

# cathepsin L (CPLH-2D4): sc-32801

## 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  $\alpha$ -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.

## CHROMOSOMAL LOCATION

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

## SOURCE

cathepsin L (CPLH-2D4) is a mouse monoclonal antibody raised against native human procathepsin L.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

cathepsin L (CPLH-2D4) is recommended for detection of procathepsin L of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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.

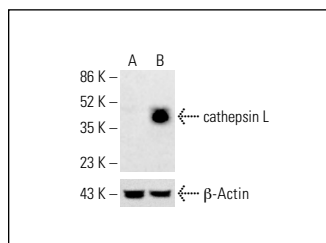
Molecular Weight of procathepsin L: 38-42 kDa.

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

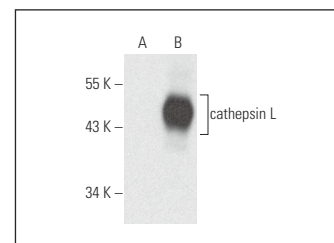
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 (CPLH-2D4): sc-32801. Western blot analysis of cathepsin L expression in untreated (A) and chemically-treated (B) K-562 whole cell lysates. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-525408.  $\beta$ -Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



cathepsin L (CPLH-2D4): sc-32801. 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.

## SELECT PRODUCT CITATIONS

1. Abboud-Jarrous, G., et al. 2008. Cathepsin L is responsible for processing and activation of proheparanase through multiple cleavages of a linker segment. *J. Biol. Chem.* 283: 18167-18176.
2. Puchi, M., et al. 2010. A new nuclear protease with cathepsin L properties is present in HeLa and Caco-2 cells. *J. Cell. Biochem.* 111: 1099-1106.
3. Zhou, J., et al. 2015. A novel autophagy/mitophagy inhibitor liensinine sensitizes breast cancer cells to chemotherapy through DNM1L-mediated mitochondrial fission. *Autophagy* 11: 1259-1279.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.