

Stat5a (h): 293T Lysate: sc-114013

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 is 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 α 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.
8. Mazarakou, G., et al. 2005. Stat5a interacts with and is phosphorylated upon activation of the μ -opioid receptor. *J. Neurochem.* 93: 918-931.
9. Clark, D.E., et al. 2005. ErbB-4/HER4 potentiates Stat5a transcriptional activity by regulating novel Stat5a serine phosphorylation events. *J. Biol. Chem.* 280: 24175-24180.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: STAT5A (human) mapping to 17q21.2.

PRODUCT

Stat5a (h): 293T Lysate represents a lysate of human Stat5a transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

Stat5a (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Stat5a antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

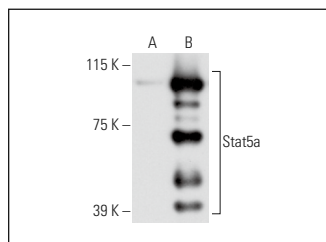
Stat5 (A-9): sc-74442 is recommended as a positive control antibody for Western Blot analysis of enhanced human Stat5a expression in Stat5a transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



Stat5 (A-9): sc-74442. Western blot analysis of Stat5a expression in non-transfected: sc-117752 (A) and human Stat5a transfected: sc-114013 (B) 293T whole cell lysates.

RESEARCH USE

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