SANTA CRUZ BIOTECHNOLOGY, INC.

p-Stat6 (Tyr 641): sc-11762

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The Power to Question

BACKGROUND

Membrane receptor signaling by various ligands, including interferons and growth hormones like EGF, induces activation of JAK kinases, which then leads to tyrosine phosphorylation of the various Stat transcription factors. Activated Stat proteins form dimers, translocate to the nucleus, bind to specific response elements in promoters of target genes, and transcriptionally activate these genes. Stimulation of susceptible cells by interleukin-4 (IL-4) leads to activation of Stat6 through the phosphorylation of tyrosine and serine residues. IL-4 activation of Stat6 also leads to dimerization, which directs Stat6 to the nucleus, and renders it a sequence-specific transcription factor. Stat6 is also tyrosine-phosphorylated in response to IL-15, and is involved in IL-4 activated signaling pathways. The activation of Stat6 by JAK family protein tyrosine kinases is essential for the full response of cells to IL-4.

CHROMOSOMAL LOCATION

Genetic locus: STAT6 (human) mapping to 12q13.3; Stat6 (mouse) mapping to 10 D3.

SOURCE

p-Stat6 (Tyr 641) is available as either goat (sc-11762) or rabbit (sc-11762-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Tyr 641 phosphorylated Stat6 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-11762 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-11762 X, 200 µg/0.1 ml.

APPLICATIONS

p-Stat6 (Tyr 641) is recommended for detection of Tyr 641 phosphorylated Stat6 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-Stat6 (Tyr 641) is also recommended for detection of correspondingly phosphorylated Stat6 in additional species, including bovine.

Suitable for use as control antibody for Stat6 siRNA (h): sc-29497, Stat6 siRNA (m): sc-36570, Stat6 shRNA Plasmid (h): sc-29497-SH, Stat6 shRNA Plasmid (m): sc-36570-SH, Stat6 shRNA (h) Lentiviral Particles: sc-29497-V and Stat6 shRNA (m) Lentiviral Particles: sc-36570-V.

p-Stat6 (Tyr 641) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of p-Stat6: 105 kDa.

Positive Controls: HeLa + IL-4 cell lysate: sc-24686 or IL-4-treated Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Bulanova, E., et al. 2003. Mast cells express novel functional IL-15 receptor α isoforms. J. Immunol. 170: 5045-5055.
2. Monteleone, I., et al. 2004. Regulation of the T helper cell type 1 transcription factor T-bet in coeliac disease mucosa. Gut 53: 1090-1095.
3. Nolan, Y., et al. 2005. Role of interleukin-4 in regulation of age-related inflammatory changes in the hippocampus. J. Biol. Chem. 280: 9354-9362.
4. Bulanova, E., et al. 2005. Extracellular ATP induces cytokine expression and apoptosis through P2X7 receptor in murine mast cells. J. Immunol. 174: 3880-3890.
5. Tsuji, K., et al. 2005. dsRNA enhances eotaxin-3 production through interleukin-4 receptor upregulation in airway epithelial cells. Eur. Respir. J. 26: 795-803.
6. Börner, C., et al. 2006. Cannabinoid receptor type 2 agonists induce transcription of the µ-opioid receptor gene in Jurkat T cells. Mol. Pharmacol. 69: 1486-1491.
7. Walker, W., et al. 2009. RNA interference of STAT6 rapidly attenuates ongoing interleukin-13-mediated events in lung epithelial cells. Immunology 127: 256-266.
8. Jensen, K.D., et al. 2011. *Toxoplasma* polymorphic effectors determine macrophage polarization and intestinal inflammation. Cell Host Microbe 9: 472-483.
9. Chu, D., et al. 2011. Paeoniflorin attenuates schistosomiasis japonica-associated liver fibrosis through inhibiting alternative activation of macrophages. Parasitology 138: 1259-1271.
10. Dwivedi, V.P., et al. 2012. *Mycobacterium tuberculosis* directs T helper 2 cell differentiation by inducing interleukin-1β production in dendritic cells. J. Biol. Chem. 287: 33656-33663.
11. Rhee, I., et al. 2013. Macrophage fusion is controlled by the cytoplasmic protein tyrosine phosphatase PTP-PEST/PTPN12. Mol. Cell. Biol. 33: 2458-2469.

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.