

## Product datasheet for **MG214022**

### 3110043O21Rik (NM\_001081343) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	3110043O21Rik (NM_001081343) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	3110043O21Rik
Synonyms:	A1840585; C9orf72
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



[View online »](#)

**ORF Nucleotide Sequence:**

>MG214022 representing NM\_001081343  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGTCGACTATCTGCCCCACCATCTCCTGCTGTTGCCAAGACAGAGATTGCTTTAAGTGGTGAATCAC  
 CCTTGTGGCGGTACCTTTGCTTACTGGGATAATATTCTTGGTCTAGAGTAAGGCATATTTGGGCTCC  
 AAAGACAGACCAAGTGCTTCTCAGTGATGGAGAAATAACTTTTCTTGCCAACCACACTCTAAATGGAGAA  
 ATTCTTCGAAATGCAGAGAGTGGGGCTATAGATGTAAAATTTTTGTCTTATCTGAAAAAGGGTAATTA  
 TTGTTTCATTAATCTTCGACGAAACTGGAATGGAGATCGGAGCACTTATGGACTATCAATTATACTGCC  
 GCAGACAGAGCTGAGCTTCTACCTCCACTTCACAGAGTGTGTGTTGACAGGCTAACACACATTATTCGA  
 AAAGGAAGAATATGGATGCATAAGGAAAGACAAGAAAATGTCCAGAAAATGTCTTGAAGGCACAGAGA  
 GGATGGAAGATCAGGGTCAGAGTATCATTCCCATGCTTACTGGGAAGTCATTCTGTAAATGGAGCTGCT  
 TGCATCTATGAAATCCCACAGTGTCTCCTGAAGACATTGATATAGCTGATACAGTGTCAATGATGATGAC  
 ATTGGTGACAGCTGTCACGAAGGCTTCTTCTCAATGCCATCAGCTCACACCTGCAGACCTGTGGCTGTT  
 CCGTTGTAGTTGGCAGCAGTGCAGAGAAAAGTAAATAAGATAGTAAGAACCCTGTGCCTTTTTCTGACACC  
 AGCAGAGAGGAAATGCTCCAGGCTGTGTGAAGCAGAATCGTCCTTAAAGTACGAATCGGGACTCTTTGTG  
 CAAGGCTTGCTAAAGGATGCAACAGGCAGTTTTGTCTACCCTCCGGCAAGTTATGTATGCCCCGTACC  
 CCACCACGCACATTGATGTGGATGTCAACACTGTCAAGCAGATGCCACCGTGTCAATGACATATTTATAA  
 TCAACGCAGATACATGAGGTCAGAGCTGACAGCCTTCTGGAGGGCACTTCAAGAGGACATGGCGCAG  
 GACACCATCATCTACACAGATGAGAGCTTCACTCCTGATTTGAATATTTTCAAGATGTCTTACACAGAG  
 AACTCTAGTGAAGCCTTCTGGATCAGGTCTTCCATTTGAAGCCTGGCCTGTCTCTCAGGAGTACTTT  
 CCTTGCACAGTTCCTCCTCATTCTTACAGAAAAGCCTTGACACTAATCAAGTACATCGAGGATGATACG  
 CAGAAGGGGAAAAAGCCCTTTAAGTCTCTCGGAACCTGAAGATAGATCTTGATTTAACAGCAGAGGGCG  
 ATCTTAACATAAATGGCTCTAGCTGAGAAAATTAAGCCAGGCCTACACTCTTTCATCTTTGGGAGACC  
 TTTCTACACTAGTGACAAGAACGTGATGTTCTAATGACCTTT

**ACGCGTACGCGGCCGCTCGAG** – GFP Tag – GTTTAA

**Protein Sequence:**

>MG214022 representing NM\_001081343  
 Red=Cloning site Green=Tags(s)

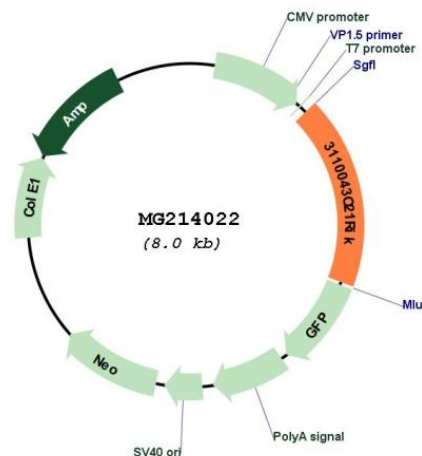
MSTICPPSPAVAKTEIALSGESPLLAATFAYWDNILGPRVRHIWAPKTDQVLLSDGEITFLANHTLN  
 ILRNAESGAIDVKFFVLSEKGVIIIVSLIFDGNWNGDRSTYGLSIIILPQTELSFYLPVLRVCDRLTHIIR  
 KGRIWMHKERQENVQKIVLEGTTERMEDQGSIIIPMLTGEVIVPMELLASMKSHSVPEIDIDIADTVLNDDD  
 IGDSCHEGFLLNAISSHLQTCGCSVVVGSAAEKVNKIVRTLCLFLTPAERKCSRLCEAESSFYKESGLFV  
 QGLLKDATGSFVLPFRQVMYAPYPTTHIDVDVNTVKQMPPCHEHIYNQRRYMRSELTAFWRATSEEDMAQ  
 DTIIYTDSESTPDLNIFQDVLHRDTLVKAFDQVFHLKPLSLRSTFLAQFLLILHRKALTLIKYIEDDT  
 QKGGKPFKSLRNLKIDLDTAEGDLNIIIMALAEKIKPGLHSFIFGRPFYTSVQERDVLMTF

**TRTRPLE** – GFP Tag – V

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**

**Plasmid Map:**


**ACCN:** NM\_001081343

**ORF Size:** 1443 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.

**RefSeq:** [NM\\_001081343.2](#)

**RefSeq Size:** 3198 bp

**RefSeq ORF:** 1446 bp

**Locus ID:** 73205

**UniProt ID:** [Q6DFW0](#)

**Cytogenetics:** 4 A5

**Gene Summary:** Component of the C9orf72-SMCR8 complex, a complex that has guanine nucleotide exchange factor (GEF) activity and regulates autophagy (PubMed:27193190, PubMed:27617292). In the complex, C9orf72 and SMCR8 probably constitute the catalytic subunits that promote the exchange of GDP to GTP, converting inactive GDP-bound RAB8A and RAB39B into their active GTP-bound form, thereby promoting autophagosome maturation (By similarity). The C9orf72-SMCR8 complex also acts as a regulator of autophagy initiation by interacting with the ATG1/ULK1 kinase complex and modulating its protein kinase activity (PubMed:27193190, PubMed:27617292). Positively regulates initiation of autophagy by regulating the RAB1A-dependent trafficking of the ATG1/ULK1 kinase complex to the phagophore which leads to autophagosome formation (By similarity). Acts as a regulator of mTORC1 signaling by promoting phosphorylation of mTORC1 substrates (PubMed:27875531). Plays a role in endosomal trafficking (PubMed:26989253). May be involved in regulating the maturation of phagosomes to lysosomes (PubMed:26989253). Regulates actin dynamics in motor neurons by inhibiting the GTP-binding activity of ARF6, leading to ARF6 inactivation (PubMed:27723745). This reduces the activity of the LIMK1 and LIMK2 kinases which are responsible for phosphorylation and inactivation of cofilin, leading to cofilin activation (PubMed:27723745). Positively regulates axon extension and axon growth cone size in spinal motor neurons (PubMed:27723745). Plays a role within the hematopoietic system in restricting inflammation and the development of autoimmunity (PubMed:27412785). [UniProtKB/Swiss-Prot Function]