

MMP-1 (Matrix Metalloproteinase)

Analyte: Matrix Metalloproteinase-1

Specimen Type: Heparin Plasma

Optimum Volume: 1 mL

Stability:

2-8 Degrees C	-20 Degrees C	-70 Degrees C
Unstable*	N.A.*	N.A.*

Reporting Units: ng/mL

Method: Fluorimetric

Biological or Clinical Significance:

Matrix metalloproteinases (MMPs) constitute a family of zinc and calcium dependent endopeptidases that function in the breakdown of extracellular matrix (ECM). They play an important role in many normal physiological processes such as embryonic development, morphogenesis, reproduction, and tissue remodeling. They also participate in many pathological processes such as arthritis, cancer, and cardiovascular disease.

MMP-1 (also referred to as interstitial collagenase, vertebrate collagenase, fibroblast collagenase, or collagenase I) is produced by fibroblasts, chondrocytes, macrophages, keratinocytes, endothelial cells, and osteoblasts. MMP-1 is normally secreted as a 52 kDa pro-enzyme. Activation of the pro-enzyme involves a proteolytic removal of the pro-domain. MMP-1 is implicated in a wide variety of biological processes where collagen degradation occurs. These include rheumatoid arthritis, osteoarthritis, periodontal disease, tumor invasion, angiogenesis, corneal ulceration, tissue remodeling, inflammatory bowel disease, atherosclerosis, aneurysm, and restenosis.

Principle of Test Method:

The MMP-1 assay is a solid-phase ELISA that employs the quantitative fluorimetric enzyme immunoassay principle.

*Please contact PBI for stability information.

References:

1. Smith GN. The role of collagenolytic matrix metalloproteinases in the loss of articular cartilage in osteoarthritis. *Front. Biosci.* 2006; 11:3081-3095.
2. Newby AC. Dual role of matrix metalloproteinases (matrixins) in intimal thickening and atherosclerotic plaque rupture. *Physiol Rev* 2005; 85:1-31.
3. D'Agostino P, Camemi AR, Caruso R, Arcoleo F, Cascio A, Dolce A, Sacco E, Cangemi G, diRosa T, Moceo P, Cillari E. Matrix metalloproteinases production in malignant pleural effusions after talc pleurodesis. *Clin Exp Immunol.* 2003; 134:138-142.