Active Matrix Metalloproteinase 2 (MMP2)

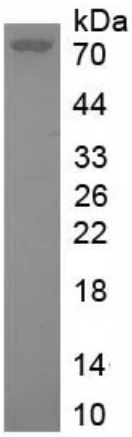
Catalog#:PHH12180

概述（Summary）

别称（Alternative Names）	CLG4; CLG4A; MMP-II; MONA; TBE-1; PEX; Gelatinase A; 72kDa Gelatinase; 72kDa Type IV Collagenase
纯度（Purity）	Greater than 95% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Ala30-Cys660】
Accession #	P08253
表达宿主（Host）	293F
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	72.6 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	Ubiquitinous metalloproteinase that is involved in diverse functions such as remodeling of the vasculature, angiogenesis, tissue repair, tumor invasion, inflammation, and atherosclerotic plaque rupture. As well as degrading extracellular matrix proteins, can also act on several nonmatrix proteins such as big endothelial 1 and beta-type CGRP promoting vasoconstriction. Also cleaves KISS at a Gly-|-Leu bond. Appears to have a role in myocardial cell death pathways. Contributes to myocardial oxidative stress by regulating the activity of GSK3beta. Cleaves GSK3beta in vitro. Involved in the formation of the

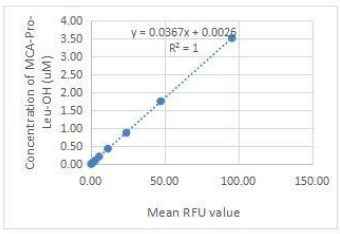
fibrovascular tissues in association with MMP14.; PEX, the C-terminal non-catalytic fragment of MMP2, posseses anti-angiogenic and anti-tumor properties and inhibits cell migration and cell adhesion to FGF2 and vitronectin. Ligand for integrinv/beta3 on the surface of blood vessels.; Mediates the proteolysis of CHUK/IKKA and initiates a primary innate immune response by inducing mitochondrial-nuclear stress signaling with activation of the pro-inflammatory NF-kappaB, NFAT and IRF transcriptional pathways.

电泳图（SDS-PAGE image）



Greater than 95% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）



RFU (320/405)	MCA-Pro-Leu-OH (product) uM
95.78	3.52
47.46	1.76
24.20	0.88
11.63	0.44
5.71	0.22
3.05	0.11
1.52	0.05
0.77	0.03

Figure 2. The standard curve of MCA-Pro-Leu-OH

Specific Activity (pmol/min/μg) =

$$\frac{\text{Adjusted Vmax * (RFU/min) x Conversion Factor ** (pmol/RFU)}}{\text{amount of enzyme (ug)}}$$

*Adjusted for Substrate Blank

**Derived using calibration standard MCA-Pro-Leu-OH

MMP2 is a zinc-dependent enzymes capable of cleaving components of the extracellular matrix, which belongs to the matrix metalloproteinase (MMP) family .It is a gelatinase A, 72 kDa type IV collagenase which can hydrolyze gelatin under certain conditions. Gelatin zymography is mainly used for the detection of the gelatinases, MMP-2 and MMP-9 and It is extremely sensitive because levels of 10 pg of MMP-2 can already be detected .Briefly， various concentrations of MMP2 (50ng, 25ng, 13ng, 6.5ng, 3.3ng, 1.7ng) were denatured by SDS loading buffer, electrophoresed through sodium dodecylsulphate–

polyacrylamide gel (SDS–PAGE; 10% gels) containing gelatin (1 mg/ml) with nonreducing conditions. After renaturation, incubation and CCB-stained, active MMP2 would hydrolyze gelatin nearby, which was indicated by the white binds on the gel. In this experiment we use trypsin as positive control. The result was shown in figure 1. The activity of recombinant human MMP2 is also measured by its ability to cleave a fluorogenic peptide substrate MCA-Pro-Leu-Gly-Leu-DPA-Ala-Arg-NH2 in the assay buffer 50 mM Tris, 10 mM CaCl2, 150 mM NaCl, 0.05% (w/v) Brij-35, pH 7.5. The rhMMP2 is diluted to 100 ug/ml in assay buffer, then activated by p-aminophenylmercuric acetate (APMA) in a final concentration of 1 mM incubated at 37 °C for 1 hours. The activated rhMMP2 is diluted to 2.5 ug/mL in assay buffer. Loading into a black well plate 50 µL of 2.5 ug/mL rhMMP2 and start the reaction by adding 50 µL of 20 µM substrate, with a substrate blank containing 50 µL assay buffer, 50 µL substrate, and no rhMMP2. Then read at excitiation and emission wavelengths of 320 nm and 405 nm, respectively, in kinetic mode for 5 minutes. The specific activity of recombinant human MMP2 is > 170 pmol/min/µg.

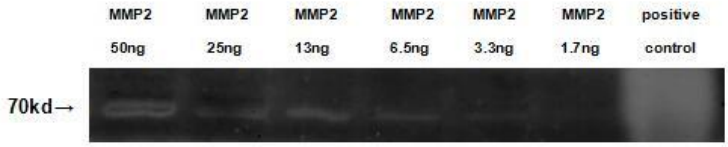


Figure 1. Hydrolysis of gelatin by recombinant human MMP2

注意事项（Note）

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