

Product datasheet for **SC316317**

JAK2 (NM_004972) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	JAK2 (NM_004972) Human Untagged Clone
Tag:	Tag Free
Symbol:	JAK2
Synonyms:	JTK10
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>OriGene ORF within SC316317 sequence for NM_004972 edited (data generated by NextGen Sequencing)

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ATGGGAATGGCCTGCCTTACGATGACAGAAATGGAGGGAACATCCACCTTCTATATAT
CAGAATGGTGATATTTCTGGAAATGCCAATTCTATGAAGCAAATAGATCCAGTTCTCAG
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ATCATGACAGAATGCTGGAACAATAATGTAATCAACGCCCTCCTTTAGGGATCTAGCT
CTTCGAGTGGATCAAATAAGGGATAACATGGCTGGATGA
    
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Clone variation with respect to NM_004972.3

5' Read Nucleotide Sequence:

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>OriGene 5' read for NM_004972 unedited
GGCGCTCATGTATACGACTCCTATAGGGCGGCGCGGAATTCGGCACGAGGCAGCAGCGG
ACGCCGCTAACGGCCTCCCTCGGCGCTGACAGGCTGGGCCGGCGCCCGGCTCGTTGGGT
GTTTCGCGTCGCCACTTTCGGCTTCTCGGCCGGTTCGGGCCCTCGGCCCGGGCTTGGCGGC
GCGTCCGGGGCTGAGGGCTGCTGCGGCGCAGGGAGAGGCCTGGTCTCCTCGCTGCCGAGGGAT
GTGAGTGGGAGCTGAGCCCACTGGAGGGCCCCGAGGGCCAGCCTGGAGGTCTGTTCA
GAGCCGTGCCCGCCCGGGGCTTCGAGACCTTGACCCGCGGGTTTCAGAAGCAGGCAA
CAGGAACAAGATGTGAACTGTTTCTTCTTGCAGAAAAAGAGGCTCTTCTCCTCCTCCC
GCGACGGCAAATGTTCTGAAAAAGACTCTGCATGGGAATGGCCTGCCTTACGATGACAGA
AATGGAGGGAACATCCACCTCTTCTATATATCAGAATGGTGATATTTCTGGAAATGCCAA
TTCTATGAAGCAAATAGATCCAGTCTTTCAGGTGATCTTTACCATTCCCTTGGGAAATC
TGAGGCAGATTATCTGACCTTTCCATCTGGGGAGTATGTTGCAGAAGAAAATCTGTATTGC
TGCTTCTAAAGCTTGTGGTATCACACCTGTGTATCATAATATGTTTGCTTAAATGAGTGA
AACAGAAAGGATCTGGTATCCACCCAACCATGTCTCCATATAGATGAGTCAACCAGGCA
TAATGTACTCTACAGAATAAGATTTTACTTTCTCCTCGTTGGTATTGCAGTGGCAGCAACAG
AGCCTATCGGCATGGATATCTCGAGGTGCTGAAGCTCCTCTTCTGATGACTTTGTCATG
GTCTTAACCTCTTTGCTCAGTGGCGCATGATTTTTGGTGCACCGATTGGGATAAA
    
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Restriction Sites:	Please inquire
ACCN:	NM_004972
Insert Size:	5000 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
OTI Annotation:	This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none"> 1. Centrifuge at 5,000xg for 5min. 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA. 3. Close the tube and incubate for 10 minutes at room temperature. 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom. 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	<u>NM_004972.2</u> , <u>NP_004963.1</u>
RefSeq Size:	5097 bp
RefSeq ORF:	3399 bp
Locus ID:	3717
UniProt ID:	<u>O60674</u>
Cytogenetics:	9p24.1
Domains:	B41, pkinase, SH2, TyrKc, S_TKc
Protein Families:	Druggable Genome, Protein Kinase
Protein Pathways:	Adipocytokine signaling pathway, Chemokine signaling pathway, Jak-STAT signaling pathway

Gene 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]

Transcript Variant: This variant (1), along with variants 2, 3, and 4, all encode the same isoform (a). Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.