

## Product datasheet for **MG204858**

### Prkag1 (NM\_016781) Mouse Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Prkag1 (NM\_016781) Mouse Tagged ORF Clone  
**Tag:** TurboGFP  
**Symbol:** Prkag1  
**Synonyms:** AA571379; BB036179; Prkaac  
**Mammalian Cell Selection:** Neomycin  
**Vector:** pCMV6-AC-GFP (PS100010)  
**E. coli Selection:** Ampicillin (100 ug/mL)  
**ORF Nucleotide Sequence:** >MG204858 representing NM\_016781  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGGAGTCGGTTGCTGCAGAGAGCTCGCCAGCTCTAGAGAATGAACACTTCAAGAGACCCCGAATCAA  
 ACAATAGTGTGTATACTTCCTTCATGAAGTCTCATCGCTGCTATGACCTAATCCACAAGTTCCAAGTT  
 GGTGGTATTTGACTTCGCTACAGGTAAGAAAGCCTTTTTGCCCTGGTGACCAATGGTGTTCGTGCC  
 GCCCTTTGTGGGACAGTAAGAAGCAGAGTTTTGTGGCATGCTGACCATCACCGACTTCATCAACATTT  
 TGCACCGATACTATAAGTCAGCCCTGGTGCAGATCTACGAACTGGAGGAGCACAAGATAGAGACGTGGAG  
 AGAGGTGTACCTGCAGGACTCCTTAAGCACTTGTCTGCATCTCTCAAATGCCAGTTGTTTGTATGCT  
 GTCTCTTCATTAATTCGAAATAAGATCCACAGGCTCCCAGTTATCGACCCAGAGTCAGGCAACACCTTGT  
 ACATCCTTACTCACAGCGGATCCTCAAGTTTCTCAAGTTGTTTATCACCGAGTTCCCAAGCCGGAATT  
 CATGTCTAAGTCTCTCAAGAGCTGCAGATTGGCACCTATGCCAATATTGCCATGGTCCGTACTACCAGC  
 CCTGTCTACGTGGCTCTGGGCATCTTTGTACAGCACCGAGTCTCCGCCTTACCTGTAGTGGATGAGAAA  
 GCGTGTGGTGGACATCTACTCCAAGTTTGTATGTATCAATTTGGCAGCCGAAAAGACCTACAACAACCT  
 AGATGTGTCTGTGACAAAAGCCCTGCAGCATCGGTCCCCTACTTTGAGGGTGTCTCAAATGCTACCTG  
 CATGAGACTCTGGAACCATCATCAATAGGCTGGTGGAGGAGAGTTTACCAGTCTGGTGGTGGTGGATG  
 AACACGACGTGGTCAAGGCATCGTTTCGCTGTCTGACATCTTACAGGCTCTGGTCTCACGGGTGGAGA  
 GAAGAAGCCC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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**Protein Sequence:** >MG204858 representing NM\_016781  
Red=Cloning site Green=Tags(s)

MESVAAESSPALENEHFQETPESNNSVYTSFMKSHRCYDLIPTSSKLVVFDTSLQVKKAFFALVTNGVRA  
 APLWDSKKQSFVGM L TITDFINILHRYYSALVQIYELEEK IETWREVYLQDSFKPLVCISPNASLFDA  
 VSSLIRNKIHR L PVIDPESGNTLYILTHKRILKFLKLFIT EFPKPEFMKSLQELQIGTYANIAMV R TTT  
 PVYVALGIFVQHRVSALPVVDEKGRVVDIYSKFDVINLAAEKT YNNLDVSVTKALQHRSHYFEGVLKCYL  
 HETLETIINRLVEAEVHRLVVVDEHDVVKGI VLSLDILQALVLTGGEKKP

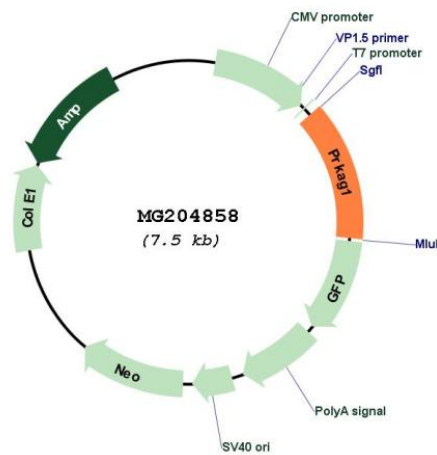
TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**



**ACCN:** NM\_016781

**ORF Size:** 990 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\\_016781.2](#), [NP\\_058061.2](#)

**RefSeq Size:** 1680 bp

**RefSeq ORF:** 993 bp

**Locus ID:** 19082

**UniProt ID:** [Q54950](#)

**Cytogenetics:** 15 54.73 cM

**Gene Summary:**

AMP/ATP-binding subunit of AMP-activated protein kinase (AMPK), an energy sensor protein kinase that plays a key role in regulating cellular energy metabolism. In response to reduction of intracellular ATP levels, AMPK activates energy-producing pathways and inhibits energy-consuming processes: inhibits protein, carbohydrate and lipid biosynthesis, as well as cell growth and proliferation. AMPK acts via direct phosphorylation of metabolic enzymes, and by longer-term effects via phosphorylation of transcription regulators. Also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. Gamma non-catalytic subunit mediates binding to AMP, ADP and ATP, leading to activate or inhibit AMPK: AMP-binding results in allosteric activation of alpha catalytic subunit (PRKAA1 or PRKAA2) both by inducing phosphorylation and preventing dephosphorylation of catalytic subunits. ADP also stimulates phosphorylation, without stimulating already phosphorylated catalytic subunit. ATP promotes dephosphorylation of catalytic subunit, rendering the AMPK enzyme inactive (By similarity).[UniProtKB/Swiss-Prot Function]