SANTA CRUZ BIOTECHNOLOGY, INC.

p-Stat4 (Ser 721)-R: sc-22160-R

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 p38-dependent, and MEK, ERK and JNK-independent 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.
3. Schindler, C. and Darnell, J.E. 1995. Transcriptional responses to polypeptide ligands: the JAK/Stat pathway. Annu. Rev. Biochem. 64: 621-651.
4. Yu, C.L., et al. 2000. Cytosolic tyrosine dephosphorylation of Stat5. J. Biol. Chem. 275: 599-604.
5. Visconti, R., et al. 2000. Importance of the MKK6/p38 pathway for interleukin-12-induced Stat4 serine phosphorylation and transcriptional activity. Blood 96: 1844-1852.

CHROMOSOMAL LOCATION

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

SOURCE

p-Stat4 (Ser 721)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 721 phosphorylated Stat4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22160 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

p-Stat4 (Ser 721)-R is recommended for detection of Ser 721 phosphorylated Stat4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

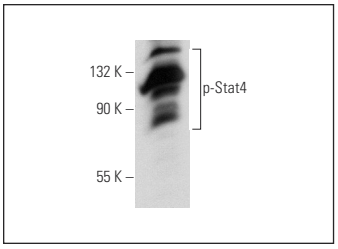
p-Stat4 (Ser 721)-R is also recommended for detection of correspondingly phosphorylated Stat4 in additional species, including equine, porcine and avian.

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.

Molecular Weight of p-Stat4: 89 kDa.

Positive Controls: RAW 264.7 + LPS/PMA cell lysate: sc-2212 or HeLa + IL-4 cell lysate: sc-24686.

DATA



p-Stat4 (Ser 721)-R: sc-22160-R. Western blot analysis of Stat4 phosphorylation in 293T whole cell lysate.

SELECT PRODUCT CITATIONS

1. Guo, F., et al. 2006. Stat4 and the proliferation of artery smooth muscle cells in atherosclerosis. Exp. Mol. Pathol. 81: 15-22.
2. Bulwin, G., et al. 2008. HLA-DR α 2 mediates negative signalling via binding to Tirc7 leading to anti-inflammatory and apoptotic effects in lymphocytes in vitro and in vivo. PLoS ONE 3: e1576.
3. Jiang, Z., et al. 2009. MOG(35-55) i.v suppresses experimental autoimmune encephalomyelitis partially through modulation of Th17 and JAK/STAT pathways. Eur. J. Immunol. 39: 789-799.
4. Pulecio, J., et al. 2010. Cdc42-mediated MTOC polarization in dendritic cells controls targeted delivery of cytokines at the immune synapse. J. Exp. Med. 207: 2719-2732.