

Product datasheet for **RR205579**

Arhgef2 (NM_001012079) Rat Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Arhgef2 (NM_001012079) Rat Tagged ORF Clone
Tag: Myc-DDK
Symbol: Arhgef2
Synonyms: MGC95068
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
Cell Selection: Neomycin
ORF Nucleotide Sequence: >RR205579 representing NM_001012079
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCCCGATCGCC

ATGTCTCGGATCGAATCCCTCACTCGCGCGGGATCGACCGGAGCAAGGAGCAGGCGACCAAGACCCGGG
 AAAAGGAGAAGATGAAGGAAGCTAAAGATGCCCGCTATACCAACGGCCACCTCTTACCACCATCTCGGT
 CTCGGCATGACTATGTGCTATGCTGTAAACAAGAGCATTACAGCCAAGGAAGCCCTCATTGTGCCACA
 TGTAACTGACCATCCACAACCGCTGTAAGGACACGCTGGCCAACGTACCAAGGTCAAGCAGAAGCAAC
 AGAAAGCTGCACTGCTGAGGAACAACACTGCCTTGCACTCCGTCTCTCCGAAGTAAGCAACACCAG
 AGAGCGGCCAACGCTGCCATCTACCCTCCGATAGCTTCCGGCAGTCCCTCCTGGGTTCTCGTCGTGGC
 CTGTCTCCTTGTCTTTGGCCAAAAGTGTTCCTACTACCAACATTGCTGGACATTTCAATGATGAGTCTC
 CTCTGGGGCTGCGTCAGATCCTCTCCAGTCCACAGACTCCCTCAACATGCGGAACCGAACCCCTGTCCGT
 GGAGTCCCTTATTGATGAAGGTGTAGAAGTGTCTACAACGAGCTCATGAGTGACTTTGAGATGGACGAG
 AAGGACTTCGAGGCGGATTCATGGAGCCTTGTGTGGACAGCTTCTGCAACAGCATAAAAAGGAGG
 TGATGAAGAAGCAAGATGTCATCTACGAGCTGATCCAGACCGAGCTGCACCATGTGAGAACCTTGAAGT
 TATGACCCGCTCTTCCGCACTGGGATGCTGGAAGAGTTGCAGATGGAGCCAGAAGTGGTCCAGGGACTG
 TCCCCCTGTGTGGACGAGCTTAGTGACATTCACACACGTTTCCTTAGTCAGCTTTTGAACGCGCGCC
 AGGCCCTGTGTCCAGGCAGCACCCGGAACCTTGTGATCCATCGTTTGGGTGACTTGTCTATCAGCCAGTT
 CTCAGGTTCCAACGCTGAGCAGATGCGCAAGACTTACTCAGAGTTCTGCAGCCGCCACCAAGGCCCTTA
 AAGCTCTATAAGGAGCTGTACGCTCGAGACAAACGCTTCCAACAGTTCATCCGAAAATGACCCGCTCTG
 CTGTGCTGAAGCGGCATGGGTTTCAAGAGTGATTTCTCCTGTAACCTCAGCGGATTACCAAATACCCAGT
 GCTCATCAACAGGATCCTGCAGAATCCCATGGGATTGAAGAGGAGTACCAAGACTTGGCAGCAGCCCTA
 GGGCTAGTAAAGGAGTTGTTGTCCAATGTGGACCAGGATGTACACGAGCTGGAGAAGAGGCCCGCCTTC
 AGGAGATTTACAACCGAATGGATCCTCGGGCTCAGACCCCTGTTCTGGCAAGGGCCCTTCGGCCGAGA
 TGAACCTTTGCGGAGAAAACCTTATCCATGATGGCTGCCTGCTCTGGAAGACAGCCACAGGCCGCTTAAA
 GATGTCCTCTTACTACTGATGACAGATGTGCTGGTGTTCCTCAGGAAAAGGACCAGAAGTACATTTTCA



CGTCCCTGGACAAGCCCTCAGTGGTATCCTTGCAGAATCTCATCGTAAGAGACATTGCCAACCCAGGCGAA
 AGGGATGTTTCTGATCAGTTCTGGCCACCTGAAATGTATGAAGTACACGCAGCATCTCGAGATGACCGT
 ACTACCTGGATCCGTGTCATCCAGCAGAGCGTGCCTTATGCCCGTCGAGGGAGGACTTCCCTCTGATCG
 AGACAGAGGATAAGGCGTACCTCCGAGGATCAAGACGAAACTGCAGCAGAAAAACCAGGCGCTGGTGA
 GCTGCTACAGATGAATGTTGAGCTATTTGCTGAGATGGTCCACTCCAGGCATTAAGCTGGTTTCATC
 GGAATGCCCGCCACCCTGCCAGGGCCTTTCCGCTTGTAGTCTTTGAGTCCCTTCGAGGCGGAGC
 GTCTGCTCAAAGATGCCCTCCGTGAAGTGAAGGCCTGAAAGACCTGTTGTTGGGCCCTTGTGTGGACT
 GCCTTTGACAGCCGAGAACCAGCCTTACCCGTAGAAGCTGACAGTGGTAGCTGTCTGGGGTCACTGCC
 AACGGAGAGGCCAGAACCTTCAATGGCTCCATTGAGCTCTGTAGAGCAGACTCAGATTCCAGCCAGAAGG
 ATCGGAATGGAATCAGTTGAGGTCAACACAGGAGGAGCGTTACAACCATTGGTCAATCTGTATGGACT
 CCTACAAGGCTGCAGGCTGTTGTGGTCCAGCAAGAAAGATTGATGGAAGCCCTGTTCCCTGAAGGCCCT
 GAGCGGTGGAAAAGCTATCCCGAGCCAACTCTCGGGATGGCGAAGCTGGCCGGGCTGCGGTTGCTTCTG
 TAACTCCCAGAAAGCAGGCCACGGAGCTGGCATTACTGCAGAGGCAGCACAGCCTGTTGCAGGAAGAGCT
 GCGGCGCTGCCAGCGCTCGGGGAAGAGCGGGCAACTGAAGCTGGCAGCCTGGAGGCCAGGCTGCGGGAG
 AGCGAGCAAGCCCGGCCCTGCTGGAGCGGAGGCTGAAGAGATCCGCCGCAGCTAGCAGCCTTGGGCC
 AAAACGAGCCACTCCCGCAGAAGCACCCTGGGCTCGCAGGCCTCTGGACCCTCGGCGCCGAGCCTTCC
 AGCAGGCGACGCTCTGTACTTGAAGTTCATCCCCCAGCCTAGTCGAGGCCATGACCCCTGGATTTG
 CCTGTGACTGTTTCCTCCACCGACCTTTGATGACCGAGAGGCACAAGAACTTGGTAGCCCGAGG
 ATCGACTGCAGGACAGCAGTACCCCTGATACTTGCAGTGAAGGAGGAAAGTCAAGTCCCGGCTGTCACC
 CCACAGTCCACGAGACTTACCCGAATGCAGGACATTCCCGAAGAGACAGAAAGCCGAGATGGGGAGCCT
 ACGGCCTCAGAGAGC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGTTTAA

Protein Sequence:

>RR205579 representing NM_001012079
 Red=Cloning site Green=Tags(s)

MSRIESLTRARIDRSKEQATKTREKEKMEAKDARYTNGHLFTTISVSGMTMCYACNKSI TAKEALICPT
 CNVTIHNRCCKDTLANCTKVQKQQAALLRNNTALQSVSLRSKTTTRERPTSAIYPSDSFRQSLGSRRG
 LSSL SLAKSVSTNIAGHFNDESPLGLRQILSQSTDLSLNMNRNRLSVESLIDEGVEVFYNELMSDFEMDE
 KDFEADSWSLAVDSSFLQHKKEVMKKQDVIYELIQTELHHVRTLKIMTRLFRTGMLEELQMEPEVVQGL
 FPCVDELSDIHRFLSQLLERRRQALCPGSTRNFVIHRLGDLLISQFSGSNAEQMRKTYSEFCSRHTKAL
 KLYKELYARDKRFQQFIRKMTRSAVLKRHGVQECILLVTQRITKYPVLINRILQNSHGIEEYQDLAAAL
 GLVKELLSNVDQDVHELEKEARLQEIYNRMDPRAQTPVPGKPFGRDELLRRKLIHDGCLLWKTATGRFK
 DVLLLLMTDVLVFLQEKDQKYIFTSLDKPSVSLQNLIVRDIANQAKGMFLISSGPPMEYEVHAASRDDR
 TTWIRVIQQSVRLCPSREDFPLIETEDKAYLRRIKTKLQKQNALVELLQMNVELFAEMVHFQALKAGFI
 GMPPTLPRGLFRLESFESLRGERLLKDALREVEGLKDLLGPCVDLPLTAREPALPVEADSGSCPGVTA
 NGEARTFNGSIELCRADSDSSQKDRNGNQLRSPQEEALQPLVNL YGLLQGLQAVVVQQRLEALFPEGP
 ERWEKLSRANSRDEAGRAAVASVTPEQATELALLQRQSHLLQEELRRCQRLGEERATEAGSLEARLRE
 SEQARALLEREAEIIRQLAALGQNEPLPAEAPWARRPLDPRRSLPAGDALYLSFNPPQPSRGHDRLDL
 PVTVRSLSLHRPFDREAQELGSPEDRLQDSSDPDTCSEEEVSSRLSPPHSPRDFTRMQDIPETESRDGEP
 TASES

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

Sgfl-Mlul

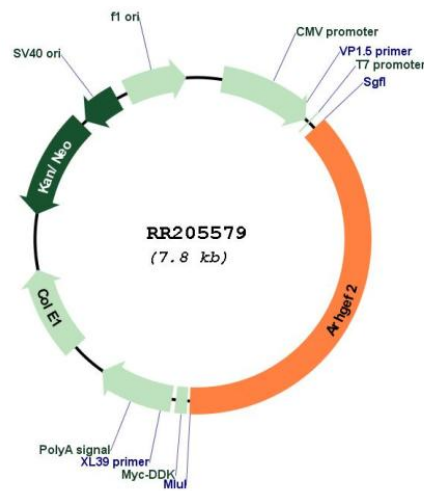
Cloning Scheme:

Cloning sites used for ORF Shutting:



* The last codon before the Stop codon of the ORF

Plasmid Map:



ACCN: NM_001012079
 ORF Size: 2955 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:	<ol style="list-style-type: none">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_001012079.1 , NP_001012079.1
RefSeq Size:	4217 bp
RefSeq ORF:	2958 bp
Locus ID:	310635
UniProt ID:	Q5FVC2
Cytogenetics:	2q34
MW:	111.9 kDa
Gene Summary:	Activates Rho-GTPases by promoting the exchange of GDP for GTP. May be involved in epithelial barrier permeability, cell motility and polarization, dendritic spine morphology, antigen presentation, leukemic cell differentiation, cell cycle regulation, innate immune response, and cancer. Binds Rac-GTPases, but does not seem to promote nucleotide exchange activity toward Rac-GTPases. May stimulate instead the cortical activity of Rac. Inactive toward CDC42, TC10, or Ras-GTPases. Forms an intracellular sensing system along with NOD1 for the detection of microbial effectors during cell invasion by pathogens. Involved in innate immune signaling transduction pathway promoting cytokine IL6/interleukin-6 and TNF-alpha secretion in macrophage upon stimulation by bacterial peptidoglycans; acts as a signaling intermediate between NOD2 receptor and RIPK2 kinase. Contributes to the tyrosine phosphorylation of RIPK2 through Src tyrosine kinase leading to NF-kappaB activation by NOD2. Overexpression activates Rho-, but not Rac-GTPases, and increases paracellular permeability. Involved in neuronal progenitor cell division and differentiation. Involved in the migration of precerebellar neurons.[UniProtKB/Swiss-Prot Function]