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 MMP13 Protein
Catalog Number: hRP-1225
Manufacturer: LD Biopharma, Inc.

Introduction

Proteins of the matrix metalloproteinase (MMP) family are involved in the breakdown of extracellular matrix in normal physiological processes, such as embryonic development, reproduction, and tissue remodeling, as well as in disease processes, such as arthritis and metastasis. Most MMP's are secreted as inactive proproteins, which are activated when cleaved by extracellular proteinases. The protein encoded by human MMP13 gene cleaves type II collagen more efficiently than types I and III. It may be involved in articular cartilage turnover and cartilage pathophysiology associated with osteoarthritis. The gene is part of a cluster of MMP genes, which localize to chromosome 11q22.3.

Full-length active human collagenase 3 domain (MMP13) cDNA (104 – 471 aa, derived from BC074807) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is 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:	MMP13 (CLG3; MANDP1)
Accession Number:	NP_002418.1
Species:	Human
Size:	25 µg / Vial
Composition:	0.50 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, 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

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Radwan,M., et al., *Matrix metalloproteinase 13 expression in response to double-stranded RNA in human chondrocytes*. Arthritis Rheum. 65 (5), 1290-1301 (2013)

Hashimoto,K., et al., *Regulated transcription of human matrix metalloproteinase 13 (MMP13) and interleukin-1beta (IL1B) genes in chondrocytes depends on methylation of specific proximal promoter CpG sites*. J. Biol. Chem. 288 (14), 10061-10072 (2013)

Wang,J.R., et al., *Expression of MMP-13 is associated with invasion and metastasis of papillary thyroid carcinoma*. Eur Rev Med Pharmacol Sci 17 (4), 427-435 (2013)

Kudo,Y., et al., *Matrix metalloproteinase-13 (MMP-13) directly and indirectly promotes tumor angiogenesis*. J. Biol. Chem. 287 (46), 38716-38728 (2012)

Applications

1. May be used for in vitro activated MMP13 mediated extracellular matrix protein signal regulation study for chondrocytes cell differentiation regulation or tumor cell metastasis with this protein as either coating matrix protein or soluble factor.
2. May be used as MMP13 protein-protein interaction assay.
3. As enzymatic substrate for various proteases.
4. As potential cancer diagnostic biomarker protein.
5. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFYNVFPRTLKWSKMNLTYRIVNYTPDMTHSEVEKAF
KKAFKVWSDVTPLNFTRLHDGIADIMISFGIKEHGDFYPFDGPSGLLAHAFPPGPNYGGDAHFD
DDETWTSSSKGYNLFLVAAHEFGHSLGLDHSKDPGALMFPIYTYTGKSHFMLPDDDVQGIQSLY
GPGDEDPNPKHPKTPDKCDPSLSLDAITSLRGETMIFKDRFFWRLHPQQVDAELFLTKSFWPEL
PNRIDAAYEHPSHDLIFIFRGRKFWALNGYDILEGYPKKISELGLPKEVKKISAAVHFEDTGKT
LLFSGNQVWRYDDTNHIMDKDYPRLIEEDFPGIGDKVDAVYEKNGYIYFFNGPIQFEYSIWSNR
IVRVMPANSILWC