

Active Recombinant Human Janus kinase 2 Protein, His Tagged

Cat. No. JAK2-27628TH **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Active Recombinant Human Janus kinase 2 Protein (808-1132 aa) with His tag was expressed in Baculovirus-Insect Cells.

Species

Human

Source

Insect Cells

ProteinLength

808-1132 aa

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 inflammation. Disregulation of the IL6/JAK2/STAT3 signalling pathways produces increased cellular proliferation and myeloproliferative neoplasms of hematopoietic

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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.

Molecular Mass 38 kDa

AA Sequence

MHHHHHHHHLFTPDIYELLTENDMLPNMRIGALGFSGAFEDRDPTQFEERHLKFLQQ
 LGKGNFSGVEMCRYDPLQDNTGEVVAVKKLQHSTEEHLRDFEREIEILKSLQHDNIV
 KYKGVCYSAGRRNLKLIMEYLPYGSLRDYLQKHKERIDHIKLLQYTSQICKGMEYLG
 KRYIHRDLATRNLVENENRVKIGDFGLTKVLPQDKEYYKVKEPGESPIFWYAPESLT
 ESKFSVASDVWSFGVVLYELFTYIEKSKSPPAEFMRMIGNDKQGQMIVFHLLIELLKNN
 GRLPRPDGCPDEIYMIMTECWNNNVNQRPSFRDLALRVDQIRDNMAG

Bio-Activity

The specific activity of JAK2 was determined to be 234 nmol/min/mg as per activity assay protocol. JAK2 can digest IGF1Rtide synthetic peptide substrate (KKKSPGEYVNIEFG) while consuming ATP to produce ADP. The JAK2 assay is performed using the ADP-Glo™ Kinase Assay kit which quantifies the amount of ADP produced by the JAK2 reaction. The ADP-Glo™ Reagent is added to terminate the kinase reaction and to deplete the remaining ATP, and then the Kinase Detection Reagent is added to convert ADP to ATP and to measure the newly synthesized ATP using luciferase/luciferin reaction.

Purity > 90 % by SDS-PAGE

Storage Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

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Storage Buffer	Sterile 40mM Tris, pH8.0, 110mM NaCl, 2.2mM KCl, 3mM DTT, 20 % Glycerol, 0.04 % Tween-20
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Concentration	0.27 mg/mL by BCA
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GENE INFORMATION

Gene Name	JAK2 Janus kinase 2 [Homo sapiens (human)]
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Official Symbol	JAK2
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Synonyms	JAK2; Janus kinase 2; tyrosine-protein kinase JAK2; JTK10; JAK-2; Janus kinase 2 (a protein tyrosine kinase); THCYT3
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Gene ID	3717
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mRNA Refseq	NM_004972
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Protein Refseq	NP_004963
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MIM	147796
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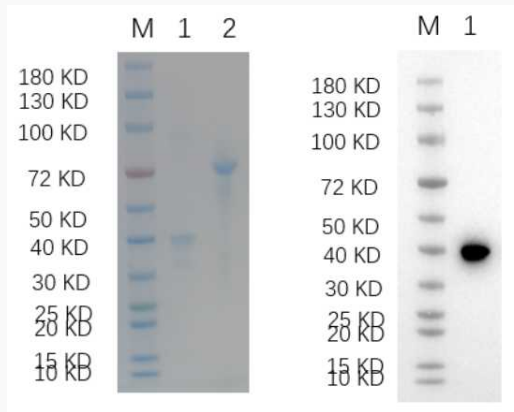
UniProt ID	O60674
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**Reducing 12 % SDS-
PAGE (CBB stained)
and WB (Anti-His
Mouse Monoclonal
Antibody) analysis
profiles of purified
JAK2.**



1. JAK2
2. BSA

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