

cathepsin L (B-8): sc-393770

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.

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: Ctsl (mouse) mapping to 13 B3.

SOURCE

cathepsin L (B-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 306-334 at the C-terminus of cathepsin L of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393770 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

cathepsin L (B-8) is recommended for detection of cathepsin L of mouse and rat origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

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

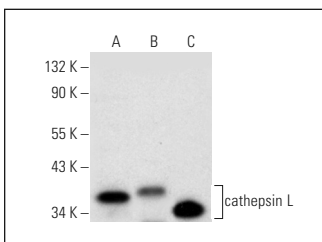
Molecular Weight of mature cathepsin L: 25-35 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, KNRK whole cell lysate: sc-2214 or NIH/3T3 whole cell lysate: sc-2210.

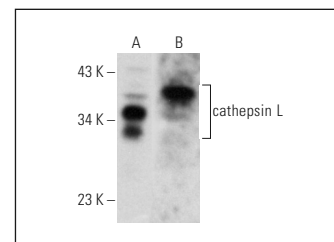
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



cathepsin L (B-8): sc-393770. Western blot analysis of cathepsin L expression in RAW 264.7 (A), KNRK (B) and NIH/3T3 (C) whole cell lysates.



cathepsin L (B-8): sc-393770. Western blot analysis of cathepsin L expression in Hs 181 Tes (A) and PMJ2-PC (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Jiang, M., et al. 2020. Cathepsin B inhibition blocks neurite outgrowth in cultured neurons by regulating lysosomal trafficking and remodeling. *J. Neurochem.* 155: 300-312.

STORAGE

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

RESEARCH USE

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