



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human TIMP2 Protein
Catalog Number: hRP-1779
Manufacturer: LD Biopharma, Inc.

Introduction

Human metalloproteinase inhibitor 2 (TIMP2) gene is a member of the TIMP gene family. The proteins encoded by TIMP2 gene family are natural inhibitors of the matrix metalloproteinases, a group of peptidases involved in degradation of the extracellular matrix. In addition to an inhibitory role against metalloproteinases, the TIMP2 protein has a unique role among TIMP family members in its ability to directly suppress the proliferation of endothelial cells. As a result, the encoded protein may be critical to the maintenance of tissue homeostasis by suppressing the proliferation of quiescent tissues in response to angiogenic factors, and by inhibiting protease activity in tissues undergoing remodelling of the extracellular matrix. Recent data indicated that by monitoring blood level of TIMP2 protein with other biomarker protein can serve as diagnostic and predictive parameter in various cancers, such as prostate and lung cancer.

Full-length mature protein of human TIMP2 cDNA (27 – 220aa, derived from BC071586) 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: TIMP2 (CSC-21K; DDC8)
Accession Number: NP_003246
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.

Key References



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Tsaur L, et al., *sE-cadherin serves as diagnostic and predictive parameter in prostate cancer pateints*. J Exp Clin Cancer Research.14: 34-43 (2015)

Li P, et al., *Upregulated miR-106a plays an oncogenic role in pancreatic cancer*. FEBS Lett. 588 (5), 705-712 (2014)

Lin TH, et al., *Mitral tissue inhibitor of metalloproteinase 2 is associated with mitral valve surgery outcome*. PLoS ONE 9 (1), E86287 (2014)

Wu TY, et al., *MiR-19a is correlated with prognosis and apoptosis of laryngeal squamous cell carcinoma by regulating TIMP-2 expression*. Int J Clin Exp Pathol 7 (1), 56-63 (2013)

Ryzhakova,O.S. et al., *Matrix metalloproteinases (MMP)--MMP-1,-2,-9 and its endogenous activity regulators in transformed by E7 oncogene HPV16 and HPV18 cervical carcinoma cell lines*. Biomed Khim 59 (5), 530-540 (2013)

Applications

1. May be used for in vitro TIMP2 mediated matrix metalloproteinases activities regulation study for cell differentiation or cancer cell metastasis with this protein either as soluble factor or as coating matrix protein.
2. May be used for mapping TMP2 protein-protein interaction.
3. Potential biomarker protein for diagnostic/prognosis, such as prostate or lung cancer.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGECSCSPVHPQQAFCNADV VIRAKAVSEKEVDSGNDIY
GNPIKRIQYEIKQIKMFKGPEKDIEFIYTAPSSAVCGVSLDVGGKKEYLIAGKAEGDGKMHITL
CDFIVPWDTLSTTQKKS LNHR YQMGCECKITRCPMIPCYISSPDECLWMDWVTEKNINGHQAKF
FACIKRSDGSCAWYRGAAPPKQEFLDIEDP