

Product datasheet for **RC402627**

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:	W446S
Affected Codon#:	446
Affected NT#:	1337
Nucleotide Mutation:	PAK3 Mutant (W446S), 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:

>RC402627 representing NM_002578
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGCTGACGGTCTGGATAATGAAGAGAAACCCCGGCTCCTCCACTGAGGATGAATAGTAAACAACGGG
 ATTCTTCAGCACTCAACACAGCTCCAAACCACTTCCCATGGCCCTGAAGAGAAGAATAAGAAAAGCCAG
 GCTTCGCCTCTATCTCCAGGAGGAGGGGATAAAACCAATAAGAAGAAGGAGAAAAGCGCCAGAGATC
 TCTCTTCTCAGACTTTGAGCATACGATTTCATGTGGGTTTGTGTCAGTACCAGGGGAATTCAGTGAA
 TTCCAGAGCAATGGGCACGATTACTCCAACTTCCAACATAACAAAATTGGAACAGAAGAAGAACCCACA
 AGCTGTCTAGATGTTCTCAAATTCATGATCCAAAGAAACAGTCAACAACAGAAATACATGAGCTTT
 ACATCAGGAGATAAAAGTGCACATGGATACATAGCAGCCATCCTTCGAGTACAAAAACAGCATCTGAGC
 CTCATTGGCCCTCCTGTGTGAAGAAGAAGATGAAGAGGAAGAAGAAGAAGAAGATGAAAATGAGCC
 ACCACCAGTTATCGCACCAAGACCAGAGCATACAAAATCAATCTATACTCGTTCTGTGGTTGAATCCATT
 GCTTCACCAGCAGTACCAATAAAGAGGTACACACCACCTCTGCTGAAAAATGCCAATCCAGTACTTTGT
 ACAGGAACACAGATCGGCAAAGAAAAAATCCAAGATGACAGATGAGGAGATCTTAGAGAAGCTAAGAAG
 CATTGTGAGTGTGGGGACCCAAAGAAAAAATACACAAGATTTGAAAAATTTGGTCAAGGGGCATCAGGT
 ACTGTTATACAGCACTAGACATTGCAACAGGACAAGAGGTGGCCATAAAGCAGATGAACCTTCAACAGC
 AACCCAAGAAGGAATTAATTATTAATGAAATTCGGTCATGAGGGAAAAAAGAACCCTAATATTGTTAA
 TTATTTAGATAGCTACTTGGTGGGTGATGAACTATGGGTAGTCATGGAATACTTGGCTGGTGGCTCTCTG
 ACTGATGTGGTCACAGAGACCTGTATGGATGAAGGACAGATAGCAGCTGTGCAGAGAGTGCCTGCAAG
 CTTTGGATTTCTGCACTCAAACCAGGTATCCATAGAGATATAAAGAGTGACAATATTTCTCTCGGGAT
 GGATGGCTCTGTTAAATTGACTGACTTTGGGTTCTGTGCCAGATCACTCCTGAGCAAAGTAAACGAAGC
 ACTATGGTGGGAACCCCATATTGGATGGCACCTGAGGTGGTACTCGAAAAGCTTATGGTCCGAAAGTTG
 ATATCTCGTCTCTTGGAAATTATGGCAATTGAAATGGTGGAAAGGTGAACCCCTTACCTTAATGAAAATCC
 ACTCAGGGCATTGTATCTGATAGCCACTAATGAACTCCAGAGCTCCAGAATCCTGAGAGACTGTCAGCT
 GTATCCGTGACTTTTTAAATCGCTGTCTTGGATGGATGGATAGGCGAGGATCTGCCAAGGAGCTTT
 TGCAGCATCCATTTTTAAATAGCCAAGCCTCTCTCCAGCCTGACTCCTCTGATTATCGCTGCAAAGGA
 AGCAATTAAGAACAGCAGCCGC

AG**GCGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGTTTAA

Protein Sequence:

>RC402627 representing NM_002578
 Red=Cloning site Green=Tags(s)

MSDGLDNEEKPPAPPLRMNSNDRSSALNHSSKPLPMAPEEKNKARLRSIFPGGDKTNKKKERPEI
 SLPDSFEHTIHVGFDAVTGEFTGIPEQWARLLQTSNITKLEQKKNQAVLDVLFYDSKETVNNQKYMFS
 TSGDKSAHGYYIAAHPSSKTASEPPLAPPVSEEEDEEEEDENEPPPVIAPRPEHTKSIYTRSVVESI
 ASPAVPNKEVTPPSAENANSSTLYRNTDRQRKSKMTDEEILEKLRISIVSVDGPKKYYTRFEKIGQGASG
 TVYTALDIATGQEVAIKQMNLLQQPKKELINEILVMRENKNPNIVNYLDSYLVGDELWVMEYLAGGSL
 TDVVTETCMDEGQIAAVCRECLQALDFLHSNQVIHRDIKSDNILLGMDGSVKLTDFGCAQITPEQSKRS
 TMVGTPYWMapeVVTRKAYGPKVDISSLGIMAIEMVEGPPYLNENPLRALYL 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 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).
RefSeq:	NP_002569
RefSeq Size:	1632 bp
RefSeq ORF:	1635 bp
Locus ID:	5063
Cytogenetics:	Xq23
Domains:	PBD, pkinase, TyrKc, S_TKc
Protein Families:	Druggable Genome, Protein Kinase, Stem cell - Pluripotency
Protein Pathways:	Axon guidance, ErbB signaling pathway, Focal adhesion, Regulation of actin cytoskeleton, Renal cell carcinoma, T cell receptor signaling pathway
MW:	59.8 kDa
Gene Summary:	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]