

Recombinant Human JAK2 (JH1, JH2 domain) Protein, His/GST-tagged

Cat. No. JAK2-22H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant human JAK2 (Janus Kinase 2) encompassing amino acids 532-1132 (end), containing both the tyrosine kinase domain (JH1) and the pseudo-kinase domain (JH2). This construct contains an N-terminal His-tag (6xHis) followed by a GST-Tag. The protein was affinity purified.
Species	Human
Source	Insect Cells
ProteinLength	532-1132
Description	This gene encodes a non-receptor tyrosine kinase that plays a central role in cytokine and growth factor signalling. The primary isoform of this protein has an N-terminal FERM domain that is required for erythropoietin receptor association, an SH2 domain that binds STAT transcription factors, a pseudokinase domain and a C-terminal tyrosine kinase domain. Cytokine binding induces autophosphorylation and activation of this kinase. This kinase then recruits and phosphorylates signal transducer and activator of transcription (STAT) proteins. Growth factors like TGF-beta 1 also induce phosphorylation and activation of this kinase and translocation of downstream STAT proteins to the nucleus where they influence gene transcription. Mutations in this gene are associated with numerous inflammatory diseases and malignancies. This gene is a downstream target of the pleiotropic cytokine IL6 that is produced by B cells, T cells, dendritic cells and macrophages to produce an immune response or

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inflammation. Disregulation of the IL6/JAK2/STAT3 signalling pathways produces increased cellular proliferation and myeloproliferative neoplasms of hematopoietic stem cells. A nonsynonymous mutation in the pseudokinase domain of this gene disrupts the domains inhibitory effect and results in constitutive tyrosine phosphorylation activity and hypersensitivity to cytokine signalling. This gene and the IL6/JAK2/STAT3 signalling pathway is a therapeutic target for the treatment of excessive inflammatory responses to viral infections. Alternative splicing results in multiple transcript variants encoding distinct isoforms.

Form	Aqueous buffer solution
Molecular Mass	98 kDa
Purity	80%
Applications	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.
Usage	Assay was done in a kinase buffer containing 1 mM DTT using Poly-(Glu4:Tyr) substrate (0.2 mg/mL) and 20 µM ATP. Reaction was done at 30 centigrade for 45 min. Amount of ATP transferred was calculated using 50 µL of Kinase-Glo reagent per well.
Storage	At least 6 months at –80 centigrade.
Storage Buffer	45 mM Tris-HCl, pH 8.0, 300 mM NaCl, 2.4 mM KCl, 0.04% Tween-20, 3 mM DTT, 10% glycerol and 250 mM Imidazole

GENE INFORMATION

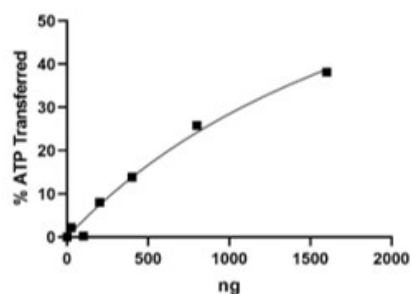
Gene Name JAK2 Janus kinase 2 [Homo sapiens (human)]

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Official Symbol	JAK2
Synonyms	JAK2; Janus kinase 2; JTK10; tyrosine-protein kinase JAK2; JAK-2; Janus kinase 2 (a protein tyrosine kinase); EC 2.7.10.2; jak; jh1
Gene ID	3717
mRNA Refseq	NM_004972
Protein Refseq	NP_004963
MIM	147796
UniProt ID	O60674

Activity
JAK2 (JH1, JH2 domain) Activity


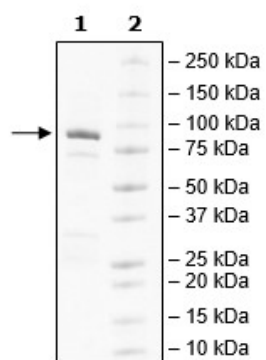
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SDS-PAGE

4-20% SDS-Page Coomassie Staining



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