

# Tyrosine-protein kinase JAK2 Recombinant Protein | JAK2 recombinant protein

Recombinant Human Tyrosine-protein kinase JAK2

|                               |                                                                 |
|-------------------------------|-----------------------------------------------------------------|
| CATALOG #<br><b>AAA114786</b> | HOST<br><b>E Coli or Yeast or Baculovirus or Mammalian Cell</b> |
|-------------------------------|-----------------------------------------------------------------|

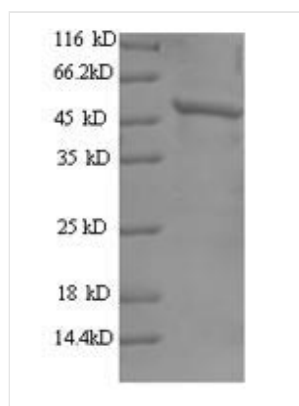
## PRODUCT SYNONYMS

Tyrosine-protein kinase JAK2; Recombinant Human Tyrosine-protein kinase JAK2; Janus kinase 2; JAK-2; JAK2 recombinant protein

## PRODUCT SPECIFICATIONS

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Host                    | E Coli or Yeast or Baculovirus or Mammalian Cell                                                                                                                                                                                                                                                                                                                                                                                                  |
| Purity/Purification     | Greater or equal to 85% purity as determined by SDS-PAGE.                                                                                                                                                                                                                                                                                                                                                                                         |
| Form/Format             | Lyophilized or liquid (Format to be determined during the manufacturing process)                                                                                                                                                                                                                                                                                                                                                                  |
| Sequence Positions      | 752-1132aa; Partial                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Sequence                | KPLSALDSQR KLQFYEDRHQ LPAPKWAELA NLINNCMDYE PDFRPSFRAI IRDLNSLFTP DYELLTENDM<br>LPNMRIGALG FSGAFEDRDP TQFEERHLKF LQQLGKGNFG SVEMCRYDPL QDNTGEVVAV KKLQHSTEEH<br>LRDFEREIEI LKSLQHDNIV KYGVCYSAG RRNLKLIMEY LPYGSLRDYL QKHKERIDHI KLLQYTSQIC<br>KGMEYLGTKR YIHRDLATRN ILVENENRVK IGDFGLTKVL PQDKEYYKVK EPGESPIFWY APESLTESKF<br>SVASDVWSFG VVLYELFTYI EKSKSPPAEF MRMIGNDKQG QMIVFHLIEL LKNNGRLPRP DGCPDEIYMI<br>MTECWNNNVN QRPSFRDLAL RVDQIRDNMA G |
| Preparation and Storage | Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.                                                                                                                                                                                                                                                                                                                                                            |

## IMAGES



SDS-PAGE

ADDITIONAL INFORMATION

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Product Information for JAK2 recombinant protein | <p>Non-receptor tyrosine kinase involved in various processes such as cell growth, development, differentiation or histone modifications. Mediates essential signaling events in both innate and adaptive immunity. In the cytoplasm, 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, phosphorylates specific tyrosine residues on the cytoplasmic tails of the receptor, creating docking sites for STATs proteins. Subsequently, phosphorylates 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. For example, cell stimulation with erythropoietin (EPO) during erythropoiesis leads to JAK2 autophosphorylation, activation, and its association with erythropoietin receptor (EPOR) that becomes phosphorylated in its cytoplasmic domain. Then, STAT5 (STAT5A or STAT5B) is recruited, phosphorylated and activated by JAK2. Once activated, dimerized STAT5 translocates into the nucleus and promotes the transcription of several essential genes involved in the modulation of erythropoiesis. In addition, JAK2 mediates angiotensin-2-induced ARHGEF1 phosphorylation. Plays a role in cell cycle by phosphorylating CDKN1B. Cooperates with TEC through reciprocal phosphorylation to mediate cytokine-driven activation of FOS transcription. In the nucleus, plays a key role in chromatin by specifically mediating phosphorylation of 'Tyr-41' of histone H3 (H3Y41ph), a specific tag that promotes exclusion of CBX5 (HP1 alpha) from chromatin.</p> |
| Product Categories/Family for JAK2 recombinant protein   | <p>Immunology</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## References

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NCBI AND UNIPROT INFORMATION

|                                  |                              |
|----------------------------------|------------------------------|
| NCBI GI #                        | 4826776                      |
| NCBI GeneID                      | 3717                         |
| NCBI Accession #                 | NP_004963.1                  |
| NCBI GenBank Nucleotide #        | NM_004972.3                  |
| UniProt Accession #              | O60674; O14636; O75297       |
| Molecular Weight                 | 48.6 kDa                     |
| NCBI Official Full Name          | tyrosine-protein kinase JAK2 |
| NCBI Official Synonym Full Names | Janus kinase 2               |
| NCBI Official Symbol             | JAK2                         |
| NCBI Official Synonym Symbols    | JTK10; THCYT3                |
| NCBI Protein Information         | tyrosine-protein kinase JAK2 |
| UniProt Protein Name             | Tyrosine-protein kinase JAK2 |
| UniProt Gene Name                | <b>JAK2</b>                  |
| UniProt Synonym Gene Names       | JAK-2                        |
| UniProt Entry Name               | JAK2_HUMAN                   |

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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