PRODUCT INFORMATION

JAK1 (human, recombinant)

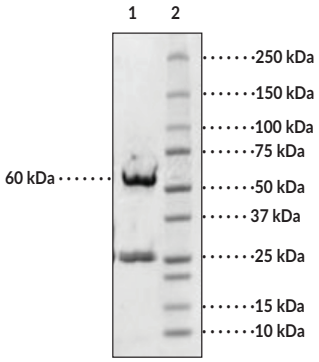
Item No. 33741

Overview and Properties

Synonyms:	Janus-Associated Kinase 1, JTK3, Tyrosine-Protein Kinase JAK1
Source:	Active recombinant human N-terminal GST-tagged JAK1 expressed in insect cells
Amino Acids:	866-1,154
Uniprot No.:	P23458
Molecular Weight:	60 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	***batch specific*** (≥63% estimated by SDS-PAGE)
Supplied in:	25 mM Tris-HCl, pH 8.0, with 427 mM NaCl, 1.3 mM KCl, 0.02% Tween 20, 3 mM DTT, 14 mM glutathione, and 50% glycerol
Protein Concentration:	***batch specific*** mg/ml
Bioactivity:	See figures for details

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

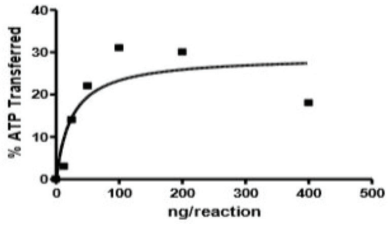
Images



Lane 1: JAK1 (4 µg)
Lane 2: MW Markers

SDS-PAGE Analysis of JAK1.

Representative gel image shown; actual purity may vary between each batch.



Kinase activity confirmed by ADP detection assay using 3 mM DTT, 20 µM ATP, and 0.1 mg/ml IRS-1-derived peptide substrate.

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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, 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.[2,4] JAK1 signaling is inhibited by the suppressor of cytokine signaling (SOCS) proteins SOCS-1, SOCS-3, and SOCS-5.[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] Cayman's JAK1 (human, recombinant) protein can be used for enzyme activity assays.

References

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4. Imada, K. and Leonard, W.J. The Jak-STAT pathway. *Mol. Immunol.* **37(1-2)**, 1-11 (2000).
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