

cathepsin L (22): sc-135859

BACKGROUND

The cathepsin family of proteolytic enzymes contains several diverse classes of proteases. The cysteine protease class comprises cathepsins B, L, H, K, S and O. The aspartyl protease class is composed of cathepsins D and E. Cathepsin G is in the serine protease class. Most cathepsins are lysosomal and each is involved in cellular metabolism, participating in various events such as peptide biosynthesis and protein degradation. Cathepsin L (also designated major excreted protein, MEP or CATL) is a member of the peptidase C1 family and has been identified as a protein that is most closely related to cathepsin H. Cathepsin L is a lysosomal cysteine proteinase that mediates intracellular protein catabolism for collagen, elastin and α -1 protease inhibitor. Cathepsin L is a dimer composed of disulfide-linked heavy and light chains, both produced from a single protein precursor. At least two transcript variants encoding the same protein have been found for this gene. Transformed mouse fibroblasts stimulated by growth factors or tumor promoters secrete a form of cathepsin L.

REFERENCES

1. Ishidoh, K., et al. 1987. Molecular cloning and sequencing of cDNA for rat cathepsin L. *FEBS Lett.* 223: 69-73.
2. Joseph, L.J., et al. 1988. Complete nucleotide and deduced amino acid sequences of human and murine preprocathepsin L. An abundant transcript induced by transformation of fibroblasts. *J. Clin. Invest.* 81: 1621-1629.
3. Soderstrom, M., et al. 1999. Cathepsin expression during skeletal development. *Biochim. Biophys. Acta* 1446: 35-46.
4. Abudula, A., et al. 2001. Splice variants of human cathepsin L mRNA show different expression rates. *Biol. Chem.* 382: 1583-1591.
5. Bakhshi, R., et al. 2001. Cloning and characterization of human cathepsin L promoter. *Gene* 275: 93-101.
6. Arora, S. and Chauhan, S.S. 2002. Identification and characterization of a novel human cathepsin L splice variant. *Gene* 293: 123-131.
7. Huang, X., et al. 2003. Impaired cathepsin L gene expression in skeletal muscle is associated with type 2 diabetes. *Diabetes* 52: 2411-2418.

CHROMOSOMAL LOCATION

Genetic locus: CTSL1 (human) mapping to 9q21.33.

SOURCE

cathepsin L (22) is a mouse monoclonal antibody raised against amino acids 116-273 of cathepsin L of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

cathepsin L (22) is recommended for detection of cathepsin L of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

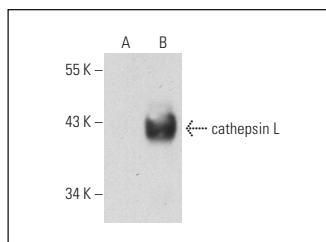
Suitable for use as control antibody for cathepsin L siRNA (h): sc-29938, cathepsin L shRNA Plasmid (h): sc-29938-SH and cathepsin L shRNA (h) Lentiviral Particles: sc-29938-V.

Molecular Weight of mature cathepsin L: 25-35 kDa.

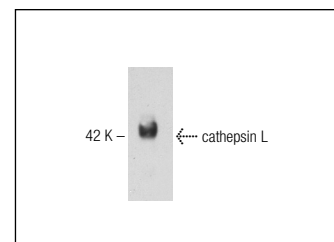
Molecular Weight of pro cathepsin L: 38-42 kDa.

Positive Controls: cathepsin L (h3): 293T Lysate: sc-158353, A-431 whole cell lysate: sc-2201 or A549 cell lysate: sc-2413.

DATA



cathepsin L (22): sc-135859. Western blot analysis of cathepsin L expression in non-transfected: sc-110760 (A) and human cathepsin L transfected: sc-158353 (B) 293 whole cell lysates.



cathepsin L (22): sc-135859. Western blot analysis of cathepsin L expression in A-431 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Cecarini, V., et al. 2012. Crosstalk between the ubiquitin-proteasome system and autophagy in a human cellular model of Alzheimer's disease. *Biochim. Biophys. Acta* 1822: 1741-1751.
2. Zhang, H., et al. 2016. Knockdown of cathepsin L sensitizes ovarian cancer cells to chemotherapy. *Oncol. Lett.* 11: 4235-4239.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.