

# p-Stat1 (PSM1): sc-51700

## BACKGROUND

Membrane receptor signaling by various ligands, including interferons and growth hormones such as EGF, induces activation of Jak kinases which then leads to tyrosine phosphorylation of the various Stat transcription factors. Stat1 and Stat2 are induced by IFN $\alpha$  and form a heterodimer which is part of the ISGF3 transcription factor complex. Although early reports indicate Stat3 activation by EGF and IL-6, it has been shown that Stat3 $\beta$  appears to be activated by both while Stat3 $\alpha$  is activated by EGF, but not by IL-6. Highest expression of Stat4 is seen in testis and myeloid cells. IL-12 has been identified as an activator of Stat4. Stat5 has been shown to be activated by prolactin and by IL-3. Stat6 is involved in IL-4 activated signaling pathways.

## REFERENCES

- Zhong, Z., et al. 1994. Stat3: a Stat family member activated by tyrosine phosphorylation in response to epidermal growth factor and interleukin-6. *Science* 264: 95-98.
- Darnell, J.E., et al. 1994. JAK/Stat pathways and transcriptional activation in response to IFNs and other extracellular signaling proteins. *Science* 264: 1415-1421.
- Hou, J., et al. 1994. An interleukin-4-induced transcription factor: IL-4 Stat. *Science* 265: 1701-1706.

## CHROMOSOMAL LOCATION

Genetic locus: STAT1 (human) mapping to 2q32.2; Stat1 (mouse) mapping to 1 C1.1.

## SOURCE

p-Stat1 (PSM1) is a mouse monoclonal antibody raised against amino acids 721-733 of Stat1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-Stat1 (PSM1) is recommended for detection of Stat1 activated by phosphorylation at Ser 727 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Stat1 siRNA (h): sc-44123, Stat1 siRNA (m): sc-44124, Stat1 shRNA Plasmid (h): sc-44123-SH, Stat1 shRNA Plasmid (m): sc-44124-SH, Stat1 shRNA (h) Lentiviral Particles: sc-44123-V and Stat1 shRNA (m) Lentiviral Particles: sc-44124-V.

Molecular Weight of Stat1 $\alpha$ : 91 kDa.

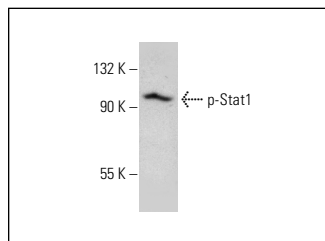
Molecular Weight of Stat1 $\beta$ : 84 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or KARPAS-299 whole cell lysate: sc-364781.

## STORAGE

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

## DATA



p-Stat1 (PSM1): sc-51700. Western blot analysis of Stat1 phosphorylation in KARPAS-299 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Dien Bard, J., et al. 2009. IL-21 contributes to JAK3/Stat3 activation and promotes cell growth in ALK-positive anaplastic large cell lymphoma. *Am. J. Pathol.* 175: 825-834.
- Eid, R.A., et al. 2019. A high-fat diet rich in corn oil induces cardiac fibrosis in rats by activating JAK2/Stat3 and subsequent activation of ANG II/TGF-1 $\beta$ /Smad3 pathway: the role of Ros and IL-6 *trans*-signaling. *J. Food Biochem.* 43: e12952.
- Shati, A.A. and El-Kott, A.F. 2019. Acylated ghrelin prevents doxorubicin-induced cardiac intrinsic cell death and fibrosis in rats by restoring IL-6/JAK2/Stat3 signaling pathway and inhibition of Stat1. *Naunyn Schmiedebergs Arch. Pharmacol.* 392: 1151-1168.
- Kocic, H., et al. 2020. The regenerative potential of donkey and human milk on the redox-sensitive and proliferative signaling pathways of skin fibroblasts. *Oxid. Med. Cell. Longev.* 2020: 5618127.
- Pan, H., et al. 2021. DYNC1H1 regulates NSCLC cell growth and metastasis by IFN- $\gamma$ -JAK-Stat signaling and is associated with an aberrant immune response. *Exp. Cell Res.* 409: 112897.
- Han, X., et al. 2022. Pyrotinib targeted EGFR-STAT3/CD24 loop-mediated cell viability in TSC. *Cells* 11: 3064.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.