

Stat5a (H-2): sc-518112

BACKGROUND

Signal transducer and activator of transcription 5A (Stat5a) and Stat5b, which share 96% homology, undergo receptor tyrosine kinase or G protein-coupled receptor-dependent phosphorylation in response to cytokines or growth factors, and then form homo- or heterodimers that translocate to the nucleus, where they initiate transcription. Activation of Stat5a via IL-2, IL-3, IL-7/ GM-CSF, erythropoietin, thrombopoietin and growth hormones influences proliferation, differentiation and apoptosis in lymphohematopoietic cells. Phosphorylation of Stat5a at Ser 127/Ser 128 and Ser 779 are contingent on ErbB-4-mediated activation of Stat5a. Activation of Stat5b via IL-2, IL-4, CSF-1 and growth hormones influences TCR signaling, apoptosis, adult mammary gland development and sexual dimorphism of liver gene expression. Stat5b is the major liver-expressed Stat5 form that has been shown to fuse with the retinoic acid receptor a gene in acute promyelocytic leukemias (APLL). Stat5a/b null mice have severely impaired lymphoid development and differentiation.

REFERENCES

1. Lin, J.X., et al. 2000. The role of Stat5a and Stat5b in signaling by IL-2 family cytokines. *Oncogene* 19: 2566-2576.
2. Sexl, V., et al. 2000. Stat5a/b contribute to interleukin 7-induced B-cell precursor expansion, but Abl- and Bcr/Abl-induced transformation are independent of Stat5. *Blood* 96: 2277-2283.
3. Mahajan, S., et al. 2001. Transcription factor Stat5a is a substrate of Bruton's tyrosine kinase in B cells. *J. Biol. Chem.* 276: 31216-31228.
4. Park, S.H., et al. 2001. Serine phosphorylation of GH-activated signal transducer and activator of transcription 5a (Stat5a) and Stat5b: impact on Stat5 transcriptional activity. *Mol. Endocrinol.* 15: 2157-2171.
5. Benitah, S.A., et al. 2003. Stat5a activation mediates the epithelial to mesenchymal transition induced by oncogenic Rho A. *Mol. Biol. Cell* 14: 40-53.
6. Behbod, F., et al. 2003. Specific inhibition of Stat5a/b promotes apoptosis of IL-2-responsive primary and tumor-derived lymphoid cells. *J. Immunol.* 171: 3919-3927.
7. Snow, J.W., et al. 2003. Loss of tolerance and autoimmunity affecting multiple organs in Stat5a/5b-deficient mice. *J. Immunol.* 171: 5042-5050.

CHROMOSOMAL LOCATION

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

SOURCE

Stat5a (H-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 767-793 at the C-terminus of Stat5a of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-518112 X, 200 µg/0.1 ml.

APPLICATIONS

Stat5a (H-2) is recommended for detection of Stat5a of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Stat5a siRNA (h): sc-37008, Stat5a siRNA (m): sc-37009, Stat5a shRNA Plasmid (h): sc-37008-SH, Stat5a shRNA Plasmid (m): sc-37009-SH, Stat5a shRNA (h) Lentiviral Particles: sc-37008-V and Stat5a shRNA (m) Lentiviral Particles: sc-37009-V.

Stat5a (H-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

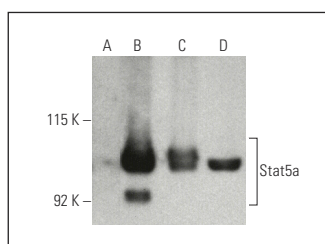
Molecular Weight of Stat5a: 92 kDa.

Positive Controls: Stat5a (h3): 293T Lysate: sc-173719, chemically-treated K-562 whole cell lysate or K-562 whole cell lysate: sc-2203.

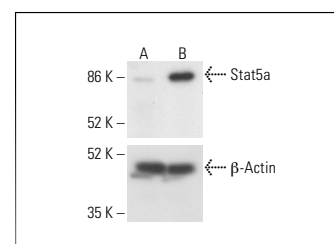
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Stat5a (H-2): sc-518112. Western blot analysis of Stat5a expression in non-transfected 293T: sc-117752 (A), human Stat5a transfected 293T: sc-173609 (B), human Stat5a transfected 293T: sc-173719 (C) and K-562 (D) whole cell lysates.



Stat5a (H-2): sc-518112. Western blot analysis of Stat5a expression in untreated (A) and chemically-treated (B) K-562 whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

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.