

cathepsin D (C-5): sc-377124

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. Cathepsins may also cleave some protein precursors, thereby releasing regulatory peptides. The promoter region of the cathepsin D gene contains five Sp1 binding sites and four AP-2 binding sites.

REFERENCE

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.

CHROMOSOMAL LOCATION

Genetic locus: CTSD (human) mapping to 11p15.5; Ctsd (mouse) mapping to 7 F5.

SOURCE

cathepsin D (C-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 171-189 within an internal region of cathepsin D of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cathepsin D (C-5) is available conjugated to agarose (sc-377124 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377124 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377124 PE), fluorescein (sc-377124 FITC), Alexa Fluor[®] 488 (sc-377124 AF488), Alexa Fluor[®] 546 (sc-377124 AF546), Alexa Fluor[®] 594 (sc-377124 AF594) or Alexa Fluor[®] 647 (sc-377124 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377124 AF680) or Alexa Fluor[®] 790 (sc-377124 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377124 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

cathepsin D (C-5) is recommended for detection of cathepsin D 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 D siRNA (h): sc-29239, cathepsin D siRNA (m): sc-29934, cathepsin D siRNA (r): sc-270475, cathepsin D shRNA Plasmid (h): sc-29239-SH, cathepsin D shRNA Plasmid (m): sc-29934-SH, cathepsin D shRNA Plasmid (r): sc-270475-SH, cathepsin D shRNA (h) Lentiviral Particles: sc-29239-V, cathepsin D shRNA (m) Lentiviral Particles: sc-29934-V and cathepsin D shRNA (r) Lentiviral Particles: sc-270475-V.

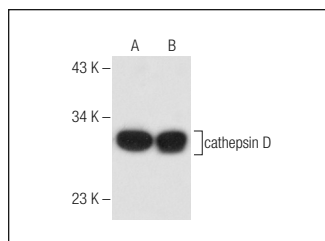
Molecular Weight of immature cathepsin D: 52 kDa.

Molecular Weight of intermediate cathepsin D: 46 kDa.

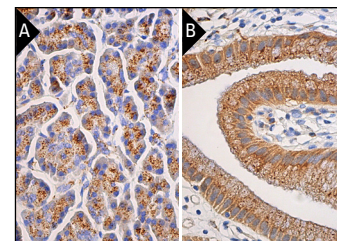
Molecular Weight of mature cathepsin D: 33 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, ZR-75-1 cell lysate: sc-2241 or K-562 whole cell lysate: sc-2203.

DATA



cathepsin D (C-5): sc-377124. Western blot analysis of cathepsin D expression in MCF7 (A) and ZR-75-1 (B) whole cell lysates.



cathepsin D (C-5): sc-377124. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Cheng, A.L., et al. 2008. Identifying cathepsin D as a biomarker for differentiation and prognosis of nasopharyngeal carcinoma by laser capture microdissection and proteomic analysis. J. Proteome Res. 7: 2415-2426.
2. Jarzina, S., et al. 2022. Application of the adverse outcome pathway concept to *in vitro* nephrotoxicity assessment: kidney injury due to receptor-mediated endocytosis and lysosomal overload as a case study. Front. Toxicol. 4: 864441.

RESEARCH USE

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