

p-Stat2 (Tyr 690)-R: sc-21689-R

BACKGROUND

Membrane receptor signaling by IFN- α induces activation of the receptor-associated cytoplasmic tyrosine kinases of the JAK family. JAK activates Stat2 via the association of JAK with the Src homology 2 (SH2) domain of Stat2. This activation leads to the phosphorylation of Stat2 on Tyrosine 690. The phosphorylated Stat2 dimerizes with Stat1 at the SH2 domain and the heterodimer translocates to the nucleus via nuclear import receptors importin- α 5 and RAN. The Stat1/Stat2 heterodimer associates with p48 (also known as ISGF-3 γ), a member of a separate DNA-binding family, forming the IFN-stimulated-gene factor 3 (ISGF-3). The ISGF-3 complex binds to DNA through direct interaction of Stat1 and p48 to the IFN-stimulated response element on the DNA, and activates transcription of the IFN-responsive genes. The Stat2 gene maps to human chromosome 12q13.3 and is widely expressed in many tissues. Stat2 is an 851 amino acid long protein with a short isoform missing amino acids 653-851 due to alternative splicing.

CHROMOSOMAL LOCATION

Genetic locus: STAT2 (human) mapping to 12q13.3.

SOURCE

p-Stat2 (Tyr 690)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 690 of Stat2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-21689 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Stat2 (Tyr 690)-R is recommended for detection of Tyr 690 phosphorylated Stat2 of 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)], 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).

p-Stat2 (Tyr 690)-R is also recommended for detection of correspondingly phosphorylated Stat2 in additional species, including canine.

Suitable for use as control antibody for Stat2 siRNA (h): sc-29492, Stat2 shRNA Plasmid (h): sc-29492-SH and Stat2 shRNA (h) Lentiviral Particles: sc-29492-V.

Molecular Weight of p-Stat2: 120 kDa.

Positive Controls: HeLa + IFN- α cell lysate: sc-2273 or Daudi cell lysate: sc-2415.

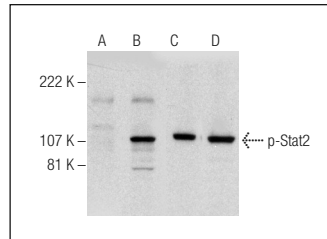
STORAGE

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



Western blot analysis of Stat2 phosphorylation in untreated (**A, C**) and IFN α treated (**B, D**) HeLa whole cell lysates. Antibodies tested include p-Stat2 (Tyr 690)-R: sc-21689-R (**A, B**) and Stat2 (H-190): sc-22816 (**C, D**).

SELECT PRODUCT CITATIONS

- Liu, W.J., et al. 2005. Inhibition of interferon signaling by the New York 99 strain and Kunjin subtype of West Nile virus involves blockage of Stat1 and Stat2 activation by nonstructural proteins. *J. Virol.* 79: 1934-1942.
- Win, H.Y., et al. 2008. Atypical protein kinase C phosphorylates IKK α / β in transformed non-malignant and malignant prostate cell survival. *Cancer Lett.* 270: 302-311.
- Wan, L., et al. 2008. Type I IFN induced IL1-Ra expression in hepatocytes is mediated by activating STAT6 through the formation of STAT2: STAT6 heterodimer. *J. Cell. Mol. Med.* 12: 876-888.
- Chappier, A., et al. 2009. A partial form of recessive Stat1 deficiency in humans. *J. Clin. Invest.* 119: 1502-1514.
- Chattopadhyay, S., et al. 2009. Tumor-shed PGE₂ impairs IL2R γ -signaling to inhibit CD4 T cell survival: regulation by theaflavins. *PLoS ONE* 4: e7382.
- Patel, D., et al. 2010. Porcine reproductive and respiratory syndrome virus inhibits type I interferon signaling by blocking Stat1/Stat2 nuclear translocation. *J. Virol.* 84: 11045-11055.
- Kong, X.F., et al. 2010. A novel form of human STAT1 deficiency impairing early but not late responses to interferons. *Blood* 116: 5895-5906.
- Jaworska, J., et al. 2010. Divergent susceptibilities of human herpesvirus 6 variants to type I interferons. *Proc. Natl. Acad. Sci. USA* 107: 8369-8374.
- Rosas-Murrieta, N.H., et al. 2010. Interaction of mumps virus V protein variants with STAT1-STAT2 heterodimer: experimental and theoretical studies. *Virology* 403: 263.
- Takayama, I., et al. 2012. The nucleocapsid protein of measles virus blocks host interferon response. *Virology* 424: 45-55.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.