PRODUCT DATA SHEET

MMP-2 (catalytic domain) (human), (recombinant)

BML-SE237

Product Number/Sizes

BML-SE237-0010	10 µg

Active recombinant matrix metalloproteinase-2 (MMP-2, gelatinase A, 72kDa type IV collagenase) cloned from human cDNA. The enzyme consists of residues Tyr^{110}-Asp^{452} (NM_004530), which comprises the catalytic/fibronectin domain of human MMP-2, with a C-terminal purification tag. This represents a naturally occurring active form of MMP-2 which lacks the C-terminal hemopexin domain. MMPs lacking this domain cannot cleave native collagens; however, activity toward other targets such as gelatin, casein, or peptide substrates is unaffected.

Product Specifications

ALTERNATIVE NAME:	Matrix metalloproteinase 2, Gelatinase A, 72 kDa Type IV collagenase
MW:	~40kDa
SOURCE:	Produced in yeast.
UNIPROT ID:	P08253
FORMULATION:	Liquid. In TRIS-HCl, pH 7.5, containing 300mM NaCl, 5mM $CaCl_2$, 20µM $ZnCl_2$, 0.5% Brij-35 and 20% glycerol.
PURITY:	≥90% (SDS-PAGE)
PURITY DETAIL:	Purified by multi-step chromatography.
ACTIVITY:	Preincubation of MMP-2 catalytic domain at 5nM with the broad-spectrum inhibitor GM6001 (Prod. No. BML-EI300) at 30nM for 1 hour completely inhibits enzymatic activity.
SPECIFIC ACTIVITY:	≥25 U/µg. One U=100 pmol/min at 37°C using the colorimetric thiopeptolide Ac-Pro-Leu-Gly-S-Leu-Leu-Gly-OEt (100 µM; Prod. No. BML-P125) as substrate.
APPLICATION:	Study enzyme kinetics, cleave target substrates, and screen for inhibitors.
LONG TERM STORAGE:	-80°C
USE/STABILITY:	The enzyme is stable on ice for at least several hours. However, it is recommended that thawing and dilution of the enzyme be done within as short a time as possible before start of the assay. After initial defrost, aliquot product into individual tubes and refreeze at -70°C. Avoid repeated freeze/defrost cycles. NOTE: When stored under the above conditions, this enzyme is stable at the concentration supplied, in its current storage buffer. Procedures such as dilution of the enzyme followed by refreezing could lead to loss of activity.

Product Literature References

Development and validation of novel enzyme activity methods to assess inhibition of matrix metalloproteinases (MMPs) in human serum by antibodies against enzyme therapeutics T.J. Edkins, et al. J. Pharm. Biomed. Anal. **70** 408 (2012)

Kinetics and thermodynamics of irreversible inhibition of matrix metalloproteinase 2 by a Co(III) Schiff base complex A.S. Harney, et al. J. Biol. Inorg. Chem. **17** 853 (2012)

Directed evolution of protease beacons that enable sensitive detection of endogenous MT1-MMP activity in tumor cell lines A. Jabaiah, et al. Chem. Biol. **18** 392 (2011)

Heterogeneity in MT1-MMP activity with ischemia-reperfusion and previous myocardial infarction: relation to regional myocardial function J.A. Dixon, et al. Am. J. Physiol. Heart Circ. Physiol. **299** H1947 (2010)

Titin is a target of matrix metalloproteinase-2: implications in myocardial ischemia/reperfusion injury M.A. Ali, et al. Circulation **122** 2039 (2010)

The effect of a hydroxamic acid-containing polymer on active matrix metalloproteinases G.A. Skarja, et al. Biomaterials **30** 1890 (2009)

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