Store at -20°C

#9133

Stat 1/2/3/5 Control Cell Extracts

☑ Controls for 10 Western mini-blots

Cell Signaling TECHNOLOGY®

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

Entrez-Gene ID #6774
UniProt ID #P40763

Product Includes	Product #	Quantity
Stat1/2/3/5 Control Cell Extracts (HeLa untreated)	15540	100 ul
Stat1/2/3/5 Control Cell Extracts (HeLa +IFN-alpha)	59434	100 ul

Storage: *Supplied in SDS Sample Buffer:* 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue or phenol red. *Store at –20°C, or at –80°C for long-term storage.*

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

Description: *Stat1/2/3/5 Control Cell Extracts (HeLa untreated):* Total cell extracts from serum-starved HeLa cells serve as a negative control. Supplied in SDS Sample Buffer.

Stat1/2/3/5 Control Cell Extracts (HeLa +IFN-alpha): Total cell extracts from serum-starved HeLa cells treated with 100 ng/ml interferon-alpha for 5 minutes serve as a positive control. Supplied in SDS Sample Buffer..

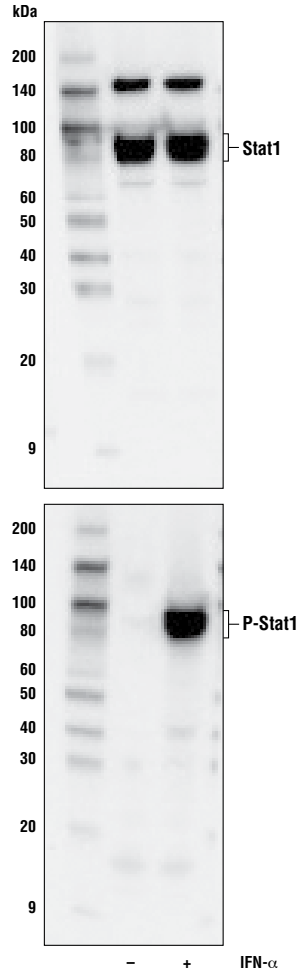
Background: Jaks (Janus Kinases) and Stats (Signal Transducers and Activators of Transcription) are utilized by receptors for a wide variety of ligands including cytokines, hormones, growth factors and neurotransmitters. Jaks, activated via autophosphorylation following ligand-induced receptor aggregation, phosphorylate tyrosine residues on associated receptors, Stat molecules and other downstream signaling proteins (1,2). The phosphorylation of Stat proteins at conserved tyrosine residues activates SH2-mediated dimerization followed rapidly by nuclear translocation. Stat dimers bind to IRE (interferon response element) and GAS (gamma interferon-activated sequence) DNA elements, resulting in the transcriptional regulation of downstream genes (1,2). The remarkable range and specificity of responses regulated by the Stats is determined in part by the tissue-specific expression of different cytokine receptors, Jaks and Stats (2,3), and by the combinatorial coupling of various Stat members to different receptors. Serine phosphorylation in the carboxy-terminal transcriptional activation domain has been shown to regulate the function of Stat1, -2, -3, -4 and -5 (1). Phosphorylation of Stat3 at Ser727 via MAPK or mTOR pathways is required for optimal transcriptional activation in response to growth factors and cytokines including IFN-gamma and CNTF (4,5). Jak/Stat pathways also play important roles in oncogenesis, tumor progression, angiogenesis, cell motility, immune responses and stem cell differentiation (6-11).

Directions for Use: Boil for 3 minutes prior to use. Load 10 µl of phosphorylated and nonphosphorylated Stat1/2/3/5 Control Cell Extracts per lane.

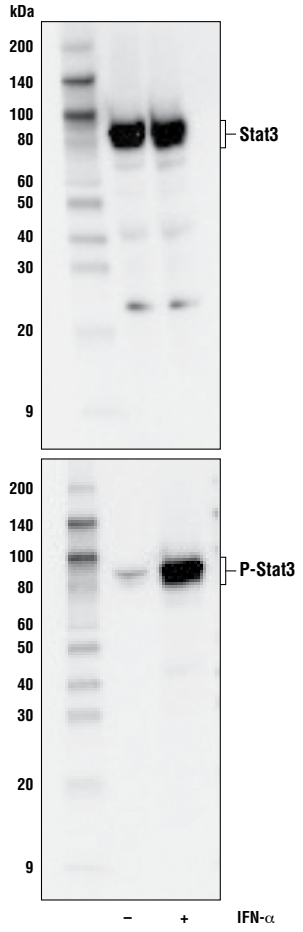
Background References:

(1) Darnell Jr., J. et al. (1994) Science 264, 1415-1421.
(2) Leonard, W.J. and O'Shea, J.J. (1998) Annu. Rev Immunol. 16, 293-322.
(3) Caldenhoven, E. et al. (1996) J. Biol. Chem. 271, 13221-13227.
(4) Wen, Z. et al. (1995) Cell 82, 241-250.
(5) Yokogami, K. et al. (2000) Curr. Biol. 10, 47-50.
(6) Lim, C.P. and Cao, X. (1999) J. Biol. Chem. 274, 31055-31061.
(7) Bromberg, J. F. et al. (1999) Cell 98, 295-303.
(8) Su, L. et al. (1999) J. Biol. Chem. 274, 31770-31774.
(9) Dentelli, P. et al. (1999) J. Immunol. 163, 2151-2159.
(10) Cattaneo, E. et al. (1999) Trends Neurosci. 22, 365-369.
(11) Frank, D.A. (1999) Mol. Med. 5, 432-456.

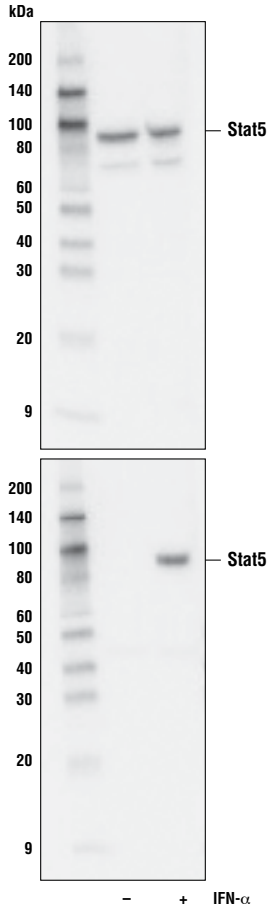
Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **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.



Western blot analysis of extracts from HeLa cells, untreated (-) or treated with IFN-alpha (100 ng/ml) for 5 min, using Stat1 (D1K9Y) Rabbit mAb #14994 (upper) and P-Stat1 (Tyr701) (58D6) Rabbit mAb #9167 (lower).



Western blot analysis of extracts from HeLa cells, untreated (-) or treated with IFN-alpha (100 ng/ml) for 5 min, using Stat3 (D3Z2G) Rabbit mAb #12640 (upper) and P-Stat3 (Tyr705) (D3A7) XP Rabbit mAb #9145 (lower).



Western blot analysis of extracts from HeLa cells, untreated (-) or treated with IFN-alpha (100 ng/ml) for 5 min, using Stat5 (D2O6Y) Rabbit mAb #94205 (upper) and P-Stat5 (Tyr694) (D47E7) Rabbit mAb #4322 (lower).