

cathepsin D (49): sc-136282

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.

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. 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.
8. 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.

CHROMOSOMAL LOCATION

Genetic locus: CTSD (human) mapping to 11p15.5.

SOURCE

cathepsin D (49) is a mouse monoclonal antibody raised against cathepsin D of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 0.5 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 D (49) is recommended for detection of cathepsin D of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for cathepsin D siRNA (h): sc-29239, cathepsin D shRNA Plasmid (h): sc-29239-SH and cathepsin D shRNA (h) Lentiviral Particles: sc-29239-V.

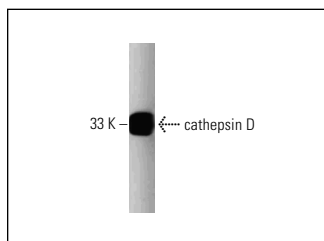
Molecular Weight of immature cathepsin D: 52 kDa.

Molecular Weight of intermediate cathepsin D: 46 kDa.

Molecular Weight of mature cathepsin D: 33 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, MCF7 whole cell lysate: sc-2206 or MDA-MB-231 cell lysate: sc-2232.

DATA



cathepsin D (49): sc-136282. Western blot analysis of cathepsin D expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2018. Suppression of chloride voltage-gated channel 3 expression increases sensitivity of human glioma U251 cells to cisplatin through lysosomal dysfunction. Oncol. Lett. 16: 835-842.
2. Ding, Q. and Zhu, H. 2018. Upregulation of PSMB8 and cathepsins in the human brains of dementia with Lewy bodies. Neurosci. Lett. 678: 131-137.
3. Hu, Y., et al. 2019. Enhancing tumor chemotherapy and overcoming drug resistance through autophagy-mediated intracellular dissolution of zinc oxide nanoparticles. Nanoscale 11: 11789-11807.
4. Wang, Y., et al. 2020. Acetyltransferase GCN5 regulates autophagy and lysosome biogenesis by targeting TFEB. EMBO Rep. 21: e48335.

RESEARCH USE

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



See **cathepsin D (D-7): sc-377299** for cathepsin D antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.