

# pan cathepsin (C-5): sc-365614

## BACKGROUND

The cathepsin family of proteolytic enzymes contains several diverse classes of proteases. The cysteine protease class includes cathepsins B, C, L, H, K, S, W and O. The aspartyl protease class consists of cathepsins D, E and F. Most cathepsins are lysosomal and each is involved in normal cellular metabolism, participating in various events such as peptide biosynthesis and protein degradation. Cathepsin J is a murine cysteine protease of the papain family expressed exclusively in the placenta, which may indicate a role in embryo implantation and/or placental function. Cathepsin L is a lysosomal cysteine protease that is most closely related to cathepsin H. Mouse cathepsin M is closely related to cathepsins P and L and is highly expressed in placenta. Cathepsins M, P, Q, and R, are conserved in mice and rats but not found in human or rabbit placenta, showing that this family of proteases are probably restricted to rodents. Cathepsin V, also known as Cathepsin U or Cathepsin L2, is mostly expressed in the thymus and testis and may be involved in tumor processes.

## REFERENCES

1. Ishidoh, K., et al. 1987. Molecular cloning and sequencing of cDNA for rat cathepsin L. *FEBS Lett.* 223: 69-73.
2. Santamaria, I., et al. 1998. Cathepsin L2, a novel human cysteine proteinase produced by breast and colorectal carcinomas. *Cancer Res.* 58: 1624-1630.
3. Tislar, K., et al. 1999. Cathepsin J, a novel murine cysteine protease of the papain family with a placenta-restricted expression. *FEBS Lett.* 459: 299-304.
4. Sol-Church, K., et al. 2000. Mouse cathepsin M, a placenta-specific lysosomal cysteine protease related to cathepsins L and P. *Biochim. Biophys. Acta* 1491: 289-294.
5. Sol-Church, K., et al. 2000. Characterization of mouse cathepsin R, a new member of a family of placentally expressed cysteine proteases. *Biochim. Biophys. Acta* 1492: 488-492.
6. Sol-Church, K., et al. 2002. Evolution of placentally expressed cathepsins. *Biochem. Biophys. Res. Commun.* 293: 23-29.
7. Collette, J., et al. 2004. Biosynthesis and alternate targeting of the lysosomal cysteine protease cathepsin L. *Int. Rev. Cytol.* 241: 1-51.

## SOURCE

pan cathepsin (C-5) is a mouse monoclonal antibody raised against amino acids 34-333 of cathepsin L of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 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

pan cathepsin (C-5) is recommended for detection of cathepsin J, L, M, P, Q, R, U and V of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

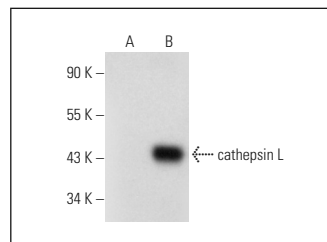
Molecular Weight of pan cathepsin: 38 kDa.

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

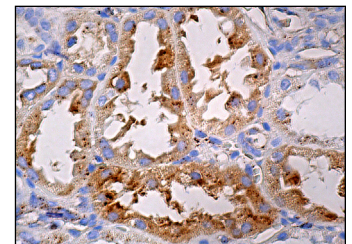
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



pan cathepsin (C-5): sc-365614. 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.



pan cathepsin (C-5): sc-365614. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS

1. Moles, A., et al. 2012. Cathepsin B overexpression due to acid sphingomyelinase ablation promotes liver fibrosis in Niemann-Pick disease. *J. Biol. Chem.* 287: 1178-1188.

## 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.