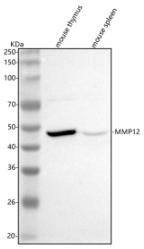
Mmp12 Antibody / Matrix metalloproteinase 12 (FY12936)

Catalog No.	Formulation	Size
FY12936	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Mouse
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P34960
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This Mmp12 antibody is available for research use only.



Western blot analysis of Mmp12 using anti-Mmp12 antibody. Lane 1: mouse thymus tissue lysates, Lane 2: mouse spleen tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Mmp12 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. Predicted molecular weight: ~55 kDa (pro form), ~45 kDa and ~22 kDa (active forms).

Description

MMP12 antibody detects Matrix metalloproteinase-12, also known as macrophage metalloelastase, an extracellular matrix-degrading enzyme that plays a key role in tissue remodeling, inflammation, and innate immune defense. The UniProt recommended name is Matrix metalloproteinase-12 (MMP12), and alternate names include macrophage metalloelastase, hME, macrophage elastase, and MME. MMP12 belongs to the matrix metalloproteinase (MMP) family, a group of zinc-dependent endopeptidases that degrade components of the extracellular matrix (ECM) and regulate

numerous physiological and pathological processes including wound healing, angiogenesis, and tumor progression.

MMP12 is predominantly expressed in macrophages, where it contributes to tissue turnover and inflammatory regulation by cleaving elastin, fibronectin, laminin, and type IV collagen. MMP12 antibody is often used in immunohistochemistry, western blot, and zymography to assess macrophage activation and ECM degradation activity. During chronic inflammation, such as in atherosclerosis, emphysema, and rheumatoid arthritis, overproduction of MMP12 accelerates ECM breakdown and tissue destruction. Conversely, controlled MMP12 activity is necessary for effective wound repair, pathogen clearance, and extracellular remodeling in normal immune responses.

Structurally, MMP12 contains the conserved catalytic zinc-binding motif (HEXXHXXGXXH) and a C-terminal hemopexin domain important for substrate specificity and interaction with tissue inhibitors of metalloproteinases (TIMPs). The MMP12 antibody is used to monitor expression and activity under various conditions where macrophage-mediated proteolysis contributes to disease pathology. The MMP12 gene is located on chromosome 11q22.2-q22.3, clustered with other MMP family members including MMP1, MMP3, and MMP13. The mature enzyme is secreted as a pro-MMP, which is activated by proteolytic cleavage or oxidative stress in inflamed tissues.

Beyond matrix degradation, MMP12 regulates cytokine bioavailability and macrophage migration, influencing the balance between inflammation and resolution. Elevated MMP12 levels have been correlated with chronic obstructive pulmonary disease (COPD) severity and vascular remodeling in atheromatous plaques. Genetic knockout models in mice have shown Mmp12 deletion reduces elastin breakdown and lung injury, highlighting its central role in tissue integrity. Research using MMP12 antibody supports studies of inflammation, fibrosis, tumor invasion, and innate immunity. NSJ Bioreagents provides validated reagents that detect human, mouse, and rat MMP12 in tissues and culture systems for translational and mechanistic research.

Application Notes

Optimal dilution of the Mmp12 antibody should be determined by the researcher.

Immunogen

E.coli-derived mouse Mmp12 recombinant protein (Position: K237-H442) was used as the immunogen for the Mmp12 antibody.

Storage

After reconstitution, the Mmp12 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.