

# Hepsin (P-16): sc-23776

## 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 distribution, 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.

## CHROMOSOMAL LOCATION

Genetic locus: Hpn (mouse) mapping to 7 B1.

## SOURCE

Hepsin (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Hepsin of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23776 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

Hepsin (P-16) is recommended for detection of Hepsin of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 Hepsin siRNA (m): sc-41657, Hepsin shRNA Plasmid (m): sc-41657-SH and Hepsin shRNA (m) Lentiviral Particles: sc-41657-V.

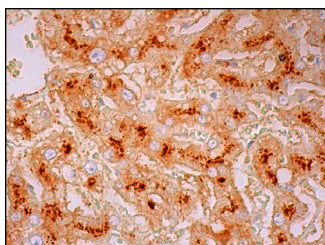
Molecular Weight of Hepsin: 51 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, PC-12 cell lysate: sc-2250 or mouse liver extract: sc-2256.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



Hepsin (P-16): sc-23776. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

## SELECT PRODUCT CITATIONS

1. Guipponi, M., et al. 2008. An integrated genetic and functional analysis of the role of type II transmembrane serine proteases (TMPRSSs) in hearing loss. *Hum. Mutat.* 29: 130-141.

## STORAGE

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