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PRODUCT INFORMATION



JAK1 JH2 Domain (human, recombinant; aa 561-852)

Item No. 42271

Overview and Properties

Synonyms: Janus-Associated Kinase 1, JTK3, Tyrosine-Protein Kinase JAK1
Source: Active recombinant human N-terminal His-tagged JAK1 JH2 domain expressed in insect cells (sf9)
Amino Acids: 561-852
Uniprot No.: P23458
Molecular Weight: 35 kDa
Storage: -80°C (as supplied)
Stability: ≥6 months
Purity: ≥90% estimated by SDS-PAGE
Supplied in: 40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, 0.04% polysorbate 20, and 20% glycerol

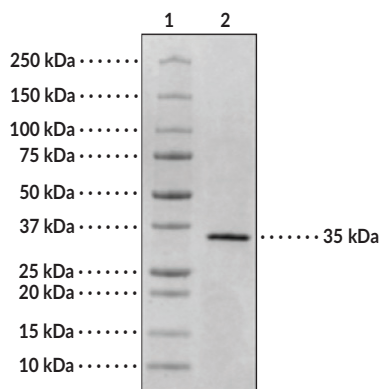
Protein

Concentration: *batch specific* mg/ml

Activity: *batch specific* U/ml

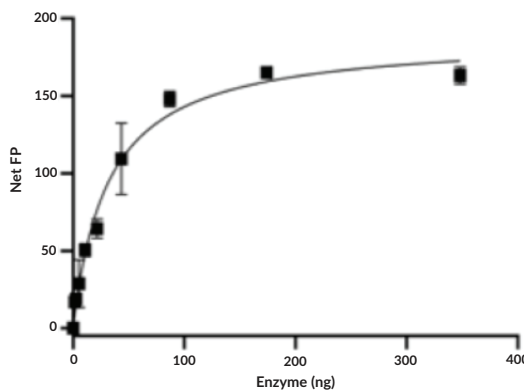
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: JAK1 JH2 Domain

SDS-PAGE Analysis of JAK1 JH2 Domain. This protein has a calculated molecular weight of 35 kDa.



JAK1 JH2 Domain Activity

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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PRODUCT INFORMATION



Description

JAK1 is a non-receptor tyrosine kinase that has roles in immune signaling.¹⁻³ It is composed of N-terminal FERM and SH2 domains, a regulatory pseudokinase domain (JH2), and a C-terminal kinase domain.² It is widely expressed and associates with class I and class II cytokine receptors at the plasma membrane.³ Activation of these cytokine receptors activates JAK1 and induces its dimerization and kinase activity, leading to JAK1 phosphorylation of STAT transcription factors and transcription of immune-related target genes.^{1,4} JAK1 signaling is inhibited by the suppressor of cytokine signaling (SOCS) proteins SOCS1, SOCS3, and SOCS5.^{5,6} Knockout of *Jak1* in mice results in perinatal mortality and deficits in lymphopoiesis.⁷ JAK1 fusion proteins and activating mutations in *JAK1* are associated with acute myeloid leukemia (AML) and T cell precursor acute lymphoblastic leukemia (ALL).⁸ JAK1 containing a valine-to-phenylalanine substitution (JAK1^{V617F}) in the JH2 domain is associated with disease incidence in patients with polycythemia vera, a thrombotic erythrocyte hyperproliferative disorder. Cayman's JAK1 JH2 domain (human, recombinant; aa 561-852) protein can be used for binding assays and has a calculated molecular weight of 35 kDa.

References

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2. Leonard, W.J. and O'Shea, J.J. Jaks and STATs: Biological implications. *Annu. Rev. Immunol.* **16**, 293-322 (1998).
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