SANTA CRUZ BIOTECHNOLOGY, INC.

Stat3 (C-20): sc-482

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.

CHROMOSOMAL LOCATION

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

SOURCE

Stat3 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Stat3 of mouse origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-482 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-482 X, 100 µg/0.1 ml.

APPLICATIONS

Stat3 (C-20) is recommended for detection of Stat3 p92 of mouse, rat, human and *Xenopus* 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) 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.

Stat3 (C-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Stat3α: 91 kDa.

Molecular Weight of Stat3β: 86 kDa.

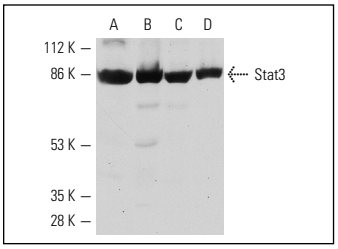
STORAGE

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

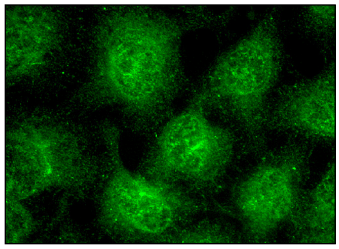
RESEARCH USE

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

DATA



Stat3 (C-20): sc-482. Western blot analysis of Stat3 expression in K-562 (**A**), 3611-RF (**B**), NIH/3T3 (**C**) and KNRK (**D**) whole cell lysates.



Stat3 (C-20): sc-482. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Aoki, Y., et al. 2003. Inhibition of Stat3 signaling induces apoptosis and decreases survivin expression in primary effusion lymphoma. Blood 101: 1535-1542.
2. Spiekermann, K., et al. 2003. Overexpression and constitutive activation of Flt-3 induces Stat5 activation in primary acute myeloid leukemia blast cells. Clin. Cancer Res. 9: 2140-2150.
3. Kortylewski, M., et al. 2003. Akt modulates Stat3-mediated gene expression through a FKHR (FOXO1a)-dependent mechanism. J. Biol. Chem. 278: 5242-5249.
4. Kotenko, S.V., et al. 2003. IFN-γs mediate antiviral protection through a distinct class II cytokine receptor complex. Nat. Immunol. 4: 69-77.
5. Renou, J.P., et al. 2003. Identification of genes differentially expressed in mouse mammary epithelium transformed by an activated β-catenin. Oncogene 22: 4594-4610.
6. Freudenberg, J.M., et al. 2012. Acute depletion of Tet1-dependent 5-hydroxymethylcytosine levels impairs LIF/Stat3 signaling and results in loss of embryonic stem cell identity. Nucleic Acids Res. 40: 3364-3377.
7. Iglesias P., et al. 2012. Defining hypoxic microenvironments by non-invasive functional optical imaging. Eur. J. Cancer: 9: 264-271.
8. Icardi, L., et al. 2012. The Sin3a repressor complex is a master regulator of STAT transcriptional activity. Proc. Natl. Acad. Sci. USA 109: 12058-12063.
9. Turtoi, A., et al. 2012. The angiogenesis suppressor gene AKAP12 is under the epigenetic control of HDAC7 in endothelial cells. Angiogenesis 15: 543-554.