SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin S (E-3): sc-271619

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. Cathepsin S has been shown to be an elastinolytic cysteine proteinase present in alveolar macrophages.

CHROMOSOMAL LOCATION

Genetic locus: CTSS (human) mapping to 1q21.3; Ctss (mouse) mapping to 3 F2.1.

SOURCE

cathepsin S (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 302-331 at the C-terminus of cathepsin S 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 S (E-3) is available conjugated to agarose (sc-271619 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271619 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271619 PE), fluorescein (sc-271619 FITC), Alexa Fluor® 488 (sc-271619 AF488), Alexa Fluor® 546 (sc-271619 AF546), Alexa Fluor® 594 (sc-271619 AF594) or Alexa Fluor® 647 (sc-271619 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271619 AF680) or Alexa Fluor® 790 (sc-271619 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271619 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

cathepsin S (E-3) is recommended for detection of cathepsin S 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 S siRNA (h): sc-29940, cathepsin S siRNA (m): sc-29941, cathepsin S shRNA Plasmid (h): sc-29940-SH, cathepsin S shRNA Plasmid (m): sc-29941-SH, cathepsin S shRNA (h) Lentiviral Particles: sc-29940-V and cathepsin S shRNA (m) Lentiviral Particles: sc-29941-V.

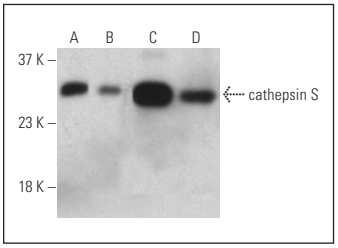
Molecular Weight of cathepsin S precursor: 37 kDa.

Molecular Weight of mature cathepsin S: 24 kDa.

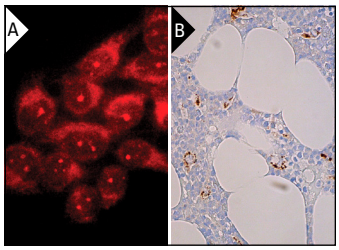
STORAGE

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

DATA



cathepsin S (E-3): sc-271619. Western blot analysis of cathepsin S expression in GA-10 (**A**), THP-1 (**B**) and U-698-M (**C**) whole cell lysates and human spleen tissue extract (**D**). Detection reagent used: m-IgG_1 BP-HRP: sc-525408.



cathepsin S (E-3): sc-271619. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic staining of subset of hematopoietic cells (**B**).

SELECT PRODUCT CITATIONS

1. Samouillan, V., et al. 2012. Lipid loading of human vascular smooth muscle cells induces changes in tropoelastin protein levels and physical structure. Biophys. J. 103: 532-540.
2. Vaithilingam, A., et al. 2013. A simple methodology to assess endolysosomal protease activity involved in antigen processing in human primary cells. BMC Cell Biol. 14: 35.
3. Castellano, J., et al. 2014. Amyloid-β increases metallo- and cysteine protease activities in human macrophages. J. Vasc. Res. 51: 58-67.
4. de Gonzalo-Calvo, D., et al. 2015. Intratumor cholesteryl ester accumulation is associated with human breast cancer proliferation and aggressive potential: a molecular and clinicopathological study. BMC Cancer 15: 460.
5. Tam, W.Y., et al. 2016. The association between Laminin and microglial morphology *in vitro*. Sci. Rep. 6: 28580.
6. Maatouk, L., et al. 2018. TLR9 activation via microglial glucocorticoid receptors contributes to degeneration of midbrain dopamine neurons. Nat. Commun. 9: 2450.
7. Kim, S., et al. 2019. Regulating BRCA1 protein stability by cathepsin S-mediated ubiquitin degradation. Cell Death Differ. 26: 812-825.
8. Hermida-Nogueira, L., et al. 2020. Deciphering the secretome of leukocyte-platelet rich fibrin: towards a better understanding of its wound healing properties. Sci. Rep. 10: 14571.
9. Ziros, P.G., et al. 2021. Mice hypomorphic for Keap1, a negative regulator of the Nrf2 antioxidant response, show age-dependent diffuse goiter with elevated thyrotropin levels. Thyroid 31: 23-35.

RESEARCH USE

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