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## Jak/Stat Pathway Inhibitors Antibody Sampler Kit

1 Kit (6 x 20 microliters)

**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 variety 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 phosphotyrosine 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 induced 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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