

## Product datasheet for **RC204129**

### Arg 3.1 (ARC) (NM\_015193) Human Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Arg 3.1 (ARC) (NM\_015193) Human Tagged ORF Clone  
**Tag:** Myc-DDK  
**Symbol:** Arg 3.1  
**Synonyms:** Arg3.1; hArc  
**Mammalian Cell Selection:** Neomycin  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**ORF Nucleotide Sequence:** >RC204129 representing NM\_015193  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGGAGCTGGACCACCGGACCAGCGGGGGCTCCACGCCTACCCCGGGCCGCGGGCGGGCAGGTGGCCA  
 AGCCCAACGTGATCCTGCAGATCGGGAAGTGCCGGCCGAGATGCTGGAGCAGTGCGGCGGACGCACCG  
 GCACCTGCTGGCCGAGGTGTCCAAGCAGGTGGAGCGGAGCTGAAGGGGTGCACCGGTCGGTGGGAAG  
 CTGGAGAGCAACCTGGACGGCTACGTGCCACGAGCGACTCGCAGCGCTGGAAGAAGTCCATCAAGGCCT  
 GCCTGTGCCGCTGCCAGGAGACCATCGCCAACCTGGAGCGCTGGGTCAAGCGCGAGATGCACGTGTGGCG  
 CGAGGTGTTCTACCGCTGGAGCGCTGGGCCGACCGCCTGGAGTCCACGGCGGCAAGTACCCGGTGGGC  
 AGCGAGTCAGCCCGCCACACCGTTTCCGTGGCGTGGGGGTCCCAGAGCTACTGCCACGAGGCAGACG  
 GCTACGACTACACCGTCAGCCCTACGCCATCACCCCGCCCCAGCCGCTGGCGAGCTGCCCGGGCAGGA  
 GCCCGCCGAGGCCAGCAGTACCAGCCGTGGGTCCCCGGCGAGGACGGGCAGCCAGCCCGGCGTGGAC  
 ACGCAGATCTTCGAGGACCCTCGAGAGTTCCTGAGCCACCTAGAGGAGTACTTGCAGGAGTGGCGGGCT  
 CTGAGGAGTACTGGGTGTCCCAGATCCAGAATCACATGAACGGCCGGCCAAGAAGTGGTGGGAGTTCAA  
 GCAGGGCTCCGTGAAGAACTGGGTGGAGTTCAAGAAGGAGTTCCTGCAGTACAGCGAGGGCAGCGTGTCC  
 CGAGAGGCCATCCAGCGGAGCTGGACCTGCCGAGAAGCAGGGCGAGCCGCTGGACCAAGTTCCTGTGGC  
 GCAAGCGGGACCTGTACCAGACGCTCTACGTGGACGCGGACGAGGAGGAGATCATCCAGTACGTGGTGGG  
 CACCCTGCAGCCCAAGCTCAAGGTTTCTGCGCCACCCCTGCCCAAGACCCTGGAGCAGCTCATCCAG  
 AGGGGCATGGAGGTGACGATGACCTGGAGCAGCGGCCGAGCCGGCCGCCCCACCTCCCGTGGAGG  
 ATGAGGCGGAGACCCCTACGCCCGCCCCAACAGCGAGTCCGTGGCCAGTACCAGCCAGCCCGAG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA



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**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\\_015193.2](#)

**RefSeq Size:** 2948 bp

**RefSeq ORF:** 1191 bp

**Locus ID:** 23237

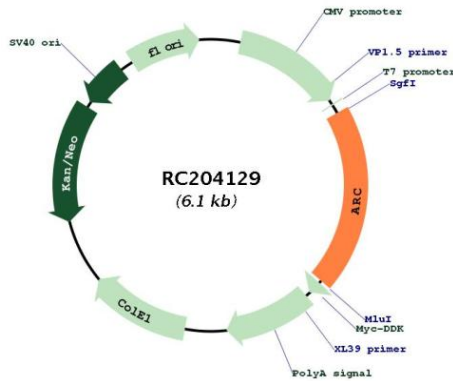
**UniProt ID:** [Q7LC44](#)

**Cytogenetics:** 8q24.3

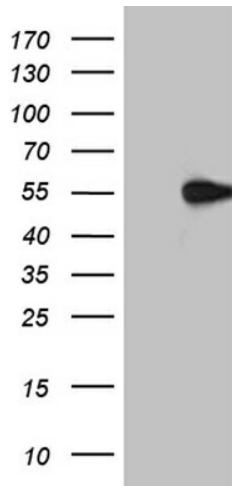
**MW:** 45.3 kDa

**Gene Summary:** Master regulator of synaptic plasticity that self-assembles into virion-like capsids that encapsulate RNAs and mediate intercellular RNA transfer in the nervous system. ARC protein is released from neurons in extracellular vesicles that mediate the transfer of ARC mRNA into new target cells, where ARC mRNA can undergo activity-dependent translation. ARC capsids are endocytosed and are able to transfer ARC mRNA into the cytoplasm of neurons. Acts as a key regulator of synaptic plasticity: required for protein synthesis-dependent forms of long-term potentiation (LTP) and depression (LTD) and for the formation of long-term memory. Regulates synaptic plasticity by promoting endocytosis of AMPA receptors (AMPA receptors) in response to synaptic activity: this endocytic pathway maintains levels of surface AMPARs in response to chronic changes in neuronal activity through synaptic scaling, thereby contributing to neuronal homeostasis. Acts as a postsynaptic mediator of activity-dependent synapse elimination in the developing cerebellum by mediating elimination of surplus climbing fiber synapses. Accumulates at weaker synapses, probably to prevent their undesired enhancement. This suggests that ARC-containing virion-like capsids may be required to eliminate synaptic material. Required to transduce experience into long-lasting changes in visual cortex plasticity and for long-term memory (By similarity). Involved in postsynaptic trafficking and processing of amyloid-beta A4 (APP) via interaction with PSEN1 (By similarity). In addition to its role in synapses, also involved in the regulation of the immune system: specifically expressed in skin-migratory dendritic cells and regulates fast dendritic cell migration, thereby regulating T-cell activation (By similarity).[UniProtKB/Swiss-Prot Function]

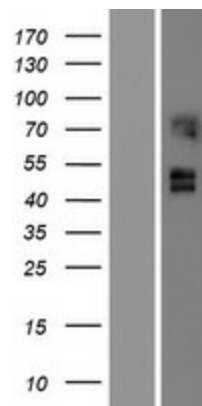
Product images:



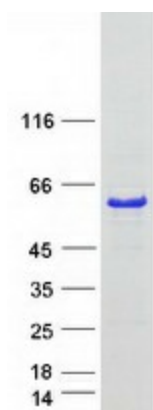
Circular map for RC204129



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY ARC (Cat# RC204129, 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-ARC antibody (Cat# [TA812091]). Positive lysates [LY414716] (100ug) and [LC414716] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY414716]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC204129 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ARC protein (Cat# [TP304129]). The protein was produced from HEK293T cells transfected with ARC cDNA clone (Cat# RC204129) using MegaTran 2.0 (Cat# [TT210002]).