



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

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human ITIH4 70kD H Chain Protein  
**Catalog Number:** hRP-1979  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

The protein encoded by human inter-alpha-trypsin inhibitor heavy chain H4 (ITIH4) gene is secreted into the blood, where it is cleaved by plasma kallikrein into two smaller forms. Expression of this gene has been detected only in liver, and it seems to be up-regulated during surgical trauma. As type II acute-phase protein (APP), ITIH4 is involved in inflammatory responses to trauma. It may also play a role in liver development or regeneration. This gene is part of a cluster of similar genes on chromosome 3. Two transcript variants encoding different isoforms have been found for this gene.

Full-length mature form of human IITIH4 70 kD H chain cDNA (29 - 661aa) was constructed with codon optimization gene synthesis and expressed with N-terminal His-His-TEV cleavage site Tag (29aa) fusion. 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:** ITIH4 (GP120; H4P; IHRP; ITI-HC4; ITIHL1; PK-120)  
**Accession Number:** NP\_002209.3  
**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, 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

Tan Z, et al., *Serological targeted analysis of an ITIH4 peptide isoform: a preterm birth biomarker and its associated SNP implications*



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J Genet Genomics 42 (9), 507-510 (2015)

Chandler KB, et al., *Site-specific glycan microheterogeneity of inter-alpha-trypsin inhibitor heavy chain H4*. J. Proteome Res. 13 (7), 3314-3329 (2014)

Saguchi K, et al., *Isolation and characterization of the human inter-alpha-trypsin inhibitor family heavy chain-related protein (IHRP) gene (ITIHL1)*. J. Biochem. 119 (5), 898-905 (1996)

Choi-Miura NH, et al., *Purification and characterization of a novel glycoprotein which has significant homology to heavy chains of inter-alpha-trypsin inhibitor family from human plasma*. J. Biochem. 117 (2), 400-407 (1995)

## Applications

1. May be used for in vitro ITIH4 70kD H Chain mediated pro-inflammatory pathway regulation study in various cells with this protein either as soluble factor or as coating matrix protein.
2. May be used for protein-protein interaction assay.
3. Potential anti- pro-inflammatory response target protein for treatment of various auto-immuno-diseases using ITIH4 70kD H Chain blocking antibodies
4. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEKNGIDIIYSLTVDSRVSSRFAHTVVTSRVVNRANT  
VQEATFQMELPKKAFITNFSMIIDGMTYPGI I KEKAEQAQAQYSAAVAKGKSAGLVKATGRNMEQ  
FQVSVSVAPNAKITFELVYEELLRRLGVYELLLKVRPQQLVKHLQMDIHIIFEPQGISFLETES  
TFMTNQLVDALTTWQNKTKAHIRFKPTLSQQQKSPEQQETVLDGNLIIRYDVDRAISGGSIQIE  
NGYFVHYFAPEGLTTMPKNVVFVIDKSGSMSGRKIQQTREALIKILDDLSPRDQFNLI VFSTEA  
TQWRPSLVPASAENVNKARSFAAGIQALGGTNINDAMLMAVQLLDSSNQEERLPEGSVSLI ILL  
TDGDPTVGETNPRS IQNNVREAVSGRYSFLCLGFDFVSYAFLEKLALDNGGLARRIHEDSDSA  
LQLQDFYQEVANPLLTAVTFEYPSNAVEEVTQNNFRLLFKGSSEMVVAGKLQDRGPDVLTATVSG  
KLPTQNIITFQTESSVAEQEAEFQSPKYIFHNFMERLWAYLTIQQLLEQTVSASDADQQALRNQA



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LNLSLAYSFVTPPLTSMVVTKPDDQEQSQVAEKPMEGESRNRNVHSGSTFFKYYLQGAKIPKPEA  
SFSPRRGWNRRQAGAAGSRMNFR