Recombinant Human JAK2 (V617F, W659A, W777A, F794H) Mutation Protein, His-tagged

Cat. No. JAK2-34H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human JAK2 (Janus Kinase 2) encompassing amino acids 536-812, containing the pseudo-kinase domain JH2 with mutations V617F, W659A, W777A and F794H. The construct contains a C-terminal His tag (6xHis). The protein was affinity purified.
Species	Human
Source	Insect Cells
ProteinLength	536-812
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	33 kDa
Purity	≥ 90%
Applications	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.
Usage	Assay was done according to the JAK2-JH2 Pseudokinase Domain (W659A, W777A, F794H) Inhibitor Screening Assay Kit with JAK2 titrated from 400 nM to 0.8 nM.
Storage	At least 6 months at –80 centigrade.
Storage Buffer	20 mM Tris, pH 8.5, 0.5 mM TCEP and 10% glycerol

GENE INFORMATION

Gene Name	JAK2 Janus kinase 2 [Homo sapiens (human)]
Official Symbol	JAK2
Synonyms	JAK2; Janus kinase 2; JTK10; tyrosine-protein kinase JAK2; JAK-2; Janus kinase 2

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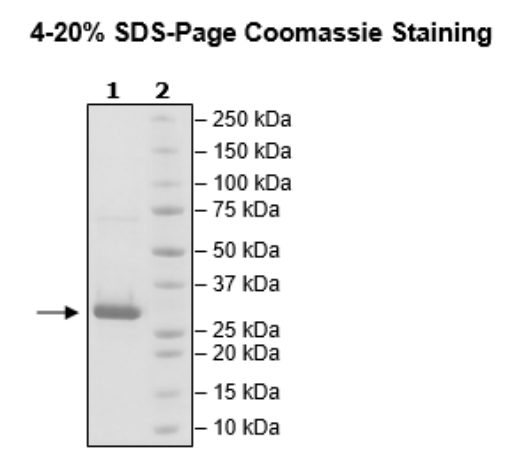
	(a protein tyrosine kinase); EC 2.7.10.2; jak; jh1
Gene ID	3717
mRNA Refseq	NM_004972
Protein Refseq	NP_004963
MIM	147796
UniProt ID	O60674
SDS-PAGE	

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