

## Product datasheet for **RG205335**

### Epac2 (RAPGEF4) (NM\_007023) Human Tagged ORF Clone

#### Product data:

|                           |   |
|---------------------------|---|
| Product Type:             | Expression Plasmids   |
| Product Name:             | Epac2 (RAPGEF4) (NM_007023) Human Tagged ORF Clone                          |
| Tag:                      | TurboGFP  |
| Symbol:                   | Epac2   |
| Synonyms:                 | CAMP-GEFII; CGEF2; EPAC; EPAC 2; EPAC2; Nbla00496                           |
| Mammalian Cell Selection: | Neomycin  |
| Vector:                   | pCMV6-AC-GFP (PS100010)   |
| E. coli Selection:        | Ampicillin (100 ug/mL)  |
| ORF Nucleotide Sequence:  | >RG205335 representing NM_007023<br>Red=Cloning site Blue=ORF Green=Tags(s) |

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCCGCC**CGATCGCC**

ATGGTCGCTGCGCAGCTGCCATTCTTCTCCTCTGCCGAGTGGATCGCCTGCCTGGATAAAAGACCAC  
TGGAGCGATCCAGCGAAGATGTGGATAAATCTCACTCGACTGAAAGAAGTTAAAGCTTTTGAGAAATT  
TCACCAAATCTCCTTCATCAGATTTGCTTATGTGGTTATTATGAGAATCTGGAAAAGGGAATAACATTA  
TTTCGCCAGGGTGATATTGGAACAACTGGTATGCTGCTCCTGGCAGGGTCTTTGGATGTTAAAGTATCTG  
AGACCAGCAGTCACCAGGATGCTGTGACCATCTGTACCCTGGGAATTGGGACGGCCTTTGGAGAGTCCAT  
TCTGGACAACACACCCCGCCATGCAACCATCGTTACCAGGGAGAGCAGTGAAGTCTCCGCATCGAGCAG  
AAGGACTTCAAGGCACTATGGGAGAAATATCGACAGTATATGGCAGGACTTCTGGCTCCTCTTATGGTG  
TTATGGAAACGGGCTCTAACAAATGACAGGATTCCTGACAAGGAGAACACACCTCTCATTGAACCTCACGT  
TCCTCTTCGTCCTGCTAACACCATTACCAAGGTCCTTCAGAGAAGATCCTCAGAGCTGGAAAAATTTTA  
CGAAATGCCATTCTCTCGAGCACCTCACATGATAAGAGATAGAAAATACCACCTAAAGACATACAGAC  
AATGCTGTGTGGAACTGAAGTGGTGGACTGGATGATGCAGCAGACACCATGTGTTCACTCCCGGACTCA  
AGCTGTTGGCATGTGGCAAGTCTGTTAGAAGATGGTGTCTCAACCACGTGGACCAGGAGCACCATTTCA  
CAAGCAAATATTTATTCTATCGATTTCTGGATGATGAGCAGAGGATGCCCTTTGCTACTGAGGAGG  
AGAAGAAGGAGTGTGATGAGGAGCTCCAGGACACCATGCTGCTGCTGTCACAGATGGGCCCCGACGCCCA  
CATGAGGATGATCCTTCGCAAACACCTGGCCAGAGGACTGTGGATGACCTAGAGATTATCTATGAGGAG  
CTTCTTCATATTAAGCCTTATCCCATCTTTCTACCACAGTGAACGAGAGTTAGCAGGTGTTCTCATT  
TTGAGTCTCACGCCAAAGGAGGGACTGTGTTGTTAAACCAGGGGAAGAAGGTACCTCCTGGTACATTAT  
TCTAAAAGGATCAGTGAATGTAGTCATTTACGGCAAGGGTGTGGTCTGCACCTGCATGAAGGAGATGAC  
TTCGGCAAGTTAGCACTAGTGAATGATGCCCCACGAGCTGCCTCTATCGTCTTACGAGAAGATAACTGCC  
ATTTCTTAAGAGTAGACAAGGAGATTTCAACCGATCCTAAGGGACGTGGAGGCGAATACAGTCAGACT  
TAAAGAACATGACCAAGATGTCTTGGTGTGGAGAAGGTCCAGCAGGGAACAGAGCTTCTAATCAAGGA



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AACTCACAGCCTCAGCAAAAGTATACTGTGATGTCAGGAACACCTGAAAAATTTTAGAGCATTTTCTAG  
 AAACAATACGCCTTGAGGCAACTTTAAATGAAGCAACAGATTCTGTTTTAAATGACTTTATTATGATGCA  
 CTGTGTTTTATGCCAAATACCCAGCTTTGCCCGGCACTGGTGGCCCACTACCACGCACAGCCTTCACAA  
 GGTACAGAACAGGAGAAAATGGATTATGCCCTCAACAATAAGAGGCGAGTCATCCGCCTGGTTCTACAGT  
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 AAGCAAATCTCAGAAGATGCAAAGGCACCACAAAAGAAGCACAAGTTCTTTTGCAACAGTTCAATACGG  
 GCGATGAGAGAGCCAGAAGCGCCAGCCTATCCGCGGCTCTGATGAAGTTCTGTTTAAGGCTATTGCAT  
 GGACCCACCTACACAACCATTGCGGTGCCAGTGGCCACTTCGGTGAAGGAAGTCATCAGTGCAGTTGCC  
 GACAAGCTGGGCTCCGGGGAGGGCCTGATCATAGTCAAGATGAGTTCGGAGGAGAAAAGGTGGTCTCA  
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 ATTCGATTCACTGACTCCCTTACCAGAACAGGAAGGCCCAACTGTTGGAACAGTGGGAACTTTTGAACTG  
 ATGAGCTCAAAGATTTAGCATACCAGATGACAATTTATGATTGGGAAGTCTTCAACTGCGTGCATGAGC  
 TGGAGCTAATCTATCACACATTTGGAAGGCATAATTTAAAAAGACCACAGCAAACCTGGATTTGTTCT  
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 GTTCAGCTATTAATAAATTTTAAAGATAGCAGCCACTGTAAGGAGTATAAAAATCTGAATTCCTTTT  
 TTGCCATCGTCATGGGACTAAGTAACTGTTGCTGTGAGCCGCTTGGCACTAACGTGGGAGAAAAGTCCAAAG  
 CAAGTTCAAGAAGTTCTATGCGGAGTTTAAAGTTTAAATGGACCTTCAAGGAACACAGGGCCTACAGG  
 CTGACAGTAGCTAAGCTGGAACCTCCTCTCATCCCTTTCATGCCTTTGCTCATTAAAGATATGACATTTA  
 CTCATGAGGGGAACAAGACGTTTCATTGACAATCTAGTAACTTTGAAAAATGCGCATGATTGCAAATAC  
 GGCCAGAACAGTGAGATACTACAGGAGCCAACCTTCAATCCTGATGCAGCTCAAGCTAATAAGAACCAT  
 CAGGATGTCGGGAGTTATGTACGGCAATTAATGTGATTGACAACCAGAGAACTTTATCACAGATGTCAC  
 ACAGATTAGAGCCTCGTCGACCA

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

>RG205335 representing NM\_007023  
 Red=Cloning site Green=Tags(s)

MVAHAHSSSSAEWIACLDKRPLERSSEVDIIFTRLKEVKAFEKHPNLLHQICLCGYENLEKGITL  
 FRQGDIGTNWYAVLAGSLDVKVSSETSSHQDAVTICTLGIGTAFGESILDNTPRHATIVTRESSELLRIEQ  
 KDFKALWEKYRQYMAGLLAPPYGVMETGSNNDRIPDKENTPLIEPHVPLRPANTITKVPSEKILRAGKIL  
 RNAILSRAPHMIRDYKYLKTYRQCCVGTGLVDWMMQQTCPVHSRTQAVGMWQVLLLEDGVLNHVDQEHF  
 QDKYLFYRFLDDEHEDAPLPTEEEKKECDEELQDTMLLLSQMGPDAHMRMILRKPPGQRTVDDLEIIEE  
 LLHIKALSHLSTTVKRELAGVLI FESHAKGGTVL FNQGEETSWYIILKGSVNVVIYKGVVCTLHEGDD  
 FGKLALVNDAPRAASIVLREDNCHFLRVDKEDFNRIIRDVEANTVRLKEHDQDVLVLEKVPAGNRASNQ  
 NSQPQQKYTVMSGTPEKILEHFLETIRLEATLNEATDVLNDFIMMHCVFMPNTQLCPALVAHYHAQPSQ  
 GTEQEKMDYALNNKRRVIRLVLQWAAMYGDLLQEDDVSMFL EEFYVSVSDDARMI AALKEQLPELEKIV  
 KQISEDAPQKHKVLLQQFNTGDERAQKRP I RGSDEVLFKYYCMDPTYTTIRVPVATSVKEI SAVA  
 DKLGSSEGLIIVKMSSGGEKVVLKPNVSVFMTLTINGRFLFACPREQFDSLTPLEQEGPTVGTGTFEL  
 MSSKDLAYQMTIYDWELFNCVHELELIYHTFGRHNFKKTANLDFLRRFNEIQFVWVTEICLCSQLSKR  
 VQLLKKFIKIAAHCKEYKLNLSFFAIVMGLSNVAVSRLALTWEKLP SKFKKFYAEFESLMDPSRNRHAYR  
 LTVAKLEPPLIPFMPLLIKDMTF THEGNKTFIDNLVNF EKMRMIANTARTVRYRSQPFNPDAQAANKNH  
 QDVRSYVRQLNVIDNQRTL SQMSHRLPRRP

TRTRPLE - GFP Tag - V

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**



**ACCN:** NM\_007023

**ORF Size:** 3033 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\\_007023.1](#), [NP\\_008954.1](#)

**RefSeq Size:** 4278 bp

**RefSeq ORF:** 3036 bp

**Locus ID:** 11069

**UniProt ID:** [Q8WZA2](#)

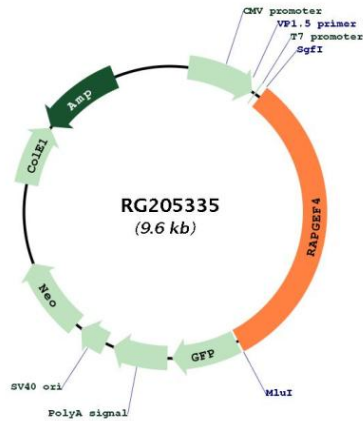
**Cytogenetics:** 2q31.1

**Domains:** DEP, cNMP, RasGEFN, RasGEF

**Protein Pathways:** Leukocyte transendothelial migration

**Gene Summary:** Guanine nucleotide exchange factor (GEF) for RAP1A, RAP1B and RAP2A small GTPases that is activated by binding cAMP. Seems not to activate RAB3A. Involved in cAMP-dependent, PKA-independent exocytosis through interaction with RIMS2 (By similarity).[UniProtKB/Swiss-Prot Function]

**Product images:**



Circular map for RG205335