



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

**Name of Product:** Recombinant Human **OCT4-V16-11R** Protein  
**Catalog Number:** HTF-0279  
**Manufacturer:** LD Biopharma, Inc. USA

### Introduction

Human Oct4 protein encoded by POU5F1 gene is a homeodomain transcription factor of the POU family. This protein is critically involved in the self-renewal of undifferentiated embryonic stem cells. As such, it is frequently used as a marker for undifferentiated cells. Oct4 combined with Sox2, Klf4 and cMyc has been used for generating iPS cells. To further increase Oct4 activity for gene transcription activation, HSV VP16 TAD (transcription activation domain, 76aa) was fused with human Oct4 protein with unique linker: L5M ([\(TSRSEPSGP1STGNPSPPSKESHKS\)](#))

Recombinant human Oct4\_VP16\_TAD\_11R gene was fully synthesized with codon optimization for *E. coli* expression. It was constructed with C-terminal tag of 11 arginine domain, which efficiently delivery protein intracellularly. This protein was expressed in *E. coli* as inclusion bodies, refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified. Incubating this protein in various culture mediums at concentration of 2-8 µg/ml may be used for protein derived iPS generation when combined with Sox2, Klf4 and cMyc.

**Gene Symbol:** Oct4\_VP16\_11R  
**Accession Number:** NP\_002692.2 & NP\_044650.1  
**Species:** Human & HSV Protein Fusion  
**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, arginine, DTT, Glycerol and others.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.



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## Key References

Yang Wang., et al. *Reprogramming of mouse and human somatic cells by highperformance engineered factors*. EMBO report. vol: 12, pp: 373-378 (2011)

Kaija Alfthan1, et al. *Properties of a single chain antibody containing different linker peptides*. Protein Engineering. Vol: 8. No 7. Pp: 725-731 (1995)

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

## Applications

1. Protein transduction for protein derived iPS generation.
2. Active recombinant protein, may be used for ELISA based DNA/Protein binding assay.
3. As specific human Oct4 protein substrate for kinase assay or other protein post-translation modification assay.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Human Oct4-Linker-V16-11R Protein Sequence (51.7 kD)

MAGHLASDFAFSPPPGGGGDGGPPEPGWVDPRTWLSFQPPGGPGIGPGVGPSEVWGIPPCP  
PPYEFCCGMAYCGPQVGVGLVPPQGGLQTSQPEGEAGVGVESNSDGASPEPCTVTPGAVKLEKEK  
LEQNPEESQDIKALQKELEQFAKLLKQKRITLGYTQADVGLTLGVLFQKVFSSQTTICRFEALQL  
SFKNMCKLRPLLQKWVEEADNNENLQEIKAETLVQARKRKRRTSIENRVRGNLENLFLQCPKPT  
LQQISHIAQQGLGLEKDVVRVWFENRRQKGRSSDYAQREDFEAAGSPFSGGPVSFLLAPGPHF  
GTPGYGSPHFTALYSSVPFPEGEAFPPVSVTTLGSMPHSN TSRSEPSGPISTGNPSPPSKESHK  
SPTDVSLGDELHLDGEDVAMAHADALDDFDLMDLGDGDSPGPGFTPHDSAPYGALDMADFEFEQ  
MFTDALGIDEYGGLEESGGGGSPGRRRRRRRRRR