

JAK1 (73): sc-136225

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 (73) is a mouse monoclonal antibody raised against amino acids 551-766 of JAK1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.1% stabilizer protein.

Blocking peptide available for competition studies, sc-136225 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

JAK1 (73) is recommended for detection of JAK1 of mouse, rat, human and canine 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A-431 whole cell lysate: sc-2201 or Jurkat whole cell lysate: sc-2204.

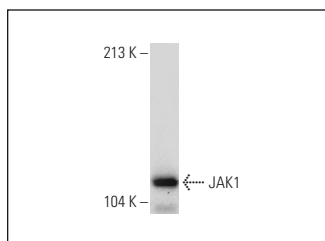
STORAGE

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

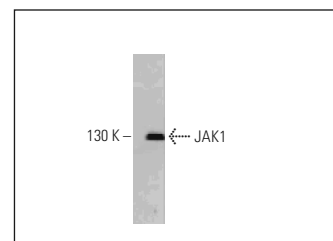
RESEARCH USE

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

DATA



JAK1 (73): sc-136225. Western blot analysis of JAK1 expression in A-431 whole cell lysate.



JAK1 (73): sc-136225. Western blot analysis of JAK1 expression in Jurkat whole cell lysate.

SELECT PRODUCT CITATIONS

- Liu, Y., et al. 2014. Enterovirus 71 inhibits cellular type I interferon signaling by downregulating JAK1 protein expression. *Viral Immunol.* 27: 267-276.
- Lu, P., et al. 2017. Long noncoding RNA CAMTA1 promotes proliferation and mobility of human breast cancer cell line MDA-MB-231 via targeting miR-20b. *Oncol. Res.* 26: 625-635.
- Xing, Y., et al. 2018. Fraxinellone has anticancer activity *in vivo* by inhibiting programmed cell death-ligand 1 expression by reducing hypoxia-inducible factor-1 α and Stat3. *Pharmacol. Res.* 135: 166-180.
- Dai, Z., et al. 2019. MicroRNA-22 regulates thyroid cell growth and lipid accumulation via IL6R. *Front. Biosci.* 24: 1350-1362.
- Wang, L., et al. 2020. MiR-23b functions as an oncogenic miRNA by down-regulating Mcl-1S in lung cancer cell line A549. *J. Biochem. Mol. Toxicol.* 34: e22494.
- Abo-Youssef, A.M., et al. 2020. Febuxostat attenuates testosterone-induced benign prostatic hyperplasia in rats via inhibiting JAK/STAT axis. *Life Sci.* 260: 118414.
- Azhar, A.S., et al. 2022. 2-methoxyestradiol inhibits carotid artery intimal hyperplasia induced by balloon injury via inhibiting JAK/STAT axis in rats. *Environ. Sci. Pollut. Res. Int.* 29: 59524-59533.
- Chen, X., et al. 2022. Menthone inhibits type-I interferon signaling by promoting Tyk2 ubiquitination to relieve local inflammation of rheumatoid arthritis. *Int. Immunopharmacol.* 112: 109228.
- Atwa, A.M., et al. 2022. Candesartan attenuates cisplatin-induced lung injury by modulating oxidative stress, inflammation, and TLR-4/NF κ B, JAK1/STAT3, and Nrf2/HO-1 signaling. *Pharmaceuticals* 15: 1222.



See **JAK1 (B-3): sc-376996** for JAK1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.