

# cathepsin Z (F-6): sc-376976

## 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 G expression is restricted to bone marrow and early myeloid cells. cathepsin Z, also designated cathepsin X or P, shows both carboxy-dipeptidase and carboxy-monopeptidase activity. It is a widely expressed protein that, similar to other cathepsins, may be involved in tumor progression. cathepsin Z plays a role in normal intracellular protein degradation.

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: CTSZ (human) mapping to 20q13.32; Ctsz (mouse) mapping to 2 H4.

## SOURCE

cathepsin Z (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 277-303 at the C-terminus of cathepsin Z 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.

cathepsin Z (F-6) is available conjugated to agarose (sc-376976 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376976 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376976 PE), fluorescein (sc-376976 FITC), Alexa Fluor<sup>®</sup> 488 (sc-376976 AF488), Alexa Fluor<sup>®</sup> 546 (sc-376976 AF546), Alexa Fluor<sup>®</sup> 594 (sc-376976 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-376976 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-376976 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-376976 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376976 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

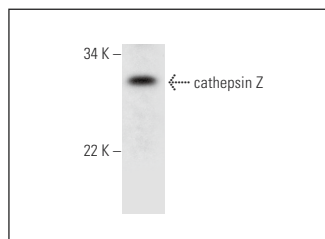
cathepsin Z (F-6) is recommended for detection of cathepsin Z of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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).

Suitable for use as control antibody for cathepsin Z siRNA (h): sc-44661, cathepsin Z siRNA (m): sc-44662, cathepsin Z shRNA Plasmid (h): sc-44661-SH, cathepsin Z shRNA Plasmid (m): sc-44662-SH, cathepsin Z shRNA (h) Lentiviral Particles: sc-44661-V and cathepsin Z shRNA (m) Lentiviral Particles: sc-44662-V.

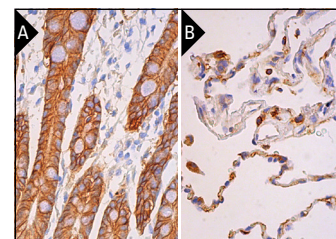
Molecular Weight of cathepsin Z: 33 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, SK-MEL-28 cell lysate: sc-2236 or Caki-1 cell lysate: sc-2224.

## DATA



cathepsin Z (F-6): sc-376976. Western blot analysis of cathepsin Z expression in SK-MEL-28 whole cell lysate.



cathepsin Z (F-6): sc-376976. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and membrane staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing cytoplasmic staining of pneumocytes and macrophages (B).

## SELECT PRODUCT CITATIONS

1. Takeda, T., et al. 2019. Upregulation of IGF2R evades lysosomal dysfunction-induced apoptosis of cervical cancer cells via transport of cathepsins. Cell Death Dis. 10: 876.
2. Cui, C., et al. 2021. A lysosome-targeted DNA nanodevice selectively targets macrophages to attenuate tumours. Nat. Nanotechnol. 16: 1394-1402.
3. Kennedy, G.T., et al. 2022. Preclinical evaluation of an activity-based probe for intraoperative imaging of esophageal cancer. Mol. Imaging 2022: 5447290.

## 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.