

cathepsin B (S-12): sc-6493

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 B is expressed in luminal epithelial cells, indicating that cathepsin B is a marker for secretory cell death.

CHROMOSOMAL LOCATION

Genetic locus: CTSB (human) mapping to 8p23.1; Ctsb (mouse) mapping to 14 D1.

SOURCE

cathepsin B (S-12) is available as an affinity purified goat (sc-6493) or rabbit (sc-6493-R) affinity purified polyclonal antibody raised against a peptide mapping at the N-terminus of cathepsin B of human origin.

PRODUCT

Each vial contains either 100 µg (sc-6493) or 200 µg (sc-6493-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6493 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cathepsin B (S-12) is recommended for detection of cathepsin B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

cathepsin B (S-12) is also recommended for detection of cathepsin B in additional species, including equine and avian.

Suitable for use as control antibody for cathepsin B siRNA (h): sc-29238, cathepsin B siRNA (m): sc-29933, cathepsin B shRNA Plasmid (h): sc-29238-SH, cathepsin B shRNA Plasmid (m): sc-29933-SH, cathepsin B shRNA (h) Lentiviral Particles: sc-29238-V and cathepsin B shRNA (m) Lentiviral Particles: sc-29933-V.

Molecular Weight of cathepsin B proenzyme: 37 kDa.

Molecular Weight of activated cathepsin B: 25 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260 or RAW 264.7 whole cell lysate: sc-2211.

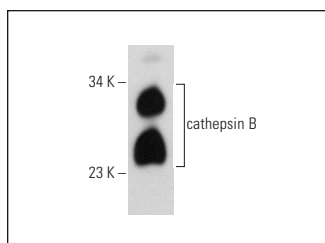
STORAGE

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

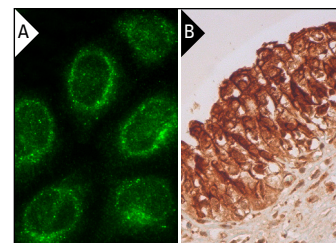
RESEARCH USE

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

DATA



cathepsin B (S-12)-R: sc-6493-R. Western blot analysis of cathepsin B expression in WI-38 whole cell lysate.



cathepsin B (S-12)-R: sc-6493-R. Immunofluorescence staining of methanol-fixed HeLa cells showing perinuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic, membrane and nuclear staining of urothelial cells (B).

SELECT PRODUCT CITATIONS

1. Kingham, P.J., et al. 2001. Microglial secreted cathepsin B induces neuronal apoptosis. *J. Neurochem.* 76: 1475-1484.
2. Windelborn, J.A. and Lipton, P. 2008. Lysosomal release of cathepsins causes ischemic damage in the rat hippocampal slice and depends on NMDA-mediated calcium influx, arachidonic acid metabolism, and free radical production. *J. Neurochem.* 106: 56-69.
3. Qu, Y., et al. 2009. P2X7 receptor-stimulated secretion of MHC class II-containing exosomes requires the ASC/NLRP3 inflammasome but is independent of caspase-1. *J. Immunol.* 182: 5052-5062.
4. Otomo, T., et al. 2009. Inhibition of autophagosome formation restores mitochondrial function in mucopolidosis II and III skin fibroblasts. *Mol. Genet. Metab.* 98: 393-399.
5. Otomo, T., et al. 2011. Lysosomal storage causes cellular dysfunction in mucopolidosis II skin fibroblasts. *J. Biol. Chem.* 286: 35283-35290.
6. Li, G., et al. 2011. Proteomic analysis of human mesenchymal stem cells. *Methods Mol. Biol.* 698: 443-457.
7. Margalef, P., et al. 2012. A truncated form of IKK α is responsible for specific nuclear IKK activity in colorectal cancer. *Cell Rep.* 2: 840-854.
8. Martino, S., et al. 2013. Expression of cathepsins S and D signals a distinctive biochemical trait in CD34⁺ hematopoietic stem cells of relapsing-remitting multiple sclerosis patients. *Mult. Scler.* 19: 1443-1453.



Try **cathepsin B (H-5): sc-365558** or **cathepsin B (CB131): sc-58333**, our highly recommended monoclonal alternatives to cathepsin B (S-12). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **cathepsin B (H-5): sc-365558**.