



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

**Name of Product:** Recombinant Human CTSF Protein  
**Catalog Number:** hRP-1831  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Cathepsins are papain family cysteine proteinases that represent a major component of the lysosomal proteolytic system. Cathepsins generally contain a signal sequence, followed by a propeptide and then a catalytically active mature region. The very long (251 amino acid residues) proregion of the cathepsin F precursor contains a C-terminal domain similar to the pro-segment of cathepsin L-like enzymes, a 50-residue flexible linker peptide, and an N-terminal domain predicted to adopt a cystatin-like fold. The cathepsin F (CTSF) proregion is unique within the papain family cysteine proteases in that it contains this additional N-terminal segment predicted to share structural similarities with cysteine protease inhibitors of the cystatin superfamily. This cystatin-like domain contains some of the elements known to be important for inhibitory activity. It is believed to participate in intracellular degradation and turnover of proteins. CTSF has also been implicated in tumor invasion and metastasis.

Full-length mature Human Cathepsin F cDNA (271 -484 aa) was constructed with codon optimization gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (28aa) 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:** CTSF (CATSF; CLN13)  
**Accession Number:** NP\_003784  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 1.0 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.



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## Key References

Lina Yang, et al., *Identification of serum biomarkers for gastric cancer diagnosis using a human proteome microarray*. Mol Cell Proteomics M115.051250 (2015)

Saghizadeh M, et al., *Enhanced wound healing, kinase and stem cell marker expression in diabetic organ-cultured human corneas upon MMP-10 and cathepsin F gene silencing*. Invest. Ophthalmol. Vis. Sci. 54 (13), 8172-8180 (2013)

Smith KR, et al., *Cathepsin F mutations cause Type B Kufs disease, an adult-onset neuronal ceroid lipofuscinosis*. Hum. Mol. Genet. 22 (7), 1417-1423 (2013)

Wex T, et al., *Human cathepsins F and W: A new subgroup of cathepsins*. Biochem. Biophys. Res. Commun. 259 (2), 401-407 (1999)

## Applications

1. May be used for in vitro CTSF related thiol proteinase activity regulation study in intracellular degradation and turnover of target proteins for various cancer cells by intracellular delivery of this protein with ProFectin Reagent.
2. May be used for protein-protein interaction mapping.
3. Potential biomarker protein for gastric cancer diagnosis applications.
4. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGEFAPPEWDWRSSKGAVTKVKDQGMCGSCWAFSVTGNVEG  
QWFLNQGTLLSLSEQELLDCKMDKACMGGLPSNAYSAIKNLGGLETEDDYSYQGHMQSCNFS  
EKAKVYINDSVELSQNEQKLAAWLAKRGPISVAINAFGMQFYRHGISRPLRPLCSPWLIDHAVL  
LVGYGNRSDVPFWAIKNSWGTDWGEKGYYYLHRGSGACGVNTMASSAVVD