Recombinant human MMP2 protein (Active) ab81550

Product name: Recombinant human MMP2 protein (Active)

Biological activity:
MMP2 activity was measured by its ability to cleave a chromogenic peptide MMP2 substrate at room temperature.
At an MMP2 concentration of 2.5 µg/ml, 50% cleavage was achieved at an incubation time of approximately 25 minutes.

Purity:
>= 98% SDS-PAGE.
>= 98% HPLC.

Endotoxin level:
< 1.000 Eu/µg

Expression system:
Escherichia coli

Accession:
P08253

Protein length:
Full length protein

Animal free:
No

Nature:
Recombinant

Species:
Human

Sequence:

MYNFFPRKPK WDKNQITYRI IGYTPDLDE
TVDDAFARAF QWWSDVTPLR FSRHHDGEAD
IMINFGRWEH GDYPFDGKDL GLLHAFAPG
TGVGGDSHFD DDELWTLGEG QVVRVRYGNA
DGEYCKFPFL FNGKEYNSCT DTGRSDGFLW
CSTTYNEKDK GKYGFCPHEA LFTMGGNAEG
QPCKFPFRFQ GTSYDSCITT GRTDGYRWGC
TTEDYDRDKK YGFCPETAMS TVGGNSEGAP
CVFPFTFLGN KYESCTSAGR SDGMWCCAT
ANYDDDRKKG FCPDQGSYLF LVAHAEFGHA
MGLEHSODPG ALMAPITYT KNFRLSQDDI
KGIQELYGAS PDDLGTGPT PTLPVTPTEI
CKQDNDGDI AQRGEIFFF KDFWRTVT
PRDKPMGPLL VATFWPELPE KIDAVYEAQF
EEKAZFANGN EYWIYASTRL ERGYPKPLTS
LGLPPDQVRV DAAFSWSNK KTYIFAGDKF
WRYNEVKKKM DPGFPKLIAD AWNAPDNLQ
AVVDLOGGGH SYFFKGAYL KLENQLKSV
KFGSIKSDWLG C
Predicted molecular weight 62 kDa
Amino acids 109 to 660
Additional sequence information ab81550 contains the entire catalytic N-terminal domain and the C-terminal domain (552 amino acids).

Specifications

Our *Abpromise guarantee* covers the use of ab81550 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications
- HPLC
- SDS-PAGE

Form Lyophilised

Preparation and Storage

Stability and Storage Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.

This product is an active protein and may elicit a biological response in vivo, handle with caution.

Reconstitution Reconstitute in water to a concentration of 0.1 mg/ml. Please note that if you receive this product in liquid form, it has already been reconstituted as described and no further reconstitution is necessary.

General Info

Function 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. PEX, the C-terminal non-catalytic fragment of MMP2, possesses anti-angiogenic and anti-tumor properties and inhibits cell migration and cell adhesion to FGF2 and vitronectin. Ligand for integrin/β3 on the surface of blood vessels.

Tissue specificity Produced by normal skin fibroblasts. PEX is expressed in a number of tumors including gliomas, breast and prostate.

Involvement in disease Defects in MMP2 are the cause of Torg-Winchester syndrome (TWS) [MIM:259600]; also known as multicentric osteolysis nodulosis and arthropathy (MONA). TWS is an autosomal recessive osteolysis syndrome. It is severe with generalized osteolysis and osteopenia. Subcutaneous nodules are usually absent. Torg-Winchester syndrome has been associated with a number of additional features including coarse face, corneal opacities, patches of thickened, hyperpigmented skin, hypertrichosis and gum hypertrophy. However, these features are not always present and have occasionally been observed in other osteolysis syndromes.

Sequence similarities Belongs to the peptidase M10A family.
Contains 3 fibronectin type-II domains.
Contains 4 hemopexin-like domains.
Domain

The conserved cysteine present in the cysteine-switch motif binds the catalytic zinc ion, thus inhibiting the enzyme. The dissociation of the cysteine from the zinc ion upon the activation-peptide release activates the enzyme.

Post-translational modifications

Phosphorylation on multiple sites modulates enzymatic activity. Phosphorylated by PKC in vitro. The propeptide is processed by MMP14 (MT-MMP1) and MMP16 (MT-MMP3). Autocatalytic cleavage in the C-terminal produces the anti-angiogenic peptide, PEX. This processing appears to be facilitated by binding integrin|beta3.

Cellular localization


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