

cathepsin S (G-5): sc-74429

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 elastolytic 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.
3. Redecker, B., et al. 1991. Molecular organization of the human cathepsin D gene. DNA Cell Biol. 10: 423-431.

CHROMOSOMAL LOCATION

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

SOURCE

cathepsin S (G-5) is a mouse monoclonal antibody raised against amino acids 191-240 of cathepsin S of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cathepsin S (G-5) 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.

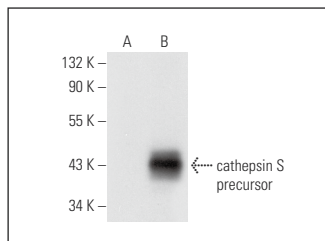
Molecular Weight of mature cathepsin S: 24 kDa.

Positive Controls: cathepsin S (h): 293T Lysate: sc-158354, GA-10 whole cell lysate: sc-364230 or U-87 MG cell lysate: sc-2411.

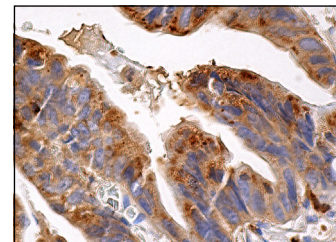
STORAGE

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

DATA



cathepsin S (G-5): sc-74429. Western blot analysis of cathepsin S expression in non-transfected: sc-117752 (A) and human cathepsin S transfected: sc-158354 (B) 293T whole cell lysates.



cathepsin S (G-5): sc-74429. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Jackson, T.C., et al. 2015. The nuclear splicing factor RNA binding motif 5 promotes caspase activation in human neuronal cells, and increases after traumatic brain injury in mice. J. Cereb. Blood Flow Metab. 35: 655-666.
2. Chen, Y.D., et al. 2017. S100A10 regulates ULK1 localization to ER-mitochondria contact sites in IFN-γ-triggered autophagy. J. Mol. Biol. 429: 142-157.
3. Chen, Y.D., et al. 2017. Exophagy of annexin A2 via RAB11, RAB8A and RAB27A in IFN-γ-stimulated lung epithelial cells. Sci. Rep. 7: 5676.
4. Lin, H.H., et al. 2019. Lysosomal cysteine protease cathepsin S is involved in cancer cell motility by regulating store-operated Ca²⁺ entry. Biochim. Biophys. Acta Mol. Cell Res. 1866: 118517.
5. Ni, H., et al. 2020. Nicotine modulates CTSS (cathepsin S) synthesis and secretion through regulating the autophagy-lysosomal machinery in atherosclerosis. Arterioscler. Thromb. Vasc. Biol. 40: 2054-2069.
6. Tu, N.H., et al. 2021. cathepsin S evokes PAR₂-dependent pain in oral squamous cell carcinoma patients and preclinical mouse models. Cancers 13: 4697.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **cathepsin S (E-3): sc-271619** for cathepsin S antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.