

Product datasheet for RC201284

Aminoacylase 1 (ACY1) (NM_000666) Human Tagged ORF Clone

Product data:

| | |
|---------------------------|---|
| Product Type: | Expression Plasmids |
| Product Name: | Aminoacylase 1 (ACY1) (NM_000666) Human Tagged ORF Clone |
| Tag: | Myc-DDK |
| Symbol: | Aminoacylase 1 |
| Synonyms: | ACY-1; ACY1D; HEL-S-5 |
| Mammalian Cell Selection: | Neomycin |
| Vector: | pCMV6-Entry (PS100001) |
| E. coli Selection: | Kanamycin (25 ug/mL) |
| ORF Nucleotide Sequence: | >RC201284 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s) |

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGACCAGCAAGGGTCCCGAGGAGGAGCACCCATCGGTGACGCTCTTCCGCCAGTACCTGCGTATCCGCA
CTGTCCAGCCCAAGCCTGACTATGGAGCTGCTGTGGCTTTCTTTGAGGAGACAGCCCGCAGCTGGGCT
GGGCTGTCAGAAAGTAGAGGTGGCACCTGGCTATGTGGTGACCGTGTGACCTGGCCAGGCACCAACCT
ACACTCTCTCCATCTTGCTCACTCCCACACGGATGTGGTGCCTGTCTCAAGGAACATTGGAGTCAG
ACCCCTTTGAGGCCTTCAAGGATTCTGAGGGCTACATCTATGCCAGGGGTGCCAGGACATGAAGTGCCT
CAGCATCCAGTACCTGGAAGCTGTGAGGAGGCTGAAGGTGGAGGGCCACCGGTTCCCCAGAACCATCCAC
ATGACCTTTGTGCTGATGAGGAGGTTGGGGTACCAAGGCATGGAGCTGTTCTGTCAGCGGCCTGAGT
TCCACGCCCTGAGGGCAGGCTTTGCCCTGGATGAGGGCATAGCCAATCCCAGTATGCTTCACTGTCTT
TTATAGTGAGCGGAGTCCCTGGTGGGTGCGGGTACCAGCACTGGGAGGCCAGGCCATGCCTCACGCTTC
ATGGAGGACACAGCAGCAGAGAAGCTGCACAAGTTGTAACTCCATCCTGGCATTCCGGGAGAAGGAAT
GGCAGAGGCTGCAGTCAAACCCCACTGAAAGAGGGGTCCGTGACCTCCGTGAACCTGACTAAGCTAGA
GGGTGGCGTGGCTATAACGTGATACCTGCCACCATGAGCGCCAGCTTTGACTTCCGTGTGGCACCAGGAT
GTGGACTTCAAGGCTTTTGGAGGACAGCTGCAGAGCTGGTGGCAGGAGGCTGGCGAGGGGTCACCCTAG
AGTTTGCTCAGAAGTGGATGCACCCCAAGTGACACCTACTGATGACTCAAACCTTGGTGGGCAGCTTT
TAGCCGGGTCTGCAAGGATATGAACCTCACTCTGGAGCCTGAGATCATGCCTGCTGCCACTGACAACCGC
TATATCCGCGCGGTGGGGTCCCAGCTCTAGGCTTCTACCCATGAACCGCACACCTGTGCTGCTGCAGC
ACCACGATGAACGGCTGCATGAGGCTGTGTTCTCCGTGGGGTGGACATATATACACGCCTGCTGCCTGC
CCTTGCCAGTGTGCTGCCCTGCCAGTGACAGC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA



Protein Sequence: >RC201284 protein sequence
Red=Cloning site Green=Tags(s)

MTSKGPEEEHPSVTLFRQYLRIQVQPKPDYGAAVAFFEETARQLGLGCQKVEVAPGVVTVLTPWGTNP
 TLSSILLNSHTDVVPVFKHWSHDPFEAFKDSEGYIYARGAQMCKVSIQYLEAVRRLKVEGHRFPRTIH
 MTFVDPDEEVGGHQGMELFVQRPEFHALRAGFALDEGIANPTDAFTVFYSERSPWVVRTSTGRPGHASRF
 MEDTAAEKLHKVVNSILAFREKEWQRLQSNPHLKEGVSVTYNLTKLEGGVAYNVIPATMSASFDFRVAPD
 VDFKAFEEQLQSWCQAAGEGVTLLEFAQKWMHPQVTPDSDSNPWWAAF SRVCKDMNLTLEPEIMPAATDNR
 YIRAVGVPALGFSPMNRTPVLLHDHDERLHEAVFLRGVDIYTRLLPALASVPALPSDS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk6395_h05.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



* The last codon before the Stop codon of the ORF

ACCN: NM_000666

ORF Size: 1224 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_000666.3](#)

RefSeq Size: 1678 bp

RefSeq ORF: 1227 bp

Locus ID: 95

UniProt ID: [Q03154](#)

Cytogenetics: 3p21.2

Domains: Peptidase_M20

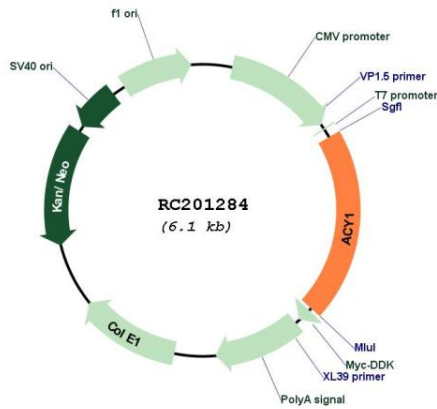
Protein Families: Protease

Protein Pathways: Arginine and proline metabolism, Metabolic pathways

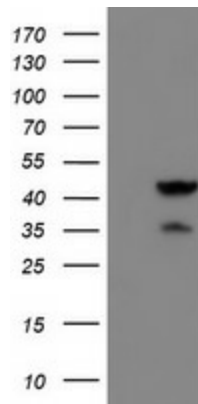
MW: 45.9 kDa

Gene Summary: This gene encodes a cytosolic, homodimeric, zinc-binding enzyme that catalyzes the hydrolysis of acylated L-amino acids to L-amino acids and an acyl group, and has been postulated to function in the catabolism and salvage of acylated amino acids. This gene is located on chromosome 3p21.1, a region reduced to homozygosity in small-cell lung cancer (SCLC), and its expression has been reported to be reduced or undetectable in SCLC cell lines and tumors. The amino acid sequence of human aminoacylase-1 is highly homologous to the porcine counterpart, and this enzyme is the first member of a new family of zinc-binding enzymes. Mutations in this gene cause aminoacylase-1 deficiency, a metabolic disorder characterized by central nervous system defects and increased urinary excretion of N-acetylated amino acids. Alternative splicing of this gene results in multiple transcript variants. Read-through transcription also exists between this gene and the upstream ABHD14A (abhydrolase domain containing 14A) gene, as represented in GenelD:100526760. A related pseudogene has been identified on chromosome 18. [provided by RefSeq, Nov 2010]

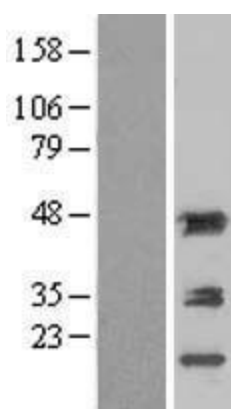
Product images:



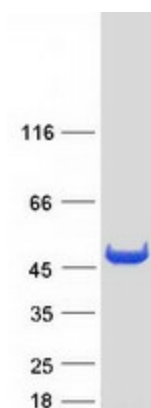
Circular map for RC201284



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY ACY1 (Cat# RC201284, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-ACY1 (Cat# [TA503213]). Positive lysates [LY424578] (100ug) and [LC424578] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY424578]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC201284 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified ACY1 protein (Cat# [TP301284]). The protein was produced from HEK293T cells transfected with ACY1 cDNA clone (Cat# RC201284) using MegaTran 2.0 (Cat# [TT210002]).