



**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 MMRN2 Protein  
**Catalog Number:** hRP-1728  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Human Multimerin-2 (MMRN2) gene encodes a protein belonging to the member of elastin microfibril interface-located (EMILIN) protein family. This family member is an extracellular matrix glycoprotein that can interfere with tumor angiogenesis and growth. It serves as a transforming growth factor beta antagonist and can down-regulates KDR activation by binding with the VEGF-A.

Full-length mature human MMRN2 cDNA (23 – 949 aa, derived from BC094744) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) 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:** MMRN2 (EMILIN-3; ENDOGLYX-1)  
**Accession Number:** NP\_079032  
**Species:** Human  
**Size:** 20 µg / Vial  
**Composition:** 0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, DTT and Glycerol.  
**Storage:** In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

### Key References

Lorenzon E, et al., *MULTIMERIN2 impairs tumor angiogenesis and growth by interfering with VEGF-A/VEGFR2 pathway*. *Oncogene* 31 (26), 3136-3147 (2012)

Shield-Artin KL, et al., *Identification of ovarian cancer-associated proteins in symptomatic women: A novel method for semi-quantitative plasma proteomics*. *Proteomics Clin Appl* 6 (3-4), 170-181 (2012)



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

Schiavinato A, et al., *EMILIN-3, peculiar member of elastin microfibril interface-located protein (EMILIN) family, has distinct expression pattern, forms oligomeric assemblies, and serves as transforming growth factor beta (TGF-beta) antagonist*. J. Biol. Chem. 287 (14), 11498-11515 (2012)

## Applications

1. May be used for in vitro MMRN2 mediated tumor cell angiogenesis & growth regulation study in both TGFb and VEGF-A pathways with this protein as either coating matrix protein or soluble factor.
2. May be used for MMRN2 protein-protein interaction assay.
3. Potential biomarker protein for early clinical diagnosis of ovarian cancer
4. May be used for specific antibody production.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFQASSTLSLSDLQSSRTPGVWKAEDAEDTGKDPVGRNW  
CPYPMSKLVTLALCKTEKFLIHSQQPCPQGAPDCQKVKVMYRMAHKPVYQVKQKVLTSWLRRC  
CPGYTGPNCEHHDSMAIPEPADPGDASHQEPQDGPVSFKPGHAAVINEVEVQQEQEHLGDLQ  
NDVHRVADSLPGLWKALPGNLTAAVMEANQTGHEFPDRSLEQVLLPHVDTFLQVHFSP IWRFSFN  
QSLHSLTQAIRNLSLDVEANRQAI SRVQDSAVARADFQELGAKFEAKVQENTQRVGQLRQDVED  
RLHAQHFTLHRSISELQADVDTKLRLHKAQEAPGTNGSLVLPATPGAGARPEPDSLQARLGQLQ  
RNLSELHMTTARREEELQYTLEDMRATLTRHVDEIKELYSESEDTFDQISKVERQVEELQVNHT  
ALRELRVILMEKSLIMEENKEEVERQLLELNLTLQHLQGGHADLIKYVKDCNCQKLYLDLDVIR  
EGQRDATRALEETQVSLDERRQLDGSSLQALQNAVDVAVSLAVDAHKAEGERARAATSRLRSQVQ  
ALDDEVGALKAAAAEARHEVRQLHSFAFALLEDALRHEAVLAALFGEEVLEEMSEQTPGPLPLS  
YEQIRVALQDAASGLQEALGWDELAARVTALEQASEPPRPAEHLEPSHDAGREEAATTALAGL  
ARELQSLSDVKNVGRCCAEAGAGAASLNASLDGLHNALFATQRSLEQHQLRFHSLFGNFQGL  
MEANVSLDLGKLQTMLSRKGKKQKQKDLAPRKRDKKEAEPVDIRVTGPVPGALGAALWEAGSP  
VAFYASFSEGTAALQTVKFNTTYINIGSSYFPEHGYFRAPERGVYLFVAVSVEFGPGPGTGQLVF  
GGHHRTPVCTTGQSGSTATVFAMAELQKGERVWFELTQGSITKRSLSGTAFGGFLMFKT