Store at -20°C

#14254

SignalSilence® Tyk2 siRNA I

www.cellsignal.com

Support: 877-678-TECH (8324)
info@cellsignal.com

Orders: 877-616-CELL (2355)
orders@cellsignal.com

New 07/14

Entrez-Gene ID #7297
UniProt ID #P29597

For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H, (M)

Description: SignalSilence® Tyk2 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Tyk2 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

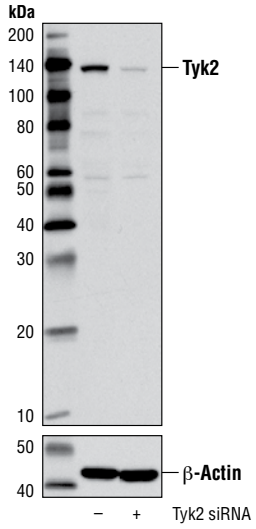
Background: Tyk2 is a member of the Jak family of protein tyrosine kinases. It associates with and is activated by receptors for many cytokines including IL-13, the IL-6 family, IL-10, and IFN-α and β (1-3). Following ligand binding, Tyk2 is activated by phosphorylation of Tyr1054 and/or Tyr1055 (4). Tyk2 is required for the tyrosine phosphorylation of Stat3 in the IFN-β signaling cascade (5).

The role of Tyk2 in immune regulation and pathological signaificance has been extensively studied (reviewed in 6). Tyk2 knockout mice display increased sensitivity to infection and defective tumor surveillance, but only a partial effect on Type I IFN signaling (7,8). In contrast, a human patient diagnosed with hyper-IgE syndrome having increased susceptibility to various microorganisms was found to have a homozygous mutation of Tyk2 (9). These studies suggest a more critical role of Tyk2 in humans with regards to Type I IFN signaling as well as other cytokines including IL-23, IL-6, and IL-10.

Directions for Use: CST recommends transfection with 100 nM SignalSilence® Tyk2 siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow the protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.



Western blot analysis of extracts from MCF7 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), or SignalSilence® Tyk2 siRNA I (+), using Tyk2 (D4I5T) Rabbit mAb #14193 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The Tyk2 (D4I5T) Rabbit mAb confirms silencing of Tyk2 expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Storage: Tyk2 siRNA I is supplied in RNAse-free water. *Aliquot and store at -20°C.*

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

Background References:

(1) Velazquez, L. et al. (1995) *J. Biol. Chem.* 270, 3327-34.

(2) Stahl, N. et al. (1994) *Science* 263, 92-5.

(3) Leonard, W.J. (1998) *Annu. Rev. Immunol.* 16, 293-322.

(4) Grauzzi, M.C. et al. (1996) *J. Biol. Chem.* 271, 20494-20500.

(5) Rani, M.R. et al. (1999) *J. Biol. Chem.* 274, 32507-11.

(6) Strobl, B. et al. (2011) *Front Biosci (Landmark Ed)* 16, 3214-32.

(7) Karaghiosoff, M. et al. (2000) *Immunity* 13, 549-60.

(8) Shimoda, K. et al. (2000) *Immunity* 13, 561-71.

(9) Minegishi, Y. et al. (2006) *Immunity* 25, 745-55.

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Cell Signaling TECHNOLOGY®

Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.