

p-Stat6 (Tyr 641): sc-101808

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.

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. Hou, J., et al. 1994. An interleukin-4-induced transcription factor: IL-4 Stat. *Science* 265: 1701-1706.
3. Schindler, C. and Darnell, J.E. 1995. Transcriptional responses to polypeptide ligands: the JAK/Stat pathway. *Annu. Rev. Biochem.* 64: 621-651.
4. Moriggl, R., et al. 1998. Activation of Stat6 is not dependent on phosphorylation-mediated docking to the interleukin-4 receptor and can be blocked by dominant-negative mutants of both receptor subunits. *Eur. J. Biochem.* 251: 25-35.
5. Kamogawa, Y., et al. 1998. A conditionally active form of Stat6 can mimic certain effects of IL-4. *J. Immunol.* 161: 1074-1077.
6. Heim, M.H. 1999. The JAK/Stat pathway: cytokine signalling from the receptor to the nucleus. *J. Recept. Signal Transduct. Res.* 19: 75-120.
7. Pesu, M., et al. 2000. Interleukin-4-induced transcriptional activation by Stat6 involves multiple serine/threonine kinase pathways and serine phosphorylation of Stat6. *Blood* 95: 494-502.

CHROMOSOMAL LOCATION

Genetic locus: STAT6 (human) mapping to 12q13.3.

SOURCE

p-Stat6 (Tyr 641) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 641 phosphorylated Stat6 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

p-Stat6 (Tyr 641) is recommended for detection of Tyr 641 phosphorylated Stat6 of 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

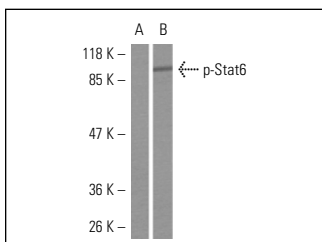
Molecular Weight of p-Stat6: 105 kDa.

Positive Controls: human breast carcinoma tissue extract or IL-4 treated HeLa whole cell lysate.

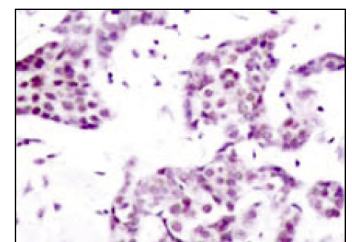
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-Stat6 (Tyr 641): sc-101808. Western blot analysis of phosphorylated Stat6 expression in untreated (A) and IL-4-treated (B) HeLa whole cell lysates.



p-Stat6 (Tyr 641): sc-101808. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

RESEARCH USE

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

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Try **p-Stat6 (pY641.18): sc-136019**, our highly recommended monoclonal alternative to p-Stat6 (Tyr 641).