

Product datasheet for RC220376

PKA R2 (PRKAR2A) (NM_004157) Human Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: PKA R2 (PRKAR2A) (NM_004157) Human Tagged ORF Clone
Tag: Myc-DDK
Symbol: PKA R2
Synonyms: PKR2; PRKAR2
Mammalian Cell Selection: Neomycin
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
ORF Nucleotide Sequence: >RC220376 representing NM_004157
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGATCGCC**

ATGAGCCACATCCAGATCCC GCCGGGGCTCACGGAGCTGCTGCAGGGCTACACGGTGGAGGTGCTGCGAC
 AGCAGCCGCCTGACCTCGTGAATTCGAGTGGAGTACTTCAACCCGCTGCGCGAGGCCCGCCCGCCAGC
 CTCAGTCTGCCCGCCGCCACCCACGCCAGAGCCTGGGCCACCCCGCCAGAACC CGCCGGACCGT
 GTCGCCGACGCCAAAGGGGACAGCGAGTCGGAGGAGGACGAGGACTTGGAAAGTCCAGTTCCTAGCAGAT
 TTAATAGACGAGTATCAGTCTGTGCTGAGACCTATAACCTGATGAGGAAGAGGAAGATACAGATCCAAG
 GGTGATTCATCTAAAAGTATGAACAGAGATGCAGACTTCAGGAAGCTTGCAAAGATATTCCTTTTC
 AAAAATCTTGATCAGGAACAGCTTTCTCAAGTTCGATGCCATGTTTGAAGGATAGTCAAAGCTGATG
 AGCATGTCATTGACCAAGGAGATGATGGAGACAACCTTTATGTCATAGAACGGGGAACCTTATGACATTTT
 AGTAACAAAAGATAATCAAACCCGCTCTGTTGGTCAATATGACAACCGTGGCAGTTTTGGAGAAGTACGCT
 CTGATGTACAACCCCGAGAGCTGCTACCATTGTTGCTACCTCAGAAGGCTCCCTTTGGGGACTGGACC
 GGGTGACTTTTAGAAGAATCATAGTAAAAATAATGCAAAGAAGAGGAAGATGTTGAATCATTTATTGA
 GTCTGTGCCCTCCTTAAATCACTAGAGGTGTCAGAACGAATGAAGATTGTTGGATGTAATAGGAGAGAAG
 ATCTATAAGGATGGAGAACGCATAATCACTCAGGGTAAAAGGCTGATAGCTTTTACATCATAGAGTCTG
 GCGAAGTGAGCATCTTGATTAGAAGCAGGACTAAATCAAACAAGGATGGTGGGAACAGGAGGTCGAGAT
 TGCCCGCTGCCATAAGGGGACGACTTTGGAGAGCTTGCCTGGTCACCAACAAACCCAGAGCTGCCTCA
 GCTTATGCAGTTGGAGATGTCAAATGCTTAGTTATGGATGTACAAGCATTGAGAGGCTTCTGGGCCCT
 GCATGGACATCATGAAGAGGAACATCTCACACTATGAGGAACAGCTGGTGAAGATGTTTGGCTCCAGCGT
 GGATCTGGGCAACCTCGGGCAG

ACGGTACGGCGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA



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Protein Sequence: >RC220376 representing NM_004157
Red=Cloning site Green=Tags(s)

MSHIQIPPGLTELLQGYTVEVLRQQPDLVEFAVEYFTRLREARAPASVLPAAATPRQSLGHPPPEPGPDR
VADAKGDSESEDEDLEVPVPSRFNRRVSVCAETYNPDEEEEDTPRVIHPKTDEQRCLQEACKDILLF
KNLDQEQLSQVLDAMFERIVKADEHVIDQGGDNFYVIERGTYDILVTKDNQTRSVGQYDNRGSGFELA
LMYNTPRAATIVATSEGLWGLDRVTFRRRIIVKNNAKRKMFSFIESVPLLLKSLEVSERMKIVDVIgek
IYKdGERIITQGEKADSFYIIESGEVSILIRSRTKSNKDGGNQVEIARCHKQYFGELALVTKNPRAAS
AYAVGDVKCLVMDVQAFERLLGPCMDIMKRNIshyEEQLVKMFGSSVDLGNLgQ

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6099_b05.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



* The last codon before the Stop codon of the ORF

ACCN: NM_004157

ORF Size: 1212 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.

Note: Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

RefSeq: [NM_004157.4](#)

RefSeq Size: 2381 bp

RefSeq ORF: 1215 bp

Locus ID: 5576

UniProt ID: [P13861](#)

Cytogenetics: 3p21.31

Domains: cNMP, RIIa

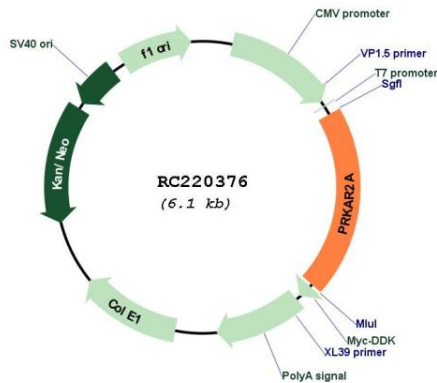
Protein Families: Druggable Genome

Protein Pathways: Apoptosis, Insulin signaling pathway

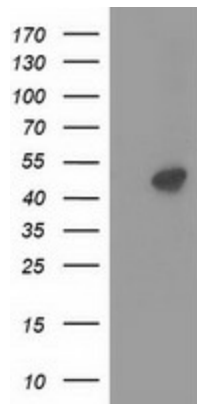
MW: 45.3 kDa

Gene Summary: cAMP is a signaling molecule important for a variety of cellular functions. cAMP exerts its effects by activating the cAMP-dependent protein kinase, which transduces the signal through phosphorylation of different target proteins. The inactive kinase holoenzyme is a tetramer composed of two regulatory and two catalytic subunits. 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. The protein encoded by this gene is one of the regulatory subunits. This subunit can be phosphorylated by the activated catalytic subunit. It may interact with various A-kinase anchoring proteins and determine the subcellular localization of cAMP-dependent protein kinase. This subunit has been shown to regulate protein transport from endosomes to the Golgi apparatus and further to the endoplasmic reticulum (ER). [provided by RefSeq, Jul 2008]

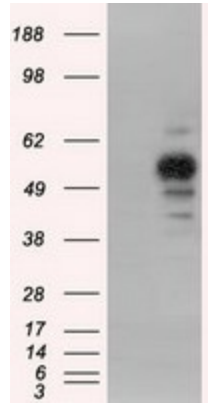
Product images:



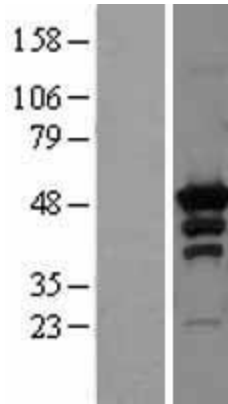
Circular map for RC220376



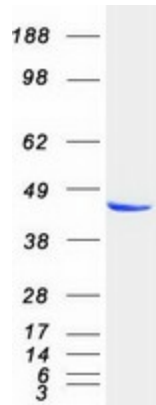
HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY PRKAR2A (Cat# RC220376, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-PRKAR2A (Cat# [TA501146]). Positive lysates [LY401337] (100ug) and [LC401337] (20ug) can be purchased separately from OriGene.



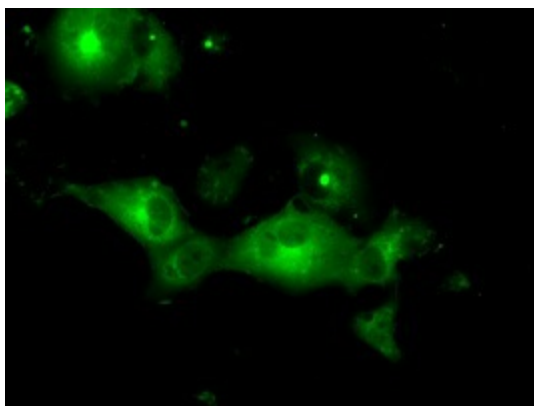
HEK293T cells were transfected with the pCMV6-ENTRY control (Left lane) or pCMV6-ENTRY PRKAR2A (RC220376, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-PRKAR2A ([TA501195]). Positive lysates [LY401337] (100ug) and [LC401337] (20ug) can be purchased separately from OriGene.



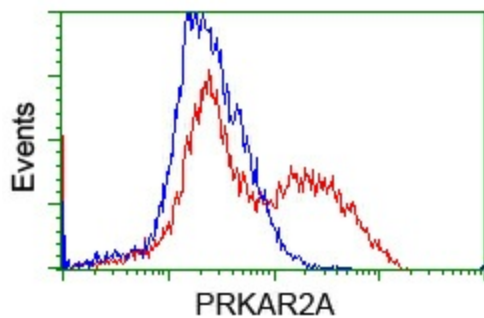
Western blot validation of overexpression lysate (Cat# [LY401337]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC220376 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified PRKAR2A protein (Cat# [TP320376]). The protein was produced from HEK293T cells transfected with PRKAR2A cDNA clone (Cat# RC220376) using MegaTran 2.0 (Cat# [TT210002]).



Anti-PRKAR2A mouse monoclonal antibody ([TA501195]) immunofluorescent staining of COS7 cells transiently transfected by pCMV6-ENTRY PRKAR2A (RC220376).



HEK293T cells transfected with either RC220376 overexpress plasmid (Red) or empty vector control plasmid (Blue) were immunostained by anti-PRKAR2A antibody ([TA501195]), and then analyzed by flow cytometry.