CellMade®

MMP1 (Matrix Metalloproteinase-1)

Cells

Fibroblast cells (HDF, HLF, HCK,…)

Background

Proteins of the matrix metalloproteinase (MMP) family are involved in the breakdown of extracellular matrix (ECM) in normal physiological processes, such as embryonic development, reproduction, and tissue remodeling, as well as in disease processes. Most MMP's are secreted as inactive pro-proteins which are activated when cleaved by extracellular proteinases.

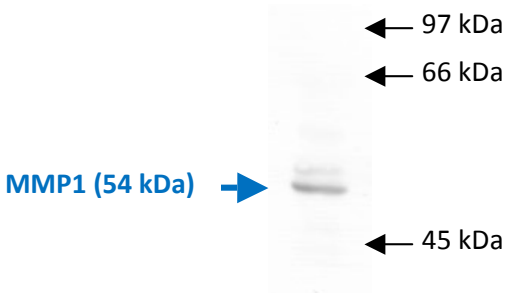
MMP1, is one of the most abundant proteases in the matrix metalloproteinase family. It is capable of degrading type I, II, III VII and X collagens, and is one of only four MMPs able to degrade triple helical collagens. MMP1 plays a clinically important role in inflammatory disease (like arthritis), and has been implicated in numerous pathological processes including wound healing and tumour metastasis (1). In fact, MMP plays an important role in rheumatoid and osteo-arthritis pathogenesis as mediators of cartilage and bone destruction (2).

Protocol – Western Blot (WB)

Migration on SDS-PAGE gel acrylamide 10%

Blotting on 100% Nitrocellulose Membranes (Protran™ nitrocellulose membranes)

Detection with WesternDot 625 Western Blot Kit



MMP1 expression in Fibroblast cells

(1) Muna Affara, Benjamin J. Dunmore, Deborah A. Sanders, Nicola Johnson, Cristin G. Print and D.S. Charnock-Jones. MMP1 bimodal expression and differential response to inflammatory mediators is linked to promoter polymorphisms. *BMC Genomics*. 2011; Vol.12: 43.

(2) Boire A., Covic L., Agarwal A., Jacques S., Sherifi S., Kuliopulos A. PAR1 is a matrix metalloprotease-1 receptor that promotes invasion and tumorigenesis of breast cancer cells. *Cell*. 2005 February 11; Vol.120 (No.3): 303-313.