Revision 4

Store at -20C

#8343

Jak/Stat Pathway Inhibitors Antibody Sampler Kit

1 Kit (6 x 20 microliters)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
SOCS1 (E3Q4M) Rabbit mAb	55313	20 µl	23 kDa	Rabbit IgG
SOCS2 Antibody	2779	20 µl	22 kDa	Rabbit
SOCS3 (D6E1T) Rabbit mAb	52113	20 µl	28 kDa	Rabbit IgG
PIAS1 (D33A7) XP® Rabbit mAb	3550	20 µl	76 kDa	Rabbit IgG
PIAS3 (D5F9) XP® Rabbit mAb	9042	20 µl	65-75 kDa	Rabbit IgG
PIAS4 (D2F12) Rabbit mAb	4392	20 µl	75 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Jak/Stat Pathway Inhibitors Antibody Sampler Kit provides an economical means to examine several inhibitors of Jak/Stat signaling, including PIAS1, PIAS3, PIAS4, SOCS1, SOCS2, and SOCS3. The kit contains enough primary antibody to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Jak (Janus Kinase) and Stat (signal transducer and activator of transcription) proteins are utilized by receptors for a wide varity of ligands including cytokines, hormones, growth factors, and neurotransmitters (1). Jaks and Stats play important roles in oncogenesis, tumor progression, angiogenesis, cell motility, immune responses, and stem cell differentiation (2-5). Therefore, regulation of Jak/Stat signaling is crucial to prevent aberrant signaling which can lead to disease progression. Two methods for regulating Jak/Stat signaling involve SOCS and PIAS proteins (6,7).The SOCS (suppressor or cytokine signaling) family members are negative regulators of cytokine signal transduction that inhibit the Jak/Stat pathway and consist of 8 known members, including the originally identified protein CIS1 (cytokine-inducible SH2-containing protein) and SOCS1-SOCS7. Each SOCS family member contains a central SH2 domain and a conserved carboxy-terminal motif designated as the SOCS box. These proteins are important regulators of cytokine signaling, proliferation, differentiation, and immune responses (8-10). SOCS proteins are involved in regulating over 30 cytokines, including interleukins, growth hormone (GH), interferons, leptin, and leukemia inhibitory factor (7). SOCS1, also known as JAB (Janus Kinase binding protein) and SSI-1 (Stat-induced Stat inhibitor-1), shares the most homology with SOCS3 and both are highly induced by cytokines (7,11). Both SOCS1 and SOCS3 directly inhibit Jak activity; SOCS1 inhibits Jak through an interaction involving a phospohotyrosine located in the kinase activation loop; SOCS3 inhibits Jak via its SH2 domain (12,13). In addition to inhibiting Jak/Stat signaling, the SOCS box of SOCS1 and SOCS3 can trigger ubiquitin-mediated degradation of proteins within and outside the Jak/Stat pathway (14,15). SOCS2 is also incduced upon cytokine stimulation and the activity of SOCS2 has been predominately linked to GH and insulin-like growth fac

Background References

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