

# p-Tyk 2 (Tyr 1054): sc-135637

## 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 $\alpha$ / $\beta$  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). Tyk 2 is subject to intermolecular tyrosine phosphorylation after homodimer formation. Human and mouse Tyk 2 are phosphorylated on Tyr 1054, leading Tyk 2 activation.

## REFERENCES

1. Firmbach-Kraft, I., Byers, M., Shows, T., Dalla-Favera, R. and Krolewski, J.J. 1990. Tyk 2, prototype of a novel class of non-receptor tyrosine kinase genes. *Oncogene* 5: 1329-1336.
2. Wilks, A.F., Harpur, A.G., Kurban, R.R., Ralph, S.J., Zurcher, G. and Ziemiecki, A. 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. 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.
4. Harpur, A.G., Andres, A.C., Ziemiecki, A., Aston, R.R. and Wilks, A.F. 1992. JAK2, a third member of the JAK family of protein tyrosine kinases. *Oncogene* 7: 1347-1353.
5. Silvennoinen, O., Witthuhn, B., Quelle, F.W., Cleveland, J.L., Yi, T. and Ihle, J.N. 1993. Structure of the JAK2 protein tyrosine kinase and its role in IL-3 signal transduction. *Proc. Natl. Acad. Sci. USA* 90: 8429-8433.
6. Stahl, N., Boulton, T.G., Farruggella, T., Ip, N.Y., Davis, S., Witthuhn, B.A., Quelle, F.W., Silvennoinen, O., Barbieri, G., Pellegrini, S., et. al. 1994. Association and activation of JAK-Tyk kinases by CNTF-LIF-OSM-IL-6 $\beta$  receptor components. *Science* 263: 92-95.
7. Domanski, P., Yan, H., Witte, M.M., Krolewski, J. and Colamonici, O.R. 1995. Homodimerization and intermolecular tyrosine phosphorylation of the Tyk 2 tyrosine kinase. *FEBS Lett.* 374: 317-322.
8. Gauzzi, M.C., Velazquez, L., McKendry, R., Mogensen, K.E., Fellous, M. and Pellegrini, S. 1996. Interferon  $\alpha$ -dependent activation of Tyk 2 requires phosphorylation of positive regulatory tyrosines by another kinase. *J. Biol. Chem.* 271: 20494-20500.

## CHROMOSOMAL LOCATION

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

## RESEARCH USE

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

## SOURCE

p-Tyk 2 (Tyr 1054) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 1054 of Tyk 2 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-Tyk 2 (Tyr 1054) is recommended for detection of Tyr 1054 phosphorylated Tyk 2 of human origin and correspondingly phosphorylated Tyr 1047 of mouse origin of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

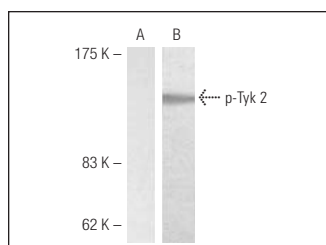
Suitable for use as control antibody for Tyk 2 siRNA (h): sc-36764, Tyk 2 siRNA (m): sc-36765, Tyk 2 shRNA Plasmid (h): sc-36764-SH, Tyk 2 shRNA Plasmid (m): sc-36765-SH, Tyk 2 shRNA (h) Lentiviral Particles: sc-36764-V and Tyk 2 shRNA (m) Lentiviral Particles: sc-36765-V.

Molecular Weight of p-Tyk 2: 130 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



p-Tyk 2 (Tyr 1054): sc-135637. Western blot analysis of phosphorylated Tyk 2 expression in untreated (A) and Anisomycin-treated (B) HT-29 cell extracts.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.