

## Product datasheet for **RC202136**

### **AlaRS (AARS) (NM\_001605) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	AlaRS (AARS) (NM_001605) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	AlaRS
Synonyms:	AARS; CMT2N; DEE29; EIEE29
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide Sequence:**

>RC202136 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGGACTCTACTCTAACAGCAAGTGAAATCCGGCAGCGATTTATAGATTTCTTCAAGAGGAACGAGCATA  
 CGTATGTTCACTCGTCTGCCACCATCCCATTGGATGACCCCACTTTGCTCTTTGCCAATGCAGGCATGAA  
 CCAGTTTAAACCCATTTTCTGAACACAATTGACCCATCTCACCCATGGCAAAGCTGAGCAGAGCTGCC  
 AATACCCAGAAGTGCATCCGGGCTGGGGCAAACATAATGACCTGGACGATGTGGCAAGGATGTCTATC  
 ATCACACCTTCTCGAGATGCTGGGCTCTTGGTCTTTGGAGATTACTTTAAGGAATTGGCATGTAAGAT  
 GGCTCTGGAACCTCTACCCAAGAGTTTGGCATTCCCATTGAAAGACTTTATGTTACTTACTTTGGCGGG  
 GATGAAGCAGCTGGCTTAGAAGCAGATCTGGAATGCAAACAGATCTGGCAAAATTTGGGGCTGGATGACA  
 CAAAAATCTCCAGGCAACATGAAGGATAACTTCTGGGAGATGGGTGACACGGGCCCTGTGGTCTTG  
 CAGTGAGATCCACTACGACCGGATTGGTGGTGGGACCGCGCACATCTTGTCAACCAGGACGACCCTAAT  
 GTGCTGGAGATCTGGAACCTTGTGTTTCATCCAGTATAACAGGGAAGCTGATGGCATTCTGAAACCTTTC  
 CCAAGAAAAGCATTGACACAGGGATGGGCTGGAACGACTGGTATCTGTGCTGCAGAATAAGATGTCCAA  
 CTATGACACTGACCTTTTTGTCCCTTACTTTGAAGCCATTGAGAAGGCACAGGTGCCCGACCATACACT  
 GGGAAAGTTGGTCTGAGGATGCCGATGGGATTGACATGGCCTACCGGGTCTGGCTGACCATGCTCGGA  
 CCATCACTGTGGCACTGGCTGATGGTGGCCGGCCTGACAAACAGGGCGTGGATATGTGTTGAGACGGAT  
 TCTCCGCCGAGCTGTCCGATACGCCATGAAAAGCTCAATGCCAGCAGGGGCTTCTTTGCTACGTTAGTG  
 GATGTTGTGTCAGTCCCTGGGAGATGCATTTCTGAGCTGAAGAAGGACCCAGACATGGTGAAGGACA  
 TCATTAATGAAGAAGAGGTGCAGTTTCTCAAGACTCTCAGCAGAGGGCGTCGCATCTGGACAGGAAAAAT  
 TCAGAGCCTGGGAGACAGCAAGACCATTCCCGGAGACACTGCTTGGCTCCTCTATGACACCTATGGGTTT  
 CCAAGTGGATCTGACTGGACTGATTGCTGAAGAGAAGGGCCTGGTGGTAGACATGGATGGCTTTGAAGAGG  
 AGAGGAAACTGGCCAGCTGAAATCACAGGGCAAGGGAGCTGGTGGGAAGACCTCATTATGCTGGACAT  
 TTACGCTATCGAAGAGCTCCGGGCACGGGTCTGGAGGTCACAGATGATCCCAAAGTACAATTACCAT  
 TTGGACTCCAGTGGTAGCTATGTATTTGAGAACACAGTGGCTACGGTATGGCTCTGCGCAGGGAGAAGA  
 TGTTCTGTTGAAGAGGTGTCCACAGGCCAGGAGTGTGGAGTGGTCTGGACAAGACCTGTTTCTATGCTGA  
 GCAAGGAGGCCAGATCTATGACGAAGGCTACCTGGTGAAGGTGGATGACAGCAGTGAAGATAAAACAGAG  
 TTTACAGTGAAGAATGCTCAGGTCGAGGAGGGTATGTGCTACACATTGGAACCTCTACGGTGACCTGA  
 AAGTGGGGATCAGGTCGGCTGTTTATTGATGAGCCCGACGAAGACCCATCATGAGCAACCACACAGC  
 TACGCACATTCTGAACTTCGCCCTGCGCTCAGTGCTTGGGGAAGCTGACCAGAAAGGCTCATTGGTTGCT  
 CCTGACCGCCTCAGATTTGACTTTACTGCCAAGGGAGCCATGTCCACCCAACAGATCAAGAAGGCTGAAG  
 AGATTGCTAATGAGATGATTGAGGCAGCCAAGGCCGTCTATACCCAGGATTGCCCCCTGGCAGCAGCGAA  
 AGCCATCCAGGGCCTACGGGCTGTGTTGATGAGACCTATCCTGACCCTGTGCGAGTCGTCTCCATTGGG  
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 GGGAAACGCACCTGCGGAACTCGAGTCATGCAGGAGCTTTTGTGATCGTGACGGAAGAAGCCATTGCCAA  
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 AAGAAATGTCTCTGTGTCATGGAAGCCAAAGTGAAGGCTCAGACTGCTCAAACAAGGATGTGCAGAGGG  
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 GACTCTCAAATCCCTAAAGAAGGTGATGGATGACTTGGACCGAGCCAGCAAGGCCGATGTCCAGAAACGA  
 GTGTTAGAGAAGACGAAGCAGTTCATCGACAGCAACCCCAACCAGCCTTGTGTCATCCTGGAGATGGAGA  
 GCGGGCCTCAGCAAGGCCCTGAATGAAGCCTTGAAGCTTTCAAGATGCACTCCCTCAGACTTCTGC  
 CATGCTCTTACGGTGGACAATGAGGCTGGCAAGATCACGTGCCTGTGTCAAGTCCCCCAGAATGCAGCC  
 AATCGGGCTTAAAGCCAGCAGTGGGTGCAGCAGGTGTGAGGCTTGTGACGGTAAAGGTGGTGGCA  
 AGGATGTGTCTGCACAGGCCACAGGCAAGAACGTTGGCTGCCTGCAGGAGGCGCTGCAGTGGCCACTTC  
 CTTGCCAGCTGCGCCTCGGGATGTAAGAAC

**ACGCGT**ACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:** >RC202136 protein sequence  
 Red=Cloning site Green=Tags(s)

MDSTLTASEIRQRFIDFFKRNEHTYVHSSATIPLDDPTLLFANAGMNQFKPIFLNTIDPSHPMAKLSRAA  
 NTQKCIRAGGKHNDLDDVGKDVYHHTFFEMLSWSFGDYFKELACKMALELLTQEFGIPIERLYVTFYFGG  
 DEAAGLEADLECKQIWQNLGLDDTKILPGNMKDNFEMGDTGPCGPCSEIHYDRIGRDAHLVNQDDPN  
 VLEIWNLVFIQYNREADGILKPLPKSIDTGMGLERLVSVLQNKMSNYDTDLFVPYFEAIQKGTGARPYT  
 GKVGAEDADGIDMAYRVLADHARTITVALADGGRPDNTGRGYVLRRLRRAVRYAHEKLNASRGFFATLV  
 DVVVQSLGDAFPELKKDPMVKDIINEEEVQFLKTL SRGRRILDRKIQSLGDSKTI PGDTAWLLYDTYGF  
 PVDLTGLIAEEKGLVVDMDGFEEERKLAQLKSQKGAGGEDLIMLDIYAEELRARGLEVTDSPKYNHY  
 LDSSGSYVFENTVATVMALRREKMFVEEVSTGQECGVVLDKTCFYAEQGGQIYDEGYLVKVDSSDKTE  
 FTVKNAQVRGGYVLHIGTIYGDLVGDQVWLFIDEPRRRPIMSNHTATHILNFRSVLGEADQKGLVA  
 PDRLRFDF TAKGAMSTQQIKKAE EIANEMIEAAKAVYTQDCPLAAAKAIQGLRAVFDETYDPVVRVVSIG  
 VPVSELDDPSGPAGSLTSVEFCGGTHLRNSSHAGAFVI VTEEAI AKGIRRI VAVTGA EAQKALRKAESL  
 KKCLSVMEAKVKAQTAPNKDVQREIADLGEALATAVIPQWQKDELRETLKSLKKVMDDLDRASKADVQKR  
 VLEKTKQFIDSNPQPLVILEMESGASAKALNEALKLFKMHSPT SAMLFTVDNEAGKITCLCQVPQNA  
 NRGLKASEWVQQVSGLMDGKGGKDVSAQATGKNVGCLEALQLATSFAQLRLGDVKN

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** [https://cdn.origene.com/chromatograms/mk6202\\_e02.zip](https://cdn.origene.com/chromatograms/mk6202_e02.zip)

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**

Cloning sites used for ORF Shuttling:



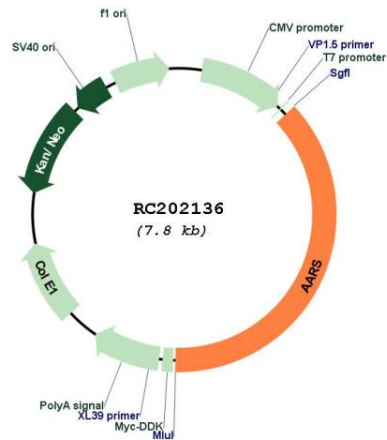
\* The last codon before the Stop codon of the ORF

**ACCN:** NM\_001605

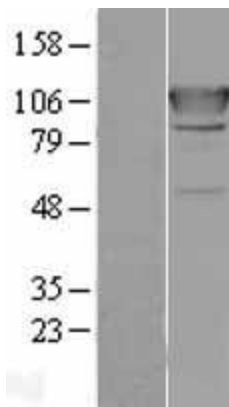
**ORF Size:** 2904 bp

<b>OTI Disclaimer:</b>	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. <a href="#">More info</a>
<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>	<a href="#">NM_001605.3</a>
<b>RefSeq Size:</b>	3344 bp
<b>RefSeq ORF:</b>	2907 bp
<b>Locus ID:</b>	16
<b>UniProt ID:</b>	<a href="#">P49588</a>
<b>Cytogenetics:</b>	16q22.1
<b>Domains:</b>	tRNA-synt_2c, DHHA1
<b>Protein Pathways:</b>	Aminoacyl-tRNA biosynthesis
<b>MW:</b>	106.8 kDa
<b>Gene Summary:</b>	The human alanyl-tRNA synthetase (AARS) belongs to a family of tRNA synthases, of the class II enzymes. Class II tRNA synthases evolved early in evolution and are highly conserved. This is reflected by the fact that 498 of the 968-residue polypeptide human AARS shares 41% identity with the E.coli protein. tRNA synthases are the enzymes that interpret the RNA code and attach specific aminoacids to the tRNAs that contain the cognate trinucleotide anticodons. They consist of a catalytic domain which interacts with the amino acid acceptor-T psi C helix of the tRNA, and a second domain which interacts with the rest of the tRNA structure. [provided by RefSeq, Jul 2008]

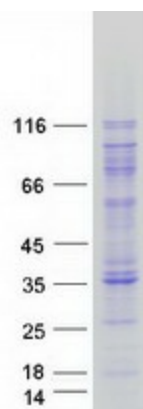
Product images:



Circular map for RC202136



Western blot validation of overexpression lysate (Cat# [LY400604]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC202136 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified AARS protein (Cat# [TP302136]). The protein was produced from HEK293T cells transfected with AARS cDNA clone (Cat# RC202136) using MegaTran 2.0 (Cat# [TT210002]).