



**LD Biopharma, Inc.**  
7384 Trade Street, Suite B  
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<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human PI3 Protein  
**Catalog Number:** HRP-2653  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human peptidase inhibitor 3; PI3 (also named as Elafin) gene encodes a secreted protein, which is neutrophil and pancreatic elastase-specific inhibitor of skin. PI3 may prevent elastase-mediated tissue proteolysis. PI3 functions as an anti-microbial peptide against Gram-positive and Gram-negative bacteria, and fungal pathogens. The protein contains a WAP-type four-disulfide core (WFDC) domain, and is thus a member of the WFDC domain family. Most WFDC gene members are localized to chromosome 20q12-q13 in two clusters: centromeric and telomeric. Expression of this gene is up-regulated by bacterial lipopolysaccharides and cytokines. PI3 was detected in its highest expression level in low esophagus mucosa.

Full-length mature form of human PI3 cDNA ( 61 – 117aa ) was constructed with codon optimization gene synthesis and expressed with a human alpha Fetal Protein N-terminal (AFPn) - His-TEV cleavage site Tag (217aa) fusion at its N-terminal in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

<b>Gene Symbol:</b>	PI3 Elafin	( Elafin; ESI; WAP3; WFDC14 )
<b>Accession Number:</b>	NP_002629.1	
<b>Species:</b>	Human	
<b>Size:</b>	20 µg / Vial	
<b>Composition:</b>	0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.	
<b>Storage:</b>	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.	

### Key References



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Zhang W, et al. **Expression and Clinical Significance of Elafin in Inflammatory Bowel Disease**. *Inflamm. Bowel Dis.* 23 (12), 2134-2141 (2017)

Han W, et al., **Recombinant human elafin promotes alveologenesis in newborn mice exposed to chronic hyperoxia**. *Int. J. Biochem. Cell Biol.* 92, 173-182 (2017)

Wang T, et al., **Plasma Neutrophil Elastase and Elafin as Prognostic Biomarker for Acute Respiratory Distress Syndrome: A Multicenter Survival and Longitudinal Prospective Observation Study**. *Shock* 48 (2), 168-174 (2017)

Stalberg, C., et al., **Anti-inflammatory Elafin in human fetal membranes** *J Perinat Med* 45 (2), 237-244 (2017)

## Applications

1. May be used for in vitro PI3 mediated elastase-specific inhibitor study for various cells in vitro using this recombinant PI3 protein either as soluble factor or as coating matrix protein.
2. May be used for PI3 protein-protein interaction assay.
3. Potential therapeutic protein, which might be used for up-regulating local immune defense as effector function of gamma/delta T cells.
4. As native human PI3 immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Human AFPn-PI3 Fusion Protein Sequence ( 30.7 kD )

MTLHRNEYGIASILDSYQCTAEISLADLATIFFAQFVQEATYKEVSKMVKDALTAIEKPTGDEQ  
SSGCLLENQLPAFLLEELCHEKEILEKYGHSDCCSQSEEGRHNCFLAHKKPTPASIPLFQVPEPVT  
SCEAYEEDRETFMNFYIYIARRHPFLYAPTILLWAARYDKIIPSCCKAENAVECFQTKAATVT  
KELRESSGGSHHHHHGSENLYFQGGEAQEPVKGPVSTKPGSCPIILIRCAMLNPPNRCLKDTD  
CPGIKKCCEGSCGMACFVPQ