

# Stat4 (C-4): sc-398228

## 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- $\alpha$  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 Stat3 $\beta$  appears to be activated by both while Stat3 $\alpha$  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: STAT4 (human) mapping to 2q32.2; Stat4 (mouse) mapping to 1 C1.1.

## SOURCE

Stat4 (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 10-31 at the N-terminus of Stat4 of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> 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-398228 X, 200  $\mu$ g/0.1 ml.

Stat4 (C-4) is available conjugated to agarose (sc-398228 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398228 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398228 PE), fluorescein (sc-398228 FITC), Alexa Fluor<sup>®</sup> 488 (sc-398228 AF488), Alexa Fluor<sup>®</sup> 546 (sc-398228 AF546), Alexa Fluor<sup>®</sup> 594 (sc-398228 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-398228 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-398228 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-398228 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398228 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

Stat4 (C-4) is recommended for detection of Stat4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Stat4 (C-4) is also recommended for detection of Stat4 in additional species, including equine, canine, bovine, porcine and avian.

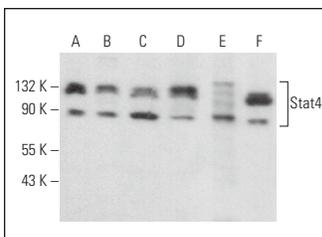
Suitable for use as control antibody for Stat4 siRNA (h): sc-36568, Stat4 siRNA (m): sc-36569, Stat4 shRNA Plasmid (h): sc-36568-SH, Stat4 shRNA Plasmid (m): sc-36569-SH, Stat4 shRNA (h) Lentiviral Particles: sc-36568-V and Stat4 shRNA (m) Lentiviral Particles: sc-36569-V.

Stat4 (C-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

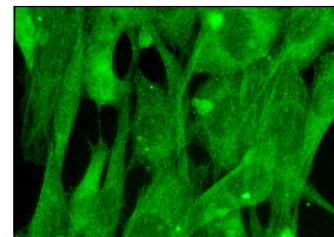
Molecular Weight of Stat4: 89 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NCI-H929 whole cell lysate: sc-364786 or U266 whole cell lysate: sc-364800.

## DATA



Stat4 (C-4): sc-398228. Western blot analysis of Stat4 expression in HeLa (A), ACHN (B), NCI-H929 (C), U266 (D), MOLT-4 (E) and TK-1 (F) whole cell lysates.



Stat4 (C-4): sc-398228. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic and nuclear localization.

## SELECT PRODUCT CITATIONS

- Liu, B., et al. 2017. IL-7R $\alpha$  glutamylation and activation of transcription factor Sall3 promote group 3 ILC development. *Nat. Commun.* 8: 231.
- Fu, B., et al. 2021. MiR-342 controls *Mycobacterium tuberculosis* susceptibility by modulating inflammation and cell death. *EMBO Rep.* 22: e52252.
- Benhassine, M., et al. 2022. Contribution of the STAT family of transcription factors to the expression of the serotonin 2B (HTR2B) receptor in human uveal melanoma. *Int. J. Mol. Sci.* 23: 1564.
- Zhou, J., et al. 2023. STAT4 facilitates PD-L1 level via IL-12R/JAK2/STAT3 axis and predicts immunotherapy response in breast cancer. *MedComm* 4: e464.

## RESEARCH USE

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