



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

**Name of Product:** Recombinant Human HLF-11R Protein  
**Catalog Number:** hTF-1233  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human Hepatic leukemia factor (HLF) gene encodes a member of the proline and acidic-rich (PAR) protein family, a subset of the bZIP transcription factors. The encoded protein forms homodimers or heterodimers with other PAR family members and binds sequence-specific promoter elements to activate transcription. Chromosomal translocations fusing portions of this gene with the E2A gene cause a subset of childhood B-lineage acute lymphoid leukemias. Alternatively spliced transcript variants have been described, but their biological validity has not been determined. Recent data also indicated that HLF plays a role in induction of multipotential hematopoietic progenitor from iPS cell via in vitro reprogramming.

Full-length of human HLF cDNA (295aa, which derived from BC036093) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (31aa) fusion at its N-terminal and 11R tag at C-terminal. 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:** HLF (TEL-2; TELB)  
**Accession Number:** NP\_002117  
**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



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Sergei, Doulatov., et al., *Induction of multipotential hematopoietic progenitors from human pluripotent stem cells via respecification of lineage-restricted precursors*. *Cell Stem cell* 13, 459-470. (2013).

Waters, K.M., et al., *Hepatic leukemia factor promotes resistance to cell death: implications for therapeutics and chronotherapy*. *Toxicol. Appl. Pharmacol.* 268 (2), 141-148 (2013)

de Boer, J., et al., *The E2A-HLF oncogenic fusion protein acts through Lmo2 and Bcl-2 to immortalize hematopoietic progenitors*. *Leukemia* 25 (2), 321-330 (2011)

## Applications

1. May be used for in vitro HLF mediated HSC differentiation regulation study using either 11R mediated or “ProFectin” based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for HLF protein-protein interaction mapping.
4. As immunogen for specific antibody production.

## Quality Control

1. Purity: > 90% by SDS-PAGE.
2. DNA binding activity: not tested yet.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEKMSRPLPLNPTFIPPPYGVLRSLLENPLKLPLHH  
EDAFSKDKDKKLLDDESNSTVPQSAFLGPTLWDKTLPYDGDTFQLEYMDLEEFLENGIIPPS  
PSQHDHSPHPPGLQPASSAAPSVM DLSSRASAPLHPGIPSPNCMQSPIRPGQLLPANRNTPSPI  
DPDTIQVPVGYEPDPADLALSSIPGQEMFDPRKRKFSEELKQPMPMIKKARKVFI PDDLKDDKY  
WARRRKNMAAKRSRDARRLKENQIAIRASFLEKENSALRQEVADLRKELGKCKNILAKYEARH  
GPLLEESGGGGSPGRRRRRRRRRRR