

Product datasheet for **MG211681**

Jak2 (NM_001048177) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Jak2 (NM_001048177) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Jak2
Synonyms:	Fd17
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG211681 representing NM_001048177 Red=Cloning site Blue=ORF Green=Tags(s)

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GCC**CGATCGCC**

ATGGGAATGGCCTGCCTTACAATGACAGAAATGGAGGCAACCTCCACATCTCCTGTACATCAGAATGGTG
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 GATTTATGTGATCATGACAGAGTGTGGAACAACAATGTGAGCCAGCGTCCCTCCTTCAGGGACCTTTCC
 CTTCCGGTGGATCAAATCCGGGACAGTATAGCTGCG

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>MG211681 representing NM_001048177
 Red=Cloning site Green=Tags(s)

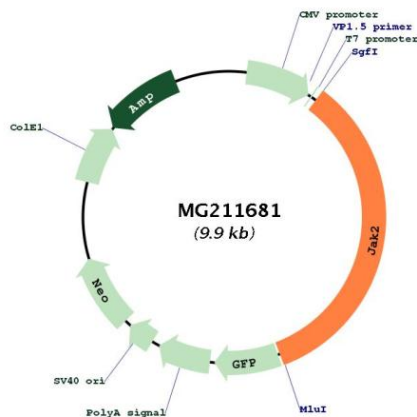
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 NILVENENRVKIGDFGLTKVLPQDKEYKVKPEGESPIFWYAPESL TESKFSVASDVSFVGVVLYELFTY
 IEKSKSPPVEFMRMIGNDKQGMIVFHLIELLKSNGRLRPEGCPDEIYVIMTECWNNNSQRPSFRDLS
 LRVDQIRDSIAA

TRTRPLE – GFP Tag – V

OTI Disclaimer:	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. More info</p>
OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
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_001048177.1</u> , <u>NP_001041642.1</u>
RefSeq Size:	4947 bp
RefSeq ORF:	3399 bp
Locus ID:	16452
UniProt ID:	<u>Q62120</u>
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]

Product images:

Circular map for MG211681