Anti-Cathepsin D Antibody [13F3]

EM1901-16

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human
Applications:	WB, IHC-P
Molecular Wt:	Predicted band size: 45 kDa
Clone number:	13F3

Description: Cathepsin D is a protein that in humans is encoded by the CTSD gene. The main function of cathepsin D is to degrade proteins and activate precursors of bioactive proteins in pre-lysosomal compartments. This proteinase, which is a member of the peptidase A1 family, has a specificity similar to but narrower than that of pepsin A. Transcription of the CTSD gene is initiated from several sites, including one that is a start site for an estrogen-regulated transcript. Mutations in this gene are involved in the pathogenesis of several diseases, including breast cancer and possibly Alzheimer disease. Homozygous deletion of the CTSD gene leads to early lethality in the postnatal phase. Over-expression of cathepsin D stimulates tumorigenicity and metastasis as well as initiation of tumor apoptosis. This protease has been regarded an independent marker of poor prognosis in breast cancer being correlated with the incidence of clinical metastasis. Knock-out of CTSD gene would cause intestinal necrosis and hemorrhage and increase apoptosis in thymus, indicating that cathepsin D is required in certain epithelial cells for tissue remodeling and renewal.

Immunogen: Recombinant protein within Human Cathepsin D aa 1-412 / 412.

Positive control: SK-Br-3 cell lysate, MCF-7 cell lysate, U937 cell lysate, human breast cancer tissue, human liver cancer tissue, human liver tissue.

Subcellular location: Lysosome, extracellular space, melanosome.

Database links: SwissProt: P07339 Human

Recommended Dilutions:

WB	1:5,000-1:20,000
IHC-P	1:2,000-1:5,000

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 50% 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 G affinity purified.

Images

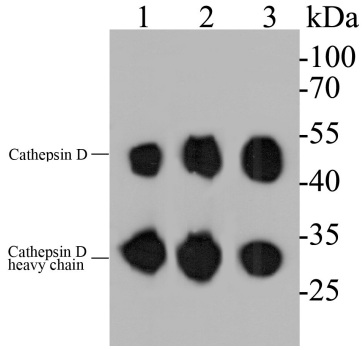

Fig1: Western blot analysis of Cathepsin D on different lysates. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody (EM1901-16, 1/500) was used in 5% BSA at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1:5,000 dilution was used for 1 hour at room temperature.
Positive control:
Lane 1: SK-Br-3 cell lysate
Lane 2: MCF-7 cell lysate
Lane 3: U937 cell lysate

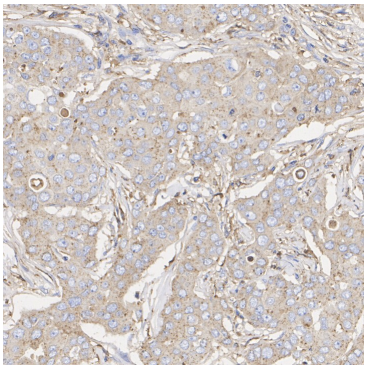

Fig2: Immunohistochemical analysis of paraffin-embedded human breast cancer tissue with Mouse anti-Cathepsin D antibody (EM1901-16) at 1/5,000 dilution.

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 (EM1901-16) at 1/5,000 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.

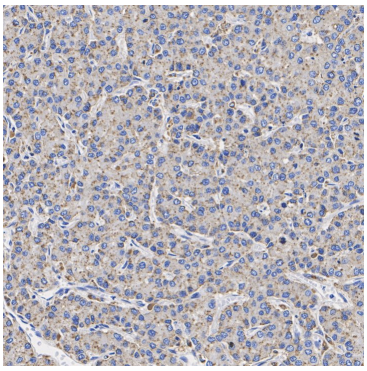

Fig3: Immunohistochemical analysis of paraffin-embedded human liver cancer tissue with Mouse anti-Cathepsin D antibody (EM1901-16) at 1/2,000 dilution.

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 (EM1901-16) 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.

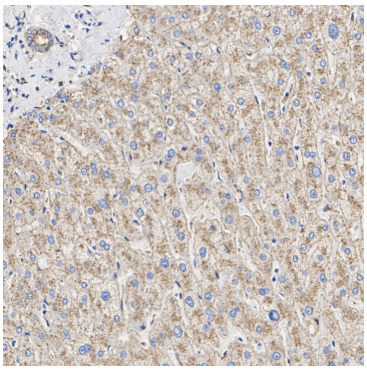

Fig4: Immunohistochemical analysis of paraffin-embedded human liver tissue with Mouse anti-Cathepsin D antibody (EM1901-16) at 1/5,000 dilution.

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 (EM1901-16) at 1/5,000 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.

Background References

1. Marques ARA. et. al. Enzyme replacement therapy with recombinant pro-CTSD (cathepsin D) corrects defective proteolysis and autophagy in neuronal ceroid lipofuscinosis. Autophagy. 2019 Jul 16:1-15.
2. Xi J. et. al. Absence of association of the Ala58Val (rs17571) CTSD gene variant with Parkinson's disease or amyotrophic lateral sclerosis in a Han Chinese population. Neurosci Lett. 2018 Jan 1;662:181-184.