SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin D (E-7): sc-13148

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

cathepsin D (E-7) is a mouse monoclonal antibody raised against amino acids 1-75 of cathepsin D of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cathepsin D (E-7) is available conjugated to agarose (sc-13148 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-13148 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13148 PE), fluorescein (sc-13148 FITC), Alexa Fluor® 488 (sc-13148 AF488), Alexa Fluor® 546 (sc-13148 AF546), Alexa Fluor® 594 (sc-13148 AF594) or Alexa Fluor® 647 (sc-13148 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13148 AF680) or Alexa Fluor® 790 (sc-13148 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

cathepsin D (E-7) is recommended for detection of cathepsin D of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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), flow cytometry (1 µg per 1 x 10^6 cells) 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 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.

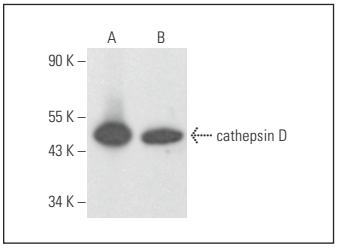
Molecular Weight of mature cathepsin D: 33 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, A-431 whole cell lysate: sc-2201 or SK-BR-3 cell lysate: sc-2218.

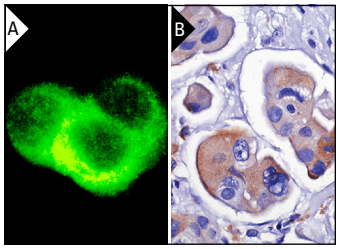
STORAGE

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

DATA



cathepsin D (E-7): sc-13148. Western blot analysis of cathepsin D expression in SK-BR-3 (**A**) and A-431 (**B**) whole cell lysates.



cathepsin D (E-7): sc-13148. Immunofluorescence staining of methanol-fixed ZR-75-1 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast tumor showing cytoplasmic staining (**B**).

SELECT PRODUCT CITATIONS

1. Wei, X., et al. 2006. MUC1 oncoprotein stabilizes and activates estrogen receptor α. Mol. Cell 21: 295-305.
2. Wu, H., et al. 2013. *Candida albicans* secreted aspartic proteases 4-6 induce apoptosis of epithelial cells by a novel Trojan horse mechanism. FASEB J. 27: 2132-2144.
3. Qi, Y.J., et al. 2014. Proteomic profiling of N-linked glycoproteins identifies ConA-binding procathepsin D as a novel serum biomarker for hepatocellular carcinoma. Proteomics 14: 186-195.
4. Zou, M., et al. 2015. Oroxylin A induces autophagy in human malignant glioma cells via the mTOR-Stat3-Notch signaling pathway. Mol. Carcinog. 54: 1363-1375.
5. Li, L., et al. 2016. Riccardin D-N induces lysosomal membrane permeabilization by inhibiting acid sphingomyelinase and interfering with sphingomyelin metabolism *in vivo*. Toxicol. Appl. Pharmacol. 310: 175-184.
6. Zhang, J., et al. 2017. Zinc oxide nanoparticles harness autophagy to induce cell death in lung epithelial cells. Cell Death Dis. 8: e2954.
7. Ha, Y., et al. 2019. Induction of lysosome-associated protein transmembrane 4 β via sulfatase 2 enhances autophagic flux in liver cancer cells. Hepatol. Commun. 3: 1520-1543.
8. Nicolas, V. and Lievin-Le Moal, V. 2020. Small trafficking inhibitor retro-2 disrupts the microtubule-dependent trafficking of autophagic vacuoles. Front. Cell Dev. Biol. 8: 464.
9. Chae, C.W., et al. 2022. High glucose-mediated VPS26a down-regulation dysregulates neuronal amyloid precursor protein processing and τ phosphorylation. Br. J. Pharmacol. 179: 3934-3950.

RESEARCH USE

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