SANTA CRUZ BIOTECHNOLOGY, INC.

# p-Stat4 (E-2): sc-28296

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Membrane receptor signaling by various ligands, including interferons and growth hormones, induces activation of Jak kinases, which then leads to tyrosine phosphorylation of the Stat transcription factors. Upon activation by tyrosine phosphorylation, Stat proteins dimerize, translocate to the nucleus and bind to specific regulatory elements that control gene expression. Stat4 is most highly expressed in testis and myeloid cells and is an important element in mediating IL-12 signals. IL-12 induces sustained activation and nuclear translocation of Stat4, a process coupled to both tyrosine and serine phosphorylation of Stat4. Phosphorylation of Ser 721 of Stat4 is MEK-, ERK- and JNK-independent and p38-dependent, and is necessary for the transcriptional activity of Stat4.

## REFERENCES


1. 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.
2. Yamamoto, K., et al. 1994. Stat4, a novel γ interferon activation site-binding protein expressed in early myeloid differentiation. Mol. Cell. Biol. 14: 4342-4349.


## CHROMOSOMAL LOCATION

Genetic locus: STAT4 (human) mapping to 2q32.2; Stat4 (mouse) mapping to 1 C1.1.

## SOURCE

p-Stat4 (E-2) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 721 phosphorylated Stat4 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ 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-28296 X, 200 µg/0.1 ml.

p-Stat4 (E-2) is available conjugated to agarose (sc-28296 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28296 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28296 PE), fluorescein (sc-28296 FITC), Alexa Fluor® 488 (sc-28296 AF488), Alexa Fluor® 546 (sc-28296 AF546), Alexa Fluor® 594 (sc-28296 AF594) or Alexa Fluor® 647 (sc-28296 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28296 AF680) or Alexa Fluor® 790 (sc-28296 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-28296 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).



## STORAGE

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

## APPLICATIONS

p-Stat4 (E-2) is recommended for detection of Ser 721 phosphorylated Stat4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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).

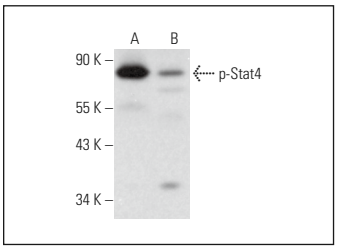
p-Stat4 (E-2) is also recommended for detection of correspondingly phosphorylated Stat4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Stat4 siRNA (h): sc-36568, Stat4 siRNA (m): sc-36569, Stat4 shRNA Plasmid (h): sc-36568-SH, Stat4 shRNA Plasmid (m): sc-36569-SH, Stat4 shRNA (h) Lentiviral Particles: sc-36568-V and Stat4 shRNA (m) Lentiviral Particles: sc-36569-V.

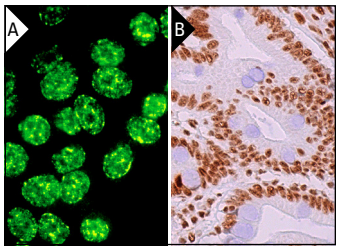
p-Stat4 (E-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of p-Stat4: 89 kDa.

## DATA




p-Stat4 (E-2): sc-28296. Western blot analysis of Stat4 phosphorylation in c4 (**A**) and F9 (**B**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.




p-Stat4 (E-2): sc-28296. Immunofluorescence staining of methanol-fixed IFN-γ-treated HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear staining of glandular cells (**B**).

## SELECT PRODUCT CITATIONS


1. Evel-Kabler, K., et al. 2006. SOCS1 restricts dendritic cells' ability to break self tolerance and induce antitumor immunity by regulating IL-12 production and signaling. J. Clin. Invest. 116: 90-100.
2. Zeng, Q., et al. 2022. Identification of sorafenib as a treatment for type 1 diabetes. Front. Immunol. 13: 740805.
3. Zhang, J., et al. 2022. Epigenetic silencing of 15-hydroxyprostaglandin dehydrogenase by histone methyltransferase EHMT2/G9a in cholangiocarcinoma. Mol. Cancer Res. 20: 350-360.
4. Zhang, X.L., et al. 2023. Myeloid cell deficiency of the inflammatory transcription factor Stat4 protects long-term synaptic plasticity from the effects of a high-fat, high-cholesterol diet. Commun. Biol. 6: 967.


## RESEARCH USE

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