

## Product datasheet for SC315311

### GNPTAB (NM\_024312) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	GNPTAB (NM_024312) Human Untagged Clone
Tag:	Tag Free
Symbol:	GNPTAB
Synonyms:	GNPTA; ICD
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>SC315311 representing NM_024312. Blue=Insert sequence Red=Cloning site Green=Tag(s)

GCTCGTTTGTAGTGAACCGTCAGAATTTTGTAAACGACTCACTATAGGGCGCCGGGAATTCGTGACTG  
GATCCGGTACCGAGGAGATCTGCCGCCGCGATCGCC  
ATGCTGTTCAAGCTCCTGCAGAGACAGACCTATACCTGCCTGTCCCACAGGTATGGGCTCTACGTGTGC  
TTCTTGGGCGTCGTTGTCACCATCGTCTCCGCCTTCCAGTTCGGAGAGGTGGTTCTGGAATGGAGCCGA  
GATCAATACCATGTTTTGTTGATTCTATAGAGACAATATTGCTGAAAAGTCTTTTCTGAAATCGGCTT  
TGTCTGCCATGCCGATTGACGTTGTTTACACCTGGGTGAATGGCACAGATCTTGAACACTGAAGGAA  
CTACAGCAGGTGAGAGAACAGATGGAGGAGGAGCAGAAAGCAATGAGAGAAATCCTTGGGAAAAACACA  
ACGGAACCTACTAAGAAGAGTGAGAAGCAGTTAGAGTGTGCTAACACACTGCATTAAGGTGCCAATG  
CTTGCTCCTGGACCCAGCCCTGCCAGCCAACATCACCTGAAGGACCTGCCATCTCTTTATCCTTCTTTT  
CATTCTGCCAGTGACATTTTCAATGTTGCAAAAACAAAAACCCTTCTACCAATGTCTCAGTTGTTGTT  
TTTGACAGTACTAAGGATGTTGAAGATGCCCACTCTGGACTGCTTAAAGGAAATAGCAGACAGACAGTA  
TGGAGGGGCTACTTGACAACAGATAAAGAAGTCCCTGGATTAGTGCTAATGCAAGATTTGGCTTTCCTG  
AGTGGATTTCCACCAACATTCAAGGAAACAAATCAACTAAAAACAAAATTGCCAGAAAATCTTTCCTCT  
AAAGTCAAAGTGTGAGTTGTATTGAGAGCCAGTGTAGCGCTTCTAAAAGTGAATAACCCCAAGGAT  
TTTCAAGAATTGAATAAGCAAACTAAGAAGAACATGACCATTGATGAAAAAGAACTGACCATAAGTCCCT  
GCATATTTATTATGGGATCTGAGCGCCATCAGCCAGTCTAAGCAGGATGAAGACATCTCTGCCAGTCGT  
TTTGAAGATAACGAAGAAGTACTGAGTACTATTGCGATCTATCGAGAGGCATGCACCATGGGTTCCGAAT  
ATTTTCATTGTACCAACGGGCAGATTCCATCCTGGCTGAACCTTGACAATCCTCGAGTGACAATAGTA  
ACACACCAGGATGTTTTTCGAAATTTGAGCCACTTGCCTACCTTTAGTTCACCTGCTATTGAAAAGTAC  
ATTCATCGCATCGAAGGGCTGTCCAGAAAGTTTATTTACCTAAATGATGATGTCATGTTTGGGAAGGAT  
GTCTGGCCAGATGATTTTACAGTCACTCAAAGGCCAGAAAGTTTATTTGACATGGCCTGTGCCAAAC  
TGTGCCGAGGGCTGCCAGGTTCTGGATTAAGGATGGCTATTGTGACAAGGCTTGAATAATTCAGCC  
TGGATTGGGATGGTGGGATTGCTCTGAAAACAGTGGAGGGAGTCGCTATATTGCAGGAGTGGAGGT  
ACTGGGATATTGGAGTTGGACAGCCCTGCCAGTTTGGTGGAGGAATAAACAGTGTCTTACTGTAAT



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CAGGGATGTGCGAATTCCTGGCTCGCTGATAAGTTCTGTGACCAAGCATGCAATGTCTTGTCTGTGGG  
 TTTGATGCTGGCGACTGTGGCAAGATCATTTTCATGAATTGTATAAAGTGATCCTTCTCCCAAACCCAG  
 ACTCACTATATTATCCAAAAGGTGAATGCCTGCCTTATTTTCAGCTTTGCAGAAGTAGCCAAAAGAGGA  
 GTTGAAGGTGCCTATAGTGACAAATCCAATAATTCGACATGCTTCTATTGCCAACAAAGTGGAAAACCATC  
 CACCTCATAATGCACAGTGGAAATGAATGCCACCACAATACATTTAATCTCACGTTTCAAAATACAAAC  
 GATGAAGAGTTCAAAATGCAGATAACAGTGGAGGTGGACACAAGGGAGGGACCAAAACTGAATCTACA  
 GCCCAGAAGGGTTACGAAAATTTAGTTAGTCCCATAACACTTCTCCAGAGGCGGAAATCCTTTTTGAG  
 GATATTCCCAAAGAAAAACGCTTCCCGAAGTTTAAAGAGACATGATGTTAACTCAACAAGGAGAGCCAG  
 GAAGAGGTGAAAATTCCTGGTAAATATTTCACTCCTTCCAAAAGACGCCAGTTGAGTCTCAATACC  
 TTGGATTTGCAACTGGAACATGGAGACATCACTTTGAAAGGATACAATTTGTCCAAGTCAGCCTTGTCTG  
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 GACAGTTTGGTGGCTCCACAGGAAAAACAGTTTCATAAAAGCATCTTGCCAAACAGCTTAGGAGTGTCT  
 GAAAGATTGCAGAGTTGACTTTTCTGCAGTGTGTAAGAGTGAATGGTCATGACCAGGGTCAGAAAT  
 CCACCCCTGGACTTGAGACCACAGCAAGATTTAGAGTGGAACTCACACCAAAAAACCATAGGCGGA  
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 ATCACAGGAAAAGAAAAGAGAACAGTAGAATGGAGGAAAATGCTGAAAAATCACATAGGCGTTACTGAA  
 GTGTTACTTGAAGAAAAGCTGCAGCATTACACAGATAGTTACTTGGGCTTTTTGCCATGGGAGAAAAAA  
 AAGTATTTCCAAGATCTTCTCGACGAAGAAGAGTCATTGAAGACACAATTTGGCATACTTCACTGATAGC  
 AAAAATACTGGGAGGCAACTAAAAGATACATTTGCAGATTCCTCAGATATGTAATAAAATTTCTAAAT  
 AGCAAGTTTGGATTACATCGCGGAAAGTCCCTGCTCACATGCCTCACATGATTGACCGGATTGTTATG  
 CAAGAAGTGAAGATATGTTCCCTGAAGAATTTGACAAGACGTCATTTACAAAAGTGCGCCATTCTGAG  
 GATATGCAGTTTGCCTTCTTATTTTTATTATCTCATGAGTGCAGTGCAGCCACTGAATATATCTCAA  
 GTCTTTTGAAGTTGATACAGATCAATCTGGTGTCTTGTCTGACAGAGAAAATCCGAACACTGGCTACC  
 AGAATTCACGAAGTCCCGTTAAGTTTGCAGGATTTGACAGGTCTGGAACACATGCTAATAAATTTGCTCA  
 AAAATGCTTCTGCTGATATCACGCAGTAAATAATTTCCACCAACTCAGGAATCCTACTATGATCCC  
 AACCTGCCACCGGTCACTAAAAGTCTAGTAACAAACTGTAAACCAGTAACTGACAAAATCCACAAAAGCA  
 TATAAGGACAAAAACAAATATAGGTTTGAATCATGGGAGAAGAAGAAAATCGCTTTTAAATGATTTCGT  
 ACCAACGTTTCTCATGTGGTTGGCCAGTTGGATGACATAAGAAAAACCCTAGGAAGTTTGTTCCTG  
 AATGACAACTTGACCACAATCATAAAGATGCTCAGACAGTGAAGGCTGTTCTCAGGGACTTCTATGAA  
 TCCATGTTCCCATACCTTCCCAATTTGAACTGCCAAGAGAGTATCGAAACCGTTTCTTTCATATGCAT  
 GAGCTGCAGGAATGGAGGCTTATCGAGACAAATTTGAAGTTTTGGACCCATTGTGTACTAGCAACATTG  
 ATTATGTTTACTATATTCTATTTTTGCTGAGCAGTTAATTGCACTTAAGCGGAAGATATTTCCAGAA  
 AGGAGGATACACAAAGAAGCTAGTCCCAATCGAATCAGAGTATAG  
 ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGAT  
 TACAAGGATGACGACGATAAGGTTTAAACGGCCGGC

**Restriction Sites:** Sgfl-Mlul  
**ACCN:** NM\_024312  
**Insert Size:** 3771 bp

**OTI Disclaimer:** 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 [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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 TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.

**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\\_024312.4](#)

**RefSeq Size:** 5644 bp

**RefSeq ORF:** 3771 bp

**Locus ID:** 79158

**UniProt ID:** [Q3T906](#)

**Cytogenetics:** 12q23.2

**Protein Families:** Transmembrane

**Protein Pathways:** Lysosome

**MW:** 143.6 kDa

**Gene Summary:**

This gene encodes two of three subunit types of the membrane-bound enzyme N-acetylglucosamine-1-phosphotransferase, a heterohexameric complex composed of two alpha, two beta, and two gamma subunits. The encoded protein is proteolytically cleaved at the Lys928-Asp929 bond to yield mature alpha and beta polypeptides while the gamma subunits are the product of a distinct gene (GeneID 84572). In the Golgi apparatus, the heterohexameric complex catalyzes the first step in the synthesis of mannose 6-phosphate recognition markers on certain oligosaccharides of newly synthesized lysosomal enzymes. These recognition markers are essential for appropriate trafficking of lysosomal enzymes. Mutations in this gene have been associated with both mucopolipidosis II and mucopolipidosis IIIA. [provided by RefSeq, May 2010]