SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin C (D-6): sc-74590

BACKGROUND

Cathepsin C, known also as dipeptidyl aminopeptidase I (DPPI), is a tetrameric lysosomal cysteine peptidase belonging to the papain family. Cathepsin C is involved in intracellular protein degradation and the processing of protein precursors, where it participates in cell growth, neuraminidase activation and platelet factor XIII activation. Cathepsin C is largely related to other lysosomal cysteine proteinases, including cathepsin B, H and L. Enzymatically, cathepsin C is capable of sequentially removing dipeptides from the amino terminus, and it requires halide ions, namely chloride ions, and thiols for complete enzymatic activity. Protein levels of cathepsin C are detected in a variety of tissues, and it is most highly expressed in spleen, kidney, cytotoxic lymphocytes and myeloid cells, where it localizes to the secretory granule compartment. Cathepsin C is initially synthesized as a proenzyme that is rapidly processed to generate two distinct chains that function together as the mature form of the enzyme.

CHROMOSOMAL LOCATION

Genetic locus: CTSC (human) mapping to 11q14.2; Ctsc (mouse) mapping to 7 E1.

SOURCE

cathepsin C (D-6) is a mouse monoclonal antibody raised against amino acids 251-394 mapping mapping to the heavy chain of cathepsin C 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 C (D-6) is available conjugated to agarose (sc-74590 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-74590 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74590 PE), fluorescein (sc-74590 FITC), Alexa Fluor® 488 (sc-74590 AF488), Alexa Fluor® 546 (sc-74590 AF546), Alexa Fluor® 594 (sc-74590 AF594) or Alexa Fluor® 647 (sc-74590 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74590 AF680) or Alexa Fluor® 790 (sc-74590 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cathepsin C (D-6) is recommended for detection of cathepsin C 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).

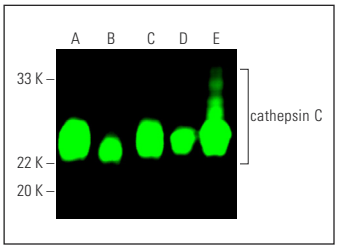
Suitable for use as control antibody for cathepsin C siRNA (h): sc-41471, cathepsin C siRNA (m): sc-41472, cathepsin C shRNA Plasmid (h): sc-41471-SH, cathepsin C shRNA Plasmid (m): sc-41472-SH, cathepsin C shRNA (h) Lentiviral Particles: sc-41471-V and cathepsin C shRNA (m) Lentiviral Particles: sc-41472-V.

Molecular Weight of cathepsin C: 55/25/8 kDa.

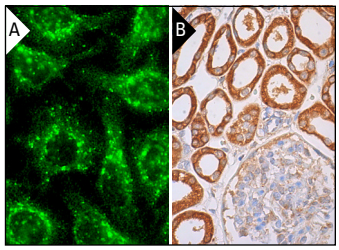
STORAGE

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

DATA



cathepsin C (D-6) Alexa Fluor® 680: sc-74590 AF680. Direct near-Infrared western blot analysis of cathepsin C expression in WI-38 (**A**), HISM (**B**), U-937 (**C**) and M1 (**D**) whole cell lysates and rat liver tissue extract (**E**). Blocked with UltraCruz® Blocking Reagent: sc-516214.



cathepsin C (D-6): sc-74590. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). cathepsin C (D-6) HRP: sc-74590 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Yu, J.H., et al. 2009. Altered gene expression in cerulein-stimulated pancreatic acinar cells: pathologic mechanism of acute pancreatitis. Korean J. Physiol. Pharmacol. 13: 409-416.
2. Nga, B.T., et al. 2015. Identification and characterization of the interactive proteins with cytotoxic T-lymphocyte antigen-2α. Biosci. Biotechnol. Biochem. 79: 587-597.
3. Hamon, Y., et al. 2016. Neutrophilic cathepsin C is maturated by a multistep proteolytic process and secreted by activated cells during inflammatory lung diseases. J. Biol. Chem. 291: 8486-8499.
4. Gu, Y., et al. 2017. Upregulation of cathepsin C expression contributes to endothelial chymase activation in preeclampsia. Hypertens. Res. 40: 976-981.
5. Božic, J., et al. 2018. Glucosamine prevents polarization of cytotoxic granules in NK-92 cells by disturbing FOXO1/ERK/paxillin phosphorylation. PLoS ONE 13: e0200757.
6. Bayraktar, E.C., et al. 2019. MITO-Tag Mice enable rapid isolation and multimodal profiling of mitochondria from specific cell types *in vivo*. Proc. Natl. Acad. Sci. USA 116: 303-312.
7. Kavcic, N., et al. 2020. Intracellular cathepsin C levels determine sensitivity of cells to leucyl-leucine methyl ester-triggered apoptosis. FEBS J. 287: 5148-5166.
8. Anastasia, I., et al. 2021. Mitochondria-rough-ER contacts in the liver regulate systemic lipid homeostasis. Cell Rep. 34: 108873.

RESEARCH USE

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