SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin L (C-18): sc-6498

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: CTSL (human) mapping to 9q21.33, CTSS (human) mapping to 1q21.3; Ctsl (mouse) mapping to 13 B3, Ctss (mouse) mapping to 3 F2.1.

SOURCE

cathepsin L (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of cathepsin L of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6498 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cathepsin L (C-18) is recommended for detection of cathepsin L, L2 and S of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

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

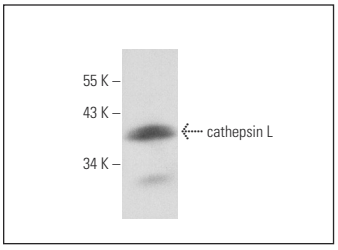
Molecular Weight of pro-cathepsin L: 38-42 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, rat kidney extract: sc-2394 or NIH/3T3 whole cell lysate: sc-2210.

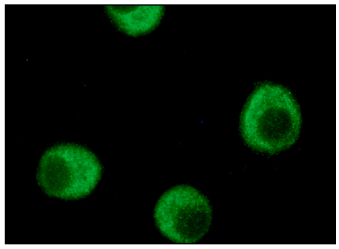
STORAGE

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

DATA



cathepsin L (C-18): sc-6498. Western blot analysis of cathepsin L expression in rat kidney extract.



cathepsin L (C-18): sc-6498. Immunofluorescence staining of methanol-fixed KNRK cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Goulet, B., et al. 2004. A cathepsin L isoform that is devoid of a signal peptide localizes to the nucleus in S phase and processes the CDP/Cux transcription factor. Mol. Cell 14: 207-219.
2. Ruettger, A., et al. 2008. Cathepsins B, K, and L are regulated by a defined collagen type II peptide via activation of classical protein kinase C and p38 MAP kinase in articular chondrocytes. J. Biol. Chem. 283: 1043-1051.
3. Biswas, N., et al. 2009. Cathepsin L colocalizes with chromogranin α in chromaffin vesicles to generate active peptides. Endocrinology 150: 3547-3557.
4. Martino, S., et al. 2013. Expression of cathepsins S and D signals a distinctive biochemical trait in CD34$^+$ hematopoietic stem cells of relapsing-remitting multiple sclerosis patients. Mult. Scler. 19: 1443-1453.
5. Vara, D., et al. 2013. Involvement of PPARγ in the antitumoral action of cannabinoids on hepatocellular carcinoma. Cell Death Dis. 4: e618.
6. Bao, H., et al. 2015. Fine-tuning of NFκB by glycogen synthase kinase 3β directs the fate of glomerular podocytes upon injury. Kidney Int. 87: 1176-1190.
7. Dutta, S., et al. 2016. Neuropilin-2 regulates endosome maturation and EGFR trafficking to support cancer cell pathobiology. Cancer Res. 76: 418-428.

RESEARCH USE

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