

# cathepsin K (H-50): sc-30056

## 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 K expression is highest in bone, cartilage and skeletal muscle. The strongest mRNA levels are revealed in osteoclasts.

## REFERENCES

1. Ishidoh, K., et al. 1987. Molecular cloning and sequencing of cDNA for rat cathepsin L. *FEBS Lett.* 223: 69-73.
2. Ishidoh, K., et al. 1987. Molecular cloning and sequencing of cDNA for rat cathepsin H. Homology in pro-peptide regions of cysteine proteases. *FEBS Lett.* 226: 33-37.
3. Redecker, B., et al. 1991. Molecular organization of the human cathepsin D gene. *DNA Cell Biol.* 10: 423-431.
4. Shi, G.P., et al. 1992. Molecular cloning and expression of human alveolar macrophage cathepsin S, an elastinolytic cysteine protease. *J. Biol. Chem.* 267: 7258-7262.
5. Heusel, J.W., et al. 1993. Molecular cloning, chromosomal location, and tissue-specific expression of the murine cathepsin G gene. *Blood* 81: 1614-1623.
6. Guenette, R.S., et al. 1994. Cathepsin B, a cysteine protease implicated in metastatic progression, is also expressed during regression of the rat prostate and mammary glands. *Eur. J. Biochem.* 226: 311-321.
7. Okamoto, K., et al. 1995. Isolation and sequencing of two cDNA clones encoding rat spleen cathepsin E and analysis of the activation of purified procathepsin E. *Arch. Biochem. Biophys.* 322: 103-111.
8. Shi, G.P., et al. 1995. Molecular cloning of human cathepsin O, a novel endoproteinase and homologue of rabbit OC2. *FEBS Lett.* 357: 129-134.

## CHROMOSOMAL LOCATION

Genetic locus: CTSK (human) mapping to 1q21.3; Ctsk (mouse) mapping to 3 F2.1.

## SOURCE

cathepsin K (H-50) is a rabbit polyclonal antibody raised against amino acids 191-240 mapping within an internal region of cathepsin K 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.

## STORAGE

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

## APPLICATIONS

cathepsin K (H-50) is recommended for detection of cathepsin K 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).

cathepsin K (H-50) is also recommended for detection of cathepsin K in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for cathepsin K siRNA (h): sc-29936, cathepsin K siRNA (m): sc-29937, cathepsin K shRNA Plasmid (h): sc-29936-SH, cathepsin K shRNA Plasmid (m): sc-29937-SH, cathepsin K shRNA (h) Lentiviral Particles: sc-29936-V and cathepsin K shRNA (m) Lentiviral Particles: sc-29937-V.

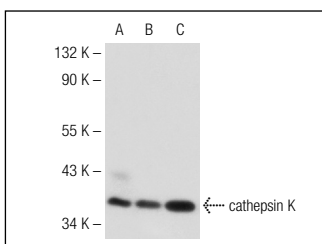
Molecular Weight of cathepsin K: 39 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, MCF7 whole cell lysate: sc-2206 or C32 whole cell lysate: sc-2205.

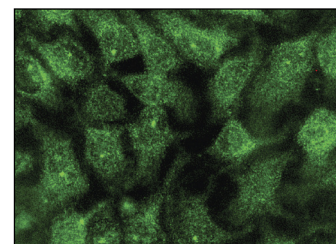
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



cathepsin K (H-50): sc-30056. Western blot analysis of cathepsin K expression in MCF7 (A), H69AR (B) and C32 (C) whole cell lysates.



cathepsin K (H-50): sc-30056. Immunofluorescence staining of methanol-fixed HeLa cells showing cell surface localization.

## SELECT PRODUCT CITATIONS

1. Chang, C.J., et al. 2009. Degradation of the internal elastic laminae in vein grafts of rats with aortocaval fistulae: potential impact on graft vasculopathy. *Am. J. Pathol.* 174: 1837-1846.

## RESEARCH USE

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