

# p-Stat5a (Ser 780): sc-101805

## BACKGROUND

Stat5 (signal transducers and activators of transcription 5) is important in regulating T cell functions involving the receptors for interleukin-2 (IL-2). IL-2 stimulates the rapid phosphorylation of both serine and tyrosine residues of Stat5a and Stat5b in human T lymphocytes and in several IL-2-responsive lymphocytic cell lines. IL-2 differentially induces serine phosphorylation of Stat5a and Stat5b on Ser 726 and Ser 731, respectively. Stat5b is preferentially phosphorylated and displays more protracted serine phosphorylation kinetics than Stat5a. Both the acid-rich region and the COOH terminus of IL-2R $\beta$  can independently mediate IL-2-induced Stat5a/b serine phosphorylation, suggesting that Stat5a/b serine phosphorylation occurs at a postreceptor level. Stat5a is phosphorylated on Tyr 694 in a Prolactin-sensitive manner, whereas serine phosphorylation is constitutive. Activation of Stat5 by IL-2 may help govern the biological effects of IL-2 during the immune response. Ser 779 is constitutively phosphorylated in the mammary gland, and Ser 725 phosphorylation influences Prolactin-stimulated *in vitro* DNA binding activity.

## REFERENCES

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- Frank, D.A., Robertson, M.J., Bonni, A., Ritz, J. and Greenberg, M.E. 1995. Interleukin-2 signaling involves the phosphorylation of Stat proteins. *Proc. Natl. Acad. Sci. USA* 92: 7779-7783.
- Kirken, R.A., Malabarba, M.G., Xu, J., DaSilva, L., Erwin, R.A., Liu, X., Hennighausen, L., Rui, H. and Farrar, W.L. 1997. Two discrete regions of interleukin-2 (IL-2) receptor  $\beta$  independently mediate IL-2 activation of a PD98059/Rapamycin/Wortmannin-insensitive Stat5a/b serine kinase. *J. Biol. Chem.* 272: 15459-15465.
- Yamashita, H., Xu, J., Erwin, R., Farrar, W.L., Kirken, R.A. and Rui, H. 1998. Differential control of the phosphorylation state of proline-juxtaposed serine residues Ser 725 of Stat5a and Ser 730 of Stat5b in Prolactin-sensitive Cells. *J. Biol. Chem.* 273: 30218-30224.

## CHROMOSOMAL LOCATION

Genetic locus: STAT5A (human) mapping to 17q21.2; Stat5a (mouse) mapping to 11 D.

## SOURCE

p-Stat5a (Ser 780) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 780 of Stat5a 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.

## STORAGE

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

## APPLICATIONS

p-Stat5a (Ser 780) is recommended for detection of Ser 780 phosphorylated Stat5a of mouse, rat and human 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 and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Stat5a siRNA (h): sc-37008 and Stat5a siRNA (m): sc-37009.

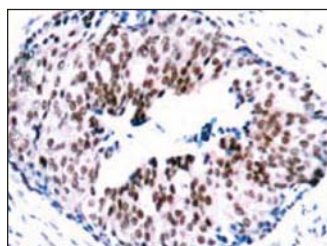
Molecular Weight of p-Stat5a: 92 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human breast carcinoma tissue.

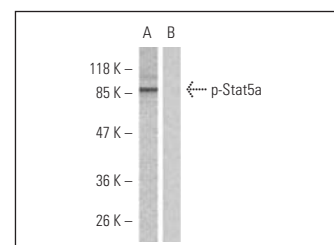
## RECOMMENDED SECONDARY REAGENTS

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) and Western Blotting Luminol Reagent: sc-2048. 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-Stat5a (Ser 780): sc-101805. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.



Western blot analysis of phosphorylated Stat5a expression in HeLa whole cell lysates. Blots were probed with p-Stat5a (Ser 780): sc-101805 (A) and p-Stat5a (Ser 780): sc-101805 preincubated with cognate phosphorylated peptide (B).

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.