

alanyl-tRNA synthetase Protein, Mouse, Recombinant (His)

General Information

Synonyms:	sti;C76919;A1316495;alanyl-tRNA synthetase
Protein Construction:	A DNA sequence encoding the mouse AARS (Q8BGQ7) (Met 1-Asn 968) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 1
Species:	Mouse
Expression Host:	Baculovirus Insect Cells
Accession:	Q8BGQ7
Molecular Weight:	108.3 kDa (predicted); 105 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 88 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, pH 7.4, 10% glycerol. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Alanyl-tRNA synthetase (AARS) belongs to the family of ligases, specifically those forming carbon-oxygen bonds in aminoacyl-tRNA and related compounds. This enzyme participates in alanine and aspartate metabolism and aminoacyl-tRNA biosynthesis. Alanyl-tRNA synthetase (AlaRS) catalyzes synthesis of Ala-tRNA (Ala) and hydrolysis of mis-acylated Ser- and Gly-tRNA (Ala) at 2 different catalytic sites. Their role is not confined to catalyze the attachment of amino acids to transfer RNAs and thereby establish the rules of genetic code by virtue of matching

the nucleotide triplet of anticodon with cognate amino acid. Under apoptotic conditions in cell culture, the full-length enzyme is secreted, and the two cytokine activities can be generated by leukocyte elastase, an extracellular protease. Secretion of this tRNA synthetase may contribute to apoptosis both by arresting translation and producing needed cytokines. This protein could be an attractive target of drugs against bacterial, fungal and parasitic infections.

Reference

- Wakasugi K, et al. (1999) Two Distinct Cytokines Released from a Human Aminoacyl-tRNA Synthetase. *Science*. 284 (5411): 147-51.
- Sokabe M, et al. (2009) The structure of alanyl-tRNA synthetase with editing domain. *Proc Natl Acad Sci* . 106 (27): 11028-33.5
- kupinska M, et al. (2009) AARS--the etiological factor and the attractive target of many disorders. *Postepy Biochem*. 55 (4): 373-84.

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