

cathepsin L (33/2): sc-32320

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. It 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.

REFERENCE

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.

CHROMOSOMAL LOCATION

Genetic locus: CTSB (human) mapping to 9q21.33; Ctsl (mouse) mapping to 13 B3.

SOURCE

cathepsin L (33/2) is a mouse monoclonal antibody raised against procathepsin L of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cathepsin L (33/2) is available conjugated to agarose (sc-32320 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32320 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32320 PE), fluorescein (sc-32320 FITC), Alexa Fluor® 488 (sc-32320 AF488), Alexa Fluor® 546 (sc-32320 AF546), Alexa Fluor® 594 (sc-32320 AF594) or Alexa Fluor® 647 (sc-32320 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32320 AF680) or Alexa Fluor® 790 (sc-32320 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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 (33/2) is recommended for detection of cathepsin L and procathepsin L of human, and to a lesser extent, mouse and rat 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

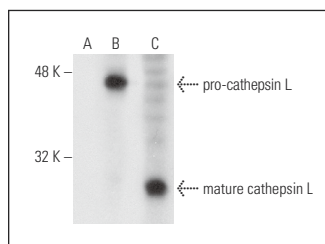
Suitable for use as control antibody for cathepsin L siRNA (h): sc-29938, cathepsin L siRNA (m): sc-29939, cathepsin L shRNA Plasmid (h): sc-29938-SH, cathepsin L shRNA Plasmid (m): sc-29939-SH, cathepsin L shRNA (h) Lentiviral Particles: sc-29938-V and cathepsin L shRNA (m) Lentiviral Particles: sc-29939-V.

Molecular Weight of procathepsin L: 38-42 kDa.

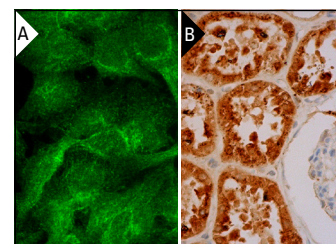
Molecular Weight of mature cathepsin L: 25-35 kDa.

Positive Controls: A549 cell lysate: sc-2413, Hep G2 cell lysate: sc-2227 or cathepsin L (h3): 293 Lysate: sc-158353.

DATA



cathepsin L (33/2): sc-32320. Western blot analysis of cathepsin L expression in non-transfected 293: sc-110760 (A), human cathepsin L transfected 293: sc-158353 (B) and Hep G2 (C) whole cell lysates.



cathepsin L (33/2): sc-32320. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and nuclear staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

1. Odagiri, S., et al. 2011. Immunohistochemical study of microscopic globular bodies of normal human brain. *Biomed. Res.* 32: 337-342.
2. Wang, W., et al. 2018. TRIM37 deficiency induces autophagy through deregulating the MTORC1-TFEB axis. *Autophagy* 14: 1574-1585.
3. Dorris, E.R., et al. 2020. The transcription factor CUX1 negatively regulates invasion in castrate resistant prostate cancer. *Oncotarget* 11: 846-857.
4. Mayca Pozo, F., et al. 2021. MYO10 drives genomic instability and inflammation in cancer. *Sci. Adv.* 7: eabg6908.
5. Wang, S., et al. 2022. SERPINB3 (SCCA1) inhibits cathepsin L and lysoptosis, protecting cervical cancer cells from chemoradiation. *Commun. Biol.* 5: 46.

RESEARCH USE

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