SANTA CRUZ BIOTECHNOLOGY, INC.

p-Stat5a/b (Tyr 694): sc-101806

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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-2Rb 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Stat5a/b (Tyr 694) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 694 phosphorylated Stat5a/b 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.

RESEARCH USE

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

APPLICATIONS

p-Stat5a/b (Tyr 694) is recommended for detection of Tyr 694 phosphorylated Stat5a and Tyr 699 phosphorylated Stat5b 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

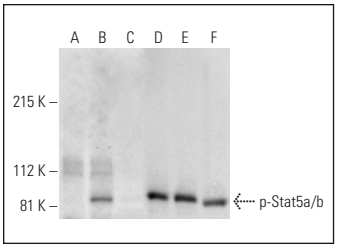
Molecular Weight of p-Stat5a/b: 92/94 kDa.

Positive Controls: EGF-treated HeLa whole cell lysate or pervanadate treated MCF7 whole cell lysate.

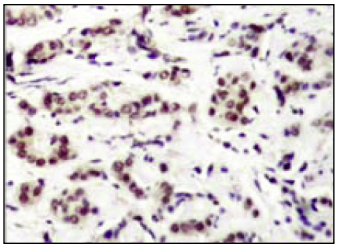
RECOMMENDED SECONDARY REAGENTS

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



Western blot analysis of Stat5a/b phosphorylation in untreated (**A**,**D**), IFNa treated (**B**,**E**) and IFNa and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-Stat5a/b (Tyr 694): sc-101806 (**A**,**B**,**C**) and Stat5 (C-17): sc-835 (**D**,**E**,**F**).



p-Stat5a/b (Tyr 694): sc-101806. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Cerliani, J.P., et al. 2011. Interaction between FGFR-2, STAT5, and progesterone receptors in breast cancer. Cancer Res. 71: 3720-3731.
2. Corless, C.L., et al. 2011. Gastrointestinal stromal tumours: origin and molecular oncology. Nat. Rev. Cancer 11: 865-878.
3. 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.
4. Chen, B., et al. 2013. Enhanced T cell lymphoma in NOD.Stat5b transgenic mice is caused by hyperactivation of Stat5b in CD8+ thymocytes. PLoS ONE 8: e56600.
5. Martínez-Neri, P.A., et al. 2015. Prolactin modulates cytokine production induced by culture filtrate proteins of *M. bovis* through different signaling mechanisms in THP1 cells. Cytokine 71: 38-44.