



**LD Biopharma, Inc.**  
9924 Mesa Rim Road Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human Fibronectin FN3 Domain-1 Protein  
**Catalog Number:** hRP-0580  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Extracellular matrix protein fibronectin (FN) plays an important role in cell adhesion. FN contains FN type I, II and III domains. The FN III repeat is generally about 90 amino acid long and is composed of seven  $\beta$ -strands, forming two antiparallel  $\beta$ -sheets. In the C-terminal of human fibronectin region, there are 16 FN-III repeat domains. FN III domain derived proteins have been demonstrated to bind various proteins with high affinity. To decode the biological function of each FN-III domain, all 16 FN-III domains were separately cloned and expressed in E.coli as soluble functional proteins. So coating them as matrix proteins in culture dish may provide a unique functional assay for regulating human ES cell lineage specific differentiation.

Full-length first FN-III domain of Human fibronectin cDNA was fully synthesized with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein 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:** FN-III domain-1  
**Accession Number:** NP\_997647  
**Species:** Human  
**Size:** 100  $\mu$ g / 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 and Glycerol.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 15 days.

### Key References

Benjamin J., et al. *Picomolar affinity fibronectin domains engineered utilizing loop*



**LD Biopharma, Inc.**  
9924 Mesa Rim Road Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

*length diversity, recursive mutagenesis, and loop shuffling.* JMB 381, 1238-1252 (2008)

Parker, M. H., et al., *Antibody mimics based on human fibronectin type three domain engineered for thermostability and high-affinity binding to vascular endothelial growth factor receptor two.* Protein Eng. Des. Sel. 18, 435-444. (2005)

Main, A. L., et al., *The three-dimensional structure of the tenth type III module of fibronectin: an insight into RGD-mediated interactions.* Cell, 71, 671-678. (1992)

## **Applications**

1. May be used for in vitro human ES lineage specific differentiation regulations study coating with this protein.
2. May be used for in vitro protein-protein interaction mapping.
3. As antigen for specific antibody production.

## **Quality Control**

1. Purity: > 90% by SDS-PAGE.

## **Recombinant Protein Sequence**

MASMTGGQQMGRGHHHHHGNLYFQGGEFSSSGPVEVFITETPSQPNSHPIQWNAPQPSHISKY  
ILRWRPKNSVGRWKEATIPGHLNSYTIKGLKPGVVYEGQLISIQQYGHQEVTRFDFTT