

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

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 μ g IgG₁ 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 μ g/0.1 ml.

p-Stat4 (E-2) is available conjugated to agarose (sc-28296 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28296 HRP), 200 μ g/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 μ g/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 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-28296 P, (100 μ 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-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 μ g per 100-500 μ g 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.

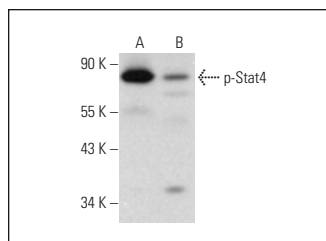
Suitable for use as control antibody for Stat4 siRNA (h): sc-36568, Stat4 siRNA (m): sc-36569, Stat4 shRNA Plasmid (h): sc-36568-SH, Stat4 shRNA Plasmid (m): sc-36569-SH, Stat4 shRNA (h) Lentiviral Particles: sc-36568-V and Stat4 shRNA (m) Lentiviral Particles: sc-36569-V.

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

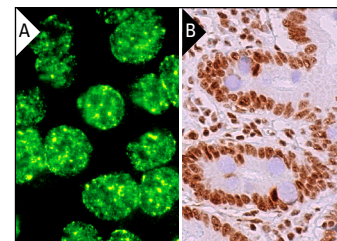
Molecular Weight of p-Stat4: 89 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, HEK293 whole cell lysate: sc-45136 or F9 cell lysate: sc-2245.

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. Zhang, Y.S., et al. 2019. Stat4 activation by leukemia inhibitory factor confers a therapeutic effect on intestinal inflammation. *EMBO J.* 38: e99595.
3. Qian, Y., et al. 2021. ZEB1 promotes pathogenic Th1 and Th17 cell differentiation in multiple sclerosis. *Cell Rep.* 36: 109602.
4. Zeng, Q., et al. 2022. Identification of sorafenib as a treatment for type 1 diabetes. *Front. Immunol.* 13: 740805.

RESEARCH USE

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