SANTA CRUZ BIOTECHNOLOGY, INC.

Stat5a (C-6): sc-271542

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Ser127/Ser128 and Ser779 are contigent 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.

CHROMOSOMAL LOCATION

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

SOURCE

Stat5a (C-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 765-793 at the C-terminus of Stat5a of mouse origin.

PRODUCT

Each vial contains 200 µg IgM 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-271542 X, 200 µg/0.1 ml.

Stat5a (C-6) is available conjugated to agarose (sc-271542 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271542 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-271542 PE), fluorescein (sc-271542 FITC) or Alexa Fluor® 488 (sc-271542 AF488) or Alexa Fluor® 647 (sc-271542 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-271542 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Stat5a (C-6) 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), 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).

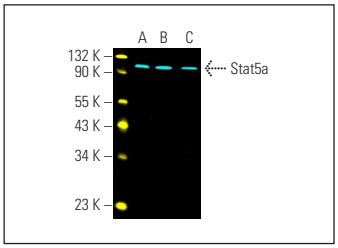
Suitable for use as control antibody for Stat5a siRNA (h): sc-37008, Stat5a siRNA (m): sc-37009, Stat5a shRNA Plasmid (h): sc-37008-SH, Stat5a shRNA Plasmid (m): sc-37009-SH, Stat5a shRNA (h) Lentiviral Particles: sc-37008-V and Stat5a shRNA (m) Lentiviral Particles: sc-37009-V.

Stat5a (C-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

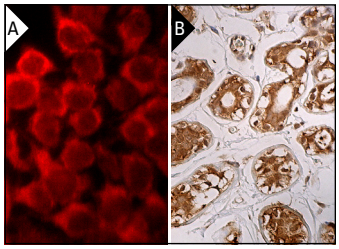
Molecular Weight of Stat5a: 92 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HEL 92.1.7 cell lysate: sc-2270 or BJAB whole cell lysate: sc-2207.

DATA



Stat5a (C-6) Alexa Fluor® 647: sc-271542 AF647. Direct fluorescent western blot analysis of Stat5a expression in K-562 (**A**), HEL 92.1.7 (**B**) and BJAB (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 488: sc-516790.



Stat5a (C-6): sc-271542. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ganaie, S.S., et al. 2017. Phosphorylated Stat5 directly facilitates parvovirus B19 DNA replication in human erythroid progenitors through interaction with the MCM complex. PLoS Pathog. 13: e1006370.
2. Liu, X., et al. 2022. SALIS transcriptionally represses IGFBP3/caspase-7-mediated apoptosis by associating with Stat5a to promote hepatocellular carcinoma. Cell Death Dis. 13: 642.
3. Lee, H.K., et al. 2023. A cytokine-responsive promoter is required for distal enhancer function mediating the hundreds-fold increase in milk protein gene expression during lactation. bioRxiv. E-published.
4. Liang, J., et al. 2024. Erythroid-intrinsic activation of TLR8 impairs erythropoiesis in inherited anemia. Nat. Commun. 15: 5678.

RESEARCH USE

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