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# Product datasheet for RG212159

## Ionotropic Glutamate receptor 2 (GRIA2) (NM_001083620) Human Tagged ORF Clone

### Product data:

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|---|---|
| **Product Type:** | Expression Plasmids |
| **Product Name:** | Ionotropic Glutamate receptor 2 (GRIA2) (NM_001083620) Human Tagged ORF Clone |
| **Tag:** | TurboGFP |
| **Symbol:** | GRIA2 |
| **Synonyms:** | GluA2; gluR-2; gluR-B; GluR-K2; GLUR2; GLURB; HBGR2; NEDLIB |
| **Mammalian Cell Selection:** | Neomycin |
| **Vector:** | pCMV6-AC-GFP (PS100010) |
| **E. coli Selection:** | Ampicillin (100 ug/mL) |

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**ORF Nucleotide Sequence:**

>RG212159 representing NM_001083620
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGTTCAGTTTTCCACTTCGGAGTTCAGACTGACACCCCACATCGACAATTTGGAGGTGGCAAACAGCT
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GAATTTTGCAACTTATAAGGAAGGTTACAACGTATATGGCATCGAAAGTGTTAAAATT

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

>RG212159 representing NM_001083620
Red=Cloning site Green=Tags(s)

MVQFSTSEFRLTPHIDNLEVANSFAVTNAFCSQFSRGVYAIFGFYDKKSVNTITSFCGTLHVSFITPSFP
TDGTHPFVIQMRPDLKGALLSLIEYYQWDKFAYLYDSDRGLSTLQAVLDSAAEKKWQVTAINVGNINNDK
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GDCLANPAVPWGQGVEIERALKQVQVEGLSGNIKFDQNGKRINYTINIMELKTNGPRKIGYWSEVDKMVV
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FLDPLAYEIWMCIVFAYIGVSVVLFLVSRFSPYEWHTEEFEDGRETQSSESTNEFGIFNSLWFSLGAFMR
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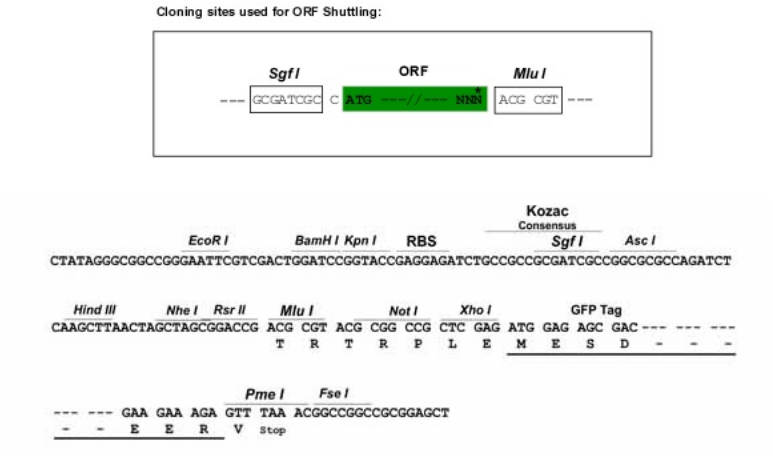
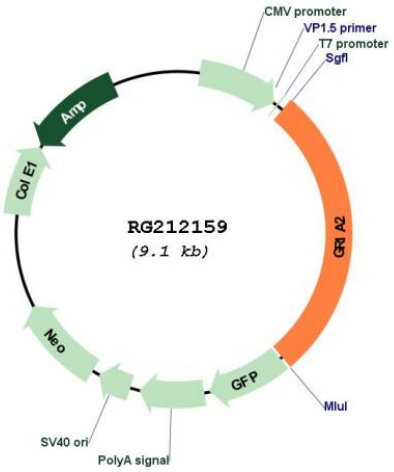
TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

Cloning Scheme:



Plasmid Map:

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|---|---|
| **ACCN:** | NM_001083620 |
| **ORF Size:** | 2508 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.<br>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.<br>3. Close the tube and incubate for 10 minutes at room temperature.<br>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.<br>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_001083620.2 |
| **RefSeq Size:** | 5266 bp |
| **RefSeq ORF:** | 2511 bp |
| **Locus ID:** | 2891 |
| **UniProt ID:** | P42262 |

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| **Cytogenetics:** | 4q32.1 |
| **Protein Families:** | Druggable Genome, Ion Channels: Glutamate Receptors, Transmembrane |
| **Protein Pathways:** | Amyotrophic lateral sclerosis (ALS), Long-term depression, Long-term potentiation, Neuroactive ligand-receptor interaction |
| **Gene Summary:** | Glutamate receptors are the predominant excitatory neurotransmitter receptors in the mammalian brain and are activated in a variety of normal neurophysiologic processes. This gene product belongs to a family of glutamate receptors that are sensitive to alpha-amino-3-hydroxy-5-methyl-4-isoxazole propionate (AMPA), and function as ligand-activated cation channels. These channels are assembled from 4 related subunits, GRIA1-4. The subunit encoded by this gene (GRIA2) is subject to RNA editing (CAG->CGG; Q->R) within the second transmembrane domain, which is thought to render the channel impermeable to Ca(2+). Human and animal studies suggest that pre-mRNA editing is essential for brain function, and defective GRIA2 RNA editing at the Q/R site may be relevant to amyotrophic lateral sclerosis (ALS) etiology. Alternative splicing, resulting in transcript variants encoding different isoforms, (including the flip and flop isoforms that vary in their signal transduction properties), has been noted for this gene. [provided by RefSeq, Jul 2008] |