

MMP-7 (Matrix Metalloproteinase)

Analyte: Matrix Metalloproteinase-7

Specimen Type: Serum, Lithium Heparin Plasma

Optimum Volume: 0.5 mL

2-8°C	-20°C	-70°C
6 days	1 month	2.8 years

Reporting units: ng/mL

Method: ELISA

Biological or Clinical Significance:

Matrix metalloproteinases (MMPs), also called matrixins, 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. The proteolytic activities of existing MMPs are controlled through both the activation of proenzymes or zymogens and the inhibition of active enzymes by endogenous inhibitors, α_2 -macroglobulin and tissue inhibitors of metalloproteinases (TIMPs).

MMP-7 (matrilysin) acts on a broad range of protein substrates, including a large number of extracellular matrix proteins, such as collagen IV, gelatins, laminin, aggrecan, entactin, elastin, and versican. It also activates other proteinases, such as urokinase plasminogen activator and cleaves additional substrates such as osteopontin.

MMP-7 is expressed in epithelial cells of normal and diseased tissues. The protein localizes in normal tissues in the endometrium and in various exocrine glands. It is expressed in a variety of tumors including breast, colon, prostate, stomach, lung, and skin.

Structurally, MMP-7 is one of the smallest MMPs, consisting of two domains, a pro-domain and a catalytic domain. After proteolytic cleavage, the resulting mature and active enzyme consists of a catalytic domain with a zinc-binding motif conserved in metzincins.

Principle of Test Method:

The MMP-7 Immunoassay is a solid phase ELISA designed to measure MMP-7 in cell culture supernates, serum, plasma, saliva, and urine. This assay employs the quantitative sandwich enzyme immunoassay technique.