

Recombinant Human JAK2 (V617F) (JH1, JH2 Domain) Protein, GST/Avi-tagged

Cat. No. JAK2-31H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human JAK2 (Janus Kinase 2) encompassing amino acids 513-1132 (end) and containing the catalytic domain (JH1) and the pseudo kinase domain (JH2). This protein contains mutation of interest V617F. The construct also contains an N-terminal GST-tag and a C-terminal Avi-Tag™. The protein was affinity purified.
Species	Human
Source	HEK293
ProteinLength	513-1132
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	99 kDa
Purity	28%
Applications	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.
Usage	Assay was performed according to the TYR Phosphorylation Assay Kit on a Neutravidin Coated plate with phosphorylated JAK2 titrated from 500 ng/rxn to 0 ng/rxn.
Storage	At least 6 months at –80 centigrade.
Storage Buffer	40 mM Tris-HCl, pH 8.0, 110 mM NaCl, 2.2 mM KCl, 0.04% Tween20, 20 mM GSH and 20% glycerol.

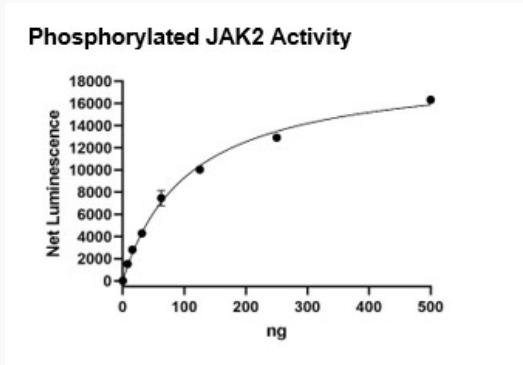
GENE INFORMATION

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

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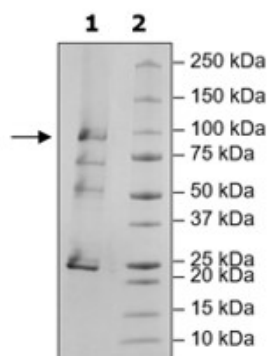
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Synonyms	JAK2; Janus kinase 2; JTK10; tyrosine-protein kinase JAK2; JAK-2; Janus kinase 2 (a protein tyrosine kinase); EC 2.7.10.2; jak; jh1																				
Gene ID	3717																				
mRNA Refseq	NM_004972																				
Protein Refseq	NP_004963																				
MIM	147796																				
UniProt ID	O60674																				
Activity	 Phosphorylated JAK2 Activity <table border="1"> <caption>Approximate data points from the Phosphorylated JAK2 Activity graph</caption> <thead> <tr> <th>Concentration (ng)</th> <th>Net Luminescence</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>10</td><td>1000</td></tr> <tr><td>20</td><td>2000</td></tr> <tr><td>30</td><td>3000</td></tr> <tr><td>40</td><td>4000</td></tr> <tr><td>50</td><td>5000</td></tr> <tr><td>100</td><td>10000</td></tr> <tr><td>250</td><td>13000</td></tr> <tr><td>500</td><td>16000</td></tr> </tbody> </table>	Concentration (ng)	Net Luminescence	0	0	10	1000	20	2000	30	3000	40	4000	50	5000	100	10000	250	13000	500	16000
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SDS-PAGE

4-20% SDS-Page Coomassie Staining



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