

## Product datasheet for **RC203756**

### Alanine Transaminase (GPT) (NM\_005309) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Alanine Transaminase (GPT) (NM_005309) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Alanine Transaminase
Synonyms:	AAT1; ALT1; GPT1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC203756 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGGCCTCGAGCACAGGTGACCGAGCCAGGCGGTGAGGCATGGACTGAGGGCGAAGGTGCTGACGCTGG  
 ACGGCATGAACCCGCGTGTGCGGAGAGTGGAGTACGCAGTGCCTGGCCCCATAGTGCAGCGAGCCTTGGA  
 GCTGGAGCAGGAGCTGCGCCAGGGTGTGAAGAAGCCTTTCACCGAGGTCATCCGTGCCAACATCGGGGAC  
 GCACAGGCTATGGGGCAGAGGCCATCACCTTCTGCGCCAGGTCTTGGCCCTCTGTGTTAACCTGATC  
 TTCTGAGCAGCCCAACTCCCTGACGATGCCAAGAAAAGGGCGGAGCGCATCTTGCAGGCGTGTGGGG  
 CCACAGTCTGGGGCCTACAGCGTCAGCTCCGGCATCCAGCTGATCCGGGAGGACGTGGCGCGGTACATT  
 GAGAGGCGTGACGGAGGCATCCCTGCGGACCCCAACAACGTCTTCTGTCCACAGGGGCCAGCGATGCCA  
 TCGTGACGGTGTGAAGCTGCTGGTGGCCGGCAGGGCCACACACGCACGGGTGTGCTCATCCCCATCCC  
 CCAGTACCACTCTACTCGGCCAGCTGGCAGAGCTGGGCGCAGTGCAGGTGGATTACTACCTGGACGAG  
 GAGCGTGCCTGGGCGCTGGACGTGGCCGAGCTTACCCTGCACTGGGCCAGGCGCGTGACCACTGCCGCC  
 CTCGTGCGCTCTGTGTCATCAACCCTGGCAACCCACCGGCAGGTGCAGACCCGCGAGTGCATCGAGGC  
 CGTGATCCGCTTCGCTTCAAGAGCGGCTCTTCTGCTGGCGGACGAGGTGTACCAGGACAACGTGATC  
 GCCGCGGGTTCGAGTTCCTACTCATTCAAGAAGGTGCTCATGGAGATGGGGCCGCCCTACGCCGGGCAGC  
 AGGAGCTTGCCTCCTTCCACTCCACCTCCAAGGGCTACATGGGCGAGTGGGGTTCGCGGGCGGCTATGT  
 GGAGGTGGTGAACATGGACGCTGCAGTGCAGCAGCAGATGCTGAAGCTGATGAGTGTGGCGCTGTGCCCC  
 CCGGTGCCAGGACAGGCCCTGCTGGACCTGGTGGTTCAGCCCGCCGCGCCACCGACCCCTCTTTGCGC  
 AGTTCCAGGCTGAGAAGCAGGACGTGCTGGCAGAGCTGGCGGCCAAGGCCAAGCTCACCGCAGGTCTT  
 CAATGAGGCTCCTGGCATCAGCTGCAACCCAGTGCAGGGCGCCATGTACTCCTTCCCGCGCGTGCAGCTG  
 CCCCCGCGGGCGGTGGAGCGCGCTCAGGAGCTGGGCTGGCCCCGATATGTTCTTCTGCCTGCGCTCC  
 TGGAGGAGACCGGCATCTGCGTGGTGCAGGGAGCGGCTTTGGGAGCGGGAAGGCACCTACCACTCCG  
 GATGACCACTTCTGCCCCCTTGGAGAACTGCGGCTGCTGCTGGAGAAGCTGAGCAGGTTCCATGCCAAG  
 TTCACCTCGAGTACTCC

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC203756 protein sequence  
 Red=Cloning site Green=Tags(s)

MASSTGDRSQAVRHGLRAKVLTL DGMNPRVRRVEYAVRGPVQRALELEQELRQGVKKPFTEVIRANIGD  
 AQAMGQRPITFLRQVLALCVNPDLLSSPNFPDDAKKRAERILQACGGHSLGAYSVSSGIQLIREDVARYI  
 ERRDGGIPADPNVFLSTGASDAIVTVLKLKVAGEGHTRTGVLIPQYPLYSATLAELGAVQVDYYLDE  
 ERAWALDVAELHRALGQARDHCRPRALCVINPGNPTGQVQTRECI EAVIRFAFEERLFLLADEVYQDNVY  
 AAGSQFHSFKKVLMEMGPPYAGQQELASFHSTSKGYMGECCGFRGGYVEVNMDAAVQQMLKMSVRLCP  
 PVPGQALLDLVVSPPAPTDPSFAQFQAEKQAVLAELA AKL TEQVFNEAPGISCNPVQGAMYSFPRVQL  
 PPAVERAQELGLAPDMFFCLRLLEETGICVVPVGSFGQREGTYHFRMTILPPEKLRLLLEKLSRFHAK  
 FTLEYS

**TRTRPLEQKLI**SEEDLAANDILDYKDDDDKV

**Chromatograms:**

[https://cdn.origene.com/chromatograms/mk6236\\_b12.zip](https://cdn.origene.com/chromatograms/mk6236_b12.zip)

**Restriction Sites:**

Sgfl-Mlul

**Cloning Scheme:**


**ACCN:** NM\_005309

**ORF Size:** 1488 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.

**Note:** Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

**RefSeq:** [NM\\_005309.3](#)

**RefSeq Size:** 1896 bp

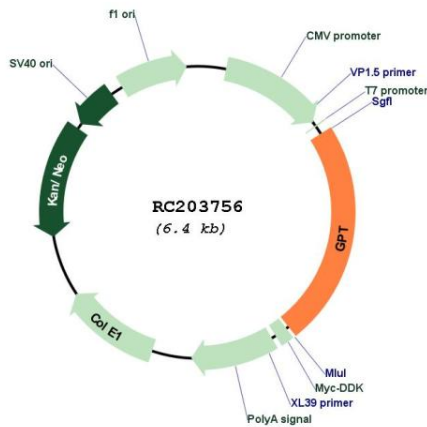
**RefSeq ORF:** 1491 bp

**Locus ID:** 2875

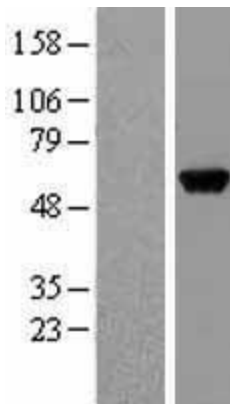
**UniProt ID:** [P24298](#)  
**Cytogenetics:** 8q24.3  
**Protein Families:** Druggable Genome  
**Protein Pathways:** Alanine, aspartate and glutamate metabolism, Metabolic pathways  
**MW:** 54.6 kDa

**Gene Summary:** This gene encodes cytosolic alanine aminotransaminase 1 (ALT1); also known as glutamate-pyruvate transaminase 1. This enzyme catalyzes the reversible transamination between alanine and 2-oxoglutarate to generate pyruvate and glutamate and, therefore, plays a key role in the intermediary metabolism of glucose and amino acids. Serum activity levels of this enzyme are routinely used as a biomarker of liver injury caused by drug toxicity, infection, alcohol, and steatosis. A related gene on chromosome 16 encodes a putative mitochondrial alanine aminotransaminase.[provided by RefSeq, Nov 2009]

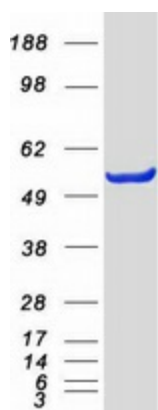
### Product images:



Circular map for RC203756



Western blot validation of overexpression lysate (Cat# [LY417391]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC203756 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified GPT protein (Cat# [TP303756]). The protein was produced from HEK293T cells transfected with GPT cDNA clone (Cat# RC203756) using MegaTran 2.0 (Cat# [TT210002]).