

Product datasheet for **MC229400**

Jak2 (NM_008413) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Jak2 (NM_008413) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Jak2
Synonyms:	Fd17
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>MC229400 representing NM_008413 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGGAATGGCCTGCCTTACAATGACAGAAATGGAGGCAACCTCCACATCTCCTGTACATCAGAATGGTG
ATATTCTGGAAGTGCTAATTCTGTGAAGCAGATAGAGCCAGTCCTTCAAGTGTATCTGTACCATTCTCT
TGGGCAAGCTGAAGGAGAGTATCTGAAGTTTCCAAGTGGAGAGTATGTTGCAGAAGAAATTTGTGTGGCT
GCTTCTAAAGCTTGTGGTATTACGCCTGTGTATCATAATATGTTTGCCTAATGAGTGAACCGAAAGGA
TCTGGTACCCACCAATCATGTCTTCCACATAGACGAGTCAACCAGGCATGACATACTCTACAGGATAAG
GTTCTACTTCCCTCATTGGTACTGTAGTGGCAGCAGCAGAACCTACAGATACGGAGTGTCCCGTGGGGCT
GAAGCTCCTCTGCTTGATGACTTTGTCTGCTTACCTTTTTGCTCAGTGGCGGCATGATTTTGTTCACG
GATGGATAAAAAGTACCTGTGACTCATGAAACTCAGGAAGAGTGTCTTGGGATGGCGGTGTAGACATGAT
GAGAATAGCTAAGGAGAAAGACCAGACTCCACTGGCTGTCTATAACTCTGTCAGCTACAAGACATTTCTTA
CCAAAGTGCCTTCGAGCGAAGATCCAAGACTATCACATTTAACC CGGAAGCGAATCAGGTACAGATTTCT
GCAGATTCATTAGCAATTCAGTCAATGTAAGCCACTGCCAGGAACCTAAAACCTAAGTATCTTATAAA
CCTGGAACCCCTGCAGTCTGCCTTCTACACAGAACAGTTTGAAGTAAAAGAATCTGCAAGAGGTCCCTCA
GGTGAGGAGATTTTGAACCAATATAAATAACTGGAAACGGTGGAAATTCAGTGGTCAAGAGGGAACATA
AGGAAAGTGAGACTGACAGAACAGGACGTACAGTTATATTGTGATTTCCCTGATATTATTGATGTCAG
TATTAAGCAAGCAAACCAGGAATGCTCAAATGAAAGTAGAATTGTAACCTGTCCATAAACAAGATGGTAAA
GTTTTGGAGATAGAACTTAGCTCATTAAAAGAAGCCTTGTATTGTCGTCATTAATTGACGGGTATTACA
GACTAACTGCGGATGCGCACCAATTACCTCTGCAAAGAGGTGGCTCCCCAGCTGTGCTCGAGAACATACA
CAGCAACTGCCACGGCCCAATATCAATGGATTTTGCCATTAGCAAACCTAAAGAAGCGGGTAACCAGACT
GGACTATATGTGCTACGATGCAGCCCTAAGGACTTCAACAATACTTTCTGACCTTTGCTGTTGAGCGAG
AAAATGTCATTGAATATAAACACTGTTTGATTACGAAGAATGAGAATGGAGAATACAACCTCAGCGGGAC
TAAGAGGAACTTCAGTAACCTTAAGGACCTTTGAATTGCTACCAGATGGAAACTGTGCGCTCAGACAGT



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ATCATCTTCCAGTTTACCAAATGCTGCCCCCAAAGCCAAAAGATAAATCAAACCTTCTCGTCTTCAGAA
 CAAATGGTATTTCTGATGTTTCAGATCTCACCAACATTACAGAGGCATAAATGTGAATCAAATGGTGT
 TCACAAAATCAGGAATGAAGATTTAATATTTAATGAAAGTCTTGGCCAAGGTACTTTTACAAAAATTTT
 AAAGGTGAAGAAGAGAAGTTGGAGATTATGGTCAACTGCACAAAACGGAAGTCTTTTGAAGTCTTAG
 ATAAAGCACATAGGAACATTTCAGAGTCTTTCTCGAAGCAGCAAGCATGATGAGTCAGCTTCTCACAA
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 TTTGGATCACTGGATACATACCTGAAGAAGAACAAAAATCCATAAATATATTATGGAACTTGGAGTGG
 CTAAAGCAGTTGGCATGGGCCATGCATTTTCTAGAAGAAAAATCCCTTATTCATGGGAATGTGTGTCTAA
 AAATATCCTGCTTATCAGAGAAGAAGACAGGAGAACGGGAACCCACCTTTCATCAAACCTTAGTGATCCT
 GGCATTAGCATTACAGTTCTACCGAAGGACATTCTTCAGGAGAGAATACCATGGGTACCTCCTGAATGCA
 TTGAGAATCCTAAAAATCTCAATCTGGCAACAGACAAGTGGAGCTTCGGGACCACTCTGTGGGAGATCTG
 CAGTGGAGGAGATAAGCCCCTGAGTGTCTGGATTCTCAAAGAAAGCTGCAGTCTATGAAGATAAGCAT
 CAGCTTCTGCACCCAAGTGGACAGAGTAGCAAACCTTATAAATAATTGCATGGACTATGAGCCAGATT
 TCAGGCCCTGCTTTCAGAGCTGTCATCCGTGATCTTAACAGCCTGTTTACTCCAGATTATGAACTACTAAC
 AGAAAATGACATGCTACCAAACATGAGAATAGGTGCCCTAGGGTTTTCTGGTGTCTTTGAAGACAGGGAC
 CCTACACAGTTTTGAAGAGAGACACTTGAAGTTTTCTACAGCAGCTTGGCAAAGGTAACCTCGGGAGTGTGG
 AGATGTGCCGCTATGACCCGCTGCAGGACAACACTGGCGAGGTGGTTCGCTGTGAAGAAAATCCAGCACAG
 CACTGAAGAGCACCTCCGAGACTTTGAGAGGGAGATCGAGATCCTGAAATCCTTGCGAGCATGACAACATC
 GTCAAGTACAAGGGAGTGTGCTACAGTGCGGGTCGGCGCAACCTAAGATTAATTATGGAATATTTACCAT
 ATGGAAGTTTACGAGACTATCTCCAAAAACATAAAGAACGGATAGATCACAAAAAATCTTCAATACAC
 ATCTCAGATATGCAAGGGCATGGAATATCTTGGTACAAAAAGGTATATCCACAGGGACCTGGCAACAAGG
 AACATATTGGTGGAAAAATGAGAACAGGGTTAAAATAGGAGACTTCGGATTAACCAAAGTCTTGCCGACAG
 ACAAGAATACTACAAAGTAAAGGAGCCAGGGGAAAGCCCCATATTCTGGTACGCACCTGAATCCTTGAC
 GGAGAGCAAGTTTTCTGTGGCCTCAGATGTGTGGAGCTTTGGAGTGGTTCTATACGAACTTTTACATAC
 ATCGAGAAGAGTAAAAGTCCACCCGTGGAATTTATGCGAATGATTGGCAATGATAAACAAGGGCAATGA
 TTGTGTTCCATTTGATAGAGCTACTGAAGAGCAACGGAAGATTGCCAAGGCCAGAAGGATGCCCAGATGA
 GATTTATGTGATCATGACAGAGTGTGGAACAACAATGTGAGCCAGCGTCCCTCCTTCAGGGACCTTTCC
 CTTCCGGTGGATCAAATCCGGGACAGTATAGCTGCGTGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

- Chromatograms:** https://cdn.origene.com/chromatograms/ja3146_b01.zip
- Restriction Sites:** SgfI-MluI
- ACCN:** NM_008413
- Insert Size:** 3399 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:** Clone contains native stop codon, and expresses the complete ORF without any c-terminal tag.
- 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:

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: [NM_008413.3](#), [NP_032439.2](#)

RefSeq Size: 5055 bp

RefSeq ORF: 3399 bp

Locus ID: 16452

UniProt ID: [Q62120](#)

Cytogenetics: 19 23.73 cM

Gene Summary: 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. Part of a signaling cascade that is activated by increased cellular retinol and that leads to the activation of STAT5 (STAT5A or STAT5B). 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.[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (1) represents the longer transcript. Both variants 1 and 2 encode the same protein.