SANTA CRUZ BIOTECHNOLOGY, INC.

p-Stat3 (B-7): sc-8059

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Membrane receptor signaling by various ligands, including interferons and growth hormones such as EGF, induces activation of JAK kinases which then leads to tyrosine phosphorylation of the various Stat transcription factors. Stat1 and Stat2 are induced by IFN-α and form a heterodimer which is part of the ISGF3 transcription factor complex. Although early reports indicate Stat3 activation by EGF and IL-6, it has been shown that Stat3β appears to be activated by both while Stat3α is activated by EGF, but not by IL-6. Highest expression of Stat4 is seen in testis and myeloid cells. IL-12 has been identified as an activator of Stat4. Stat5 has been shown to be activated by prolactin and by IL-3. Stat6 is involved in IL-4 activated signaling pathways.

REFERENCES

1. Zhong, Z., et al. 1994. Stat3: a STAT family member activated by tyrosine phosphorylation in response to epidermal growth factor and interleukin-6. Science 264: 95-98.
2. Darnell, J.E., et al. 1994. Jak-STAT pathways and transcriptional activation in response to IFNs and other extracellular signaling proteins. Science 264: 1415-1421.
3. Hou, J., et al. 1994. An interleukin-4-induced transcription factor: IL-4 Stat. Science 265: 1701-1706.

CHROMOSOMAL LOCATION

Genetic locus: STAT3 (human) mapping to 17q21.2; Stat3 (mouse) mapping to 11 D.

SOURCE

p-Stat3 (B-7) is a mouse monoclonal antibody raised against a sequence containing Tyr 705 phosphorylated Stat3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-8059 X, 200 µg/0.1 ml.

p-Stat3 (B-7) is available conjugated to agarose (sc-8059 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8059 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8059 PE), fluorescein (sc-8059 FITC), Alexa Fluor® 488 (sc-8059 AF488), Alexa Fluor® 546 (sc-8059 AF546), Alexa Fluor® 594 (sc-8059 AF594) or Alexa Fluor® 647 (sc-8059 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8059 AF680) or Alexa Fluor® 790 (sc-8059 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8059 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

p-Stat3 (B-7) is recommended for detection of Tyr 705 phosphorylated Stat3 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

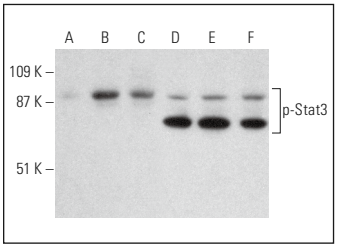
Suitable for use as control antibody for Stat3 siRNA (h): sc-29493, Stat3 siRNA (m): sc-29494, Stat3 siRNA (r): sc-270027, Stat3 shRNA Plasmid (h): sc-29493-SH, Stat3 shRNA Plasmid (m): sc-29494-SH, Stat3 shRNA Plasmid (r): sc-270027-SH, Stat3 shRNA (h) Lentiviral Particles: sc-29493-V, Stat3 shRNA (m) Lentiviral Particles: sc-29494-V and Stat3 shRNA (r) Lentiviral Particles: sc-270027-V.

p-Stat3 (B-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

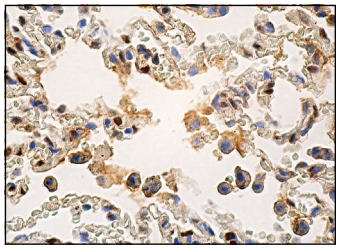
Molecular Weight of p-Stat3α/p-Stat3β isoforms: 91/86 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa + IFN-γ cell lysate: sc-2222 or HeLa whole cell lysate: sc-2200.

DATA



Western blot analysis of Stat3 phosphorylation in untreated (**A**,**D**), IFNγ-treated (**B**,**E**) and TNF-α-treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-Stat3 (B-7): sc-8059 (**A**,**B**,**C**) and Stat3 (F-2): sc-8019 (**D**,**E**,**F**). Tested with recommended blocking buffer and antibody diluent TBS Blotto B: sc-2335, plus 50mM Sodium Fluoride. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



p-Stat3 (B-7): sc-8059. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing nuclear staining of subset of pneumocytes.

SELECT PRODUCT CITATIONS

1. Melnick, M., et al. 1998. Insulin-like growth factor II receptor, transforming growth factor-β, and Cdk4 expression and the developmental epigenetics of mouse palate morphogenesis and dysmorphogenesis. Dev. Dyn. 211: 11-25.
2. Liu, Y., et al. 2023. Disrupted metabolic signatures in amniotic fluid associated with increased risk of intestinal inflammation in cesarean section offspring. Front. Immunol. 14: 1067602.

RESEARCH USE

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