

## Product datasheet for **SC308605**

### PRKACA (NM\_207518) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	PRKACA (NM_207518) Human Untagged Clone
Tag:	Tag Free
Symbol:	PRKACA
Synonyms:	CAFD1; PKACA; PPNAD4
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>NCBI ORF sequence for NM_207518, the custom clone sequence may differ by one or more nucleotides

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ATGGCTTCCAACCTCCAGCGATGTGAAAGAATTCTTAGCCAAAGCCAAAGAAGATTTTCTTAAAAATGGG
AAAGTCCCCTCAGAACACAGCCCACTTGGATCAGTTTGAACGAATCAAGACCCTCGGCACGGGCTCCTT
CGGGCGGGTGATGCTGGTGAACACAAGGAGACCGGGAACCACTATGCCATGAAGATCCTCGACAAACAG
AAGGTGGTGAACCTGAAACAGATCGAACACACCCTGAATGAAAAGCGCATCCTGCAAGCTGTCAACTTTC
CGTTCCTCGTCAAACCTCGAGTTCTCCTTCAAGGACAACCTCAAATTATACATGGTCATGGAGTACGTGCC
CGGCGGGGAGATGTTCTCACACCTACGGCGGATCGGAAGGTTCAAGTACGCCCCATGCCGTTTCTACGGC
GCCAGATCGTCTGACCTTTGAGTATCTGCACCTCGCTGGATCTCATCTACAGGGACCTGAAGCCGGAGA
ATCTGCTCATTGACCAGCAGGGCTACATTCAGGTGACAGACTTCGGTTTCGCCAAGCGCGTGAAGGGCCG
CACTTGGACCTTGTGCGGCACCCCTGAGTACCTGGCCCTGAGATTATCCTGAGCAAAGGCTACAACAAG
GCCGTGGACTGGTGGCCCTGGGGTTCTTATCTATGAAATGGCCGCTGGCTACCCGCCCTTCTTCGCAG
ACCAGCCCATCCAGATCTATGAGAAGATCGTCTCTGGGAAGGTGCGCTTCCCTTCCCCTTCCAGCTCTGA
CTTGAAGGACCTGCTGCGGAACCTCCTGCAGGTAGATCTACCAAGCGCTTTGGGAACCTCAAGAATGGG
GTCAACGATATCAAGAACCACAAGTGGTTTCCACAACCTGACTGGATTGCCATCTACCAGAGGAAGGTGG
AAGCTCCCTTTCATACCAAAGTTTAAAGGCCCTGGGATACGAGTAACTTTGACGACTATGAGGAAGAAGA
AATCCGGGTCTCCATCAATGAGAAGTGTGGCAAGGAGTTTTCTGAGTTTTAG
```

Restriction Sites:	Please inquire
ACCN:	NM_207518



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**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 TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.

**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\\_207518.1](#), [NP\\_997401.1](#)

**RefSeq Size:** 2490 bp

**RefSeq ORF:** 1032 bp

**Locus ID:** 5566

**UniProt ID:** [P17612](#)

**Cytogenetics:** 19p13.12

**Protein Families:** Druggable Genome, Protein Kinase

**Protein Pathways:** Apoptosis, Calcium signaling pathway, Chemokine signaling pathway, Dilated cardiomyopathy, Gap junction, GnRH signaling pathway, Hedgehog signaling pathway, Insulin signaling pathway, Long-term potentiation, MAPK signaling pathway, Melanogenesis, Olfactory transduction, Oocyte meiosis, Prion diseases, Progesterone-mediated oocyte maturation, Taste transduction, Vascular smooth muscle contraction, Vibrio cholerae infection, Wnt signaling pathway

**Gene Summary:**

This gene encodes one of the catalytic subunits of protein kinase A, which exists as a tetrameric holoenzyme with two regulatory subunits and two catalytic subunits, in its inactive form. cAMP causes the dissociation of the inactive holoenzyme into a dimer of regulatory subunits bound to four cAMP and two free monomeric catalytic subunits. Four different regulatory subunits and three catalytic subunits have been identified in humans. cAMP-dependent phosphorylation of proteins by protein kinase A is important to many cellular processes, including differentiation, proliferation, and apoptosis. Constitutive activation of this gene caused either by somatic mutations, or genomic duplications of regions that include this gene, have been associated with hyperplasias and adenomas of the adrenal cortex and are linked to corticotropin-independent Cushing's syndrome. Alternative splicing results in multiple transcript variants encoding different isoforms. Tissue-specific isoforms that differ at the N-terminus have been described, and these isoforms may differ in the post-translational modifications that occur at the N-terminus of some isoforms. [provided by RefSeq, Jan 2015]

Transcript Variant: This variant (2) contains an alternate 5' terminal exon and initiates translation at an alternate start codon, compared to variant 1. It encodes Calpha2, PMID:21812984 (also known as C alpha-s, PMID: 10906071) which has a shorter and distinct N-terminus, compared to Calpha1. This variant is specifically expressed in spermatogenic cells and may be essential for male fertility.