**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 LGMN Protein
**Catalog Number:** hRP-1392
**Manufacturer:** LD Biopharma, Inc.

## Introduction

Human legumain preproprotein (LGMN) gene encodes a cysteine protease that has a strict specificity for hydrolysis of asparaginyl bonds. This enzyme may be involved in the processing of bacterial peptides and endogenous proteins for MHC class II presentation in the lysosomal/endosomal systems. Enzyme activation is triggered by acidic pH and appears to be autocatalytic. Protein expression occurs after monocytes differentiate into dendritic cells. A fully mature, active enzyme is produced following lipopolysaccharide expression in mature dendritic cells. Overexpression of this gene may be associated with the majority of solid tumor types. Recent data also indicated that activities of LGMN in brain is involved in the regulating of Tau hyperphophorylation in Alzheimer disease.

Full-length mature human LGMN (416aa) gene was constructed with 29 aa N-terminal T7-His-TEV cleavage 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:** | LGMN (AEP; LGMN1; PRSC1) |
| **Accession Number:** | NP_005597 |
| **Species:** | Human |
| **Size:** | 40 µg / Vial |
| **Composition:** | 0.4 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, 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

Guo P, et al., *Expression of legumain correlates with prognosis and metastasis in gastric carcinoma*. PLoS ONE 8 (9), E73090 (2013)

Yamane T, et al., *Transcriptional regulation of the legumain gene by p53 in HCT116*

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

*cells*. Biochem. Biophys. Res. Commun. 438 (4), 613-618 (2013)

Dall E et al., *Mechanistic and structural studies on legumain explain its zymogenicity, distinct activation pathways, and regulation*. Proc. Natl. Acad. Sci. U.S.A. 110 (27), 10940-10945 (2013)

Basurto-Islas G, et al., *Activation of asparaginyl endopeptidase leads to Tau hyperphosphorylation in Alzheimer disease*. J. Biol. Chem. 288 (24), 17495-17507 (2013)

## Applications

1. May be used for in vitro LGMN mediated specific hydrolysis of asparaginyl bonds of various target protein for cell differentiation or antigen presentation study by intracellular delivery of this protein with “ProFectin” reagent.
2. May be used for mapping LGMN protein-protein interaction.
3. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein for monitoring various cancer diagnoses.
5. As antigen for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHGNLYFQGGEFVPIDDPEDGGKHWVVIVAGSNGWYNYRHQADACHA
YQIIHRNGIPDEQIVVMMYDDIAYSEDNPTPGIVINRPNGTDVYQGVPKDYTGEDVTPQNFLAV
LRGDAEAVKGIGSGKVLKSGPQDHVFIYFTDHGSTGILVFPNEDLHVKDLNETIHYMYKHKMYR
KMVFYIEACESGSMMNHLPDNINVYATTAANPRESSYACYYDEKRSTYLGDWYSVNWMEDSDVE
DLTKETLHKQYHLVKSHTNTSHVMQYGNKTISTMKVMQFQGMKRKASSPVPLPPVTHLDLTPSP
DVPLTIMKRKLMNTNDLEESRQLTEEIQRHLDARHLIEKSVRKIVSLLAASEAEVEQLLSERAP
LTGHSCYPEALLHFRTHCFNWHSPTYEYALRHLYVLVNLCEKPYPLHRIKLSMDHVCLGHY