SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin B (H-5): sc-365558

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 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 (H-5) is a mouse monoclonal antibody raised against amino acids 1-339 representing full length cathepsin B 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.

cathepsin B (H-5) is available conjugated to agarose (sc-365558 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-365558 PE), fluorescein (sc-365558 FITC), Alexa Fluor® 488 (sc-365558 AF488), Alexa Fluor® 546 (sc-365558 AF546), Alexa Fluor® 594 (sc-365558 AF594) or Alexa Fluor® 647 (sc-365558 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365558 AF680) or Alexa Fluor® 790 (sc-365558 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cathepsin B (H-5) is recommended for detection of cathepsin B 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 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, A549 cell lysate: sc-2413 or HT-1080 whole cell lysate: sc-364183.

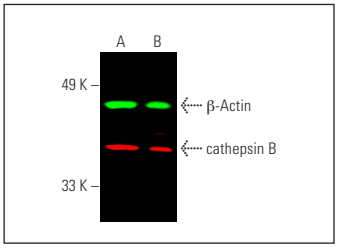
RESEARCH USE

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

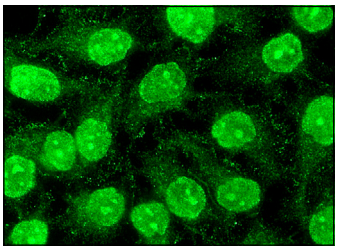
STORAGE

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

DATA



Simultaneous direct near-infrared western blot analysis of cathepsin B expression, detected with cathepsin B (H-5) Alexa Fluor® 790: sc-365558 AF790 and β-Actin expression, detected with β-Actin (C4) Alexa Fluor® 680: sc-47778 AF680 in HT-1080 (**A**) and A549 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



cathepsin B (H-5): sc-365558. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear, nucleolar and membrane localization.

SELECT PRODUCT CITATIONS

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2. Ding, Q. and Zhu, H. 2018. Upregulation of PSMB8 and cathepsins in the human brains of dementia with Lewy bodies. Neurosci. Lett. 678: 131-137.
3. Kumari, S., et al. 2019. Dopamine promotes cathepsin B-mediated amyloid precursor protein degradation by reactive oxygen species-sensitive mechanism in neuronal cell. Mol. Cell. Biochem. 454: 153-163.
4. Li, F., et al. 2019. HSPB8 overexpression prevents disruption of blood-brain barrier by promoting autophagic flux after cerebral ischemia/reperfusion injury. J. Neurochem. 148: 97-113.
5. Tripathi, A., et al. 2019. Antiretroviral-mediated microglial activation involves dysregulated autophagy and lysosomal dysfunction. Cells 8: 1168.
6. Drews, K., et al. 2019. Glucosylceramidase maintains influenza infection by regulating endocytosis. J. Virol. 93: e00017-19.
7. Zhuang, X.X., et al. 2020. Pharmacological enhancement of TFEB-mediated autophagy alleviated neuronal death in oxidative stress-induced Parkinson's disease models. Cell Death Dis. 11: 128.
8. Deng, W., et al. 2020. Disulfiram suppresses NLRP3 inflammasome activation to treat peritoneal and gouty inflammation. Free Radic. Biol. Med. 152: 8-17.
9. Dai, Z., et al. 2020. Rational design of a humanized antibody inhibitor of cathepsin B. Biochemistry 59: 1420-1427.

PROTOCOLS

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