

## Product datasheet for **RG210165**

### PAK2 (NM\_002577) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	PAK2 (NM_002577) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	PAK2
Synonyms:	PAK65; PAKgamma
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG210165 ORF sequence, **codon optimized**.  
 Due to the complexity of NM\_002577, the ORF clone is codon optimized for mammalian Expression.  
 The nucleotide sequence differs from the reference sequence, yet the amino acid sequence remains identical.

Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCCGCC**GCGATCGCC**

ATGTCCGACAACGGAGAACTGGAAGATAAACCTCCGCCCCACCCGTTCCGGATGTCTTCAACTATCTTCA  
 GCACCGGAGGAAAAGATCCACTCTCCGCAATCACTCCCTGAAGCCTCTGCCGAGCGTCCGGAGGAAAA  
 AAAACCTCGCCATAAAATATTTCAATCTTTTCAGGGACAGAGAAGGGGTCCAAGAAAAAGAAAAAGAA  
 AGACCCGAGATCAGTCCACCATCTGACTTCGAACACACAATCCATGTTGGATTGACGCGCGTGACGGGAG  
 AGTTTACTGGCATGCCAGAGCAGTGGGCGAGGCTGCTGCAAACTAGCAATATCACAAAACCTGAACAGAA  
 AAGAACCACAGGCTGTTCTTGACGTACTGAAGTTTTATGACAGTAACACAGTAAAAACAAAATACCTC  
 AGCTTACCCACCCGAAAAGGACGGATTCCCTTCAGGTACCCCGCTTTGAATGCCAAGGGTACTGAGG  
 CCCAGCTGTGGTGACCGAGGAAGAAGTACGATGAGGAAACTGCCACCCCGTTATCGCTCCGCGGCC  
 TGACCACAAAACTATCTACACCCGCTCAGTCATAGATCCCGTCCCAGCTCCCGTCCGGTACTCACAC  
 GTCGATGGCGCCGCTAAGTCCTTGATAAGCAAAAAAAAAAAAAAAGATGACAGACGAGGAGATCATGG  
 AGAAGCTTCGCACCATAGTTAGTATCGGAGATCCTAAGAAGAAATATACACGCTACGAGAAGATTGGCA  
 AGGCGCTTCTGGCACTGTCTTCCCGCCACCGACGTCGCTCTGGGACAAGAAGTTGCAATAAAAACAAAT  
 AATTTGCAAAAAACCTAAGAAGGAACATAAATTAACGAGATCCTGGTGATGAAAGAACCTAAAAAC  
 CAAATATCGTCAACTTCCCTCGATAGCTATCTCGTGGTGATGAGCTTTTTGTCGTAATGGAATATCTGGC  
 AGGGGGCAGTCTGACGGATGTGGTGACCGAACTTGATGGATGAAGCCAGATAGCTGCCGTGTGCCGC  
 GAGTGCTGCAAGCCCTGGAGTTCTGCATGCCAACCAGGTCATCCACCGAGACATTAATCCGACAACG  
 TGCTGCTCGGTATGGAAGTTCTGTAAGTTGACTGACTTCGGCTTTTGTGCACAAATAACCCCGAGCA  
 GTCTAAGCGCTACTATGGTTGAACTCCTTATTGGATGGCACCAGAAGTGGTACACGAAAGGCCTAT  
 GGTCCGAAGTTCGATATTTGGTCCCTCGGGATCATGGCTATAGAAATGGTGAAGGCGAGCCACCATATC  
 TCAACGAGAACCCTGCGGGCGCTGTATCTGATCGCCACTAATGGTACACCAGATTGCAGAATCCTGA  
 AAAATTGTCCCAATTTTCAGAGACTTTCTGAACCGCTGTCTCGAAATGGATGTGGAGAAGCGCGGTAGT  
 GCAAAGGAACTCTTGCAACATCCTTTCTGAAACTGGCCAAACCCTGTCTTCATTGACACCACTATCA  
 TGGCTGCTAAGGAGGCCATGAAAAGCAATAGA

**ACGCGT**ACGCGGCCGCTCGAG – GFP Tag – GTTTAA

**Protein Sequence:**

>RG210165 representing NM\_002577  
 Red=Cloning site Green=Tags(s)

MSDNGELEDKPPAPPVMSSTIFSTGGKDPLSANHSLKPLPSVPEEKKPRHKIISIFSGTEKGSKKKEKE  
 RPEISPPSDFEHTIHVGFDAVTGEFTGMPEQWARLLQTSNITKLEQKKNPQAVLDVLFYDSNTVKQKYL  
 SFTPPEKDGFPSTPALNAKGTEAPAVVTEEDDDEETAPPVIAPRPDHTKSIYTRVIDPVPAPVGDSDH  
 VDGAAKSLDKQKKTKMTDEEIMEKLRTIVSIGDPKKYTRYEKIGQGASGVTFATDVALGQEVAIKQI  
 NLQKQPKKELIINEILVMKELKNPNIVNFLDSYLVGDEL FVVMELAGGSLTDVVTETCMDEAQIAAVCR  
 ECLQALEFLHANQVIHRDIKSDNVLLGMEGSVKLTDGFGCAQITPEQSKRSTMVGTPTYWMAPEVVTRKAY  
 GPKVDIWSLGIAMIEVGEPPYLNENPLRALYLIATNGTPELQNPPEKLSPIFRDFLNRCLEMDVEKRG  
 AKELLQHPFLKAKPLSSLTPLIMAAKEAMKSNR

**TRTRPLE** – GFP Tag – V

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**


**ACCN:** NM\_002577

**ORF Size:** 1572 bp

**OTI Disclaimer:** 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](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

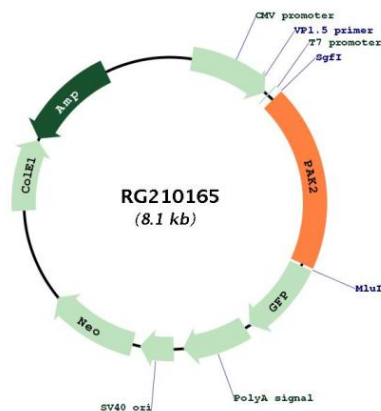
**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

- Reconstitution Method:**
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\\_002577.4](#), [NP\\_002568.2](#)

RefSeq Size:	6139 bp
RefSeq ORF:	1575 bp
Locus ID:	5062
UniProt ID:	<u><a href="#">Q13177</a></u>
Cytogenetics:	3q29
Protein Families:	Druggable Genome, Protein Kinase
Protein Pathways:	Axon guidance, ErbB signaling pathway, Focal adhesion, MAPK signaling pathway, Regulation of actin cytoskeleton, Renal cell carcinoma, T cell receptor signaling pathway
Gene Summary:	The p21 activated kinases (PAK) are critical effectors that link Rho GTPases to cytoskeleton reorganization and nuclear signaling. The PAK proteins are a family of serine/threonine kinases that serve as targets for the small GTP binding proteins, CDC42 and RAC1, and have been implicated in a wide range of biological activities. The protein encoded by this gene is activated by proteolytic cleavage during caspase-mediated apoptosis, and may play a role in regulating the apoptotic events in the dying cell. [provided by RefSeq, Jul 2008]

### Product images:



Circular map for RG210165