

# p-Stat5a/b (Ser 726): sc-12893

## 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 post-receptor 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

- Hou, J., et al. 1995. Identification and purification of human Stat proteins activated in response to interleukin-2. *Immunity* 2: 321-329.
- Frank, D.A., et al. 1995. Interleukin 2 signaling involves the phosphorylation of Stat proteins. *Proc. Natl. Acad. Sci. USA* 92: 7779-7783.

## CHROMOSOMAL LOCATION

Genetic locus: STAT5A/STAT5B (human) mapping to 17q21.2; Stat5a/Stat5b (mouse) mapping to 11 D.

## SOURCE

p-Stat5a/b (Ser 726) is a goat polyclonal antibody raised against a short amino acid sequence containing Ser 726 phosphorylated Stat5a/b of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12893 P, (100  $\mu$ g 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.

## PROTOCOLS

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

## APPLICATIONS

p-Stat5a/b (Ser 726) is recommended for detection of Ser 726 phosphorylated Stat5a and Ser 730 phosphorylated Stat5b of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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-Stat5a/b (Ser 726) is also recommended for detection of correspondingly phosphorylated Stat5a/b in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Stat5a/b: 92/94 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



p-Stat5a/b (Ser 726)-R: sc-12893-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nuclear staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Murray, M., et al. 2005. Phospho-Stat5 accumulation in nuclear fractions from vitamin A-deficient rat liver. *FEBS Lett.* 579: 3669-3673.
- Imanishi, T., et al. 2007. Cutting edge: TLR2 directly triggers Th1 effector functions. *J. Immunol.* 178: 6715-6719.
- Lee, J.E., et al. 2012. Nongenomic STAT5-dependent effects on Golgi apparatus and endoplasmic reticulum structure and function. *Am. J. Physiol., Cell Physiol.* 302: C804-C820.
- Krishna, M.B., et al. 2015. Reduced Tregs in peripheral blood of PCOS patients-a consequence of aberrant I12 signaling. *J. Clin. Endocrinol. Metab.* 100: 282-292.