



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

**Name of Product:** Recombinant Human HNF1 $\alpha$  Protein  
**Catalog Number:** HTF-2085  
**Manufacturer:** LD Biopharma, Inc. USA

### Introduction

Human hepatocyte nuclear factor 1-alpha (HNF1a) gene encodes a transcriptional activator that regulates the tissue specific expression of multiple genes, especially in pancreatic islet cells and in liver. HNF1 $\alpha$  binds to the inverted palindrome 5'-GTTAATNATTAAC-3'. It activates the transcription of CYP1A2, CYP2E1 and CYP3A11.

Full-length human HNF1 $\alpha$  cDNA (630aa, derived from BC104908) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. It 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:** HNF1 $\alpha$  ( TCF1; LFB1 )  
**Accession Number:** NP\_000536  
**Species:** Human  
**Size:** 50  $\mu$ g / Vial  
**Composition:** 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT & others.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

### Key References

Lu Y, et al., *HNF1A inhibition induces the resistance of pancreatic cancer cells to gemcitabine by targeting ABCB1*. EBioMedicine 44, 403-418 (2019)

Abel EV, et al., *HNF1a is a novel oncogene that regulates human pancreatic cancer stem cell properties*. Elife. Aug 3:7:e33947 (2018)

Szpirer C, et al., *Chromosomal localization in man and rat of the genes encoding the liver-enriched transcription factors C/EBP, DBP, and HNF1/LFB-1*



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*(CEBP, DBP, and transcription factor 1, TCF1, respectively) and of the hepatocyte growth factor/scatter factor gene (HGF). Genomics 13 (2), 293-300 (1992)*

## Applications

1. May be used for in vitro HNF1 $\alpha$  mediated gene transcription regulation study for hepatocytes differentiation by intracellular delivery of this recombinant HNF1 $\alpha$  protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used for mapping HNF1 $\alpha$  protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. As native human HNF1 $\alpha$  immunogen for specific antibody production.

## Quality Control

Purity: > 85 % by SDS-PAGE.

## Recombinant Human HNF1 $\alpha$ Protein Sequence ( 70.5 kD )

MASMTGGQQMGRGHHHHHENLYFQGGEFVSKLSQLQTELLAALLESGLSKEALIQALGEPGPY  
LLAGEGPLDKGESCGGGRGELAEPLNGLGETRGSEDETDGDEDFTPPILKELENLSPPEAAHQ  
KAVVETLLQEDPWRVAKMVKSYLQQHNIPQREVVDTTGLNQSHLSQHLNKGTPMKTQKRAALYT  
WYVRKQREVAQQFTHAGQGGLIEEPTGDELPTKKGRRNRFKWGPASQQILFQAYERQKNPSKEE  
RETLVEECNRAECIQRGVSPSQAQGLGSLNLVTEVRVYNWFANRRKEEAFRHKLAMDTYSGPPP  
PGPGPALPAHSSPGLPPPALS P SKVHGVRYGQPATSETAEVPSSSGGPLVTVSTPLHQVSPTGL  
EPHSHLLSTEAKLVSAAGGPLPPVSTLTALHSLEQTSPLNQPPQNLIMASLPGVMTIGPGEPA  
SLGPTFTNTGASTLVIGLASTQAQSVPVINSMGSSLTTLQPVQFSQPLHPSYQQPLMPPVQSHV  
TQSPFMATMAQLQSPHALYSHKPEVAQYTHTGLLPQTMLITDTTNLSALASLTPTKQVFTSDTE  
ASSEGLHTPASQATTLHVPSQDPAGIQHLQPAHRLSASPTVSSSSLVLYQSSDSSNGQSHLLP  
SNHSVIETFISTQMASSSQ