



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human YARS Protein
Catalog Number: hRP-1289
Manufacturer: LD Biopharma, Inc.

Introduction

Aminoacyl-tRNA synthetases catalyze the aminoacylation of tRNA by their cognate amino acid. Because of their central role in linking amino acids with nucleotide triplets contained in tRNAs, aminoacyl-tRNA synthetases are thought to be among the first proteins that appeared in evolution. Tyrosyl-tRNA synthetase (TYRRS, or YARS) belongs to the class I tRNA synthetase family. Cytokine activities have also been observed for the human tyrosyl-tRNA synthetase, after it is split into two parts, an N-terminal fragment that harbors the catalytic site and a C-terminal fragment found only in the mammalian enzyme. The N-terminal fragment is an interleukin-8-like cytokine, whereas the released C-terminal fragment is an EMAP II-like cytokine.

Full-length human YARS cDNA (2 – 528 aa, derived from BC016689) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: YARS (TyrRA; CMTDIC; YRS; YTS)
Accession Number: NP_003671.1
Species: Human
Size: 50 µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Sucrose.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

Key References

Savytskyi, O.V., et al., *Asymmetric structure and domain binding interfaces of human tyrosyl-tRNA synthetase studied by molecular dynamics simulations*. J. Mol. Recognit. 26 (2), 113-120 (2013)

Fu, G., et al., *tRNA-controlled nuclear import of a human tRNA synthetase*. J. Biol. Chem. 287 (12), 9330-9334 (2012)

Zeng, R., et al., *Inhibition of mini-TyrRS-induced angiogenesis response in endothelial cells by VE-cadherin-dependent mini-TrpRS*. Heart Vessels 27 (2), 193-201 (2012)

Applications

1. May be used for in vitro YARS protein mediated protein synthesis rate control pathway regulation study with “ProFectin” based intracellular delivery of this protein.
2. May be used for YARS protein – protein interaction assay.
3. As Enzymatic substrate for various proteases.
4. May be used for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEGDAPSPEEKLHLITRNLQEVLGEEKLKEILKEREL
KIYWGATATTGKPHVAYFVPMISKIADFLKAGCEVTILFADLHAYLDNMKAPWELLELRVSYENV
IKAMLESIGVPLEKLFKFKGTDYQLSKEYTLDVYRLSSVVTQHDSKKAGAEVVKQVEHPLLSGL
LYPGLQALDEEYLVKVDAAQFGGIDQRKIFTFAEKYLALGYSKRVLHMNPMVPGLTGSKMSSSEE
ESKIDLLDRKEDVKKLKKAFCEPENVENNGVLSFIKHVLFPLKSEFVILRDEKWGGNKTYTAY
VDLEKDFAAEVVHPGDLKNSVEVALNKLLDPIREKFNTPALKKLASAAYPDPSKQKPAKPAK
NSEPEEVIPSRDLIRVGKIIITVEKHPDADSLYVEKIDVGEAEPRTVVSGLVQFVPKEELQDRLV
VVLCNLKPQKMRGVESQGMLLCASIEGINRQVEPLDPPAGSAPGEHVFKGYEKGQPDEELKPK
KKVFEKLQADFKISEECIAQWKQTNFMTKLGSISCKSLKGGNIS