

DARS Protein, Human, Recombinant (His)

General Information

Synonyms:	aspartyl-tRNA synthetase;HBSL;aspRS
Protein Construction:	A DNA sequence encoding the mature form of human DARS (P14868) (Met1-Pro501) was expressed with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	E. coli
Accession:	P14868
Molecular Weight:	59 kDa (predicted); 47 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:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 50 mM Tris, 100 mM NaCl, 10% glycerol, pH 8.0. 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. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Aspartate tRNA ligase 1, also known as DARS, is part of a multienzyme complex of aminoacyl-tRNA synthetases. It belongs to the class-II aminoacyl-tRNA synthetase family. DARS charges its cognate tRNA with aspartate during protein biosynthesis. DARS catalyzes the specific attachment of an amino acid to its cognate tRNA in a 2 step reaction: the amino acid(AA) is first activated by ATP to form AA-AMP and then transferred to the acceptor end of the tRNA.

Reference

Escalante C, et al. (1993) Expression of human aspartyl-tRNA synthetase in Escherichia coli. Functional analysis of the N-terminal putative amphiphilic helix. J Biol Chem. 268(8): 6014-23.

Maruyama K, et al. (1994) Oligo-capping: a simple method to replace the cap structure of eukaryotic mRNAs with oligoribonucleotides. Gene. 138(1-2):171-4.

Reed VS, et al. (1995) Mechanisms of the transfer of aminoacyl-tRNA from aminoacyl-tRNA synthetase to the elongation factor 1 alpha. J Biol Chem. 269(52):32932-6.

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