

Product datasheet for **MR208943**

Prkag2 (NM_001170556) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Prkag2 (NM_001170556) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Prkag2
Synonyms:	2410051C13Rik; AAKG; AAKG2; AI854673; H91620p; WPWS
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>MR208943 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGGGAAGCGCAGCCATGGACACCAAGAAGAAGAAGAGGTTTCCAGCCCGGGCGGAGCAGTGGCAAAA
 AGAACCTTAGCCTGAAGAGGCGGTCACTGCGAGTGCACATTCCGGACCTGAGTTCCTTTGCCATGCCGCT
 CCTGGATGGAGATGTGGAGAATTCAGAAAAGCATTTCATCTCGAAAGGTGGACAGTCCCTTCACTCAGGC
 AGCCCCTCAGAGGACTTTCTCCAGAGGCCCCAGCCCCGGCCCTCCAGCCCTGTGTCTCTCCGTGA
 GGCCCAAGACGAGCCCTGGCTCTCCAAAAGTGTGTTCCGTTTCTCTACCAGGAGTCCCCTCCAGCCTC
 TCCACGCCGATGAGCTTCAGTGGGATCTTCGCTCCTCATCAAAGAGTCTTCGCCAACTCCAACCCG
 TCTACCTCTCTGGGGCATCCGGTCTTCTCACGGTCCAGAAAACCTCCAGCGTCTCTCTTCTCCGT
 CAACACCCACCAAGTGACCAAGCAGCACCCATTTCCCCTGGAGTCTACAAGCAGGAGCCTGAACGCC
 AGAGAGCCGCATCTATGCTTCTCGTCCCCTCCAGACACTGGGCAGCGCTTCTGCCTGGCCTTTCAGAGC
 CCAGCGCGACCTCCGCTGGCATCCCCGACATACCATGCTCCTTTGAGAAGTGCAGTGGTGGCGGCC
 CGGGACCCCGGAAGCCGGCATGCTGGAGAAGCTGGAGTTCAGGAGGAAGAAGACTCAGAAAGTGGCTT
 TTATATGCGATTTCAGGTCACACAAGTGTATGACATCGTTCCAACAGTTCAAAGCTTGTGTCTTC
 GACACTACGTTGCAAGTCAAAAAGGCCCTTCTTTCCTTGGTAGCCAACGGAGTCCGTGCAGCGCCGCTGT
 GGGAAAGTAAAAAGCAGAGCTTTGTAGGAATGCTCACGATTACAGATTTCAATAATCTACACAGATA
 CTATAATCAGCCATGGTACAGATTTATGAATTGGAAGAACATAAGATTGAAACGTGGAGGGAGTTGTAC
 TTACAAGAAACCTTCAAGCCTTTGGTGAACATCTCCAGATGCGAGCCTTTCGATGCTGATACTCGT
 TGATCAAAAATAAAAATCCACAGATTGCCAGTTATTGACCCTATCAGTGGGAACGCACCTTTATATACTTAC
 CCACAAAAGAATCCTCAAGTTCCTCCAGCTTTTTATGTCTGACATGCCAAAGCCTGCCTTCATGAAGCAG
 AACCTGGATGAGCTTGAATCGGAACGTACCACAAATATTGCCTTCATTCACCCAGACACTCCCATATCA
 AAGCCTTGAACATCTTCGTGGAGAGACGGATATCCGCATTGCCTGTGGTGGATGAGTCAAGAAAAGTTGT
 AGATATTTATTCCAAGTTTGTGTAATTAATCTTGTCTGCTGAGAAAACGTACAATAACTTGGACATCACA
 GTGACCCAGGCCCTGCAGCACCGCTCGCAGTATTTTGGGGTGTGGTGAAGTGCAGTAAGCTGGAACAC
 TGGAGACCATCGTGGACAGGATAGTGAAGCCGAGGTCCATCGGCTGGTGTAGTGAATGAAGCAGATAG
 CATTGTGGGTATTATCTCCTGTGACACATCCTGCAAGCCCTGATCCTCACACCAGCAGGTGCCAAACAG
 AAGGAGACAGAGACTGAA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>MR208943 protein sequence
 Red=Cloning site Green=Tags(s)

MGSAAMDTKKKKEVSSPGSSGKKNPSLKRRSLRVHIPDLSSFAMPLLDGDVENSEKHSSRKVDSPFSSG
 SPSRGLFSRGPQPRPSSPVSAVPRPKTSPGSPKTVFPFSYQESPPRSPRMSFSGIFRSSKESPPNSNP
 STSPGGIRFFSRKTSVSSSPSTPTQVTKQHPFPLESYKQEPERPERIYASSPPDTGQRFCLAFQS
 PARPPLASPTYHAPLRTAVLAAAPGPAEAGMLEKLEFQEEEDSESGFYMRFMRSKCYDIVPTSSKLVV
 DTTLQVKAFFALVANGVRAAPLWESKKQSFVGMLTITDFINILHRYYSKPMVQIYELEEHKIEWRELY
 LQETFKPLVNI SPDASLFDVAVSLIKNIHRLPIDPISGNALYILTHKRILKFLQLFMSDMPKPAFMKQ
 NLDELIGITYHNI AF IHPDTP I I KALNIF VERRISALPVVDESGKVVDIYSKFDVINLAAEKTYNLDIT
 VTQALQHR SQYFEGVVKCSKLETLETIVDRIVRAEVHRLVVVNEADSI VGIISLSDILQALILTPAGAKQ
 KETETE

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

Sgfl-Mlul

Cloning Scheme:


ACCN: NM_001170556

ORF Size: 1701 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_001170556.1](#), [NP_001164027.1](#)

RefSeq Size: 2258 bp

RefSeq ORF: 981 bp

Locus ID: 108099

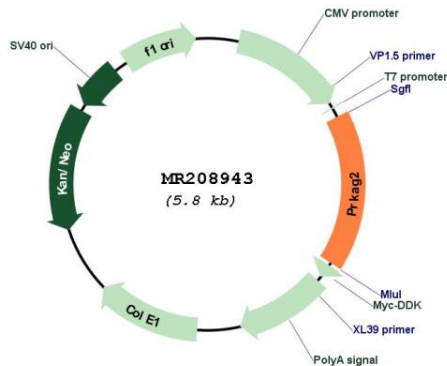
UniProt ID: [Q91WG5](#)

Cytogenetics: 5 A3

MW: 63 kDa

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]

Product images:



Circular map for MR208943