

## Product datasheet for **MC229220**

### Arhgef2 (NM\_001198913) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Arhgef2 (NM_001198913) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Arhgef2
Synonyms:	AA408978; GEF; GEF-H1; GEFH1; Lbcl1; Lfc; LFP40; mKIAA0651; P40
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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**Fully Sequenced ORF:** >MC229220 representing NM\_001198913  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGAAGGAAGCTAAAGATGCCCCGTATACCAACGGCCACCTCTTACCACCATCTCGTCTCCGGCATGA  
 CCATGTGCTATGCTGTAAACAAGAGCATCACAGCCAAGGAAGCCCTCATTGTCTCATATGTAACGTGAC  
 CATCCACAACCGCTGTAAAGACACCCTGGCCAACGTACCAAGGTCAAGCAGAAGCAACAGAAAAGCTGCA  
 CTGCTGAGGAACAACACTGCTTTGCAGTCTGTCTCCCTTTCGAACGACCACCAGAGAGCGGCCAACGTCTG  
 CCATTTACCTTCCGACAGCTTCCGGCAGTCCCTCCTGGGTTCTCGGCGGGGCTCTCTCTTATCTTT  
 GGCCAAAAGTGTTTCCACTACCAACATTGCTGGACATTTCAATGATGAGTCTCTCTGGGCTGCGTCAG  
 ATCCTCTCCAGTCCACAGACTCCCTCAACATGCGGAACCGAACCTGTCCGTGGAATCCCTTATTGATG  
 AAGGTGTAGAAGTGTCTACAATGAGCTGATGAGCGACTTTGAGATGGATGAGAAGGACTTTGAGCGGA  
 TTCTTGGAGCCTTGCCGTGGACAGCAGCTTCTGCAGCAGCACAAAAGGAAGTGTGAAGAAGCAAGAT  
 GTCATCTATGAGCTGATCCAGACAGAGCTGCACCACGTGAGAACCCTGAAGATTATGACCCGCTCTTTC  
 GCACTGGGATGCTGGAAGAGTTGCAGATGGAGCCAGAAGTGGTCCAGGGCCTGTTCCCTGCGTGGATGA  
 ACTCAGTGACATTCACACACGTTTCTTAATCAGCTTCTGGAACGGCGGCCAGGCTCTATGTCCAGGC  
 AGCACCCGGAACCTTGTCCATCCATCGTTTGGGTGACTTGCTCATCAGTCACTCAGGTTCCAATGCTG  
 AGCAGATGCGCAAGACCTACTCAGAGTTCTGCAGCCGCCACCAAGGCCTTAAAGCTCTATAAGGAGCT  
 GTATGCTCGAGACAAACGCTTCCAACAGTTCATCCGAAAATGACCCGCTCAGCTGTGTTGAAGCGGCAT  
 GGAGTTCAGGAATGCATTCTCTGGTACTCAGCGGATACCAAAATACCCTGTGCTCATCAACAGAATCC  
 TGCAGAATTCACCGGGTTGAAGAAGAGTACCAAGACTTGGCGTCAGCCCTAGGACTAGTGAAGGAGTT  
 GTTGTCGAATGTGGACCAGGATGTGACAGAGCTGGAGAAAAGAGGCCCGCTGCAGGAGATTTACAACCGA  
 ATGGATCCCCGGGCTCAGACCCCGTACCTGGCAAGGGCCCTTTCGGCCGAGATGAACTTTTACGGAGAA  
 AACTTATCCATGAAGGCTGCCTGCTCTGGAAGACAGCCACAGGCCGCTTCAAAGATGTCTGTTGCTGCT  
 GATGACAGATGTGCTCGTGTCTTCCAGAAAAGGACCAGAAAATACATTTTACAGTCTCTGGACAAGCCC  
 TCAGTGGTGTCTTGCAGAACCTCATCGTAAGAGACATAGCCAACCAGGCGAAAGGGATGTTTCTGATTA  
 GTTCTGGACCGCCTGAGATGTATGAGGTGCATGCAGCGTCCCAGACGACCGGACTACCTGGATCCGTGT  
 CATCCAGCAGAGTGTGCGCTGTGCCCTCCAGGGAGGACTTTCCTCTGATCGAGACAGAGGATAAGGCG  
 TATCTCCGAGGATCAAGACGAACTGCAGCAGAAAACCAGGCGCTAGTGGAGTGTCTACAGAAGATG  
 TTGAGCTGTTTGGCGAGATGGTCCACTTCCAGGCCTTAAAGGCTGGCTTGGTTGGAATGCCCCACCCGC  
 CCTGCCAGGGGCTTTTCCGTCTTGTGCTTGTGAGTCCCTCCGAGGCGAGCGCCTGCTAAAGGATGCC  
 CTCCGTGAAGTGAAGGCTGAAAGACCTGCTGTTGGGCCATGTGTGGACCTGCCTATGACATCCCGAG  
 AACCAGCCTTACCCTTGGACTCTGACAGCGGTAGCTGTCTGGGGTCACTGCCAATGGAGAGGCCAGAAC  
 CTTCAATGGTCCATTGAACTCTGTAGAGCAGACTCGGATTCAGCCAGAAGGATCGGAATGGAATCAG  
 TTGAGATCACCACAGGAGGAGGTGTTACAGCCATTGATCAATCTTATGGACTTCTACATGGCCTGCAGG  
 CTGTTGTGGTCCAGCAGGAAAGACTGATGGAAGCCCTGTTCCCTGAGGGCCCTGAACGGTGGGAAAAGCT  
 ATCCCGAGCCAACCTCTCGGGATGGTGAAGCTGGCCGGGCTGCGGTTGCTTCTGTAACCTCTGAGAAGCAG  
 GCCACGGAGCTGGCACTACTGCAGAGGCAACACACCCTGTTGCAGGAAGAGCTGCGGCGCTGCCAGCGGC  
 TCGGGGAAGAGCGGGCAACTGAAGCTGGCAGCCTGGAGGCCAGGCTCCGAGAGAGCGAGCAAGCCCGGGC  
 CCTGCTGGAGCGGGAGGCTGAAGAGATCCGCCGCGAGCTTGCAGCCTTGGCCAAAACGAGCCACTCCCG  
 GCAGAAGCGCCCTGGGCTCGCAGGCCTTGACCACCGCGCCGAGCCTTCCAGCGGGCAGCCTTTAT  
 ACTTGAGCTTCAATCCCCCAGCCAGTGCAGGCCATGACCGCCTGGATTTGCCTGTGACTGTTCTGTT  
 CCTCCACCGACCCTTTGATGACCGAGAGGCGCAAGAACTTGGTAGCCCGAGGATCGACTACAGGACAGC  
 AGTGACCCTGATACTGGTAGTGAGGAGGAAGTCACTAGCCGCTGTCTCCACCTCACAGTCTCGAGACT  
 TCACCCGAATGCAGGACATTCCTGAAGAGACAGAAAGCCGAGATGGGAGCCACAGCTTCAGAGAGCTA  
 A

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

<b>Restriction Sites:</b>	Sgfl-Mlul
<b>ACCN:</b>	NM_001198913
<b>Insert Size:</b>	2871 bp
<b>OTI Disclaimer:</b>	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).
<b>OTI Annotation:</b>	Clone contains native stop codon, and expresses the complete ORF without any c-terminal tag.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<u><a href="#">NM_001198913.1</a></u> , <u><a href="#">NP_001185842.1</a></u>
<b>RefSeq Size:</b>	4284 bp
<b>RefSeq ORF:</b>	2871 bp
<b>Locus ID:</b>	16800
<b>UniProt ID:</b>	<u><a href="#">Q60875</a></u>
<b>Cytogenetics:</b>	3 F1

**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 (By similarity). Involved in neuronal progenitor cell division and differentiation (PubMed:28453519). Involved in the migration of precerebellar neurons (PubMed:28453519). [UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (4) has multiple differences at its 5' end and uses a downstream in-frame translation initiation site, compared to variant 1. Variant 4 encodes a shorter protein (isoform 4), compared to isoform 1.