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Produktinformation

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION

MMP-1 (human, recombinant)

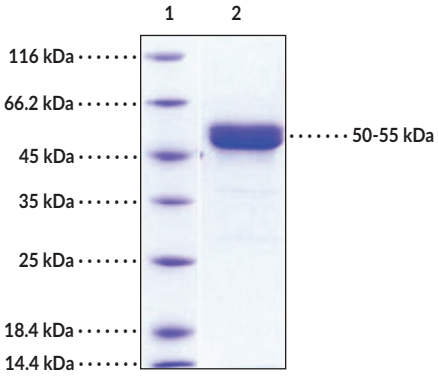
Item No. 35438

Overview and Properties

Synonyms:	Collagenase-1, Fibroblast Collagenase, Interstitial Collagenase, Matrix Metalloproteinase-1
Source:	Active recombinant human C-terminal His-tagged MMP-1 expressed in HEK293 cells
Amino Acids:	20-469
Uniprot No.:	P03956
Molecular Weight:	50-55 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥96% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 25 mM MES, pH 5.5, with 10 mM calcium chloride, 150 mM sodium chloride, and 0.05% Brij 35
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Bioactivity:	Measured by its ability to cleave the fluorogenic peptide substrate, McaPLGL-Dpa-AR-NH2

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: MMP-1

SDS-PAGE Analysis of MMP-1. This protein has an apparent molecular weight of approximately 50-55 kDa by SDS-PAGE under reducing conditions.

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PRODUCT INFORMATION

Description

Matrix metalloproteinase-1 (MMP-1) is an endopeptidase that has a major role in tissue remodeling.[1,2] It is composed of an N-terminal extracellular signal peptide, a prodomain containing a cysteine switch that interacts with the catalytic domain to regulate the proteolytic activity of MMP-1, a catalytic domain, and a C-terminal domain containing four hemopexin-like repeats which confer specificity for collagen.[1] MMP-1 is ubiquitously expressed at low levels under normal physiological conditions and localizes to the extracellular space.[2] It is primarily involved in the degradation of the extracellular matrix with type I collagen being its main substrate, but also degrades types II, III, V, IX, and X fibrillar collagens. MMP-1 also cleaves cell surface molecules such as insulin-like growth factor 1 (IGF-1) binding protein 3 (IGFBP3) and TNF-α.[1] Knockdown of *MMP1* inhibits the proliferation, migration, and invasion of colorectal cancer cells.[3] *MMP1* transgenic mice exhibit increased alveolar damage following exposure to *M. tuberculosis*.[4] Polymorphisms of *MMP1* are associated with several diseases, including various cancers, periodontitis, and coronary artery disease.[2] Cayman's MMP-1 (human, recombinant) protein can be used for enzyme activity applications. This protein consists of 461 amino acids and has a predicted N-terminus of Phe20 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 50-55 kDa.

References

1. Pardo, A. and Selman, M. MMP-1: The elder of the family. *Int. J. Biochem. Cell Biol.* **37(2)**, 283-288 (2005).
2. Arakaki, P.A., Marques, M.R., and Santos, M.C.L.G. MMP-1 polymorphism and its relationship to pathological processes. *J. Biosci.* **34(2)**, 313-320 (2009).
3. Wang, K., Zheng, J., Yu, J., *et al.* Knockdown of MMP-1 inhibits the progression of colorectal cancer by suppressing the PI3K/Akt/c-myc signaling pathway and EMT. *Oncol. Rep.* **43(4)**, 1103-1112 (2020).
4. Elkington, P., Shiomi, T., Breen, R., *et al.* MMP-1 drives immunopathology in human tuberculosis and transgenic mice. *J. Clin. Invest.* **121(5)**, 1827-1833 (2011).

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