

# p-Stat1 (A-2): sc-8394

## 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

1. 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.
2. 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 (A-2) is a mouse monoclonal antibody raised against Stat1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\gamma$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8394 X, 200  $\mu$ g/0.1 ml.

p-Stat1 (A-2) is available conjugated to agarose (sc-8394 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8394 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8394 PE), fluorescein (sc-8394 FITC), Alexa Fluor<sup>®</sup> 488 (sc-8394 AF488), Alexa Fluor<sup>®</sup> 546 (sc-8394 AF546), Alexa Fluor<sup>®</sup> 594 (sc-8394 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-8394 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-8394 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-8394 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8394 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

p-Stat1 (A-2) is recommended for detection of Stat1 phosphorylated at Tyr 701 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

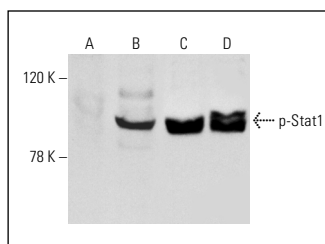
Suitable for use as control antibody for Stat1 siRNA (h): sc-44123, Stat1 siRNA (m): sc-44124, Stat1 shRNA Plasmid (h): sc-44123-SH, Stat1 shRNA Plasmid (m): sc-44124-SH, Stat1 shRNA (h) Lentiviral Particles: sc-44123-V and Stat1 shRNA (m) Lentiviral Particles: sc-44124-V.

p-Stat1 (A-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

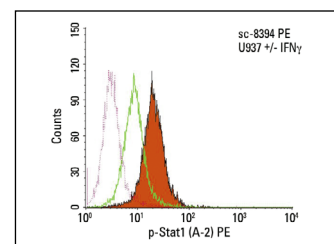
Molecular Weight of Stat1 $\alpha$ /Stat1 $\beta$ : 91/84 kDa.

Positive Controls: HeLa + IFN- $\gamma$  cell lysate: sc-2222 or SK-MEL-28 + IFN- $\gamma$  cell lysate: sc-2291.

## DATA



Western blot analysis of Stat1 phosphorylation in untreated (A,C) and  $\gamma$ -interferon induced (B,D) HeLa cells. Antibodies tested include p-Stat1 (A-2): sc-8394 (A,B) and Stat1 (C-111): sc-417 (C,D).



p-Stat1 (A-2) PE: sc-8394 PE. Intracellular FCM analysis of fixed and permeabilized control (green line histogram) and IFN $\gamma$  induced (solid orange histogram) U-937 cells. Dotted pink histogram represents the isotype control, normal mouse IgG $\gamma$ -PE: sc-2866.

## SELECT PRODUCT CITATIONS

1. Ohmori, Y. and Hamilton, T.A. 2000. Interleukin-4/Stat6 represses Stat1 and NF $\kappa$ B-dependent transcription through distinct mechanisms. *J. Biol. Chem.* 275: 38095-38103.
2. Escher, T.E., et al. 2021. Enhanced IFN $\alpha$  signaling promotes ligand-independent activation of ER $\alpha$  to promote aromatase inhibitor resistance in breast cancer. *Cancers* 13: 5130.
3. Lu, J., et al. 2022. Interleukin-27 ameliorates allergic asthma by alleviating the lung Th2 inflammatory environment. *Int. J. Mol. Med.* 49: 86.
4. Bak, S.G., et al. 2023. Effects of *Vigna angularis* extract and its active compound hemiphloin against atopic dermatitis-like skin inflammation. *Heliyon* 9: e12994.

## RESEARCH USE

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