SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin S (B-12): sc-271573

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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.

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.

CHROMOSOMAL LOCATION

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

SOURCE

cathepsin S (B-12) 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271573 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

cathepsin S (B-12) 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) 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.

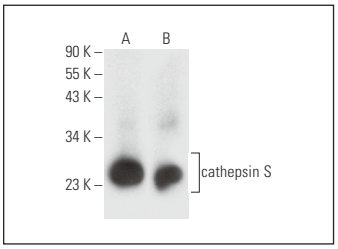
Molecular Weight of mature cathepsin S: 24 kDa.

Positive Controls: GA-10 whole cell lysate: sc-364230, THP-1 cell lysate: sc-2238 or U-87 MG cell lysate: sc-2411.

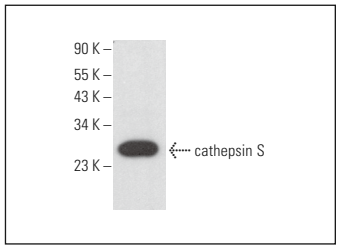
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



cathepsin S (B-12): sc-271573. Western blot analysis of cathepsin S expression in U-87 MG (**A**) and GA-10 (**B**) whole cell lysates.



cathepsin S (B-12): sc-271573. Western blot analysis of cathepsin S expression in THP-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Granato, M., et al. 2014. Hepatitis C virus present in the sera of infected patients interferes with the autophagic process of monocytes impairing their *in-vitro* differentiation into dendritic cells. Biochim. Biophys. Acta 1843: 1348-1355.
2. Velásquez, L.N., et al. 2017. *Brucella abortus* down-regulates MHC class II by the IL-6-dependent inhibition of CIITA through the downmodulation of IFN regulatory factor-1 (IRF-1). J. Leukoc. Biol. 101: 759-773.
3. Peng, H., et al. 2023. Cathepsin S inhibition in dendritic cells prevents Th17 cell differentiation in perivascular adipose tissues following vascular injury in diabetic rats. J. Biochem. Mol. Toxicol. 37: e23419.

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.