

## Product datasheet for **RC402625**

### PAK3 (NM\_002578) Human Mutant ORF Clone

#### Product data:

Product Type:	Mutant ORF Clones
Product Name:	PAK3 (NM_002578) Human Mutant ORF Clone
Mutation Description:	A365E
Affected Codon#:	365
Affected NT#:	1094
Nucleotide Mutation:	PAK3 Mutant (A365E), Myc-DDK-tagged ORF clone of Homo sapiens p21 protein (Cdc42/Rac)-activated kinase 3 (PAK3), transcript variant 2 as transfection-ready DNA
Effect:	Mental retardation syndrome, X-linked
Symbol:	PAK3
Synonyms:	ARA; beta-PAK; bPAK; MRX30; MRX47; OPHN3; PAK-3; PAK3beta
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_002578
ORF Size:	1632 bp
Restriction Sites:	Sgfl-Mlul



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**ORF Nucleotide Sequence:**

>RC402625 representing NM\_002578  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGCTGACGGTCTGGATAATGAAGAGAAACCCCGGCTCCTCCACTGAGGATGAATAGTAAACAACGGG  
 ATTCTTCAGCACTCAACCACAGCTCCAAACCACTTCCCATGGCCCTGAAGAGAAGAATAAGAAAAGCCAG  
 GCTTCGCCTCTATCTCCAGGAGGAGGGGATAAAACCAATAAGAAGAAGGAGAAAAGCGCCAGAGATC  
 TCTCTTCTCAGACTTTGAGCATACGATTTCATGTGGGTTTGTGTCAGTCACCGGGGAATTCAGTGAA  
 TTCCAGAGCAATGGGCACGATTACTCCAACTTCCAACATAACAAAATTGGAACAGAAGAAGAACCCACA  
 AGCTGTTCTAGATGTTCTCAAATTCATGATCCAAAGAAACAGTCAACAACAGAAATACATGAGCTTT  
 ACATCAGGAGATAAAAGTGCACATGGATACATAGCAGCCATCCTTCGAGTACAAAAACAGCATCTGAGC  
 CTCATTGGCCCTCCTGTGTGAAGAAGAAGATGAAGAGGAAGAAGAAGAAGAAGATGAAAATGAGCC  
 ACCACCAGTTATCGCACCAAGACCAGAGCATACAAAATCAATCTATACTCGTTCTGTGGTTGAATCCATT  
 GCTTCACCAGCAGTACCAATAAAGAGGTACACACCACCTCTGCTGAAAAATGCCAATCCAGTACTTTGT  
 ACAGGAACACAGATCGGCAAAGAAAAAATCCAAGATGACAGATGAGGAGATCTTAGAGAAGCTAAGAAG  
 CATTGTGAGTGTGGGGACCCAAAGAAAAAATACACAAGATTTGAAAAATTTGGTCAAGGGGCATCAGGT  
 ACTGTTATACAGCACTAGACATTGCAACAGGACAAGAGGTGGCCATAAAGCAGATGAACCTTCAACAGC  
 AACCCAAGAAGGAATTAATTATTAATGAAATTCGGTCATGAGGGAAAAAAGAACCCTAATATTGTTAA  
 TTATTTAGATAGCTACTTGGTGGGTGATGAACTATGGGTAGTCATGGAATACTTGGCTGGTGGCTCTCTG  
 ACTGATGTGGTCACAGAGACCTGTATGGATGAAGGACAGATAGAAGCTGTGCAGAGAGTGCCTGCAAG  
 CTTTGGATTTCTGCACTCAAACCAGGTATCCATAGAGATATAAAGAGTGACAATATTTCTCTCGGGAT  
 GGATGGCTCTGTTAAATTGACTGACTTTGGGTTCTGTGCCAGATCACTCCTGAGCAAAGTAAACGAAGC  
 ACTATGGTGGGAACCCCATATTGGATGGCACCTGAGGTGGTACTCGAAAAGCTTATGGTCCGAAAGTTG  
 ATATCTGGTCTCTTGAATTATGGCAATTGAAATGGTGAAGGTGAACCCCTTACCTTAATGAAAATCC  
 ACTCAGGGCATTGTATCTGATAGCCACTAATGAACTCCAGAGCTCCAGAATCCTGAGAGACTGTCAGCT  
 GTATCCGTGACTTTTTAAATCGCTGTCTTGGATGGATGGATAGGCGAGGATCTGCCAAGGAGCTTT  
 TGCAGCATCCATTTTTAAATAGCCAAGCCTCTCCAGCCTGACTCCTCTGATTATCGCTGCAAAGGA  
 AGCAATTAAGAACAGCAGCCGC

AG**CGGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGTTTAA

**Protein Sequence:**

>RC402625 representing NM\_002578  
 Red=Cloning site Green=Tags(s)

MSDGLDNEEKPPAPPLRMNSNDRSSALNHSSKPLPMAPEEKNKARLRSIFPGGDKTNKKKEKERPEI  
 SLPDSDFEHTIHVGFDAVTGEFTGIPEQWARLLQTSNITKLEQKKNPQAVLDVLFYDSKETVNNQKYMFS  
 TSGDKSAHGYYIAAHPSSKTASEPPLAPPVSEEEDEEEEDENEPPPVIAPRPEHTKSIYTRSVVESI  
 ASPAVPNKEVTPPSAENANSSTLYRNTDRQRKSKMTDEEILEKLRISIVSVDGPKKYYTRFEKIGQGASG  
 TVYTALDIATGQEVAIKQMNLLQQPKKELINEILVMRENKPNIVNYLDSYLVGDELWVMEYLAGGSL  
 TDVVTETCMDEGQIEAVCRECLQALDFLHSNQVIHRDIKSDNILLGMDGSVKLTDFGCAQITPEQSKRS  
 TMVGTPYWMapeVVTRKAYGPKVDIWSLGMIAIEMVEGEPYLNENPLRALYL IATNGTPELQNPERSA  
 VFRDFLNRCLMDVDRRGSakELLQHPFLKlakPLSSL TPLIIAAKEAIKNSSR

SGP**TRRRLEQKLI**SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfi-MluI

Cloning Scheme:



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](#)

<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	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).
<b>RefSeq:</b>	<a href="#">NP_002569</a>
<b>RefSeq Size:</b>	1632 bp
<b>RefSeq ORF:</b>	1635 bp
<b>Locus ID:</b>	5063
<b>Cytogenetics:</b>	Xq23
<b>Domains:</b>	PBD, pkinase, TyrKc, S_TKc
<b>Protein Families:</b>	Druggable Genome, Protein Kinase, Stem cell - Pluripotency
<b>Protein Pathways:</b>	Axon guidance, ErbB signaling pathway, Focal adhesion, Regulation of actin cytoskeleton, Renal cell carcinoma, T cell receptor signaling pathway
<b>MW:</b>	59.8 kDa
<b>Gene Summary:</b>	The protein encoded by this gene is a serine-threonine kinase and forms an activated complex with GTP-bound RAS-like (P21), CDC2 and RAC1. This protein may be necessary for dendritic development and for the rapid cytoskeletal reorganization in dendritic spines associated with synaptic plasticity. Defects in this gene are the cause of a non-syndromic form of X-linked intellectual disability. Alternatively spliced transcript variants encoding different isoforms have been identified. [provided by RefSeq, Jul 2017]