

# p-Tyk 2 (Tyr 1054/1055): sc-11763

## BACKGROUND

Members of the Janus family of tyrosine kinases, including JAK1, JAK2 and Tyk 2, are characterized by the presence of a second kinase domain and the absence of SH2, SH3 and membrane spanning domains. The members of this family of tyrosine kinases play a critical role in coupling ligand binding of cytokine receptors to tyrosine phosphorylation. For instance, Tyk 2 couples IFN $\alpha$ /b binding to tyrosine phosphorylation of the proteins of the IFN-stimulated gene factor 3 complex. The Tyk and Jak family is involved in signal transduction in response to a specific family of cytokines, which consists of ciliary neurotrophic factor (CNTF), leukemia inhibitory factor (LIF), oncostatin M (OSM), and interleukin-6 (IL-6). Also, Tyk 2 has been shown to undergo intermolecular tyrosine phosphorylation after forming a homodimer. Mouse, rat and human Tyk 2 are activated by trans-phosphorylation on Tyr 1054 and Tyr 1055, which is dependent on JAK1 phosphorylation.

## REFERENCES

1. Firmbach-Kraft, I., et al. 1990. Tyk 2, prototype of a novel class of non-receptor tyrosine kinase genes. *Oncogene* 5: 1329-1336.
2. Wilks, A.F., et al. 1991. Two novel protein-tyrosine kinases, each with a second phosphotransferase-related catalytic domain, define a new class of protein kinase. *Mol. Cell. Biol.* 11: 2057-2065.
3. Harpur, A.G., et al. 1992. JAK2, a third member of the JAK family of protein tyrosine kinases. *Oncogene* 7: 1347-1353.
4. Fu, X.Y. 1992. A transcription factor with SH2 and SH3 domains is directly activated by an interferon induced cytoplasmic protein tyrosine kinase(s). *Cell* 70: 323-335.

## CHROMOSOMAL LOCATION

Genetic locus: TYK2 (human) mapping to 19p13.2; Tyk2 (mouse) mapping to 9 A3.

## SOURCE

p-Tyk 2 (Tyr 1054/1055) is available as either goat (sc-11763) or rabbit (sc-11763-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Tyr 1054 and Tyr 1055 of Tyk 2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-11763 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

p-Tyk 2 (Tyr 1054/1055) is recommended for detection of Tyr 1054 and Tyr 1055 dually phosphorylated Tyk 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

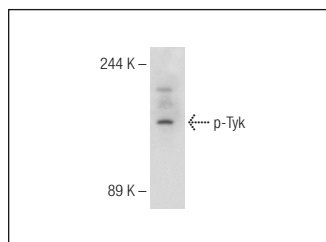
p-Tyk 2 (Tyr 1054/1055) is also recommended for detection of correspondingly phosphorylated Tyr on Tyk 2 in additional species, including canine.

Suitable for use as control antibody for Tyk 2 siRNA (h): sc-36764, Tyk 2 siRNA (m): sc-36765, Tyk 2 shRNA Plasmid (h): sc-36764-SH, Tyk 2 shRNA Plasmid (m): sc-36765-SH, Tyk 2 shRNA (h) Lentiviral Particles: sc-36764-V and Tyk 2 shRNA (m) Lentiviral Particles: sc-36765-V.

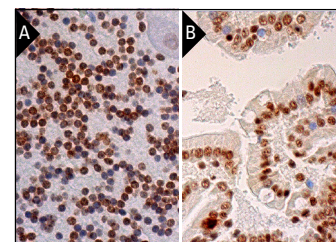
Molecular Weight of p-Tyk 2: 130 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210 or Jurkat whole cell lysate: sc-2204.

## DATA



p-Tyk 2 (Tyr 1054/1055)-R: sc-11763-R. Western blot analysis of Tyk 2 phosphorylation in Jurkat whole cell lysate.



p-Tyk 2 (Tyr 1054/1055): sc-11763. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of cells in granular layer (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Dikdan, G.S., et al. 2004. Role of oxidative stress in the increased activation of signal transducers and activators of transcription-3 in the fatty livers of obese Zucker rats. *Surgery* 136: 677-685.
2. Staerk, J., et al. 2006. An amphipathic motif at the transmembrane-cytoplasmic junction prevents autonomous activation of the thrombopoietin receptor. *Blood* 107: 1864-1871.
3. Caldas-Lopes, E., et al. 2009. HSP 90 inhibitor PU-H71, a multimodal inhibitor of malignancy, induces complete responses in triple-negative breast cancer models. *Proc. Natl. Acad. Sci. USA* 106: 8368-8373.
4. Jougasaki, M., et al. 2010. Statins suppress interleukin-6-induced monocyte chemo-attractant protein-1 by inhibiting Janus kinase/signal transducers and activators of transcription pathways in human vascular endothelial cells. *Br. J. Pharmacol.* 159: 1294-1303.