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# Product datasheet for PH320503

## JAK2 (NM_004972) Human Mass Spec Standard

### Product data:

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| **Product Type:** | Mass Spec Standards |
| **Description:** | JAK2 MS Standard C13 and N15-labeled recombinant protein (NP_004963) |
| **Species:** | Human |
| **Expression Host:** | HEK293 |
| **Expression cDNA Clone or AA Sequence:** | RC220503 |
| **Predicted MW:** | 130.5 kDa |
| **Protein Sequence:** | >RC220503 representing NM_004972<br>Red=Cloning site Green=Tags(s)<br><br>MGMACLTMTEMEGTSTSSIYQNGDISGNANSMKQIDPVLQVYLYHSLGKSEADYLTFPSGEYVAEEICIA<br>ASKACGITPVYHNMFALMSETERIWYPPNHVFHIDESTRHNVLYRIRFYFPRWYCSGSNRAYRHGISRGA<br>EAPLLDDFVMSYLFAQWRHDFVHGWIKVPVTHETQEECLGMAVLDMMRIAKENDQTPLAIYNSISYKTFL<br>PKCIRAKIQDYHILTRKRIRYRFRRFIQQFSQCKATARNLKLKYLINLETLQSAFYTEKFEVKEPGSGPS<br>GEEIFATIIITGNGGIQWSRGKHKESETLTEQDLQLYCDFPNIIDVSIKQANQEGSNESRVVTIHKQDGK<br>NLEIELSSLREALSFVSLIDGYYRLTADAHHYLCKEVAPPAVLENIQSNCHGPISMDFAISKLKKAGNQT<br>GLYVLRCSPKDFNKYFLTFAVERENVIEYKHCLITKNENEEYNLSGTKKNFSSLKDLLNCYQMETVRSDN<br>IIFQFTKCCPPKPKDKSNLLVFRTNGVSDVPTSPTLQRPTHMNQMVFHKIRNEDLIFNESLGQGTFTKIF<br>KGVRREVGDYGQLHETEVLLKVLDKAHRNYSESFFEAASMMSKLSHKHLVLNYGVCVCGDENILVQEFVK<br>FGSLDTYLKKNKNCINILWKLEVAKQLAWAMHFLEENTLIHGNVCAKNILLIREEDRKTGNPPFIKLSDP<br>GISITVLPKDILQERIPWVPPECIENPKNLNLATDKWSFGTTLWEICSGGDKPLSALDSQRKLQFYEDRH<br>QLPAPKWAELANLINNCMDYEPDFRPSFRAIIRDLNSLFTPDYELLTENDMLPNMRIGALGFSGAFEDRD<br>PTQFEERHLKFLQQLGKGNFGSVEMCRYDPLQDNTGEVVAVKKLQHSTEEHLRDFEREIEILKSLQHDNI<br>VKYKGVCYSAGRRNLKLIMEYLPYGSLRDYLQKHKERIDHIKLLQYTSQICKGMEYLGTKRYIHRDLATR<br>NILVENENRVKIGDFGLTKVLPQDKEYYKVKEPGESPIFWYAPESLTESKFSVASDVWSFGVVLYELFTY<br>IEKSKSPPAEFMRMIGNDKQGQMIVFHLIELLKNNGRLPRPDGCPDEIYMIMTECWNNNVNQRPSFRDLA<br>LRVDQIRDNMAG<br><br>TRTRPLEQKLISEEDLAANDILDYKDDDDKV |
| **Tag:** | C-Myc/DDK |
| **Purity:** | > 80% as determined by SDS-PAGE and Coomassie blue staining |
| **Concentration:** | >0.05 µg/µL as determined by microplate BCA method |
| **Labeling Method:** | Labeled with [U- 13C6, 15N4]-L-Arginine and [U- 13C6, 15N2]-L-Lysine |
| **Buffer:** | 25 mM Tris-HCl, 100 mM glycine, pH 7.3 |

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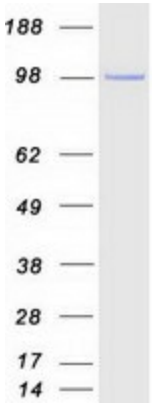
| **Storage:** | Store at -80°C. Avoid repeated freeze-thaw cycles. |
| **Stability:** | Stable for 3 months from receipt of products under proper storage and handling conditions. |
| **RefSeq:** | NP_004963 |
| **RefSeq Size:** | 5097 |
| **RefSeq ORF:** | 3396 |
| **Synonyms:** | JTK10 |
| **Locus ID:** | 3717 |
| **UniProt ID:** | O60674 |
| **Cytogenetics:** | 9p24.1 |
| **Summary:** | 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 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. [provided by RefSeq, Jul 2020] |
| **Protein Families:** | Druggable Genome, Protein Kinase |
| **Protein Pathways:** | Adipocytokine signaling pathway, Chemokine signaling pathway, Jak-STAT signaling pathway |

## Product images:




Coomassie blue staining of purified JAK2 protein (Cat# [TP320503]). The protein was produced from HEK293T cells transfected with JAK2 cDNA clone (Cat# [RC220503]) using MegaTran 2.0 (Cat# [TT210002]).