SANTA CRUZ BIOTECHNOLOGY, INC.

p-Stat3 (6D779): sc-71792

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 expresion 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. Yamamoto, K., et al. 1994. Stat4, a novel γ interferon activation site-binding protein expressed in early myeloid differentiation. Mol. Cell. Biol. 14: 4342-4349.
2. 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Stat3 (6D779) is a mouse monoclonal antibody raised against a Stat3 phosphopeptide of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

p-Stat3 (6D779) is recommended for detection of Ser 727 phosphorylated Stat3 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

Molecular Weight of p-Stat3α isoform: 91 kDa.

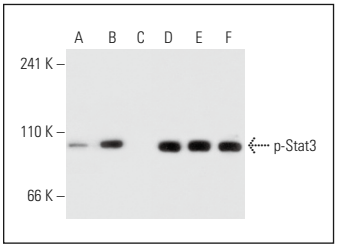
Molecular Weight of p-Stat3β isoform: 86 kDa.

Positive Controls: HeLa + IFN-γ cell lysate: sc-2222, SK-MEL-28 + IFN-γ cell lysate: sc-2291 or Stat3 (h3): 293T Lysate: sc-177985.

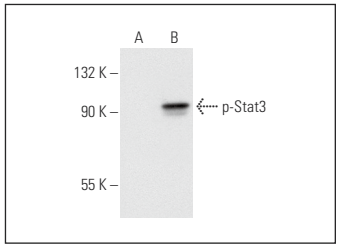
STORAGE

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

DATA



Western blot analysis of Stat3 phosphorylation in untreated (**A**,**D**), mouse LIF (sc-4989) treated (**B**,**E**) and LIF and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) 3T3-L1 whole cell lysates. Antibodies tested include p-Stat3 (6D779): sc-71792 (**A**,**B**,**C**) and Stat3 (F-2): sc-8019 (**D**,**E**,**F**).



p-Stat3 (6D779): sc-71792. Western blot analysis of Stat3 phosphorylation in non-transfected: sc-117752 (**A**) and human Stat3 transfected: sc-177985 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Dien Bard, J., et al. 2009. IL-21 contributes to JAK3/Stat3 activation and promotes cell growth in ALK-positive anaplastic large cell lymphoma. Am. J. Pathol. 175: 825-834.
2. Siejka, A., et al. 2010. Activation of Janus kinase/signal transducer and activator of transcription 3 pathway by growth hormone-releasing hormone. Cell. Mol. Life Sci. 67: 959-964.
3. Lechner, M.G., et al. 2011. Functional characterization of human $CD33^+$ and $CD11b^+$ myeloid-derived suppressor cell subsets induced from peripheral blood mononuclear cells co-cultured with a diverse set of human tumor cell lines. J. Transl. Med. 9: 90.
4. Siejka, A., et al. 2014. The effect of LHRH antagonist cetrorelix in cross-over conditioned media from epithelial (BPH-1) and stromal (WPMY-1) prostate cells. Horm. Metab. Res. 46: 21-26.
5. Liu, X., et al. 2016. Src/Stat3 signaling pathways are involved in KAI1-induced downregulation of VEGF-C expression in pancreatic cancer. Mol. Med. Rep. 13: 4774-4778.
6. Zhang, Z., et al. 2018. Effects of miR-126 on the Stat3 signaling pathway and the regulation of malignant behavior in lung cancer cells. Oncol. Lett. 15: 8412-8416.
7. Dziemidowicz, M., et al. 2019. The role of interleukin-6 in intracellular signal transduction after chronic β-adrenergic stimulation in mouse myocardium. Arch. Med. Sci. 15: 1565-1575.
8. Brodnanova, M., et al. 2024. IL-6 does not influence the expression of SLC41A1 and other Mg-homeostatic factors. Int. J. Mol. Sci. 25: 13274.

RESEARCH USE

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