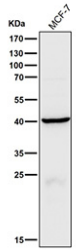
CTSH Antibody / Cathepsin H [clone 31C05] (FY12746)

Catalog No.	Formulation	Size
FY12746	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

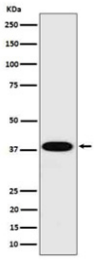
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31C05
Purity	Affinity-chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P09668
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200 Immunocytochemistry/Immunofluorescence : 1:50-1:200
Limitations	This CTSH antibody is available for research use only.



Human MCF7 cell lysate tested with the CTSH antibody at 1:1000 dilution for 1 hour at room temperature. Predicted molecular weight ~37 kDa.



Western blot analysis of Cathepsin H in human HepG2 cell lysate using CTSH antibody. Predicted molecular weight ~37 kDa.

Description

CTSH antibody detects cathepsin H, a lysosomal cysteine protease encoded by the CTSH gene. Cathepsin H is also known as mini chain cathepsin H, lysosomal thiol protease H, and EC 3.4.22.16. As a member of the papain like protease family, cathepsin H plays a central role in intracellular protein degradation, antigen processing, and extracellular matrix turnover. The protein is synthesized as an inactive zymogen that is activated in the acidic environment of lysosomes. Structurally, cathepsin H contains a papain like catalytic domain and a mini chain insert that confers aminopeptidase activity in addition to endopeptidase function.

CTSH antibody is applied in immunology, cancer biology, and developmental biology. Cathepsin H contributes to general protein turnover in lysosomes and is critical for remodeling of tissues during development and wound healing. In immune cells, CTSH processes antigens for presentation on MHC class II molecules, influencing adaptive immune responses. By detecting cathepsin H, researchers can investigate both housekeeping proteolysis and specialized immune functions.

Western blot assays detect both procathepsin H and the mature active enzyme. Immunohistochemistry maps expression in tissues such as lung, kidney, and lymph nodes, while immunofluorescence highlights punctate lysosomal localization. These assays provide robust methods for assessing lysosomal function across systems.

Dysregulated CTSH activity has been implicated in cancer progression. Tumor cells exploit cathepsin H and related proteases to degrade extracellular matrix, promoting invasion and metastasis. Elevated expression of CTSH correlates with poor prognosis in lung and breast cancer. Conversely, cathepsin H deficiency impairs immune processing and contributes to altered inflammatory responses. By applying CTSH antibody, researchers can study the balance between protective immune function and pathological proteolysis.

Beyond cancer, CTSH plays roles in metabolic and neurodegenerative disease. In the brain, altered lysosomal protease activity contributes to protein aggregation disorders such as Alzheimer disease. Cathepsin H has been linked to processing of amyloid precursor protein and clearance of aggregated proteins. In metabolic disorders, abnormal CTSH expression influences adipose tissue remodeling and insulin sensitivity.

CTSH antibody also supports studies in developmental biology. Lysosomal proteases including cathepsin H are required for embryogenesis, bone remodeling, and organ morphogenesis. Mouse knockout models reveal roles in immune cell differentiation and growth factor activation. Detection of CTSH in these contexts informs both basic developmental mechanisms and potential therapeutic interventions.

CTSH antibody from NSJ Bioreagents provides reliable specificity for cathepsin H. Its validated performance across diverse experimental systems ensures accurate results in lysosomal biology, cancer research, and immunology.

Application Notes

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

Immunogen

A synthesized peptide derived from human Cathepsin H was used as the immunogen for the CTSH antibody.

Storage

Store the CTSH antibody at -20oC.