



**LD Biopharma, Inc.**  
9924 Mesa Rim Road Suite B  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human CDC123 Protein  
**Catalog Number:** hRP-0787  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

The human CDC123 - coding sequence was first isolated from a cDNA expression library as a suppressor of the temperature-sensitive mutation in rat cell line 3Y1tsD123, which arrests in G<sub>1</sub> phase at restrictive temperature. The D123 gene is expressed in the cytosol of human and rat tissues, with expression in testis being highest. Eukaryotic initiation factor 2 (eIF2) is a central regulator of translational initiation in times of growth and times of stress, CDC123 was identified as one of key regulator for controlling eIF2 activity in CDC123-Chf-Gcd11 axis. Recent genomic-wide SNP mapping data indicated CDC123 gene locus strongly associated with susceptibility to type 2 diabetes.

Full-length human CDC123 (336 aa) gene was constructed with 15aa N-terminal T7 tag and 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:** CDC123 (C10orf7; D123)  
**Accession Number:** NP\_006014  
**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

Bieganowski,P., et al., *Cdc123 and checkpoint forkhead associated with RING proteins control the cell cycle by controlling eIF2gamma abundance.* J. Biol. Chem. 279 (43), 44656-



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44666 (2004)

Imamura, M., et al., *Genetic variants at CDC123/CAMK1D and SPRY2 are associated with susceptibility to type 2 diabetes in the Japanese population.* Diabetologia 54 (12), 3071-3077 (2011)

## Applications

1. May be used for in eIF2 regulation study with intracellular protein delivery of this protein.
2. As soluble/native protein, may be used as enzymatic substrate protein for kinase and ubiquitin assay development.
3. May be used for mapping CDC123-Chf-Gcd11 axis protein-protein interaction.
4. May be used as antigen for specific antibody development and potential biomarker development for type 2 diabetes diagnosis.

## Quality Control

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

## Recombinant Protein Sequence

MASMTGGQQMGRGEFMKKEHVLHCQFSAWYPFFRGVTIKSVILPLPQNVKDYLLDDGTLVVSGR  
DDPPTHSQPDSDEAEIQQWSDDEATLTAPFPEFATKVQEAINSLGGSVFPKLNWSAPRDA  
YWIAMNSLKCKTSLSDIFLLFKSSDFITRDFTQPFIHCTDDSPDPCIEYELVLRKWCELIPGAE  
FRCFVKENKLIGISQRDYTQYYDHISKQKEEIRRCIQDFFKKHIQYKFLDEDFVFDIYRDSRGK  
VWLIDFNPFGEVTDSSLFTWEELISENNLNGDFSEVDAQEQDSPAFRCTNSEVTVQPSPYLSYR  
LPKDFVDLSTGEDAHKLIDFLKLRNQQEDD