

# p-Stat4 (Tyr 693): sc-101804

## 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. Yamamoto, K., et al. 1994. Stat4, a novel  $\gamma$  interferon activation site-binding protein expressed in early myeloid differentiation. *Mol. Cell. Biol.* 14: 4342-4349.
2. 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.
3. Schindler, C. and Darnell, J.E. 1995. Transcriptional responses to polypeptide ligands: the JAK/Stat pathway. *Annu. Rev. Biochem.* 64: 621-651.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-Stat4 (Tyr 693) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 693 phosphorylated Stat4 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-Stat4 (Tyr 693) is recommended for detection of Tyr 693 phosphorylated Stat4 of human and rat origin and correspondingly phosphorylated Tyr 694 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 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.

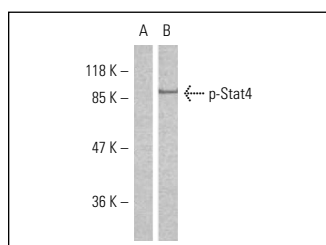
Molecular Weight of p-Stat4: 89 kDa.

Positive Controls: RAW 264.7 + LPS/PMA cell lysate: sc-2212.

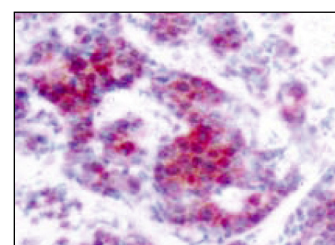
## RECOMMENDED SECONDARY REAGENTS

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-Stat4 (Tyr 693): sc-101804. Western blot analysis of phosphorylated Stat4 expression in untreated (A) and IL-4-treated (B) HeLa whole cell lysates.



p-Stat4 (Tyr 693): sc-101804. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic staining.

## SELECT PRODUCT CITATIONS

1. Tortorella, C., et al. 2006. Impaired interleukin-12-dependent T-cell functions during aging: role of signal transducer and activator of transcription 4 (STAT4) and suppressor of cytokine signaling 3 (SOCS3). *J. Gerontol. A Biol. Sci. Med. Sci.* 61: 125-135.
2. Delgoffe, G.M., et al. 2011. The kinase mTOR regulates the differentiation of helper T cells through the selective activation of signaling by mTORC1 and mTORC2. *Nat. Immunol.* 12: 295-303.

## 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.



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Try **p-Stat4 (pY693.38): sc-136194**, our highly recommended monoclonal alternative to p-Stat4 (Tyr 693).