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Produktinformation



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- Mindermengenzuschlag
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PRODUCT INFORMATION



JAK3 JH2 Domain (human, recombinant; aa 511-790)

Item No. 42277

Overview and Properties

Synonyms: Janus-Associated Kinase-3, Leukocyte Janus Kinase, L-JAK, Tyrosine-protein Kinase JAK3
Source: Recombinant human C-terminal His-tagged JAK3 JH2 domain expressed in insect cells (Sf9)
Amino Acids: 511-790
Uniprot No.: P52333
Molecular Weight: 32 kDa
Storage: -80°C (as supplied); avoid freeze/thaw
Stability: ≥6 months
Purity: ≥70% estimated by SDS-PAGE
Supplied in: 40 mM Tris-HCl, pH 8.0, 240 mM sodium chloride, 2.2 mM potassium chloride, 0.04% polysorbate 20, 200 mM imidazole, 20% glycerol, and 3 mM DTT

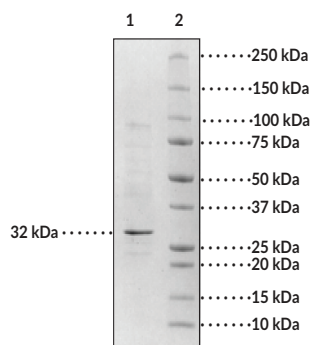
Protein

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: JAK3 JH2 Domain
Lane 2: MW Markers

SDS-PAGE Analysis of JAK3 JH2 Domain. This protein has a calculated molecular weight of 32 kDa.

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

JAK3 is a non-receptor tyrosine kinase that has roles in cytokine signaling and immune cell function.^{1,2} It is composed of N-terminal FERM and SH2 domains, an autoinhibitory JH2 pseudokinase domain, and a C-terminal kinase domain.^{2,3} JAK3 is constitutively expressed in natural killer (NK) cells and thymocytes and expressed upon cell activation in T cells, B cells, and monocytes.⁴ Following cytokine binding to the IL-2 receptor (IL-2R), IL-4R, IL-7R, IL-9R, IL-15R, or IL-21R, JAK3 binds to the γ_c subunit of the receptor and induces heterodimerization of the receptor subunits and activation of STAT transcription factors.^{1,2,4,5} Through activation of these receptors, JAK3-mediated signaling is involved in T cell proliferation, differentiation, and survival, B cell differentiation and function, and macrophage activation, among other activities.^{1,2} Loss-of-function mutations in *JAK3* are associated with autosomal recessive severe combined immunodeficiency disease (SCID), while gain-of-function mutations are associated with immune dysregulation and blood cancers, including myeloproliferative neoplasms, T cell lymphomas and leukemias, NK lymphoma-leukemia, and acute lymphoblastic leukemia.^{2,6,7} Cayman's JAK3 JH2 Domain (human, recombinant; aa 511-790) protein has a calculated molecular weight of 32 kDa.

References

1. Benczik, M. and Gaffen, S.L. The interleukin (IL)-2 family cytokines: Survival and proliferation signaling pathways in T lymphocytes. *Immunol. Invest.* **33(2)**, 109-142 (2004).
2. Liongue, C., Ratnayake, T., Basheer, F., *et al.* Janus kinase 3 (JAK3): A critical conserved node in immunity disrupted in immune cell cancer and immunodeficiency. *Int. J. Mol. Sci.* **25(5)**, 2977 (2024).
3. Leonard, W.J. and O'Shea, J.J. Jaks and STATs: Biological implications. *Annu. Rev. Immunol.* **16**, 293-322 (1998).
4. Notarangelo, L.D. and Candotti, F. JAK3-deficient severe combined immunodeficiency. *Radiol. Clin. North Am.* **20(1)**, 97-111 (2000).
5. Shanarinen, P. and Silvennoinen, O. The pseudokinase domain is required for suppression of basal activity of Jak2 and Jak3 tyrosine kinases and for cytokine-inducible activation of signal. *J. Biol. Chem.* **277(49)**, 47954-47963 (2002).
6. Ott, N., Faletti, L., Heeg, M., *et al.* JAKs and STATs from a clinical perspective: Loss-of-function mutations, gain-of-function mutations, and their multidimensional consequences. *J. Clin. Immunol.* **43(6)**, 1326-1359 (2023).
7. Philips, R.L., Wang, Y., Cheon, H., *et al.* The JAK-STAT pathway at 30: Much learned, much more to do. *Cell* **185(21)**, 3857-3876 (2022).

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