SANTA CRUZ BIOTECHNOLOGY, INC.

Hepsin (2D5): sc-517056

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Extracellular proteases mediate the digestion of neighboring extracellular matrix components in initial tumor growth, allow desquamation of tumor cells into the surrounding environment, provide the basis for invasion of basement membranes in targeted metastatic organs and are required for release and activation of many growth and angiogenic factors. Hepsin (also known as TMPRSS1) is a type II transmembrane serine protease in mammalian cells that is highly expressed on the surface of hepatocytes. Hepsin is frequently overexpressed in several tumors, suggesting that it is a candidate protease in the invasive process and growth capacity of tumor cells. The basal promoter region of the Hepsin gene contains potential binding sites for SP1, AP2, C/EBP, LF-A1 and E box, which may be responsible for the ubiquitous expression of the protein, which shows preferential expression in liver and kidney. Hepsin is located at the plasma membrane, with its catalytic subunit (C-terminal half) at the cell surface and its N-terminus facing the cytosol. Hepsin has been shown to play a role in normal cell growth, embryogenesis, hepatocyte growth, blood coagulation and fertilization. In addition, Hepsin converts zymogen Factor VII to Factor VIIa, which is capable of initiating a coagulation pathway on the cell surface and ultimately leads to Thrombin formation.

REFERENCES

1. Tsuji, A., et al. 1991. Characterization of hepsin, a membrane bound protease. Biomed. Biochim. Acta 50: 791-793.
2. Tsuji, A., et al. 1991. Hepsin, a cell membrane-associated protease. Characterization, tissue dist-ribution, and gene localization. J. Biol. Chem. 266: 16948-16953.
3. Kazama, Y., et al. 1995. Hepsin, a putative membrane-associated serine protease, activates human factor VII and initiates a pathway of blood coagulation on the cell surface leading to thrombin formation. J. Biol. Chem. 270: 66-72.
4. Tanimoto, H., et al. 1997. Hepsin, a cell surface serine protease identified in hepatoma cells, is overexpressed in ovarian cancer. Cancer Res. 57: 2884-2887.
5. Wu, Q., et al. 1998. Generation and characterization of mice deficient in hepsin, a hepatic transmembrane serine protease. J. Clin. Invest. 101: 321-326.
6. Kawamura, S., et al. 1999. Complete nucleotide sequence, origin of isoform and functional characterization of the mouse hepsin gene. Eur. J. Biochem. 262: 755-764.
7. Yu, I.S., et al. 2000. Mice deficient in hepsin, a serine protease, exhibit normal embryogenesis and unchanged hepatocyte regeneration ability. Thromb. Haemost. 84: 865-870.

CHROMOSOMAL LOCATION

Genetic locus: HPN (human) mapping to 19q13.12.

SOURCE

Hepsin (2D5) is a mouse monoclonal antibody raised against amino acids 40-417 representing full length Hepsin of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Hepsin (2D5) is recommended for detection of Hepsin of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Hepsin siRNA (h): sc-60782, Hepsin shRNA Plasmid (h): sc-60782-SH and Hepsin shRNA (h) Lentiviral Particles: sc-60782-V.

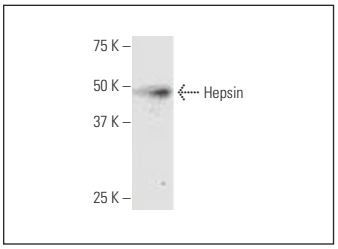
Molecular Weight of Hepsin: 51 kDa.

Positive Controls: human liver extract: sc-363766.

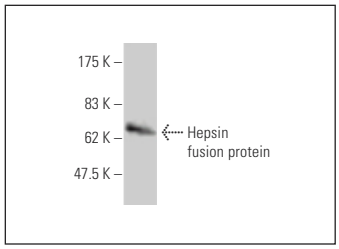
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Hepsin (2D5): sc-517056. Western blot analysis of Hepsin expression in human liver tissue extract.



Hepsin (2D5): sc-517056. Western blot analysis of human recombinant Hepsin fusion protein.

SELECT PRODUCT CITATIONS

1. Cheng, H., et al. 2017. Expression levels and clinical significance of hepsin and HMGB1 proteins in cervical carcinoma. Oncol. Lett. 14: 159-164.

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.