

Product datasheet for **MG227461**

Gsk3a (NM_001031667) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Gsk3a (NM_001031667) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Gsk3a
Synonyms:	2700086H06Rik
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG227461 representing NM_001031667
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCCGCGATCGCC

ATGAGCGGCGGGCCCTTCGGGAGGCGGCCCTGGGGCTCGGGCGGGCGGGACCAGCTCGTTTCGCGG
 AGCCAGGAGGCGGAGGCGGAGGTGGTGGCGGCGCCCGGGGGCTCGGCCTCTGGCCAGGAGGCACTGG
 CGGCGGAAAGCGTCAGTCGGGGCTATGGTGGGGCGTGGGAGCCTCGAGCTCCGGGGTGGCCCCAGC
 GGCAGCGGCGGAGGAGGAGCGGTGGCCCCGGCGGGCACTAGCTTCCCGCCGCGGGAGTGAAGCTGG
 GCCGTGACAGCGGGAAGGTGACCACAGTGGTAGCCACTGTAGGCCAAGGCCAGAGCGTTCCAAGAAGT
 GGCTTACACTGACATCAAAGTGATTGGTAATGGCTCATTTCGGAGTAGTATACCAGGCACGGCTGGCAGAG
 ACGAGGGAAGTGGTGGCCATCAAGAAGTTCTTCAGGACAAAAGTTCAAGAACCGAGAAGTGCAGATTA
 TGCCTAAGCTGGACCACTGCAATATTGTGAGGCTGCGGTACTTTTCTACTCCAGTGGGAGAAGAAGGA
 CGAGCTGTATTTGAATCTGGTGTGGAGTATGTGCCCGAGACGGTGTACCGAGTGGCCCGCCACTTCACC
 AAGGCCAAGCTGATCACCCCTATCATCTACATCAAGGTGTACATGTACCAGCTCTCCGGAGCTTGGCCT
 ACATCCACTCCCAAGGTGTGTGTCACCGTGACATCAAGCCCCAGAATTTGCTTGTGGACCCTGACTGTC
 TGTCTCAAGCTCTGCGATTTTGGCAGTGCAAAGCAGCTGGTTCGGGGGAGCCCAATGTGTCTACATC
 TGCTCTCGGTAAGTACCCTGCTCCAGAACTCATCTTTGGAGCCACAGATTACACCTCGTCCATCGATGTGT
 GGTTCGGTGGCTGTACTTGTGAGTACTTCTCGCCAGCCCATCTCCCTGGGGACAGTGGGGTGGGA
 CCAGCTTGTGGAGATCATCAAGTACTAGGAACGCCAACCAGGGAACAAATCCGAGAGATGAACCCTAAC
 TATACGGAGTTCAAGTCCCCAGATCAAAGCTCACCTTGGACAAAGGTGTTCAAATCTCAAAGACAC
 CACCTGAGGCCATTGCACTCTGCTCTAGCCTACTGGAGTACACGCCATCCTCAAGGCTCCTCCCAAGC
 GGCTTGTGCCACAGCTTCTTCGATGAAGTGGGAGACTCGGAGCCAGCTCCCCAACGACCGCCCGCTT
 CCCCCCTGTTCAACTTCAGTCTGGTGAAGTGTCCATCCAACCATCTCTCAATGCCATTCTCATCCCTC
 CTCACTTGAGGTCCCAGCAGGCCCTGCTTCTCCCTCACCACTTCTACAACCCATCCTACAAGCTTT
 AACTGAAGCTCAGACTGGCCAAGATTGGCAGCCATCTGATGCCACAAGTGTACCCTCGTAGCTCTTCC

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG227461 representing NM_001031667
 Red=Cloning site Green=Tags(s)

MSGGGPSGGGPGGSGRARTSSFAEPGGGGGGGGGGPGGSASGPGGTGGGKASVGMGGVGVASSGGGPGS
 GSGGGSGGPGAGTSFPPPGVKLGRDSGKVTTVVATVGQGPERSQEVAYTDIKVINGSGFVVYQARLAE
 TRELVAIKKVLQDKRFKNRELQIMRKL DHCNIVRLRYFFYSSGEKKDEL YLNLVLEYVPE TVYRVARHFT
 KAKLITPIIYIKVYMYQLFRSLAYIHSQGVCHRDIKPNLLVDPDTAVLKL CDFGSAKQLVRGEPNVSYI
 CSRYRRAPELIFGATDYTSSIDVWSAGCVLAELLGQPIFPGDSGVDQLVEIIKVLGTPTREREIEMNPN
 YTEFKFPQIKAHPTKVFKSSKTPPEAIALCSSLLEYTPSSRLSPLEACAHSFFDELRLRGAQLPNDRPL
 PPLFNFSPELSIQPSLNAIIPHLRSPAGPASPLTTSYNPSSQALTEAQTGDWQPSDATTATLASS

TRTRPLE - GFP Tag - V

Chromatograms:

https://cdn.origene.com/chromatograms/ja1174_e09.zip

Restriction Sites:

Sgfl-Mlul

Cloning Scheme:


ACCN: NM_001031667

ORF Size: 1470 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_001031667.1](#), [NP_001026837.1](#)

RefSeq Size: 2276 bp

RefSeq ORF: 1473 bp

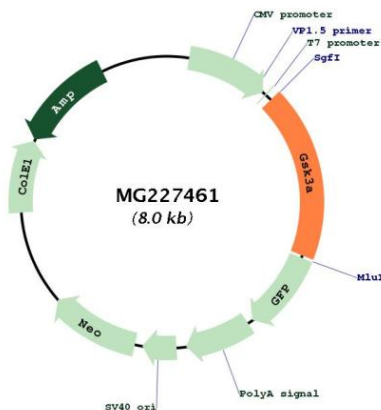
Locus ID: 606496

UniProt ID: [Q2NL51](#)

Cytogenetics: 7 A3

Gene Summary:

Constitutively active protein kinase that acts as a negative regulator in the hormonal control of glucose homeostasis, Wnt signaling and regulation of transcription factors and microtubules, by phosphorylating and inactivating glycogen synthase (GYS1 or GYS2), CTNNB1/beta-catenin, APC and AXIN1 (PubMed:15791206, PubMed:17908561). Requires primed phosphorylation of the majority of its substrates (PubMed:22539723). Contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting GYS1 activity and hence glycogen synthesis (PubMed:15791206, PubMed:17908561). Regulates glycogen metabolism in liver, but not in muscle (PubMed:17908561). May also mediate the development of insulin resistance by regulating activation of transcription factors (By similarity). In Wnt signaling, regulates the level and transcriptional activity of nuclear CTNNB1/beta-catenin (PubMed:15791206). Facilitates amyloid precursor protein (APP) processing and the generation of APP-derived amyloid plaques found in Alzheimer disease (By similarity). May be involved in the regulation of replication in pancreatic beta-cells (By similarity). Is necessary for the establishment of neuronal polarity and axon outgrowth (PubMed:17391670). Through phosphorylation of the anti-apoptotic protein MCL1, may control cell apoptosis in response to growth factors deprivation (PubMed:16543145). Acts as a regulator of autophagy by mediating phosphorylation of KAT5/TIP60 under starvation conditions, leading to activate KAT5/TIP60 acetyltransferase activity and promote acetylation of key autophagy regulators, such as ULK1 and RUBCNL/Pacer (PubMed:22539723). [UniProtKB/Swiss-Prot Function]

Product images:

Circular map for MG227461