

p-Stat3 (pS727.25): sc-293059

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

- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: STAT3 (human) mapping to 17q21.2.

SOURCE

p-Stat3 (pS727.25) 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-293059 X, 200 μ g/0.1 ml.

APPLICATIONS

p-Stat3 (pS727.25) is recommended for detection of Ser 727 phosphorylated Stat3 of human and rat 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); non cross-reactive with Ser 727 phosphorylated Stat3 of mouse origin.

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

p-Stat3 (pS727.25) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

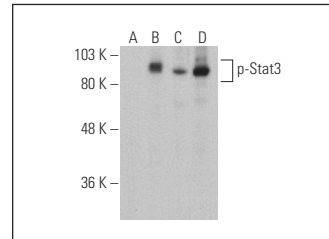
Molecular Weight of p-Stat3 α/β isoforms: 91/86 kDa.

Positive Controls: 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



p-Stat3 (pS727.25): sc-293059. Western blot analysis of p-Stat3 expression in non-transfected 293T: sc-117752 (A), human Stat3 transfected 293T: sc-177985 (B), untreated A-431 (C) and EGF-treated A-431 (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG $_1$ BP-HRP: sc-525408.

SELECT PRODUCT CITATIONS

- Guo, H., et al. 2016. The aspirin-induced long non-coding RNA OLA1P2 blocks phosphorylated Stat3 homodimer formation. *Genome Biol.* 17: 24.
- Li, L., et al. 2017. iNOS-derived nitric oxide promotes glycolysis by inducing pyruvate kinase M2 nuclear translocation in ovarian cancer. *Oncotarget* 8: 33047-33063.
- Eid, R.A., et al. 2018. Cardioprotective effect of ghrelin against myocardial infarction-induced left ventricular injury via inhibition of SOCS3 and activation of JAK2/Stat3 signaling. *Basic Res. Cardiol.* 113: 13.
- Li, H., et al. 2018. Parthenolide facilitates apoptosis and reverses drug-resistance of human gastric carcinoma cells by inhibiting the Stat3 signaling pathway. *Oncol. Lett.* 15: 3572-3579.
- Zhao, L., et al. 2018. Function of GCN5 in the TGF- β 1-induced epithelial-to-mesenchymal transition in breast cancer. *Oncol. Lett.* 16: 3955-3963.
- Deneyer, N., et al. 2019. HoxA2 activity regulation by cytoplasmic relocation, protein stabilization and post-translational modification. *Biochim. Biophys. Acta Gene Regul. Mech.* 1862: 194404.
- Eid, R.A., et al. 2019. A high-fat diet rich in corn oil induces cardiac fibrosis in rats by activating JAK2/Stat3 and subsequent activation of ANG II/TGF- β 1/Smad3 pathway: the role of ROS and IL-6 *trans*-signaling. *J. Food Biochem.* 43: e12952.
- Zuo, Y., et al. 2022. Pirfenidone inhibits cell fibrosis in connective tissue disease-associated interstitial lung disease by targeting the TNF- α /STAT3/KL6 pathway. *J. Thorac. Dis.* 14: 2089-2102.
- Lin, Y., et al. 2024. MiR-653-5p drives osteoarthritis pathogenesis by modulating chondrocyte senescence. *Arthritis Res. Ther.* 26: 111.

RESEARCH USE

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