



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human COASY Protein  
**Catalog Number:** hRP-0711  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Biosynthesis of coenzyme A (CoA) from pantothenic acid (vitamin B5) is an essential universal pathway in prokaryotes and eukaryotes. Human bifunctional coenzyme A synthase (COASY) is a bifunctional enzyme that catalyzes the 2 last steps in CoA synthesis. These activities are performed by 2 separate enzymes, phosphopantetheine adenylyltransferase (PPAT; EC 2.7.7.3) and dephospho-CoA kinase (DPCK; EC 2.7.1.24), in prokaryotes. Recent data indicated that this enzyme form complex with *p85aPI3K*, and plays a unique role in bladder cancer development.

Full-length human COASY (269aa, Isoform\_b) gene was constructed with 15 N-terminal T7 tag. This protein was expressed in *E. coli* as inclusion bodies, refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

**Gene Symbol:** COASY (DPCK; NBP; pOV-2; PPAT; UKR1)  
**Accession Number:** NP\_001035996  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

### Key References

Daugherty, M., et al., *Complete reconstitution of the human coenzyme A biosynthetic pathway via comparative genomics*. *J. Biol. Chem.* 277 (24), 21431-21439 (2002)



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Aghajanian,S.et al., *Identification and characterization of the gene encoding the human phosphopantetheine adenylyltransferase and dephospho-CoA kinase bifunctional enzyme (CoA synthase)*. Biochem. J. 365 (PT 1), 13-18 (2002)

Breus,O., et al., *CoA synthase is in complex with p85alphaPI3K and affects PI3K signaling pathway*. Biochem. Biophys. Res. Commun. 385 (4), 581-585 (2009)

## **Applications**

1. May be used for in vitro human COASY mediated biosynthesis of coenzyme A regulation study for various cells by intracellular delivery of this protein with “ProFectin” reagent.
2. May be used for mapping COASY protein-protein interaction.
3. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. COASY mRNA were enriched in CD105+ endothelial cells, so detection of this protein in blood sample may be used as specific bio-marker protein for monitoring endothelial cell functions.
5. May be used as antigen for specific antibody production.

## **Quality Control**

1. Purity: > 90% by SDS-PAGE.

## **Recombinant Protein Sequence**

MASMTGGQQMGRGEFMAINRFRLENDLEELALYQIQLLKDLRHTENEEDKVSSSSFRQRMLGNL  
LRPPYERPELPTCLYVIGLTGISGSGKSSIAQRLKGLGAFVIDSDHLGHRAYAPGGPAYQPVVE  
AFGTDILHKDGI INRKVLGSRVFGNKKQLKILTDIMWPI IAKLAREEMDRAVAEGKRVCVIDAA  
VLLEAGWQNLVHEVWTAVIPETEAVRRIVERDGLSEAAAQSRLQSQMSGQQLVEQSHVVLSTLW  
EPHITQRQVEKAWALLQKRIPKTHQALD