



**LD Biopharma, Inc.**  
7384 Trade Street, Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human HIF1a Protein  
**Catalog Number:** hTF-2115  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

This gene encodes the alpha subunit of transcription factor hypoxia-inducible factor-1 (HIF-1), which is a heterodimer composed of an alpha and a beta subunit. HIF-1 functions as a master regulator of cellular and systemic homeostatic response to hypoxia by activating transcription of many genes, including those involved in energy metabolism, angiogenesis, apoptosis, and other genes whose protein products increase oxygen delivery or facilitate metabolic adaptation to hypoxia. HIF-1 thus plays an essential role in embryonic vascularization, tumor angiogenesis and pathophysiology of ischemic disease. Alternatively spliced transcript variants encoding different isoforms have been identified for this gene.

Full-length human HIF1a cDNA (825aa) 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:** HIF1a (bHLHe78; MOP1; PASD8)  
**Accession Number:** NP\_001521  
**Species:** Human  
**Size:** 20 µg / Vial  
**Composition:** 0.2 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

Lee SD, et al., *AK-1, a SIRT2 inhibitor, destabilizes HIF-1alpha and diminishes its transcriptional activity during hypoxia.* Cancer Lett. 373 (1), 138-145 (2016)

Ai Z, et al., *Overcoming cisplatin resistance of ovarian cancer cells by targeting HIF-1-regulated cancer metabolism.* Cancer Lett. 373 (1), 36-44 (2016)



**LD Biopharma, Inc.**  
7384 Trade Street, Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

Rath S, et al., *Cobalt chloride-mediated protein kinase Calpha (PKCalpha) phosphorylation induces hypoxia-inducible factor 1alpha (HIF1alpha) in the nucleus of gastric cancer cell* Biochem. Biophys. Res. Commun. 471 (1), 205-212 (2016)

Zheng F, et al., *Up-Regulation of ENO1 by HIF-1alpha in Retinal Pigment Epithelial Cells after Hypoxic Challenge Is Not Involved in the Regulation of VEGF Secretion.* PLoS ONE 11 (2), E0147961 (2016)

## Applications

1. May be used for in vitro HIF1a mediated gene transcription regulation study in homeostatic response to hypoxia for various cancer cells by intracellular delivery of this protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used for mapping protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein / therapeutic target protein for cancer prognosis and cancer treatment drug development..
5. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEGSEGAGGANDKKKISSERRKEKSRDAARSRRSKESEV  
VFYELAHQLPLPHNVSSHLDKASVMRLTISYLRVRKLLDAGDLIEDDMKAQMNCFYLKALDGF  
FVMVLTDDGDMIYISDNVNKYMGLTQFELTGHSVDFDTHPCDHEEMREMLTHRNLVKKGKEQN  
TQRSFFLRMKCTLT SRGRTMNIKSATWVKVLHCTGHIHVYDTNSNQPCGYKKPMTCLVLI  
CEP  
IPHPSNIEIPLDSKTFLSRHSLDMKFSYCDERITELMGYEPEELLGRSIEEYHALDSDHLTKT  
HHDMFTKGQVTTGQYRMLAKRGGYVWVETQATVIYNTKNSQPQCIVCVNYVVSGIIQHDLI  
FSL  
QQTECVLKPVESSDMKMTQLFTKVESED TSSLFDKLLKKEPDALTLLAPAAGDTIISLDFGSNDT  
ETDDQQLEEVPLYNDVMLPSPNEKLQINLAMSPLPTAETPKPLRSSADPALNQEVALKLEPNP  
ESLELSFTMPQIQDQTPSPSDGSTRQSSPEPNPSEYCFYVDSDMVNEFKLELVEKLFAEDTEA  
KNPFSTQD TDLLEMLAPYIPMDDDFQLRSFDQLSPLESSSASPESASPQSTVTVFQQTQIQEP  
TANATTTTATTDELKTVTKDRMEDIKILIASPSPTHIHKETTSATSSPYRDTQSRTASPNRAGK  
GVIEQTEKSHPRSPNVLSVALSQRTTVPEEELNPKILALQNAQRKRKMEHDGSLFQAVGIGTLL  
QQPDDHAATTSLWKRKVGCKSSEQNGMEQKTIILIPSDLACRLLGQSMDESGLPQLTSYDCEV  
NAPIQGSRNLLQGEELLRALDQVN