



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

**Name of Product:** Recombinant sfGFP- Human CYTA Fusion Protein  
**Catalog Number:** HRP-3964  
**Manufacturer:** LD Biopharma, Inc. USA

### **Introduction**

Human cystatin-A (CYTA) gene encodes an intracellular thiol proteinase inhibitor. CYTA mainly expressed in the skin throughout the epidermis. It has an important role in desmosome-mediated cell-cell adhesion in the lower levels of the epidermis. Recent data demonstrated that CYTA as an epidermally derived hormone linking skin aging to age-related bone loss. Enhancers of skin CYTA levels could serve as a potential topical drug for treatment of senile osteoporosis.

Full-length human CYTA cDNA ( 2 - 98aa ) was constructed with codon optimization gene synthesis and expressed with a SuperGFP Protein N-terminal (sfGFP; 257aa) fusion at target protein N-terminal in *E.coli* as inclusion bodies. The final product was expressed as soluble protein and purified using affinity column system.

**Gene Symbol:** CYTA ( CSTA; STFA; STF1 )  
**Accession Number:** NP\_005204  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 1.0 mg/ml, sterile filtered, in PBS buffer with 20% Glycerol.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

### **Key References**



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Wenquan Liang, et al., *Skin chronological aging drives age-related bone loss via secretion of cystatin-A*. Nature Aging. Vol 2, 906-922. (2022). [doi.org/10.1038/s43587-022-00285-x](https://doi.org/10.1038/s43587-022-00285-x)

Wang Y, et al., *Decreased CSTA expression promotes lymphatic metastasis and predicts poor survival in oral squamous cell carcinoma*. Arch Oral Biol 126, 105116 (2021)

Dohm A, et al., *Identification of CD37, cystatin A, and IL-23A gene expression in association with brain metastasis: analysis of a prospective trial*. Int J Biol Markers 34 (1), 90-97 (2019)

## Applications

1. May be used for CYTA mediated intracellular thiol proteinase activity regulation study in vitro for various cells using intracellular delivery of recombinant human CYTA protein with protein delivery reagent such as ProFectin.
2. May be used for CYTA intracellular domain protein-protein interaction assay.
3. Potential diagnostic biomarker for bone loss related diseases.
4. As native human CYTA immunogen for specific its antibody production.

## Quality Control

Purity: > 95 % by SDS-PAGE.

sfGFP protein: **Ex λ** = 485nm, and **Em λ** = 510nm.

## Recombinant sfGFP- Human CYTA Fusion Protein Sequence ( 40.4 kD )

MKHHHHHHQVSKGEELFTGVVPILVELDGDVNGHKFSVRGEGEGDATNGKLTCLKFICTTGKLPV  
PWPTLVTTTLTYGVQCFSRYPDHMKRHDFKSSAMPEGYVQERTISFKDDGTYSKTRAEVKFEGDTL  
VNRIELKGIDFKEDGNILGHKLEYFNFSHNVYITADKQKNGIKANFKIRHNVEDGSVQLADHYQ  
QNTPIGDGPVLLPDNHYLSTQSVLSKDPNEKRDHMLLEFVTAAGITHGMDELYKSGLRSGGSG  
**GENLYFQG**IPGGLSEAKPATPEIQEIVDKVKPQLEEKTNETYGKLEAVQYKTQVVAGTNYYIKV  
RAGDNKYMHLKVFKSLPGQNEDLVLTGYQVDKNKDDELTGF