SANTA CRUZ BIOTECHNOLOGY, INC.

Stat3 (F-2): sc-8019

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

CHROMOSOMAL LOCATION

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

SOURCE

Stat3 (F-2) is a mouse monoclonal antibody raised against amino acids 50-240 mapping at the N-terminus of Stat3 p92 of human 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-8019 X, 200 µg/0.1 ml.

Stat3 (F-2) is available conjugated to agarose (sc-8019 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8019 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8019 PE), fluorescein (sc-8019 FITC), Alexa Fluor® 488 (sc-8019 AF488), Alexa Fluor® 546 (sc-8019 AF546), Alexa Fluor® 594 (sc-8019 AF594) or Alexa Fluor® 647 (sc-8019 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8019 AF680) or Alexa Fluor® 790 (sc-8019 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

Stat3 (F-2) is recommended for detection of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Stat3 (F-2) is also recommended for detection of Stat3 in additional species, including equine, bovine and porcine.

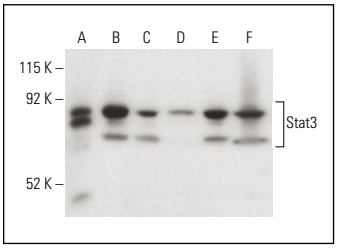
Suitable for use as control antibody for Stat3 siRNA (h): sc-29493, Stat3 siRNA (m): sc-29494, Stat3 siRNA (r): sc-270027, Stat3 shRNA Plasmid (h): sc-29493-SH, Stat3 shRNA Plasmid (m): sc-29494-SH, Stat3 shRNA Plasmid (r): sc-270027-SH, Stat3 shRNA (h) Lentiviral Particles: sc-29493-V, Stat3 shRNA (m)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

Stat3 (F-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

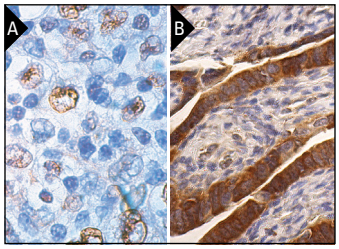
Molecular Weight of Stat3α/β isoforms: 91/86 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, SK-BR-3 cell lysate: sc-2218 or MOLT-4 cell lysate: sc-2233.

DATA



Stat3 (F-2): sc-8019. Western blot analysis of Stat3 expression in SK-BR-3 (**A**), PANC-1 (**B**), K-562 (**C**), A549 (**D**), MOLT-4 (**E**) and EOC 20 (**F**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



Stat3 (F-2): sc-8019. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Lemmink, H.H., et al. 2001. Identification of LIL-Stat in monocytic leukemia cells and monocytes after stimulation with interleukin-6 or interferon γ. Blood 98: 3849-3852.
2. Li, M., et al. 2023. Vortioxetine hydrobromide inhibits the growth of gastric cancer cells *in vivo* and *in vitro* by targeting JAK2 and SRC. Oncogenesis 12: 24.

STORAGE

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