

p-Stat3 (pS727.49): sc-136193



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 ISGF-3 transcription factor complex. Although early reports indicate Stat3 activation by EGF and IL-6, it has been shown that Stat3 β appears to be activated by both while Stat3 α 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

- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Stat3 (pS727.49) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 727 phosphorylated Stat3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Stat3 (pS727.49) is recommended for detection of Ser 727 phosphorylated Stat3 isoform α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

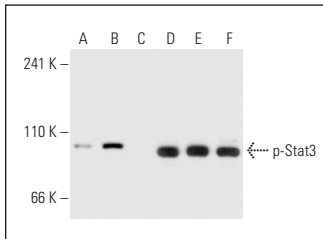
Molecular Weight of p-Stat3 α isoform: 92 kDa.

Positive Controls: A-431 + EGF whole cell lysate: sc-2202, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

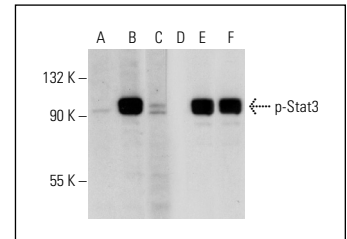
STORAGE

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 (pS727.49): sc-136193 (A,B,C) and Stat3 (F-2): sc-8019 (D,E,F).



Western blot analysis of Stat3 phosphorylation in untreated (A,D), EGF treated (B,E) and EGF and lambda protein phosphatase treated (C,F) A-431 whole cell lysates. Antibodies tested include p-Stat3 (pS727.49): sc-136193 (A,B,C) and Stat3 (F-2): sc-8019 (D,E,F).

SELECT PRODUCT CITATIONS

- Waitkus, M.S., et al. 2013. Stat3-mediated coincidence detection regulates noncanonical immediate early gene induction. *J. Biol. Chem.* 288: 1198.
- Tang, Y.C., et al. 2014. Endothelin-1 stimulates resistin gene expression. *Endocrinology* 155: 854-864.
- Harhous, Z., et al. 2019. Critical appraisal of Stat3 pattern in adult cardiomyocytes. *J. Mol. Cell. Cardiol.* 131: 91-100.
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- Wang, H., et al. 2019. Stat3 regulates the type I IFN-mediated antiviral response by interfering with the nuclear entry of Stat1. *Int. J. Mol. Sci.* 20: 4870.
- Nimmanon, T., et al. 2021. The ZIP6/ZIP10 heteromer is essential for the zinc-mediated trigger of mitosis. *Cell. Mol. Life Sci.* 78: 1781-1798.
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- Lee, B., et al. 2024. Triptolide, a cancer cell proliferation inhibitor, causes zebrafish muscle defects by regulating Notch and STAT3 signaling pathways. *Int. J. Mol. Sci.* 25: 4675.

RESEARCH USE

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