



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

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human ECD Protein  
**Catalog Number:** hTF-1639  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

ECD (ecdysoneless) is required for normal embryogenesis, adult eclosion, and oocyte development. Ecd has been implicated in the regulation of ecdysteroid synthesis in *Drosophila melanogaster*. ECD loss disrupts production of the steroid hormone ecdysone and causes abnormal lymph gland cell division and defective nerve terminal development. The human ECD ortholog, known as hGST1 (human suppressor of glucocorticoid receptor (GCR) 2), is highly expressed in muscle and the heart and rescues the growth defect induced by the *gcr2* mutation, in which glycolytic genes transcription is dysregulated. Recently ECD was identified as a novel p53-interacting protein, which interacts with MDM2 and stabilizes p53 by inhibiting the Mdm2-mediated degradation of p53. Additionally, ECD-null mouse embryonic fibroblasts show a delay in G<sub>1</sub>-S cell cycle progression. EED acts in the cell cycle via the Rb-E2F pathway by directly binding to Rb and inhibiting Rb-E2F binding, thereby inducing E2F target gene expression and cell cycle progression. ECD expression is highly expressed in breast cancer tissue compared with normal breast tissue. ECD shuttles between the nucleus and the cytoplasm, and its strong cytoplasmic localization depends on active CRM1-mediated nuclear export. In the nucleus, ECD interacts with p300 to increase the transactivation activity.

Full-length human ECD (643 aa, Isoform-I) gene was constructed with 31 aa N-terminal T7 / His / TEV cleavage site Tag and 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:** ECD (GCR2; HSGT1)  
**Accession Number:** NP\_009196  
**Species:** Human  
**Size:** 20 µg / Vial  
**Composition:** 0.20 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.



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**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 7 days.

## Key References

Suh HW, et al., *TXNIP interacts with hEcd to increase p53 stability and activity*. Biochem. Biophys. Res. Commun. 438 (2), 264-269 (2013)

Dey P, et al., *Overexpression of ecdysoless in pancreatic cancer and its role in oncogenesis by regulating glycolysis*. Clin. Cancer Res. 18 (22), 6188-6198 (2012)

Zhao X, et al., *Overexpression of a novel cell cycle regulator ecdysoless in breast cancer: a marker of poor prognosis in HER2/neu-overexpressing breast cancer patients*. Breast Cancer Res. Treat. 134 (1), 171-180 (2012)

Kim JH, et al., et al., *Biochemical characterization of human Ecdysoless reveals a role in transcriptional regulation*. Biol. Chem. 391 (1), 9-19 (2010)

## Applications

1. May be used for in vitro ECD mediated p53 and Ras pathway gene transcription regulation study for various cells with “ProFectin” reagent based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for ECD protein-protein interaction mapping.
4. Potential biomarker protein, may be used for monitoring breast cancer treatment.
5. As immunogen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFELEETMKLATMEDTVEYCLFLIPDES RDS DKHKEI



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LQKYIERIITRFAPMLVPYIWQNQPFNLKYKPGKGGVPAHMFVTKFGDNI EDEWFIVYVIKQI  
TKEFPELVARIEDNDGEFLLEAADFLPKWLDPENSTNRVFFCHGELCII PAPRKSGAESWLPT  
TPPTIPQALNIITAHSEKILASESIRA AVNRRIRGYPEKIQASLHRAHCFLPAGIVAVLKQRPR  
LVAAAVQAFYLRDPIDLRACRVFKTFLPETRIMTSVTFTKCLYAQLVQQRFPDRRSGYRLPPP  
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FDADSFLNYFDKILGPRPNESDSDDLDEDFECLDSDDDLDFETHEPGE EASLKGTLNLKSYM  
AQMDQELAHTCISKSF TTRNQVEPVSQTTDNNSDEEDSGTGESVMAPVDVDLNLVSNILESYSS  
QAGLAGPASNLLQSMGVQLPDNTDHRPTSKPTKN