Recombinant Human SOCS-3 His-tag

Catalog Number: 11817-S3

DESCRIPTION

Source	*E. coli*-derived human SOCS-3 protein Val2-Leu255, with a C-terminal 6-His tag Accession # O14543.1
N-terminal Sequence Analysis	Val 2
Predicted Molecular Mass	25.5 kDa

SPECIFICATIONS

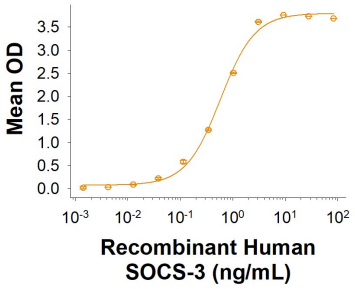
SDS-PAGE	26-31 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Human SOCS-3 His-tag binds to Human/Mouse SOCS-3 Antibody (Catalog # MAB5696) with an ED_{50} of 0.150-1.50 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in Tris, NaCl, TCEP and Glycerol with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 6 months from date of receipt, -20 to -70 °C as supplied. • 3 months, -20 to -70 °C under sterile conditions after opening.

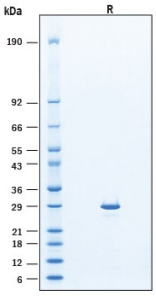
DATA

Binding Activity



Recombinant Human SOCS-3 His-tag Protein Binding Activity. Measured by its binding ability in a functional ELISA. Recombinant Human SOCS-3 His-tag Protein (Catalog # 11817-S3) binds to Human/Mouse SOCS-3 Antibody (Catalog # MAB5696) with an ED_{50} of 0.150-1.50 ng/mL.

SDS-Page



Recombinant Human SOCS-3 His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human SOCS-3 His-tag Protein (Catalog # 11817-S3) was resolved with SDS-PAGE under reducing (R) condition and visualized by Coomassie® Blue staining, showing bands at 26-31 kDa.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

Recombinant Human SOCS-3 His-tag

Catalog Number: 11817-S3

BACKGROUND

Suppressor of Cytokine Signaling 3 (SOCS-3) is a key intracellular negative-feedback regulator of cytokine signaling, functioning primarily within the Janus kinase/signal transducer and activator of transcription (JAK/STAT) pathway. SOCS-3 is rapidly induced following cytokine stimulation and acts to constrain the intensity and duration of signaling downstream of multiple inflammatory mediators, particularly those utilizing gp130-associated receptors, including interleukin-6 (IL-6) family cytokines (1, 2). Structurally, SOCS-3 contains an SH2 domain, a C-terminal SOCS box, and an N-terminal kinase inhibitory region (KIR). Mechanistic studies have demonstrated that SOCS-3 directly binds to JAK1, JAK2, and TYK2 while simultaneously engaging specific cytokine receptor phosphotyrosine motifs, conferring receptor-restricted inhibition of JAK catalytic activity. This dual binding explains the selectivity of SOCS-3 for a subset of cytokine receptors, distinguishing it functionally from SOCS-1 (1, 3). SOCS-3 plays a critical role in immune homeostasis and inflammation, where it limits STAT-3-dependent transcriptional programs and prevents pathological cytokine amplification. Genetic and conditional deletion studies have shown that SOCS-3 is essential for regulating inflammatory responses in myeloid and epithelial compartments, as well as for maintaining balanced signaling downstream of IL-6, G-CSF, leptin, and IL-12 receptors (2, 4). In cancer and chronic inflammatory disease, SOCS-3 exhibits context-dependent functions. Reduced SOCS-3 expression has been associated with sustained STAT3 activation, tumor-promoting inflammation, and oncogenic signaling, while elevated SOCS-3 levels can contribute to immune evasion by dampening anti-tumor cytokine responses. Consequently, SOCS-3 is increasingly recognized both as a disease biomarker and as a potential target for therapeutic modulation in cancer and inflammatory disorders (5, 6). Recombinant human SOCS-3 is therefore a valuable research tool for studying cytokine signal attenuation, JAK/STAT pathway specificity, gp130-mediated signaling, inflammation, and tumor-associated immune regulation, as well as for evaluating SOCS-based therapeutic strategies.

References:

1. Babon, J. J. *et al.* (2012) Immunity **36**:239.
2. Mahony, R. *et al.* (2016) Cell. Mol. Life Sci. **73**:3323.
3. White, C. A. *et al.* (2013) JAK-STAT **2**:e25045.
4. Carow, B. & Rottenberg, M. E. (2014) Front. Immunol. **5**:58.
5. Zhang, Y. *et al.* (2025) Biol. Proced. Online **27**:36.
6. Morelli, M. *et al.* (2024) Front. Immunol. **15**:1393799.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475