The HIV matrix protein p17 promotes the activation of human hepatic stellate cells through interactions with CXCR2 and Syndecan-2. *PLoS ONE* 9: e94798.

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Try **JAK1 (B-3): sc-376996** or **JAK1 (A-9): sc-1677**, our highly recommended monoclonal alternatives to JAK1 (H-106). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **JAK1 (B-3): sc-376996**.