

## Product datasheet for **RG216305**

### MGAM (NM\_004668) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	MGAM (NM_004668) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	MGAM
Synonyms:	MG; MGA
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG216305 ORF sequence, <b>codon optimized</b> . Due to the complexity of NM_004668, the ORF clone is codon optimized for mammalian Expression. The nucleotide sequence differs from the reference sequence, yet the amino acid sequence remains identical.

Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGGCAAGAAAGAAGCTGAAAAATTTACTACTTTGGAGATTGTGCTCAGTGTTCTTCTGCTTGTGTGT  
TTATCATCAGTATTGTTCTAATTGTGCTTTTAGCCAAAGAGTCACTGAAATCAACAGCCCCAGATCCTGG  
GACAACTGGTACCCAGATCCTGGGACAACCTGGTACCCAGATCCTGGAACAACCTGGTACCACACATGCT  
AGGACAACGGGTCCCCAGATCCTGGAACAACCTGGTACCACTCCTGTTTCTGCTGAATGTCCAGTGGTAA  
ATGAATTGGAACGAATTAATTGCATCCCTGACCAGCCGCAACAAGGCCACATGTGACCAACGTGGCTG  
TTGCTGGAATCCCAGGGAGCTGAAGTGTCCCTGGTCTACTATTCCAAGAATCATAGCTACCATGTA  
GAGGGCAACCTTGTCAACACAAATGCAGGATTCACAGCCCGTTGAAAAATCTGCCTTCTCACCAGTGT  
TTGGCAGCAACGTCGATAACGTCTCCTGACCGCTGAATATCAGACATCTAACAGATTTCAATTTCAAAT  
CACCGACCAACCAATAATCGCTTCGAGGTGCCCCACGAACACGTCCAATCATTAGCGGCAATGCCGCA  
GCATCTCTGACTTACCAGGTGGAGATTTCCAGACAGCCTTTTAGTATCAAAGTGACCCGGCGCAGTAATA  
ACCGAGTCTCTTCGATTCTTCCATTGGGCCTTTGTTGTTGCAGATCAGTTCCTCCAACGTCCACCCG  
CCTGCCTAGTACTAACGTGTATGGCCTCGGAGAGCACGTGCACCAGCAATATCGCCACGATATGAATTGG  
AAAACCTGGCCCATCTTCAACCGCGACACCACACCTAACGGAAATGGACCAATCTGTATGGTGCACAAA  
CATTCTTCTCTGTCTGGAAGATGCATCCGGTGTGATTTGGCGTATTTCTGATGAATTCTAACGCAAT  
GGAGGTCGTCTCAGCCGGCCCCAGCCATCACATACAGAACAATCGGAGGAATCCTGGATTTCTACGTG  
TTCTCGGAACACACCAGAGCAGTCTGCAAGAGTATTTGGAACCTATTGGTAGCCTGCCCTGCCCT



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CTTACTGGGCTCTGGGTTTTTCATCTTTACGATACGAATATGGCACCCCTGGACAACATGAGGGAGGTCTG  
CGAACGCAACCGAGCCGCCAACTGCCGTACGACGTGCAGCAGCTGATATAGATTACATGGATGAACGG  
CGGGACTTTACATATGACTCTGTGGATTCAAAGGCTTCCAGAATTCGTGAACGAACTTCATAAATG  
GCCAGAACTGGTAATCATCGTGGACCCCTGCTATATCCAACAACCTTCTCCTCAAGTAAACCTATGGCCC  
ATATGACAGGGGTTGAGATATGAAGATATGGGTGAATAGTTCAGATGGAGTGACTCCACTCATTGGGGAG  
GTCTGGCCTGGACAACTGTGTTTCTGATTATACCAATCCCAACTGTGCTGTTTGGTGGACAAAGGAAT  
TTGAGCTTTTTCACAATCAAGTAGAGTTTGTGGAACTGGAATCTGGATTGATATGAATGAAGTCTCCAACCTTGT  
TGATGGTTCGGTCTCAGGATGTTCCACAACAACCTAAATAATCCCCATTCACTCCAGAATCCTGGAT  
GGGTACCTGTTCTGCAAGACTCTCTGTATGGATGCAAGTGCAGTGCAGCACTGGGGCAAGCAGTATGACATTCACA  
ATCTGTATGGCTACTCCATGGCGGTGCGCACAGCAGAAGCTGCCAAGACTGTGTTCCCTAATAAGAGAAG  
CTTCATTCTGACCCGTTTACCTTTGCGGGCTCTGGCAAGTTTGCAGCACATTGGTTAGGAGACAACACT  
GCCACCTGGGATGACCTGAGATGGTCCATCCCTGGCGTGTGAGTTCAACCTTTTTGGCATCCCAATGG  
TGGGTCTGACATATGTGGCTTTGCTTTGGACACCCCTGAGGAGCTCTGTAGGCGGTGGATGCAGTTGGG  
TGCATTTTATCCGTTTTCTAGAAATCACAATGGCCAAGGCTACAAGGACCAGGATCTGCCTCCTTTGGA  
GCTGACTCCCTGTGTTGAATTCCTCCAGGCACTACCTAACATCCGCTATACTCTATTGCCCTACCTAT  
ACACCCTCTTCTCCGTGCTCACAGCCGAGGGGACAGGTTGGCCAGGCCCTTTTGCATGAGTCTACGA  
GGACAACAGCACTTGGGATGTGCACCAACAGTTCTTATGGGGGCCCGGCCTCCTCATCACTCCAGTTCTG  
GATGAAGGTGCAGAGAAAGTGTGGCATATGTGCCTGATGCTGTCTGGTATGACTACGAGACTGGGAGCC  
AAGTGAGATGGAGGAAGCAAAAAGTCGAGATGGAACCTTCTGGAGACAAAATTGGACTTCACCTTCGAGG  
AGGCTACATCTTCCCACACAGCAGCCAATAACAACACTCTGGCCAGTCGAAAGAACCCTCTTGGTCTT  
ATCATTGCCCTAGATGAGAACAAAGAAGCAAAAGGAGAAGTCTTCTGGGATAATGGGGAAACGAAGGATA  
CTGTGGCCAATAAAGTGTATCTTTATGTGAGTTTTCTGTCACTAAAACCGCTTGGAGGTGAATATTTT  
ACAATCAACCTACAAGGACCCCAATAATTTAGCATTTAATGAGATTAATAATCTTGGGACGGAGAACT  
AGCAATGTTACAGTGAAACACAATGGTGTCCCAAGTCAGACTTCTCTACAGTCACTTATGATTCTAACCC  
TGAAAGTTGCCATTATCACAGATATTGATCTTCTCCTGGGAGAAGCATACACAGTGAATGGAGCATAAA  
GATAAGGGATGAAGAAAAATAGACTGTTACCCTGATGAGAATGGTGCTTCTGCCGAAAACCTGCACTGCC  
CGTGGCTGTATCTGGGAGGCATCCAATCTTCTGGAGTCCCTTTTTGCTATTTTGTCAACGACCTATACT  
CTGTCAAGTGTTCAGTATAATTCCCATGGGGCCACAGCTGACATCTCCTTAAAGTCTTCCGTTTATGC  
CAATGCCTTCCCCTCCACACCCGTGAACCCCTTCGCCTGGATGTCACCTACCATAAGAATGAAATGCTG  
CAGTTCAAGATTTATGATCCCAACAAGAATCGGTATGAAGTTCAGTCCCTTGAACATACCCAGCATGC  
CATCCAGCACCCCTGAGGGTCAACTCTATGATGTGCTCATTAAAGAAGAATCCATTTGGGATTGAAATTCG  
CCGGAAGAGTACAGGCACTATAATTTGGGACTCTCAGCTCCTTGGCTTTACCTTCAAGTACATGTTTATC  
CGCATCTCCACCCGCTTCCCTCCAAGTACCTCTATGGCTTTGGGGAAAACCTGAGCACAGGTCCTATAGGA  
GAGACTTGGAGTGGCACACTTGGGGGATGTTTCTCCCGAGACCAGCCCCAGGGTACAAGAAGAATTCCTA  
TGGTGTCCACCCCTACTACATGGGGCTGGAGGAGGACGGCAGTGGCCATGGAGTGTCTGCTGAACAGC  
AATGCCATGGATGTGACGTTCCAGCCCCGCTGCCTTGACATACCCGACCACAGGGGGAGTTCTGGACT  
TTTATGTGTTCTTGGGGCCGACTCCAGAGCTTGTACCCAGCAGTACACTGAGTTGATTGGCCGGCTGT  
GATGGTACCTTACTGGTCTTTGGGGTCCAGCTGTGTCGCTATGGCTACCAGAATGACTCTGAGATCGCC  
AGCTTGTATGATGAGATGGTGGCTGCCAGATCCCTTATGATGTGCAGTACTCAGACATGCACTACATGG  
AGCGGCAGCTGGACTTACCCTCAGCCCCAAGTTTGTGGGTTTCCAGCTCTGATCAATCGCATGAAGGC  
TGATGGGATGCGGTCATCCTCATTCTGGATCCAGCCATTTCTGGCAATGAGACACAGCCTTATCCTGCC  
TTCACTCGGGCGTGGAGGATGACGTTTATCAATAACCCAAATGATGGAGACATTGTCTGGGAAAGG  
TCTGGCCTGATTTTCTGATGTTGTTGTAATGGGTCTTAGACTGGGACAGCCAAGTGGAGCTATATCG  
AGCTTATGTGGCCTTCCCAGACTTTTTCCGTAATTTCAACTGCCAAGTGGTGAAGAGGGAATAGAAGAA  
CTATAACAATCCACAGAATCCAGAGAGGAGCTTGAAGTTTGTGGCATGTGGATTGATATGAATGAAC  
CATCAAGCTTCGTGAATGGGCAGTTTCTCCAGGCTGCAGGGACGCTCTCTGAACCACCCTCCCTACAT  
GCCACATTTGGAGTCCAGGGACAGGGCCCTGAGCAGCAAGACCCTTTGTATGGAGAGTCAAGATCCTC  
CCAGACGGCTCCCTGGTGCAGCACTACAACGTGCAACAACCTGTATGGGTGGTCCCAGACCAGACCACAT  
ACGAAGCCGTGCAGGAGGTGACGGGACAGCGAGGGGTCTGCATCACCCGCTCCACATTTCCCTCTTCTGG  
CCGCTGGGACAGCATTGGCTGGGAGACAACACGGCCGATGGGATCAGCTGAAGAAGTCTATCATTGGC  
ATGATGGAGTTCAGCCTCTTGGCATACTCTACGGGAGCAGATATCTGTGGGTCTTTCAAGATGCTG  
AATATGAGATGTGTGTCGCTGGATGCAGCTGGGGCCTTTTACCCTTCTCAAGAAACCACAACACCAT

TGGGACCAGGAGACAAGACCCTGTGCCTGGGATGTTGCTTTTGTGAATATTTCCAGAACTGCCTGCAG  
 ACCAGATACACCTGTTGCCATATCTGTATACCTTGATGCATAAGGCCACACGGAGGGCGTCACTGTTG  
 TGCGGCCCTCTGCTCCATGAGTTTGTGTACAGACCAGGTGACATGGGACATAGACAGTCAGTTCTGCTGGG  
 CCCAGCCTTCTGGTCAGCCCTGTCTGGAGCGTAATGCCAGAAATGTCAGTGCATATTTCCCTAGAGCC  
 CGCTGGTATGATTACTACACGGGTGTGGATTAATGAAGAGGAGAGTGAAGACCTTGCCAGCCCCTC  
 TTAGCCACATTAATCTTCATGTCCGTGGGGCTACATCCTGCCCTGGCAAGAGCCTGCACCTGAACACCCA  
 CTTAAGCCGCGAGAAATTCATGGGCTTCAAATTCCTTGGATGATGAAGGAACCTGCTGGGGCTGGCTC  
 TTCTGGGATGATGGGCAAAGCATTGATACCTATGGGAAAGGACTCTATTACTTGGCCAGCTTTTCTGCCA  
 GCCAGAATACGATGCAAAGCCATATAATTTTCAACAATTACATCACTGGTACAAATCCTTTGAAACTGGG  
 CTACATTGAAATCTGGGAGTGGGCAGTGTCCCGTTACCAGTGTGAGCATCTCTGTGAGTGGCATGGTC  
 ATAACACCCTCCTTCAACAATGACCCACGACACAGGTATTAAGCATCGATGTGACTGACAGAAACATCA  
 GCCTACATAATTTTACTTCACTGACGTGGATAAGCACTCTG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

**Protein Sequence:**

>RG216305 representing NM\_004668  
 Red=Cloning site Green=Tags(s)

MARKKKKFTTLEIVLSVLLLVLFIIISIVLIVLLAKESLKSTAPDPGTTGTPDPGTTGTPDPGTTGTTTHA  
 RTTGPPDPGTTGTPVSAECPVNELERINCIPDQPPTKATCDQRGCCWNPQAVSVPWCYYSKNHSYHV  
 EGNLVNTNAGFTARLKNLPSSPVFGSNVDNVLTAEYQTSNRHFHFKLTDQTNRRFEVPHHEVQVFSGNA  
 ASLTYQVEISRQPFSEIKVTRRSNNRVLFDSSIGPLLFADQFLQLSTRLPSTNVYGLGEHVHQYRHMNMW  
 KTWPIFNRDTPNGNGLNYGAQTFFLCLEASGLSFGVFLMNSNAMEVVLQPAPAITYRTIGGILDFYV  
 FLGNTPEQVQVEYLELIGRPALPSYWALGFHLSTRYEYGLDNMREVVERNRAAQLPYDVQHADIDYMDER  
 RDTFYDSVDFKGFPEFVNELHNNQKLVIIIVDPAISNNSSSKPYGYPDRGSDMKIWNSSDGVTPPLIGE  
 VWPQGVTFPDYTPNCAVWWTKEFELFHNQVEFDGIWIDMNEVSNFVDSVSGCSTNNLNNPPTPRILD  
 GYLFCCKTLCMDAVQHWGKYDIHNLGYSMATAEAAKTVFPNKRSEILTRSTFAGSGKFAHWLGDNT  
 ATWDDLRSWIPGVLEFNLFGIPMVGPDICGFALDTPPEELCRRWMLGAFYFYSRHHNGQYKQDQDPA  
 ADSLLNNSRHYLNIRYTLPLYLTLFFRAHSRGDTVARPLLEHEFYEDNSTWDVHQFLWGPGLLITPVL  
 DEGAEKVMAYVPDAVWYDYETGSQVRRWKQKQVEMELPGDKIGLHLRGGYIFPTQPNTTTLASRKNPLGL  
 IIALDENKEAKGELFWDNGETKDTVANKVYLLCEFSVTQNRLEVNISQSTYKDPNNLAFNEIKILGTEEP  
 SNVTVKHNGVPSQTSPTVTYDSNLKVAIITDIDLLGEAYTVEWSIKIRDEEKIDCYPDENGASAENCTA  
 RGCWEASNSGVPFCYFVNDLYSVSDVQYNSHGATADISLKSSVYANAFSTPVPNPLRLDVTYHKNEML  
 QFKIYDPNKNRYEVPVPLNIPSMPSSTPEGQLYDVLIKKNPFGIEIRRKSTGTIIWDSQLLGFTFSDMFI  
 RISTRPLSKYLYGFGETEHRSYRRDLEWHTWGMFSRDQPPGYKKNYGVHPYMGLEEDGSAHGVLNLS  
 NAMDVTFQPLPALTYRTTGGVLDYVFLGPTPELVTQYTELIGRPVMVPYWSLGFQLCRYGYQNDSEIA  
 SLYDEMVAQIPYDVQYSDIDYMERQLDFTLSPKFAGFPALINRMKADGMRVILILDPAISGNETQPYPA  
 FTRGVEDDVFIKYPNDGDIVWGKVPDFPDVVVNGSLDWDSDVELYRAYVAFPDFFRNSTAKWWKREIEE  
 LYNNPQNPERSLKFDGMWIDMNEPSSFVNGAVSPGCRDASLNHPPYMPHLESRDGLSSKTLCEMESQQIL  
 PDGSLVQHYNVHNLVYGSQTRPTYEAVQEVTGQRGVVITRSTFPSSGRWAGHWLGDNTAAWDQLKKSIIIG  
 MMEFSLFGISYTGADICGFFQDAEYEMCVRWMQLGAFYFYSRHHNTIGTRRQDPVSWDVAFVNISRTVLQ  
 TRYTLPLYLTLMHKAHTEGVTVRPLLEHEFVSDQVTDWIDSQFLGPAFLVSPVLERNARNVTAYFPRA  
 RWYDYTGVDINARGEKTLPAPLDHLNLRVGGYILPWQEPALNTHLSRQKFMGFKIALDDEGTAGGWL  
 FWDGQSIDTYGKGLYLLASFASQNTMQSHIIFNNYITGTNPLKLGYIEIHWGVGSVPVTSVSVSGMV  
 ITPSFNNDPTTQVLSIDVTDNRNLSLHNFSTLTWISTL

TRTRPLE - GFP Tag - V

**Restriction Sites:**

SgfI-MluI



<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>	<u><a href="#">NM_004668.2</a></u> , <u><a href="#">NP_004659.2</a></u>
<b>RefSeq Size:</b>	6513 bp
<b>RefSeq ORF:</b>	5574 bp
<b>Locus ID:</b>	8972
<b>UniProt ID:</b>	<u><a href="#">O43451</a></u>
<b>Cytogenetics:</b>	7q34
<b>Protein Families:</b>	Druggable Genome, Transmembrane
<b>Protein Pathways:</b>	Galactose metabolism, Metabolic pathways, Starch and sucrose metabolism
<b>Gene Summary:</b>	This gene encodes maltase-glucoamylase, which is a brush border membrane enzyme that plays a role in the final steps of digestion of starch. The protein has two catalytic sites identical to those of sucrase-isomaltase, but the proteins are only 59% homologous. Both are members of glycosyl hydrolase family 31, which has a variety of substrate specificities. [provided by RefSeq, Jul 2008]