Product datasheet for RG220813

p16INK4A (CDKN2A) (NM_058197) Human Tagged ORF Clone

Product data:

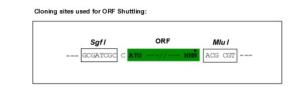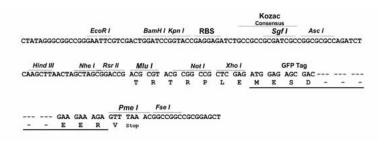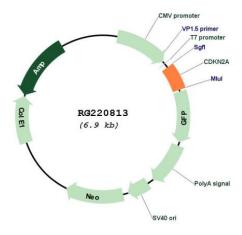|	
Product Type:	Expression Plasmids
Product Name:	p16INK4A (CDKN2A) (NM_058197) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	CDKN2A
Synonyms:	ARF; CDK4I; CDKN2; CMM2; INK4; INK4A; MLM; MTS-1; MTS1; P14; P14ARF; P16; P16-INK4A; P16INK4; P16INK4A; P19; P19ARF; TP16
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG220813 representing NM_058197 Red=Cloning site Blue=ORF Green=Tags(s) TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC GCCGCGATCGCC ATGGAGCCGGCGGCGGGGGAGCAGCATGGAGCCTTCGGCTGACTGGCTGGCCACGGCCGCGGCCCGGGGGTC GGGTAGAGGAGGTGCGGGCGCTGCTGGAGGCGGGGGCGCTGCCCAACGCACCGAATAGTTACGGTCGGAG GCCGATCCAGGTGGGTAGAGGGTCTGCAGCGGGAGCAGGGGATGGCGGGCGACTCTGGAGGACGAAGTTT GCAGGGGAATTGGAATCAGGTAGCGCTTCGATTCTCCGGAAAAAGGGGAGGCTTCCTGGGGAGTTTTCAG AAGGGGTTTGTAATCACAGACCTCCTCCTGGCGACGCCCTGGGGGCTTGGGAAGCCAAGGAAGAGGAA ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA
Protein Sequence:	>RG220813 representing NM_058197 Red=Cloning site Green=Tags(s) MEPAAGSSMEPSADWLATAAARGRVEEVRALLEAGALPNAPNSYGRRPIQVGRGSAAGAGDGGRLWRTKF AGELESGSASILRKKGRLPGEFSEGVCNHRPPPGDALGAWEAKEEE TRTRPLE – GFP Tag – V
Restriction Sites:	SgfI-MluI

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Cloning Scheme:

Cloning sites used for ORF Shuttling:

Sgf I	ORF	Mlu I
--- GCGATCGC C	ATG ---//--- NNN*	ACG CGT ---

	EcoR I	BamH I Kpn I	RBS	Kozac Consensus Sgf I	Asc I

CTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCCGCCGCGATCGCCGGCGCGCCAGATCT

Hind III	Nhe I	Rsr II	Mlu I		Not I	Xho I	GFP Tag

CAAGCTTAACTAGCTAGCGGACCG ACG CGT ACG CGG CCG CTC GAG ATG GAG AGC GAC --- --- ---
                            T   R   T   R   P   L   E   M   E   S   D   -   -   -

		Pme I	Fse I

--- --- GAA GAA AGA GTT TAA ACGGCCGGCCGCGGAGCT
 -    -   E   E   R   V Stop

Plasmid Map:

ACCN: NM_058197

ORF Size: 348 bp

OTI Disclaimer: 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_058197.5
RefSeq Size:	1235 bp
RefSeq ORF:	351 bp
Locus ID:	1029
UniProt ID:	P42771
Cytogenetics:	9p21.3
Protein Families:	Druggable Genome
Protein Pathways:	Bladder cancer, Cell cycle, Chronic myeloid leukemia, Glioma, Melanoma, Non-small cell lung cancer, p53 signaling pathway, Pancreatic cancer, Pathways in cancer
Gene Summary:	This gene generates several transcript variants which differ in their first exons. At least three alternatively spliced variants encoding distinct proteins have been reported, two of which encode structurally related isoforms known to function as inhibitors of CDK4 kinase. The remaining transcript includes an alternate first exon located 20 Kb upstream of the remainder of the gene; this transcript contains an alternate open reading frame (ARF) that specifies a protein which is structurally unrelated to the products of the other variants. This ARF product functions as a stabilizer of the tumor suppressor protein p53 as it can interact with, and sequester, the E3 ubiquitin-protein ligase MDM2, a protein responsible for the degradation of p53. In spite of the structural and functional differences, the CDK inhibitor isoforms and the ARF product encoded by this gene, through the regulatory roles of CDK4 and p53 in cell cycle G1 progression, share a common functionality in cell cycle G1 control. This gene is frequently mutated or deleted in a wide variety of tumors, and is known to be an important tumor suppressor gene. [provided by RefSeq, Sep 2012]