



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

**Name of Product:** Recombinant Human cMyc-11R Protein  
**Catalog Number:** hTF-0009  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

The protein encoded by human cMyc gene is a multifunctional, nuclear phosphoprotein that plays a role in cell cycle progression, apoptosis and cellular transformation. It functions as a transcription factor that regulates transcription of specific target genes. Mutations, over-expression, rearrangement and translocation of this gene have been associated with a variety of hematopoietic tumors, leukemias and lymphomas, including Burkitt lymphoma.

Full-length human wild-type cMyc cDNA (454 aa) was constructed with codon optimization by gene synthesis and expressed with flexible linker domain & eleven arginine (11R Tag) as membrane penetration domain at the C terminus to enable penetration across the plasma membrane of mammalian cells. The protein was expressed in *E. coli* as inclusion bodies, solubilized, refolded, using our unique “temperature shift inclusion body refolding” technology and chromatographically purified. The protein identity was confirmed by both MS mapping and western blot analysis. The *in vitro* function was tested using specific DNA binding assays. This product was reported to successfully generate induced pluripotent stem (iPS) cells from OG2 MEFs<sup>1</sup> and human fibroblast cells<sup>2</sup>.

**Gene Symbol:** cMyc (bHLHe39; MRTL; MYC)  
**Accession Number:** NP\_002458.2  
**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 Glycerol.  
**Storage:** In Liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 7 days

### Key References

Hongyan Zhou, et al. *Generation of induced pluripotent stem cells using recombinant protein*. Cell Stem Cell. Vol 4. Issue 5: 381-384 (2009)



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Jieun Lee, et al. *Activation of innate immunity is required for efficient nuclear reprogramming.* Cell. 151. 547 – 558. Oct 26 (2012)

## Applications

1. May be used for in vitro human cMyc mediated iPS generation mechanism, or its gene specific transcription regulation study with intracellular delivery of this protein.
2. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for cMyc protein-protein interaction mapping.
4. May be used for specific antibody production.

## Quality Control

1. Purity: > 93% by SDS-PAGE.
2. Cellular Toxicity: This recombinant protein was tested on mouse embryonic stem cells up to 50 µg/ml in culture medium. Suggested reprogramming protein concentration is between 0.5 to 8 ug / ml for both human and mouse fibroblast cells applications.
3. Biologic Activity: reprogramming mouse fibroblast cell to iPS cells using 3 retroviral vectors, which carry Oct4, Sox2 & Klf4 with this protein as replacement assay. 8ug/ml of human Klf4-11R were added in reprogramming medium every 48 hours for 20 days. Intracellular protein penetration rate was tested using DyLight labeled cMyc-11R protein at 1ug/ ml for 30 min incubation for human fibroblast cells (BJ) at 37C. More than 90% cell will be positive one hour after sample incubation.

## Recombinant Protein Sequence

MDFFRVVENQPPATMPLNVSFTNRNYDLDYDSVQPYFYCDEEENFYQQQQQSELQPPAPSEDI  
WKKFELLPTPPLSPRRSGLCSPSYVAVTFSLRGDNDGGGGSFSTADQLEMVTELLGGDMVNQ  
SFICDPDDETFIKNIIIQDCMWSGFSAAKLVSEKCLASYQAARKDSGSPNPARGHSVCSTSSLY  
LQDLSAAASECIDPSVVFYPLNDSSSPKSCASQDSSAFSPSSDLSLSTESSPQGSPEPLVLH  
EETPPTTSSDSEEEQEDEEEIDVVSVEKRQAPGKRSESGSPSAGGHKPPHSPLVLKRCHVSTH  
QHNYAAPPSTRKDYPAAKRVKLDsvrvlrqisnnrkctsprssdteenvkrrthnvlrqrne  
LKRsfFalrdQIPELENNEKAPKVVILKKATAYILSVQAEEQKLISEEDLLRKRREQLKHKLEQ  
LRNSCAESGGGSGPGRRRRRRRRRR