

Product datasheet for **RG204129**

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:	TurboGFP
Symbol:	Arg 3.1
Synonyms:	Arg3.1; hArc
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG204129 representing NM_015193 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGC**

ATGGAGCTGGACCACCGACCAGCGCGGGCTCCACGCCTACCCCGGGCCGCGGGCGGGCAGGTGGCCA
AGCCCAACGTGATCCTGCAGATCGGGAAGTGCCGGGCCGAGATGCTGGAGCAGTGCGGCGGACGCACCG
GCACCTGCTGGCCGAGGTGTCCAAGCAGGTGGAGCGCAGCTGAAGGGGCTGCACCGTCCGGTGGGAAG
CTGGAGAGCAACCTGGACGGCTACGTGCCACGAGCGACTCGCAGCGCTGGAAGAAGTCCATCAAGGCCT
GCCTGTGCCGCTGCCAGGAGACCATCGCCAACCTGGAGCGCTGGGTCAAGCGCGAGATGCACGTGTGGCG
CGAGGTGTTCTACCGCCTGGAGCGCTGGGCCACCGCCTGGAGTCCACGGCGGCAAGTACCCGGTGGGC
AGCGAGTCAGCCCGCCACACCGTTTCCGTGGGCGTGGGGGTCCCAGAGCTACTGCCACGAGGCAGACG
GCTACGACTACACCGTCAGCCCCACGCCATACCCCCGCCCCAGCCGCTGGCGAGCTGCCCGGGCAGGA
GCCCCGCCGAGGCCAGCAGTACCAGCCGTGGGTCCCCGGCGAGGACGGGCAGCCAGCCCCGCGTGGAC
ACGCAGATCTTCGAGGACCCTCGAGAGTTCCTGAGCCACCTAGAGGAGTACTTGGCGCAGGTGGGCGGCT
CTGAGGAGTACTGGGTGTCCCAGATCCAGAATCACATGAACGGGCCGCGCAAGAAGTGGTGGGAGTTCAA
GCAGGGCTCCGTGAAGAACTGGGTGGAGTTCAAGAAGGAGTTCTGCAGTACAGCGAGGGCAGCGTGTCC
CGAGAGGCCATCCAGCGGAGCTGGACCTGCCGAGAAGCAGGGCGAGCCGCTGGACCAAGTTCCTGTGGC
GCAAGCGGGACCTGTACCAGACGCTCTACGTGGACGCGGACGAGGAGGAGATCATCCAGTACGTGGTGGG
CACCTGCAGCCCAAGCTCAAGCGTTTCTGCGCCACCCCTGCCCAAGACCCTGGAGCAGCTCATCCAG
AGGGGCATGGAGGTGACGATGACCTGGAGCAGCGGCCGAGCCGGCCGCCCCACCTCCCGTGGAGG
ATGAGGCGGAGACCTCACGCCGCCCCCAACAGCGAGTCCGTGGCCAGTGACCGGACCCAGCCGAG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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Protein Sequence: >RG204129 representing NM_015193
 Red=Cloning site Green=Tags(s)

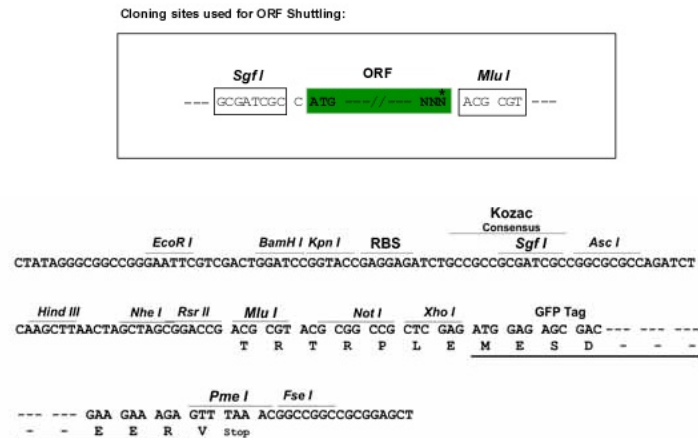
MELDHRTSGGLHAYPGPRGGQVAKPNVILQIGKCRAEMLEHVRTRHLLAEVSKQVERELKGLHRSVGK
 LESNLDGYVPTSDSQRWKKSIKACLCRCQETIANLERWVKREMHVWREVFYRLERWADRLESTGGKYPVG
 SESARHTVSVGVGGPESYCHEADGYDYTVSPYAITPPPAAGELPGQEPAAEQYQWPVPGEDGQPSPGVD
 TQIFEDPREFLSHLEEYLRQVGGSEYWLSQLQNHMNGPAKKWWEFKQGSVKNWVEFKKEFLQYSEGTLS
 REAIQRELDLPQKQGEPLDQFLWRKRDLYQTLYVDADEEEIIQYVVGTLQPKLKRFLRHPLPKTLEQLIQ
 RGMVQDDLEQAAEPAGPHLPVEDEAETLTPAPNSESVASDRTQPE

TRTRPLE – GFP Tag – V

Restriction Sites:

SgfI-MluI

Cloning Scheme:



ACCN: NM_015193

ORF Size: 1188 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:

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: 2985 bp

RefSeq ORF: 1191 bp

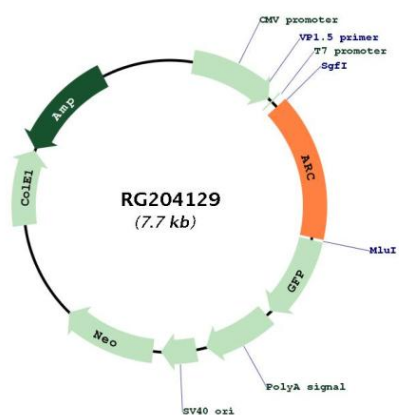
Locus ID: 23237

UniProt ID: [Q7LC44](#)

Cytogenetics: 8q24.3

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) 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 RG204129