

# Stat Phospho-Regulation Antibody Sampler Kit

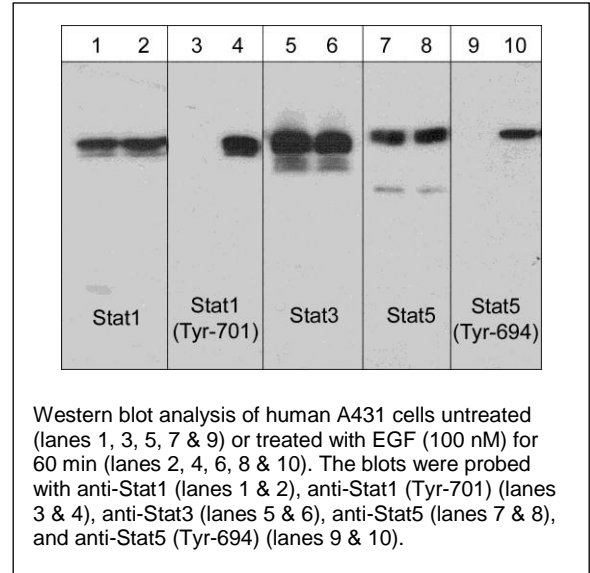
Catalog # **SK6030**

## Synopsis:

The Stat phospho-regulation antibody sampler kit can be used to examine the level of phosphorylation of Stat1 and Stat5, as well as the total expression level of Stat1, Stat3, and Stat5.

## Background:

The stat proteins (Stat1-6) function both as cytoplasmic signal transducers and as activators of transcription in response to cytokines and growth factor receptors. Stat subunits become phosphorylated at tyrosine and serine residues leading to translocation into the nucleus and formation of active Stat transcription complexes. Stat1 is expressed as two variants of 84 and 91 kDa that contain SH2 and SH3 domains. These variants become phosphorylated at Tyr-701 in response to cytokines and assemble into the interferon-stimulated gene factor 3 complexes. Stat3 is expressed as two variants, Stat3 $\alpha$  (92 kDa) and Stat3 $\beta$  (79 kDa) that differ in expression and activity depending on cell type, activation pathway, and cell maturation stage. Both are activated by phosphorylation at Tyr-705, which induces dimerization, nuclear translocation and DNA binding. Stat3 $\alpha$  transcriptional activation may be regulated by phosphorylation at Ser-727 through the MAPK pathway, while Stat3 $\beta$  lacks this serine site. Stat5 is activated in response to a wide variety of ligands including IL-2, GM-CSF, growth hormone and prolactin. Phosphorylation at Tyr-694 is required for Stat5A activation and this Stat is constitutively active in some leukemic cell types. Both Stat5A (Tyr-694) and Stat5B (Tyr-699) are independently regulated and activated in various cell types. For instance, both isoforms are activated in response to IFN- $\alpha$  in B cells, but only Stat5A is phosphorylated in response to IFN- $\alpha$  in HeLa cells.



## References:

- Fu, X.Y. et al. (1993) Cell 74:1135.
- Gouilleux, F. et al. (1994) EMBO J. 13:4361.
- Wakao, H. et al. (1994) EMBO J. 13:2182.
- Wen, Z. et al. (1995) Cell 82:241.
- Meinke, A. et al. (1996) Mol. Cell. Biol. 16:6937-6944.
- Darnell, J.E. (1997) Science 277:1630.
- Biethahn, S. et al. (1999) Exp. Hematol. 27:885.

## Kit Components:

Catalog#	Description	Host	Size	Applications	Species Reactivity	MW (kDa)
SM1351	Stat1 (Tyr-701), phospho-specific	Mouse mAb	50 $\mu$ l	WB, E	H, R, M	84/91
SM2491	Stat1	Mouse mAb	50 $\mu$ l	WB, E, IP	H, R, M	84/91
SM2631	Stat3 (N-terminal region)	Mouse mAb	50 $\mu$ l	WB, E, IP	H, R, M	79/92
SM1481	Stat5 (Tyr-694), phospho-specific	Mouse mAb	50 $\mu$ l	WB, E	H, R, M	92
SM2511	Stat5 (C-terminal region)	Mouse mAb	50 $\mu$ l	WB, E, ICC	H, R, M	92

Applications: WB = western blot, IP = immunoprecipitation, ICC = immunocytochemistry, IHC = immunohistochemistry, E = ELISA

Species: H = Human, R = Rat, M = Mouse, B = Bovine, C = Chicken

## Buffers and Storage:

Mouse monoclonal, affinity-purified antibodies are each supplied in 50 $\mu$ l phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at  $-20^{\circ}$ C. Do not aliquot. Stable for 1 year.

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