

Recombinant JAK2 (532-1132, V617F) protein

Catalog No: 81283, 81983

Expressed In: Baculovirus

Quantity: 20, 1000 µg

Concentration: 0.25 µg/µl

Source: Human

Buffer Contents: Recombinant JAK2 (532-1132, V617F) protein is supplied in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100 and 0.5 mM TCEP.

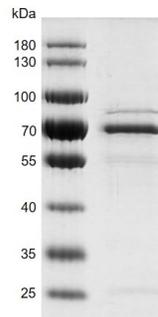
Background: JAK2 (Janus Kinase 2), also known as Tyrosine-Protein Kinase JAK2 or JTK10, is a non-receptor tyrosine kinase involved in various processes such as cell growth, development, differentiation or histone modifications. In the cytoplasm, JAK2 plays a pivotal role in signal transduction via its association with type I receptors such as growth hormone (GHR), prolactin (PRLR), leptin (LEPR), erythropoietin (EPOR), thrombopoietin (THPO); or type II receptors including IFN-alpha, IFN-beta, IFN-gamma and multiple interleukins. Following ligand-binding to cell surface receptors, JAK2 can phosphorylate specific tyrosine residues on the cytoplasmic tails of the receptor, creating docking sites for STATs proteins. Then it can subsequently phosphorylate the STATs proteins once they are recruited to the receptor. Phosphorylated STATs then form homodimer or heterodimers and translocate to the nucleus to activate gene transcription. JAK2 signalling is implicated in diverse biological processes such as cell cycle progression, apoptosis, mitotic recombination, genetic instability and alteration of heterochromatin. The mutation V617F is the most clinically relevant variant, and is seen in around half of myeloproliferative disorders. JAK2-V617F leads to constitutive activation of the kinase and thereby aberrant engagement of downstream signaling pathways. The variant is a known activating mutation, and activated JAK2 is sufficient to drive myeloproliferative disorders in mouse models.

Protein Details: Recombinant JAK2 (532-1132, V617F) protein that includes amino acids 532-1132 of human JAK2 protein (accession number NP_004963.1) was expressed in a baculovirus expression system with a point mutation Val617Phe, and contains an N-terminal FLAG tag. The molecular weight of the protein is 71.1 kDa.

Application Notes: Recombinant JAK2 (532-1132, V617F) protein is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.

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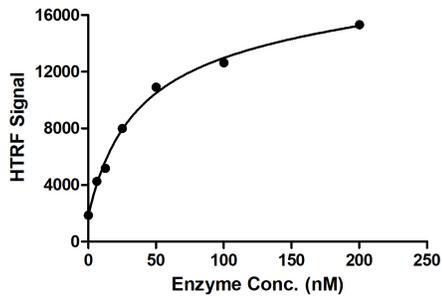


Recombinant JAK2 (532-1132, V617F) protein gel
10% SDS-PAGE gel with Coomassie blue staining

MW: 71.1kDa

Purity: >88%

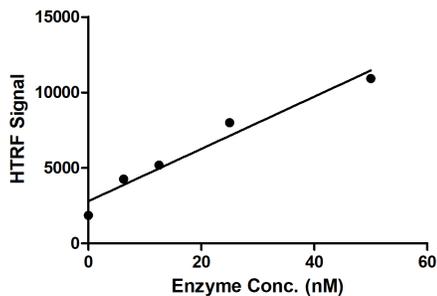
JAK2 (532-1132, V617F) Titration



HTRF assay for JAK2 (532-1132, V617F) activity

1 μ M TK substrate was incubated with different concentrations of JAK2 (532-1132, V617F) protein in 10 μ l reaction system containing 1 \times Enzymatic Buffer, 5 mM MgCl₂, 1 mM DTT and 100 μ M ATP for 1 hour. The detection reagents were added and incubated with the reactions for 1 hr. All the operations and reactions were performed at room temperature, and HTRF KinASE TK assay was used to detect the enzymatic activity.

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