

## Product datasheet for **RG223136**

### NMDAR2A (GRIN2A) (NM\_000833) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	NMDAR2A (GRIN2A) (NM_000833) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	NMDAR2A
Synonyms:	EPND; FESD; GluN2A; LKS; NMDAR2A; NR2A
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG223136 representing NM_000833 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGGCAGAGTGGGCTATTGGACCCTGCTGGTGTGCCGGCCCTTCTGGTCTGGCGCGGTCCGGCGCCGA  
GCGCGGCGGGGAGAAGGGTCCCCCGCGCTAAATATTGCGGTGATGCTGGGTACAGCCACGACGTGAC  
AGAGCGCGAACTTCGAACACTGTGGGGCCCCGAGCAGGCGGGGGGTGCCCTGGACGTGAACGTGGTA  
GCTCTGTGATGAACCGACCGACCCCAAGAGCCTCATCACGCACGTGTGCGACCTCATGTCGGGGGCAC  
GCATCCACGGCCTCGTGTGGGGACGACACGGACCAGGAGCCGTAGCCAGATGCTGGATTTTATCTC  
CTCCACACCTTCGTCGCCATCTTGGGCATTCATGGGGGCGCATCTATGATCATGGCTGACAAGGATCCG  
ACGTCTACCTTCTCCAGTTTGGAGCGTCCATCCAGCAGCAAGCCACGGTCATGTGAAGATCATGCAGG  
ATTATGACTGGCATGTCTTCTCCCTGGTGACCACTATCTTCCCTGGCTACAGGGAATTCATCAGTTTCGT  
CAAGACCACAGTGGACAACAGCTTTGTGGGCTGGGACATGCAGAAATGTGATCACACTGGACACTTCCCTT  
GAGGATGCAAAGACACAAGTCCAGCTGAAGAAGATCCACTTCTGTGTCATCTTGTCTACTGTTCCAAAG  
ACGAGGCTGTTCTCATTCTGAGTGAGGCCCGCTCCCTTGGCTCACCGGGTATGATTTCTTCTGGATTGT  
CCCCAGCTTGGTCTCTGGGAACACGGAGCTCATCCAAAAGAGTTTCCATCGGACTCATTCTGTCTCC  
TACGATGACTGGACTACAGCCTGGAGGCGAGAGTGAGGGACGGCATTGGCATCCTAACCACCGTGCAT  
CTTCTATGCTGGAGAAGTTCTCCTACATCCCCGAGGCCAAGGCCAGCTGCTACGGGCAGATGGAGAGGCC  
AGAGGTCCCAGTGCACACCTTGACCCATTTATGGTCAATGTTACATGGGATGGCAAAGACTTATCCTTC  
ACTGAGGAAGGCTACCAGGTGCACCCAGGCTGGTGGTATTGTGCTGAACAAAGACCGGGAATGGGAAA  
AGGTGGGCAAGTGGGAGAACCATACGCTGAGCCTGAGGCACGCCGTGGGCCAGGTACAAGTCCTTCTC  
CGACTGTGAGCCGGATGACAACCATCTCAGCATCGTACCCTGGAGGAGGCCCATTCGTCATCGTGGA  
GACATAGACCCCTGACCGAGACGTGTGTGAGGAACACCGTGCCATGTCGGAAGTTCGTCAAAATCAACA  
ATCAACCAATGAGGGGATGAATGTGAAGAAATGCTGCAAGGGTTCTGCATTGATTTCTGAAGAAGCT  
TCCAGAAGTGTGAAGTTTACTACGACCTCTATCTGGTACCAATGGGAAGCATGGCAAGAAAGTTAAC



[View online »](#)

AATGTGTGGAATGGAATGATCGGTGAAGTGGTCTATCAACGGGCAGTCATGGCAGTTGGCTCGCTCACCA  
TCAATGAGGAACGTTCTGAAGTGGTGGACTTCTCTGTGCCCTTTGTGAAACGGGAATCAGTGTCATGGT  
TTCAAGAAGTAATGGCACCGTCTCACCTTCTGCTTTTCTAGAACCATTACAGCGCCTCTGTCTGGGTGATG  
ATGTTTGTGATGCTGCTCATTGTTTCTGCCATAGCTGTTTTGTCTTTGAATACTTCAGCCCTGTTGGAT  
ACAACAGAACTTAGCCAAAGGAAAGCACCCCATGGGCCTTCTTTACAATTGAAAAGCTATATGGCT  
TCTTTGGGGCCTGGTGTCAATAACTCCGTGCCTGTCCAGAATCCTAAAGGGACCACCAGCAAGATCATG  
GTATCTGTATGGGCCTTCTCGCTGTCAATTCCTGGCTAGCTACACAGCCAATCTGGCTGCCTTCATGA  
TCCAAGAGGAATTTGTGGACCAAGTGACCGGCCTCAGTGACAAAAAGTTTCAGAGACCTCATGACTATTC  
CCCACCTTTTCGATTTGGGACAGTGCCTAATGGAAGCACGGAGAGAAAACATTTCGGAATAACTATCCCTAC  
ATGCATCAGTACATGACCAAATTAATCAGAAAGGAGTAGAGGACGCCTTGGTCAGCCTGAAAACGGGGA  
AGCTGGACGCTTTCATCTACGATGCCGAGTCTTGAATTAACAAGGCTGGGAGGGATGAAGGCTGCAAGCT  
GGTGACCATCGGGAGTGGGTACATCTTGGCCACCACCGGTTATGGAATTGCCCTTCAGAAAGGCTCTCT  
TGGAAAGAGGCAGATCGACCTGGCCTTGCTTCAGTTTGTGGGTGATGGTGAGATGGAGGAGCTGGAGACCC  
TGTGGCTCACTGGGATCTGCCACAACGAGAAGAACGAGGTGATGAGCAGCCAGCTGGACATTGACAACAT  
GGCGGGCTATTCTACATGCTGGCTGCCCCATGGCCCTTAGCCTCATCACCTTCATCTGGGAGCACCTC  
TCTACTGGAAGCTGCGCTTCTGTTTCACGGGCGTGTGCTCCGACCGGCCTGGGTGCTCTTCTCCATCA  
GCAGGGGCATCTACAGCTGCATTTCATGGAGTGCACATTGAAGAAAAGAAGAGTCTCCAGACTTCAATCT  
GACGGGATCCCAGAGCAACATGTTAAAACCTCCTCCGGTCAGCCAAAAACATTTCCAGCATGTCCAACATG  
AACTCCTCAAGAATGGACTCACCCAAAAGAGCTGCTGACTTCATCCAAGAGGTTCCCTCATCATGGACA  
TGGTTTCAGATAAGGGGAATTTGATGTAAGTACTCAGACAACAGGTCTTTTCAGGGGAAAGAGAGCATT  
AGACAACATGAACGAACCTCAAACATTTGTGGCAACCGGCAGAAAGGATAACCTCAATAACTATGTATTC  
CAGGGACAACATCCTTACTCTCAATGAGTCCAACCTAACACGGTGGAGGTGGCCGTGAGCACAGAAT  
CCAAAGCGAAGTCTAGACCCCGGACGCTGTGGAAGAAAATCCGTGGATTCCATACGCCAGGATCACTATC  
CCAGAATCCAGTCTCCCAGAGGGATGAGGCAACAGCAGAGAATAGGACCCACTCCCTAAAGAGCCCTAGG  
TATCTTCCAGAAGAGATGGCCACTCTGACATTTAGAAAACGTCAAATCGGGCCACGTGCCACAGGGAAC  
CTGACAACAGTAAGAACCACAAAACCAAGGACAACCTTTAAAAGGTGAGTGGCCTCCAAATACCCCAAGGA  
CTGTAGTGAGGTGAGCGCACCTACCTGAAAACCAAAATCAAGCTCCCCTAGAGACAAGATCTACACTATA  
GATGGTGAGAAGGAGCCTGGTTTCCACTTAGATCCACCCAGTTTGTGAAAATGTGACCCTGCCCGAGA  
ACGTGGACTTCCCGGACCCCTACCAGGATCCCAGTAAAAACTCCGCAAGGGGACTCCACGCTGCCAAT  
GAACCGGAACCCCTTGCATAATGAAGAGGGGCTTCCAACAACGACCAGTATAAACTCTACTCCAAGCAC  
TTCACCTTGAAAGACAAGGGTCCCGCACAGTGAGACCAGCGAGCGATACCGGCAGAACTCCACGCACT  
GCAGAAGCTGCCTTCCAAACATGCCACCTATTCAGGCCACTTACCATGAGGTCCCCTTCAAGTGCGA  
TGCTGCCTGCGGATGGGGAACCTCTATGACATCGATGAAGACCAGATGCTTCAGGAGACAGGTAACCCA  
GCCACCGGGGAGCAGGTCTACCAGCAGGACTGGGCACAGAAACAATGCCCTTCAATTACAAAAGAACAAGC  
TAAGGATTAGCCGTGACGATTCACGATAACATTTGTCGACAAAACCTAGGGAGCTAGACCTTAGCAGGCC  
CTCCCGGAGCATAAGCCTCAAGGACAGGGAACGGCTTCTGGAGGGAAAATTTTACGGCAGCCTGTTAGT  
GTCCCTCAAGCAAACCTCTCGGGAAAAAAGCTCCCTTTCCCAAGGTCTGGAGGACAGCAAGAGGA  
GCAAGTCTCTCTGCCAGACCACCTCCGATAACCCCTTCTCCACTCCCACAGGGATGACCAACGCTT  
GGTATTGGGAGATGCCCTCGGACCCTTACAAACACTCGTTGCCATCCCAGGCGGTGAATGACAGCTAT  
CTTCGGTCTCCTTGAAGTCAACGGCATGTAAGTCCAGGGACAGTCCGGGCCACAATGATGTGTATA  
TTTCGGAGCATGTTATGCCTTATGCTGCAATAAGAATAATGTAAGTCTACCCCAAGGTTTTAAATTC  
CTGCAGCAATAGACGCGTGTACAAGAAAATGCCTAGTATCGAATCTGATGTT

ACGGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence: >RG223136 representing NM\_000833  
 Red=Cloning site Green=Tags(s)

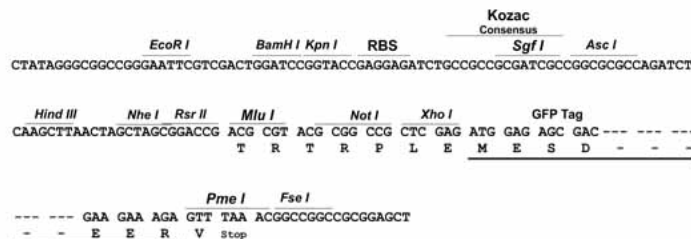
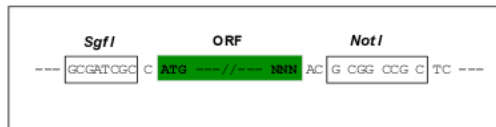
MGRVGYWTL L V L P A L L V W R G P A S A A E K G P P A L N I A V M L G H S H D V T E R E L R T L W G P E Q A A G L P L D V N V V  
 A L L M N R T D P K S L I T H V C D L M S G A R I H G L V F G D D T D Q E A V A Q M L D F I S S H T F V P I L G I H G G A S M I M A D K D P  
 T S T F F Q G A S I Q Q Q A T V M L K I M Q D Y D W H V F S L V T T I F P G Y R E F I S F V K T T V D N S F V G W D M Q N V I T L D T S F  
 E D A K T Q V Q L K K I H S S V I L L Y C S K D E A V L I L S E A R S L G L T G Y D F F W I V P S L V S G N T E L I P K E F P S G L I S V S  
 Y D D W D Y S L E A R V R D G I G I L T T A A S S M L E K F S Y I P E A K A S C Y G Q M E R P E V P M H T L H P F M V N V T W D G K D L S F  
 T E E G Y Q V H P R L V V I V L N K D R E W E K V G K W E N H T L S L R H A V W P R Y K S F S D C E P D D N H L S I V T L E E A P F V I V E  
 D I D P L T E T C V R N T V P C R K F V K I N N S T N E G M N V K K C C K G F C I D I L K K L S R T V K F T Y D L Y L V T N G K H G K K V N  
 N V W N G M I G E V V Y Q R A V M A V G S L T I N E E R S E V V D F S V P F V E T G I S V M V S R S N G T V S P S A F L E P F S A S V W M  
 M F V M L L I V S A I A V F V F E Y F S P V G Y N R N L A K G K A P H G P S F T I G K A I W L L W G L V F N N S V P V Q N P K G T T S K I M  
 V S V W A F F A V I F L A S Y T A N L A A F M I Q E E F V D Q V T G L S D K K F Q R P H D Y S P P F R F G T V P N G S T E R N I R N N Y P Y  
 M H Q Y M T K F N Q K G V E D A L V S L K T G K L D A F I Y D A A V L N Y K A G R D E G C K L V T I G S G Y I F A T T G Y G I A L Q K G S P  
 W K R Q I D L A L L Q F V G D G E M E E L T L W L T G I C H N E K N E V M S S Q L D I D N M A G V F Y M L A A A M A L S L I T F I W E H L  
 F Y W K L R F C F T G V C S D R P G L L F S I S R G I Y S C I H G V H I E E K K S P D F N L T G S Q S N M L K L L R S A K N I S S M S N M  
 N S S R M D S P K R A A D F I Q R G S L I M D M V S D K G N L M Y S D N R S F Q G K E S I F G D N M N E L Q T F V A N R Q K D N L N N Y V F  
 Q Q H P L T L N E S N P N T V E V A V S T E S K A N S R P R Q L W K K S V D S I R Q D S L S Q N P V S Q R D E A T A E N R T H S L K S P R  
 Y L P E E M A H S D I S E T S N R A T C H R E P D N S K N H K T K D N F K R S V A S K Y P K D C S E V E R T Y L K T K S S S P R D K I Y T I  
 D G E K E P G F H L D P P Q F V E N V T L P E N V D F P D P Y Q D P S E N F R K G D S T L P M N R N P L H N E E G L S N N D Q Y K L Y S K H  
 F T L K D K G S P H S E T S E R Y R Q N S T H C R S C L S N M P T Y S G H F T M R S P F K C D A C L R M G N L Y D I D E D Q M L Q E T G N P  
 A T G E Q V Y Q Q D W A Q N N A L Q L Q K N K L R I S R Q H S Y D N I V D K P R E L D L S R P S R S I S L K D R E R L L E G N F Y G S L F S  
 V P S S K L S G K K S S L F P Q G L E D S K R S K S L L P D H T S D N P F L H S H R D D Q R L V I G R C P S D P Y K H S L P S Q A V N D S Y  
 L R S S L R S T A S Y C S R D S R G H N D V Y I S E H V M P Y A A N K N M Y S T P R V L N S C S N R R V Y K K M P S I E S D V

TRPLE - GFP Tag - V

Restriction Sites: SgfI-NotI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



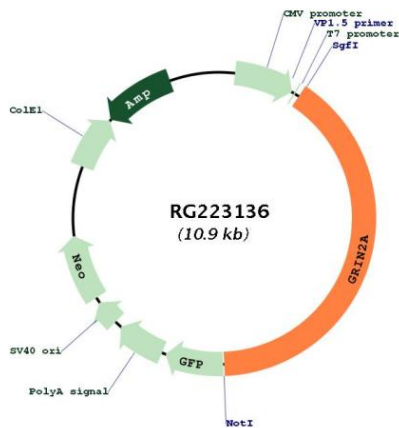
ACCN: NM\_000833

ORF Size: 4392 bp

<b>OTI Disclaimer:</b>	<p>Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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. <a href="#">More info</a></p>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<a href="#">NM_000833.5</a>
<b>RefSeq Size:</b>	6293 bp
<b>RefSeq ORF:</b>	4395 bp
<b>Locus ID:</b>	2903
<b>UniProt ID:</b>	<a href="#">Q12879</a>
<b>Cytogenetics:</b>	16p13.2
<b>Protein Families:</b>	Druggable Genome, Ion Channels: Glutamate Receptors, Ion Channels: Sodium, Transmembrane
<b>Protein Pathways:</b>	Alzheimer's disease, Amyotrophic lateral sclerosis (ALS), Calcium signaling pathway, Long-term potentiation, Neuroactive ligand-receptor interaction, Systemic lupus erythematosus

**Gene Summary:**

This gene encodes a member of the glutamate-gated ion channel protein family. The encoded protein is an N-methyl-D-aspartate (NMDA) receptor subunit. NMDA receptors are both ligand-gated and voltage-dependent, and are involved in long-term potentiation, an activity-dependent increase in the efficiency of synaptic transmission thought to underlie certain kinds of memory and learning. These receptors are permeable to calcium ions, and activation results in a calcium influx into post-synaptic cells, which results in the activation of several signaling cascades. Disruption of this gene is associated with focal epilepsy and speech disorder with or without cognitive disability. Alternative splicing results in multiple transcript variants. [provided by RefSeq, May 2014]

**Product images:**


Circular map for RG223136