Recombinant Human MMP-2 Protein

Catalog Number: PKSH031888

Note: *Centrifuge before opening to ensure complete recovery of vial contents.*

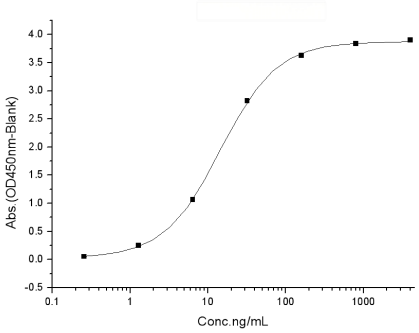
Description

Species	Human
Source	HEK293 Cells-derived Human MMP-2 protein Met 1-Cys 660
Calculated MW	72 kDa
Observed MW	72 kDa
Accession	NP_004521.1
Bio-activity	1. Measured by its ability to cleave the fluorogenic peptide substrate Mca-PLGL-Dpa-AR-NH2 (AnaSpec, Catalog # 27076). The specific activity is > 1, 000 pmoles/min/μg. 2. Immobilized human MMP2 at 10 μg/mL (100 μl/well) can bind human TIMP2/Fc. The EC_{50} of human TIMP2/Fc is 0.02 μg/mL. (Activation description: The proenzyme needs to be activated by APMA for an activated form)

Properties

Purity	> 90 % as determined by reducing SDS-PAGE.
Endotoxin	< 1.0 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile PBS, pH 7.4 Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Data



Measured by its binding ability in a functional ELISA. Immobilized Human MMP-2 (Cat: PKSH031888) at 2 μg/ml (100 μl/well) can bind Human TIMP2 hFc(Cat: PKSH030472), the EC_{50} of Human TIMP2 hFc is 6.0-30.0 ng/mL.

Background

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Matrix Metalloproteinase-2 (MMP-2) is an enzyme that degrades components of the extracellular matrix and thus plays a pivotal role in cell migration during physiological and pathological processes. MMP-2 expression is dependent on extracellular matrix metalloproteinase inducer (EMMPRIN); Her2/neu; growth factors; cytokines; and hormones. Pro-MMP-2 activation needs MT1-MMP and TIMP-2 contribution. MMP-2 is changed in distribution and increased in amount in the ventral cochlear nucleus after unilateral cochlear ablation. A low level of MMP-2 is linked to favorable prognosis in patients with a hormone receptor-negative tumor; usually associated with high risk. As a zymogen requiring proteolytic activation for catalytic activity; MMP-2 has been implicated broadly in the invasion and metastasis of many cancer model systems; including human breast cancer (HBC). Blocking MMP-2 secretion and activation during breast carcinoma development may decrease metastasis. The detection of active MMP-2 alone or the rate of pro-MMP-2 and active MMP-2 is considered a very sensitive indicator of cancer metastasis. Modulation of MMP-2 expression and activation through specific inhibitors and activators may thus provide a new mechanism for breast cancer treatment.

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