

Product datasheet for **MC227478**

Arc (NM_001276684) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Arc (NM_001276684) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Arc
Synonyms:	Arc3.1; arg3.1; C86064; mArc
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>MC227478 representing NM_001276684 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGAGCTGGACCATATGACCACCGGGCCCTCCACGCCTACCCTGCCCGCGGGTGGCCGGCCGCCA
AACCCAATGTGATCCTGCAGATTGGTAAGTGCCGAGCTGAGATGCTGGAACACGTACGGAGGACCCACCG
GCATCTGTTGACCGAAGTGTCCAAGCAGGTGGAGCGAGAGCTGAAAGGGTGCACAGGTCGGTGGGCAAG
CTGGAGAACAACTTGACGGCTACGTGCCACCGGCGACTCACAGCGCTGGAAGAAGTCCATCAAGGCCT
GTCTTTGCCGCTGCCAGGAGACCATCGCCAACCTGGAGCGCTGGGTCAAGCGTGAGATGCACGTGTGGAG
GGAGGTCTTCTACCGTCTGGAGAGGTGGGCTGACCGCCTGGAGTCCATGGGCGGCAAAATACCCAGTGGGC
AGCGAGCCCGCCGCCACACTGTCTGTAGGTGTGGGGGTCCAGAGCCCTACTGCCAGGAAGCTGATG
GCTATGACTATACCGTTAGCCCTATGCCATCACCCCGCCACCTGCCGACGAGAACTGCCTGAACAGGA
GTCAGTTGAGGCTCAGCAATATCAGTCTTGGGGGCCAGGTGAGGATGGGCAACCGAGCCCTGGTGTGGAT
ACACAGATCTTCGAGGACCCACGGGAGTTCCTGAGCCACCTGGAAGAGTACCTGCGGCAGGTGGTGGCT
CTGAAGAATATTGGCTGTCCAGATCCAGAACCACATGAATGGGCCAGCAAGAAGTGGTGGGAGTTCAA
GCAGGGCTCGGTGAAGAAGTGGTGGAGTTCAGAAAGGAGTTTCTGCAATACAGTGAGGGTACACTCTCC
CGTGAAGCCATTACGCGGAGCTGGAGCTGCCGAGAAGCAGGGTGAACCACTCGACCACTCCTCTGGC
GCAAGCGGGACCTGTACCAGACACTGTATGTGGACGCTGAGGAGGAGGATCATTAGTGTGGTGGG
CACCCTGCAGCCAAACTCAAGCGCTTTCTGCGCCACCCACTCCCAAGACCCTGGAGCAGCTTATCCAG
AGGGGTATGGAAGTGCAGGACGGCTGGAGCAGGAGCTGAGCCTTCTGGCACCCCACTGCCACAGAGG
ATGAGACGGAGGCACTCACACCTGCTTACCAGCGAGTCAGTAGCCAGTGACAGGACCCAGCCTGAATA
G

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA



[View online »](#)

Restriction Sites:	Sgfl-Mlul
ACCN:	NM_001276684
Insert Size:	1191 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).
OTI Annotation:	Clone contains native stop codon, and expresses the complete ORF without any c-terminal tag.
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:	<u>NM_001276684.1, NP_001263613.1</u>
RefSeq Size:	3056 bp
RefSeq ORF:	1191 bp
Locus ID:	11838
UniProt ID:	<u>Q9WV31</u>
Cytogenetics:	15 34.25 cM

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 (By similarity). 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 (By similarity). ARC capsids are endocytosed and are able to transfer ARC mRNA into the cytoplasm of neurons (By similarity). 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 (PubMed:29264923, PubMed:24094104). 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 (PubMed:17088213, PubMed:20211139, PubMed:20228806). Acts as a postsynaptic mediator of activity-dependent synapse elimination in the developing cerebellum by mediating elimination of surplus climbing fiber synapses (PubMed:23791196). Accumulates at weaker synapses, probably to prevent their undesired enhancement (By similarity). This suggests that ARC-containing virion-like capsids may be required to eliminate synaptic material (By similarity). Required to transduce experience into long-lasting changes in visual cortex plasticity and for long-term memory (PubMed:17088210, PubMed:20228806). Involved in postsynaptic trafficking and processing of amyloid-beta A4 (APP) via interaction with PSEN1 (PubMed:22036569). 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 (PubMed:28783680).

[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (2) uses an alternate splice site in the 3' UTR compared to variant 1. Both variants 1 and 2 encode the same protein. Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments. CCDS Note: This CCDS ID represents the protein described in PMIDs: 10727859 and 22036569. This protein is encoded by two splice variants which are supported by AK157822.1 and AF162777.1. It should be noted this transcript is predicted to undergo nonsense-mediated mRNA decay (NMD). However, the protein is represented because it was detected endogenously in PMID: 22036569. It is likely that the majority of transcripts representing this variant will undergo NMD, while some low level of NMD escape may allow for the expression of this protein.