SANTA CRUZ BIOTECHNOLOGY, INC.

Stat5b (G-2): sc-1656

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: STAT5B (human) mapping to 17q21.2; Stat5b (mouse) mapping to 11 D.

SOURCE

Stat5b (G-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 750-779 at the C-terminus of Stat5b of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-1656 X, 200 µg/0.1 ml.

Stat5b (G-2) is available conjugated to agarose (sc-1656 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-1656 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-1656 PE), fluorescein (sc-1656 FITC), Alexa Fluor® 488 (sc-1656 AF488), Alexa Fluor® 546 (sc-1656 AF546), Alexa Fluor® 594 (sc-1656 AF594) or Alexa Fluor® 647 (sc-1656 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-1656 AF680) or Alexa Fluor® 790 (sc-1656 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-1656 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

Stat5b (G-2) is recommended for detection of 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), 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).

Stat5b (G-2) is also recommended for detection of Stat5b in additional species, including equine, canine, bovine and porcine.

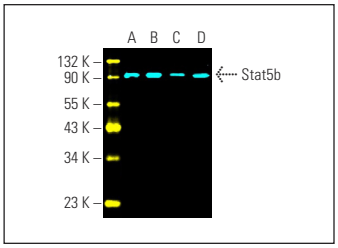
Suitable for use as control antibody for Stat5b siRNA (h): sc-37010, Stat5b siRNA (m): sc-37011, Stat5b siRNA (r): sc-156026, Stat5b shRNA Plasmid (h): sc-37010-SH, Stat5b shRNA Plasmid (m): sc-37011-SH, Stat5b shRNA Plasmid (r): sc-156026-SH, Stat5b shRNA (h) Lentiviral Particles: sc-37010-V, Stat5b shRNA (m) Lentiviral Particles: sc-37011-V and Stat5b shRNA (r) Lentiviral Particles: sc-156026-V.

Stat5b (G-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

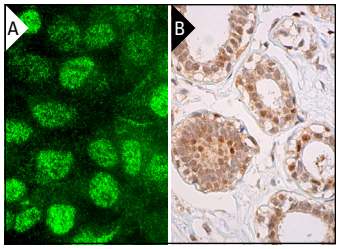
Molecular Weight of Stat5b: 94 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

DATA



Stat5b (G-2) Alexa Fluor® 647: sc-1656 AF647. Direct fluorescent western blot analysis of Stat5b expression in BJAB (**A**), K-562 (**B**), HeLa (**C**) and HEL 92.1.7 (**D**) 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.



Stat5b (G-2): sc-1656. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and nuclear staining of glandular cells and nuclear staining of myoepithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Wynick, D., et al. 1998. Galanin regulates prolactin release and lactotroph proliferation. Proc. Natl. Acad. Sci. USA 95: 12671-12676.
2. Kang, D.Y., et al. 2022. Methylsulfonylmethane relieves cobalt chloride-induced hypoxic toxicity in C2C12 myoblasts. Life Sci. 301: 120619.
3. Tehrani, S.S., et al. 2023. STAT1 is required to establish but not maintain interferon-γ-induced transcriptional memory. EMBO J. 42: e112259.

RESEARCH USE

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