



**LD Biopharma, Inc.**  
7384 Trade Street, Suite B  
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Tel: 858-876-8266  
<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human CT42 N-terminal-11R Fusion Protein  
**Catalog Number:** hRP-2026  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Immunotherapy holds great potential for disseminated cancer, and cancer/testis (CT) antigen are among the most promising tumor targets. They are widely expressed in different cancer types and are essentially tumor-specific, since their expression in normal tissue is largely restricted to immune-privileged sites, such as testis. Recent data indicated that efficient intracellular delivery of CT antigen such as fusion with transmembrane domain (Tat or 11 arginine) has a great benefit of utilizing MHC pathway for presenting CT antigen on cell membrane as immuno-stimulator for potential cancer vaccine development. Human testis-expressed sequence 15 protein (TEX15, also named as CT42) displays testis-specific expression, maps to chromosome 8, contains four exons and encodes a 2789-amino acid protein with uncertain function. CT42 is required during spermatogenesis for normal chromosome synapsis and meiotic recombination in germ cells. It was necessary for formation of DMC1 and RAD51 foci on meiotic chromosomes, suggesting a specific role in DNA double-stranded break repair. Recent data indicated that CT42 is highly expressed in human colorectal cancer, breast cancer, prostate cancer and lung cancer.

N-terminal domain of human CT42 cDNA (2 – 655aa) was constructed with codon optimization gene synthesis and expressed with a human Alpha Fetal protein at N-terminal and 11 arginine (11R tag) at C-terminal. This protein was 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:** CT42 (TEX15)  
**Accession Number:** NP\_112561.2  
**Species:** Human  
**Size:** 20 µg / Vial



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**Composition:** 0.20 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

Loriot A, et al., *Five new human cancer-germline genes identified among 12 genes expressed in spermatogonia*. Int. J. Cancer 105 (3), 371-376 (2003)

Salmaninejad A, et al. *Cancer/Testis Antigens: Expression, regulation, Tumor Invasion, and Use in Immunotherapy of Cancers*. Immunol Invest. Oct; 45(7): 619-640. (2016).

Nicole Brooks, et al. *Comparative Immunogenicity of a Cytotoxic T cell Epitope Delivered by Penetratin and TAT Cell Penetrating Peptides*. Molecules. 20, 14033-14050. (2015)

Madiha Derouazi, et al. *Novel cell penetration peptide based vaccine induces robust CD4+ and CD8+ T cell mediated antitumor immunity*. Cancer Res; 75(15) August 1, 3020-3031 (2015)

## Applications

1. May be used for in vitro CT42 mediated anti-tumor immunotherapy for T cell activation study by delivery of this protein in MHC pathway.
2. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ  
SSGCLLENQLPAFLLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT  
SCEAYEEDRETFMKNFIYEIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT  
KELRESSGGSHHHHHHGSPSDAKDSVNGDLLLNWTSLKNILSGLNASFPLHNNTGSSTVTTSSK  
IKDPRLMRREESMGEQSSTAGLNEVLQFEKSSDNVNSEIKSTPSNSASSEVVPGDCAVLTNGL



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DTPCFKTSVNDSQSWAHNMGSEYDCIPPNKVTMAGQCKDQGNFSFPI SVSNVSEVENQNHSE  
EKAQRAQQESGNAYTKEYSSHIFQDSQSSDLKTIYQTGCQTSTVFPLKKKVS IDEYQLQNTGKMK  
NFADLEDSSKHEEKQTSWKEIDNDFNETKISPIDNYIVLHQEYKESESHNSFGKSCDKILITQ  
ELEITKSSTSTIKDKDELHDLALEWQITPSFESLSQKHPQHSVEYEGNIHTSLAIAQKLMELKL  
GKINQNYASII TEAFPKPKDIPQAKEMFIDTVISSYNIETAHDSNCSITREHICVHRKNENEP  
VSLENIQRDYKETAYVEDRGQDHNLF CNSQLSNDIWLNVNFKKQTDRENQNEAKENSASCVENN  
IENIYGDKKQDSHTNENFSNIDEKEDKNYHNEIILSSEEFSTKFNLICREDNAVSAATALLESE  
EDTISAVKQKDTENTGRSVEHLASTTFPKTASSSVCVASNAAIQIASATMPALSLNDDHQIYQ  
FKETCSSESPDFGLLVKHRVSDCEIDTDKNKSESGGGGSPGRRRRRRRRRR