

Product datasheet for **SC102496**

p21 (CDKN1A) (NM_078467) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	p21 (CDKN1A) (NM_078467) Human Untagged Clone
Tag:	Tag Free
Symbol:	p21
Synonyms:	CAP20; CDKN1; CIP1; MDA-6; P21; p21CIP1; SDI1; WAF1
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>OriGene ORF within SC102496 sequence for NM_078467 edited (data generated by NextGen Sequencing)

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ATGTCAGAACCGGCTGGGGATGTCCGTGACAACCCATGCGGCAGCAAGGCCTGCCGCCGC  
CTCTTCGGCCCAGTGGACAGCGAGCAGCTGAGCCGCGACTGTGATGCGCTAATGGCGGGC  
TGCATCCAGGAGGCCCGTGAGCGATGGAACCTTCGACTTTGTACCGAGACACCACTGGAG  
GGTGACTTCGCTGGGAGCGTGTGCGGGCCTTGGCCTGCCAAGCTCTACCTTCCCACG  
GGGCCCGGCGAGGCCGGATGAGTTGGGAGGAGGCGGCGCCTGGCACCTCACCTGCT  
CTGCTGCAGGGGACAGCAGAGGAAGACCATGTGGACCTGTCACTGTCTTGTACCTTGTG  
CCTCGCTCAGGGGAGCAGGCTGAAGGGTCCCCAGGTGGACCTGGAGACTCTCAGGGTCGA  
AAACGGCGGCAGACCAGCATGACAGATTTCTACCACTCCAAACGCCGGCTGATCTTCTCC  
AAGAGGAAGCCCTAA
```

Clone variation with respect to NM_078467.2



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5' Read Nucleotide Sequence:

>OriGene 5' read for NM_078467 unedited
 NGGGGTCAACAATTGTATACGACTCATATAGGCGGCCGCGAAATTCGCACGAGCCGAATC
 AGTTCTTGTGGAGCCGGAGCTGGGCGCGGATTCGCCGAGGCACCGAGGCACTCAGAGGA
 GGGCCATGTGAGAACCGGCTGGGGATGTCCTGAGAACCCATGCGGCAGCAAGGCCTGC
 CGCCGCTCTTCGGCCAGTGGACAGCAGCAGCTGAGCCGCGACTGTGATGCGCTAATG
 GCGGGCTGCATCCAGGAGCCCGTGAGCGATGGAACCTCGACTTTGTACCGAGACACCA
 CTGGAGGTTGACTTCGCTGGGAGCGTGTGCGGGGCTTGGCCTGCCAAGCTCTACCTT
 CCCACGGGGCCCGGCGAGGCCGGATGAGTTGGGAGGAGGCAGCGGCCCTGGCACCTCA
 CCTGCTCTGCTGCAGGGGACAGCAGAGGAAGACCATGTGGACCTGCACTGTCTTGTACC
 CTTGTGCCTCGCTCAGGGGAGCAGGCTGAAGGGTCCCCAGGTGGACCTGGAGACTCTCAG
 GGTGAAAACGGCGGCAGACCAGCATGACAGATTTCTACCACTCCAAACGCCGGTGATC
 TTCTCAAAGGAAGCCCTAATCCGCCACAGGAAGCCTGCAGTCTGGAAGCGCGAGGG
 CCTCAAAGGCCGCTCTACATCTTCTGCCTTAGTCTCAGTTTGTGTCTTAATTATTAT
 TTGGGTTTTAAATTAACACCTNCTCATGTACCATACCCTGGNCGNCCCCTGCCCCCAG
 CCTCTGGCATTAGAAATATTTAAACAAAATAAGCNGTAAAATGAGAGTTCCCTAAAGT
 GCTGGCATTNTATTTATGAAAATAATTTAAAGCCTCTCATCCGTGTTCTNCTTTCTT
 T

3' Read Nucleotide Sequence:

>OriGene 3' read for NM_078467 unedited
 AATAGTTTCTGTCCCCCATCGCAATANGGGTTNNNNNNAANNCNNNNNNNTGNN
 GGGNNNNNTAATTTTTNTNTNTGGNGNGGGGGGGGGTGGTTTTTTTGTGTGAAGGA
 AGCTGTGAAGGATATGGTAATAGTACAGTTTTGGTCCCTGCCCTGANAGTTTACGG
 TCTAGGTGGAGAAAGGAATAGTAAATGGGAGCCGAGAAAATTTTCCAGCCGTGTT
 ACATTTTCTGGGGGGTTTGGGGTCAGACCCCAATACTCCAAGTACCCTAAGCACTTCAG
 TGCTCCAGGGGCTCAACATTTAGTGCCAGGAAAGACAATTTTCTAGCCTCATATGAA
 CCCACTTTGCGTCTGTGTTAGCGTTTGTGAGAATATCTTAAATGTCTGACTCTTT
 GTTCAGCTGGTAATCCTAGTGAACCTAACTGGGGAGGGATGGGTTGGGATGAAGAAGGC
 ACTGAAAGAGAGTGAACACAAGTGTGGGCGTAGGATAGAATTGTTTTAGTAGGGATATG
 ATTATAATAAAATATATTTGTCAAACGTATTTGTAGCGGAAGAGTGAGACAATAA
 CATGAGGTGAAAAGAAAGAATGAGAGGGGGAGGTGCACGCGAGACCAAGGGAACAG
 GCCCGTACAAAGCGGACCCACCATAGACCGCAACCACATACAACCCGAAGCCCCGCG
 GCCCGCACTGGAAGGAAGCAACAACACGAACAGCCCCAGAGAAAAGCAGCAACCACCGA
 GGTTGAAGAGACGCATACCCAGAAAGCCACAACCTTGCAAAAACAATCCACGATTAAT
 CAAGCACAAAAGTACGCACCAAGAGCGCCGAGAAGGGCCACCGACCCATCGCGGAGA
 GCGAAGG

Restriction Sites:

NotI-NotI

ACCN:

NM_078467

Insert Size:

2250 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 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](#)

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_078467.1](#), [NP_510867.1](#)

RefSeq Size: 2281 bp

RefSeq ORF: 495 bp

Locus ID: 1026

UniProt ID: [P38936](#)

Cytogenetics: 6p21.2

Domains: CDI

Protein Families: Druggable Genome

Protein Pathways: Bladder cancer, Cell cycle, Chronic myeloid leukemia, ErbB signaling pathway, Glioma, Melanoma, p53 signaling pathway, Pathways in cancer, Prostate cancer

Gene Summary:

This gene encodes a potent cyclin-dependent kinase inhibitor. The encoded protein binds to and inhibits the activity of cyclin-cyclin-dependent kinase2 or -cyclin-dependent kinase4 complexes, and thus functions as a regulator of cell cycle progression at G1. The expression of this gene is tightly controlled by the tumor suppressor protein p53, through which this protein mediates the p53-dependent cell cycle G1 phase arrest in response to a variety of stress stimuli. This protein can interact with proliferating cell nuclear antigen, a DNA polymerase accessory factor, and plays a regulatory role in S phase DNA replication and DNA damage repair. This protein was reported to be specifically cleaved by CASP3-like caspases, which thus leads to a dramatic activation of cyclin-dependent kinase2, and may be instrumental in the execution of apoptosis following caspase activation. Mice that lack this gene have the ability to regenerate damaged or missing tissue. Multiple alternatively spliced variants have been found for this gene. [provided by RefSeq, Sep 2015]

Transcript Variant: This variant (2) differs in the 5' UTR, lacks an in-frame portion of the 5' coding region, and initiates translation at a downstream start codon, compared to variant 3. The resulting isoform (1) has a shorter N-terminus, compared to isoform 2. Variants 1, 2, 4 and 5 encode the same isoform 1.