

p-Stat1 (pY701.4A): sc-136229

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- α 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 β appears to be activated by both while Stat3 α 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. Mouse, rat and human Stat1 are phosphorylated on tyrosine and serine residues, specifically Tyr 701 which is phosphorylated by JAK1, which promotes dimerization, allowing Stat1 to be translocated to the nucleus.

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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Stat1 (pY701.4A) is a mouse monoclonal antibody raised against a short amino acid sequence containing Tyr 701 phosphorylated Stat1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Stat1 (pY701.4A) is recommended for detection of Tyr 701 phosphorylated Stat1 α and Stat1 β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 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 α : 91 kDa.

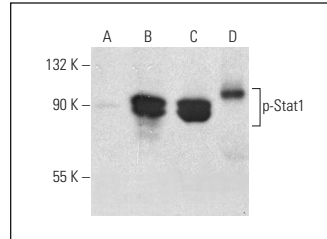
Molecular Weight of Stat1 β : 84 kDa.

Positive Controls: A-431 + EGF whole cell lysate: sc-2202, KARPAS-299 whole cell lysate: sc-364781 or human umbilical cord extract: sc-363783.

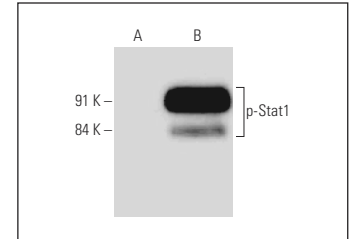
STORAGE

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

DATA



p-Stat1 (pY701.4A): sc-136229. Western blot analysis of Stat1 phosphorylation in untreated A-431 (A), EGF treated A-431 (B) and KARPAS-299 (C) whole cell lysates and human umbilical cord tissue extract (D).



p-Stat1 (pY701.4A): sc-136229. Western blot analysis of Stat1 phosphorylation in A-431 whole cell lysates either untreated (A) or treated (B) with EGF.

SELECT PRODUCT CITATIONS

- Fiorentino, L., et al. 2013. Loss of TIMP3 underlies diabetic nephropathy via FoxO1/STAT1 interplay. *EMBO Mol. Med.* 5: 441-455.
- Imaizumi, T., et al. 2016. Interferon-stimulated gene (ISG) 60, as well as ISG56 and ISG54, positively regulates TLR3/IFN- β /Stat1 axis in U373MG human astrocytoma cells. *Neurosci. Res.* 105: 35-41.
- Shirai, K., et al. 2017. Interferon (IFN)-induced protein 35 (IFI35) negatively regulates IFN- β -phosphorylated STAT1-RIG-I-CXCL10/CCL5 axis in U373MG astrocytoma cells treated with polyinosinic-polycytidylic acid. *Brain Res.* 1658: 60-67.
- Batta, G., et al. 2018. Alterations in the properties of the cell membrane due to glycosphingolipid accumulation in a model of Gaucher disease. *Sci. Rep.* 8: 157.
- Davis, S.E., et al. 2019. Nucleosomal dsDNA stimulates APOL1 expression in human cultured podocytes by activating the cGAS/IFI16-STING signaling pathway. *Sci. Rep.* 9: 15485.
- Gilardini Montani, M.S., et al. 2020. KSHV infection skews macrophage polarisation towards M2-like/TAM and activates Ire1 α -XBP1 axis up-regulating pro-tumorigenic cytokine release and PD-L1 expression. *Br. J. Cancer* 123: 298-306.
- Wu, C.C., et al. 2020. β -funaltrexamine displayed anti-inflammatory and neuroprotective effects in cells and rat model of stroke. *Int. J. Mol. Sci.* 21: 3866.
- Huynh, D.T.N., et al. 2020. Minor ginsenoside R γ 2 and Rh1 attenuates LPS-induced acute liver and kidney damages via downregulating activation of TLR4-STAT1 and inflammatory cytokine production in macrophages. *Int. J. Mol. Sci.* 21: 6656.

RESEARCH USE

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