

## Product datasheet for RN205579

### Arhgef2 (NM\_001012079) Rat Untagged Clone

#### Product data:

Product Type: Expression Plasmids  
 Product Name: Arhgef2 (NM\_001012079) Rat Untagged Clone  
 Tag: Tag Free  
 Symbol: Arhgef2  
 Synonyms: MGC95068  
 Vector: pCMV6-Entry (PS100001)  
 E. coli Selection: Kanamycin (25 ug/mL)  
 Cell Selection: Neomycin  
 Fully Sequenced ORF: >RN205579 representing NM\_001012079  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGTCTCGGATCGAATCCCTCACTCGCGCGGGATCGACCGGAGCAAGGAGCAGGCGACCAAGACCCGGG  
 AAAAGGAGAAGATGAAGGAAGCTAAAGATGCCCGCTATACCAACGGCCACCTCTTACCACCATCTCGGT  
 CTCGGCATGACTATGTGCTATGCTGTAAACAAGAGCATTACAGCCAAGGAAGCCCTCATTGTGCCACA  
 TGTAACTGACCATCCACAACCGCTGTAAGGACACGCTGGCCAACGTACCAAGGTCAAGCAGAAGCAAC  
 AGAAAGCTGCACTGCTGAGGAACAACACTGCCTTGCACTCCGTCTCTCCGAAGTAAGCAACCCAG  
 AGAGCGGCCAACGCTGCCATCTACCCTCCGATAGCTCCGGCAGTCCCTCCTGGGTTCTCGTCGTGGC  
 CTGTCTCCTTGTCTTTGGCCAAAAGTGTTCCTACTACCAACATTGCTGGACATTTCAATGATGAGTCTC  
 CTCTGGGGCTGCGTCAGATCCTCTCCAGTCCACAGACTCCCTCAACATGCGGAACCGAACCCCTGTCCGT  
 GGAGTCCCTTATTGATGAAGGTGTAGAAGTGTCTACAACGAGCTCATGAGTGACTTTGAGATGGACGAG  
 AAGGACTTCGAGGCGGATTCATGGAGCCTTGTGTGGACAGCAGTTCCTGCAACAGCATAAAAAGGAGG  
 TGATGAAGAAGCAAGATGTCATCTACGAGCTGATCCAGACCGAGCTGCACCATGTGAGAACCTTGAAGT  
 TATGACCCGCTCTTCCGCACTGGGATGCTGGAAGAGTTGCAGATGGAGCCAGAAGTGGTCCAGGGACTG  
 TCCCCCTGTGTGGACGAGCTTAGTGACATTCACACACGTTTCTTCTAGTCAGCTTTTGAACGCGCGCC  
 AGGCCCTGTGTCCAGGCAGCACCCGGAACCTTGTTCATCCATCGTTTGGGTGACTTGTCTCATCAGCCAGT  
 CTCAGGTTCCAACGCTGAGCAGATGCGCAAGACTTACTCAGAGTTCTGCAGCCGCCACCAAGGCCCTTA  
 AAGCTCTATAAAGGAGCTGTACGCTCGAGACAAACGCTTCCAACAGTTCATCCGAAAATGACCCGCTCTG  
 CTGTGCTGAAGCGGCATGGGTTTCAAGAGTGCATTCTCCTGTAACCTCAGCGGATTACCAAATACCCAGT  
 GCTCATCAACAGGATCCTGCAGAATCCATGGGATTGAAGAGGAGTACCAAGACTTGGCAGCAGCCCTA  
 GGGCTAGTAAAGGAGTTGTTGTCCAATGTGACCAGGATGTACACGAGCTGGAGAAGAGGCCCGCCTTC  
 AGGAGATTTACAACCGAATGGATCCTCGGGCTCAGACCCCTGTTCTGGCAAGGGCCCTTCGGCCGAGA  
 TGAACCTTTGCGGAGAAAACCTTATCCATGATGGCTGCCTGCTCTGGAAGACAGCCACAGGCCGCTTAAA  
 GATGTCCTTACTACTGATGACAGATGTGCTGGTGTTCCTCAGGAAAAGGACCAGAAGTACATTTTCA



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CGTCCCTGGACAAGCCCTCAGTGGTATCCTTGCAGAATCTCATCGTAAGAGACATTGCCAACCCAGGCGAA
AGGGATGTTTTCTGATCAGTTCTGGCCACCTGAAATGTATGAAGTACACGCAGCATCTCGAGATGACCGT
ACTACCTGGATCCGTGTCATCCAGCAGAGCGTGCCTTATGCCCGTCGAGGGAGGACTTCCCTCTGATCG
AGACAGAGGATAAGGCGTACCTCCGAGGATCAAGACGAAACTGCAGCAGAAAAACCAGGCGCTGGTGA
GCTGCTACAGATGAATGTTGAGCTATTTGCTGAGATGGTCCACTCCAGGCATTAAGCTGGTTTCATC
GGAATGCCCCCGCCACCCTGCCAGGGCCTTTCCGTCTTGAGTCCTTTGAGTCCCTTCGAGGCGAGC
GTCTGCTCAAAGATGCCCTCCGTGAAGTGAAGGCCTGAAAGACCTGTTGTTGGCCCTTGTGTGGACCT
GCCTTTGACAGCCGAGAACCAGCCTTACCCGTAGAAGCTGACAGTGGTAGCTGTCCCTGGGGTCACTGCC
AACGGAGAGGCCAGAACCTTCAATGGCTCCATTGAGCTCTGTAGAGCAGACTCAGATTCCAGCCAGAAGG
ATCGGAATGGAATCAGTTGAGGTCAACACAGGAGGAGCGTTACAACCATTTGGTCAATCTGTATGGACT
CCTACAAGGCCTGCAGGCTGTTGTGGTCCAGCAAGAAAGATTGATGGAAGCCCTGTTCCCTGAAGGCCCT
GAGCGGTGGAAAAGCTATCCCGAGCCAACTCTCGGGATGGCGAAGCTGGCCGGCTGCGGTTGCTTCTG
TAACTCCCAGAAAGCAGGCCACGGAGCTGGCATTACTGCAGAGGCAGCACAGCCTGTTGCAGGAAGAGCT
GCGGCGCTGCCAGCGCTCGGGGAAGAGCGGGCAACTGAAGCTGGCAGCCTGGAGGCCAGGCTGCGGGAG
AGCGAGCAAGCCCGGCCCTGCTGGAGCGGAGGCTGAAGAGATCCGCCGCAGCTAGCAGCCTTGGGCC
AAAACGAGCCACTCCCGCAGAAGCACCCTGGGCTCGCAGGCCTCTGGACCCTCGGCGCCGAGCCTTCC
AGCAGGCGACGCTCTGTACTTGAGCTTCAATCCCCCAGCCTAGTCGAGGCCATGACCCCTGGATTTG
CCTGTGACTGTTTCCTCCACCGACCTTTGATGACCGAGAGGCACAAGAATTGGTAGCCCCGAGG
ATCGACTGCAGGACAGCAGTACCCCTGATACTTGCAAGTGAAGGAGGAAAGTCAAGTCCCGGCTGCCCCACC
CCACAGTCCACGAGACTTACCCGAATGCAGGACATTCCCGAAGAGACAGAAAGCCGAGATGGGGAGCCT
ACGGCCTCAGAGAGCTAA
    
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**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

- Restriction Sites:** Sgfl-Mlul
- ACCN:** NM\_001012079
- Insert Size:** 2958 bp
- OTI Disclaimer:** Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
- 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\\_001012079.1](#), [NP\\_001012079.1](#)
- RefSeq Size:** 4217 bp
- RefSeq ORF:** 2958 bp
- Locus ID:** 310635

UniProt ID: [Q5FVC2](#)

Cytogenetics: 2q34

**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]