Anti-MMP-2 Antibody [SI15-04]

ET1606-4

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IP
Molecular Wt:	Predicted band size: 74 kDa
Clone number:	SI15-04

Description: 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, such as arthritis and metastasis. Most MMP's are secreted as inactive proproteins which are activated when cleaved by extracellular proteinases. This gene encodes an enzyme which degrades type IV collagen, the major structural component of basement membranes. The enzyme plays a role in endometrial menstrual breakdown, regulation of vascularization and the inflammatory response. Activation of MMP-2 requires proteolytic processing. A complex of membrane type 1 MMP (MT1-MMP/MMP14) and tissue inhibitor of metalloproteinase 2 recruits pro-MMP 2 from the extracellular milieu to the cell surface. Activation then requires an active molecule of MT1-MMP and auto catalytic cleavage. Clustering of integrin chains promotes activation of MMP-2. Another factor that will support the activation of MMP-2 is cell-cell clustering. A wild-type activated leukocyte cell adhesion molecule (ALCAM) is also required to activate MMP-2.

Immunogen: Synthetic peptide within Human MMP2 aa 101-150 / 660.

Positive control: U-87 MG cell lysate, L6 cell lysate, mouse liver tissue.

Subcellular location: Secreted, extracellular space, extracellular matrixm Membrane, Nucleus; Cytoplasm, Mitochondrion.

Database links: SwissProt: P08253 Human | P33434 Mouse | P33436 Rat

Recommended Dilutions:

WB	1:2,000
IHC-P	1:2,000
IP	1-2μg/sample

Storage Buffer: 1*TBS (pH7.4), 0.05% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

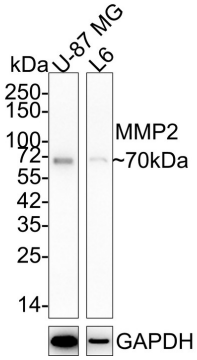

Fig1: Western blot analysis of MMP-2 on different lysates with Rabbit anti-MMP-2 antibody (ET1606-4) at 1/2,000 dilution.

Lane 1: U-87 MG cell lysate
Lane 2: L6 cell lysate

Lysates/proteins at 15 µg/Lane.

Predicted band size: 74 kDa
Observed band size: 70 kDa

Exposure time: 3 minutes 30 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ET1606-4) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:50,000 dilution was used for 1 hour at room temperature.

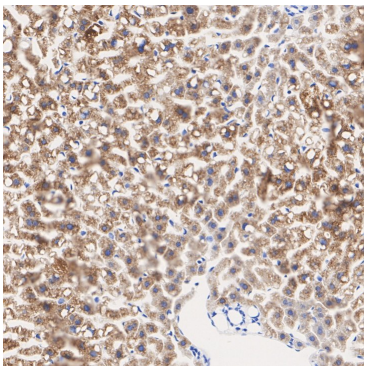

Fig2: Immunohistochemical analysis of paraffin-embedded mouse liver tissue with Rabbit anti-MMP-2 antibody (ET1606-4) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (ET1606-4) at 1/2,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

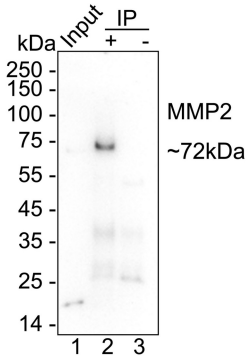

Fig3: MMP-2 was immunoprecipitated from 0.2 mg U-87 MG cell lysate with ET1606-4 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using ET1606-4 at 1/1,000 dilution. HRP Conjugated Anti-Rabbit IgG for IP Nano-secondary antibody at 1/5,000 dilution was used for 1 hour at room temperature.

Lane 1: U-87 MG cell lysate (input)
Lane 2: ET1606-4 IP in U-87 MG cell lysate
Lane 3: Rabbit IgG instead of ET1606-4 in U-87 MG cell lysate

Blocking/Dilution buffer: 5% NFDM/TBST
Exposure time: 59 seconds; ECL: K1801

Background References

1. Yan Y et al. Association of MMP2 and MMP9 gene polymorphisms with the recurrent spontaneous abortion: A meta-analysis. Gene. 2021 Jan
2. Kalev-Altman R et al. Mmp2 Deficiency Leads to Defective Parturition and High Dystocia Rates in Mice. Int J Mol Sci. 2023 Nov