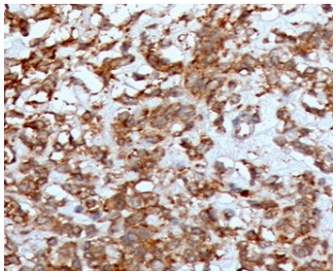
CTSK Antibody / Cathepsin K Tissue Remodeling Protease Antibody [clone CTO2-1] (V7979)

Catalog No.	Formulation	Size
V7979-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7979-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7979SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	CTO2-1
Purity	Protein G affinity chromatography
UniProt	P43235
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE): 1-2ug/ml
Limitations	This CTSK Antibody / Cathepsin K Tissue Remodeling Protease Antibody is available for research use only.



Cathepsin K Tissue Remodeling Protease Antibody Liver Tissue IHC. Immunohistochemistry analysis of FFPE human liver tissue using CTSK Antibody (clone CTO2-1) shows diffuse granular cytoplasmic staining in scattered cell populations, consistent with CTSK / Cathepsin K localization in lysosomal compartments associated with matrix remodeling activity. The punctate staining pattern reflects protease involvement in extracellular matrix turnover, while hepatocytes display comparatively lower background staining. Hematoxylin counterstain provides nuclear contrast and structural context. HIER: boil FFPE tissue sections in pH 9 10 mM Tris with 1 mM EDTA for 10-20 min and allow to cool before testing.

Description

Cathepsin K (CTSK) is a lysosomal cysteine protease with specialized activity in extracellular matrix degradation, particularly in the breakdown of collagen during bone resorption and tissue remodeling. The CTSK Antibody / Cathepsin K Tissue Remodeling Protease Antibody is designed for studies focused on matrix turnover and protease-driven structural changes in tissues. CTSK is encoded on chromosome 1q21 and belongs to the papain-like cysteine protease family, distinguished by its ability to cleave triple-helical collagen and other structural proteins within acidic microenvironments.

The CTSK antibody, also referred to as Cathepsin K antibody and osteoclast cathepsin K antibody in the literature, recognizes a protein that is synthesized as an inactive proenzyme and undergoes proteolytic activation within lysosomes or resorption lacunae. Once activated, Cathepsin K functions as a potent collagenase, enabling efficient degradation of bone matrix and contributing to normal skeletal turnover. This enzymatic activity also extends to soft tissues under conditions of inflammation or tumor progression, where extracellular matrix remodeling is required.

This CTSK Antibody / Cathepsin K Tissue Remodeling Protease Antibody is uniquely positioned for studies examining structural remodeling of tissues rather than general lysosomal protease activity. In immunohistochemistry, CTSK is typically observed as granular cytoplasmic staining in osteoclasts and other matrix-remodeling cells, as well as in tumor-associated stromal populations. This staining pattern reflects lysosomal localization coupled with active participation in matrix degradation processes. Detection of CTSK provides insight into areas of active tissue turnover, fibrosis, or invasive growth.

In addition to its well-established role in bone resorption, Cathepsin K is implicated in a range of pathological conditions, including osteoporosis, osteoarthritis, and metastatic cancer. Tumor cells and associated stromal cells can upregulate CTSK expression to facilitate invasion through extracellular matrix barriers. This makes Cathepsin K a relevant marker for studying tumor microenvironment interactions and protease-driven disease progression.

The mouse monoclonal clone CTO2-1 provides consistent detection of CTSK in research applications where matrix degradation and tissue remodeling are primary areas of interest. This antibody supports analysis of protease activity in both normal physiological processes and disease-associated remodeling, complementing broader lysosomal protease studies while offering a more focused view of collagen breakdown and structural reorganization.

This antibody supports investigation of extracellular matrix degradation, protease-mediated tissue remodeling, and disease-associated changes in Cathepsin K expression.

This antibody can be compared with our Cathepsin K Antibody / CTSK Lysosomal Protease Antibody (clone CTSK/2791) as a central reference for CTSK detection and collagen degradation studies.

Application Notes

The stated application concentrations are suggested starting points. Titration of the CTSK Antibody / Cathepsin K Tissue Remodeling Protease Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

Amino acids 163-274 were used as the immunogen for the CTSK antibody.

Storage

Store the CTSK antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

Cathepsin K remodeling antibody, CTSK matrix degradation antibody, Cathepsin K collagen breakdown antibody, CTSK

tissue remodeling antibody, Osteoclast matrix protease antibody

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