

# cathepsin W (1B1): sc-32799

## BACKGROUND

Cathepsin W (lymphopain) and cathepsin F comprise a novel subgroup of cathepsin proteases, and are phylogenetically distinct from other human cathepsins. The cathepsin W gene maps to chromosome 11q13.1 and contains ten exons with introns ranging from 81-119 bp. Cathepsin W protein is expressed specifically in CD8<sup>+</sup> T-lymphocyte. The expression of cathepsin W first occurs during the differentiation of thymocytes to CD8<sup>+</sup> T-lymphocytes, just as the thymocytes cease expression of CD4<sup>+</sup> receptors. In transfected Cos-7 and HeLa cells, cathepsin W localizes within the rough endoplasmic reticulum. Cathepsin W contains a unique 21-amino acid peptide insertion between the active site histidine and asparagine residues, in addition to a distinctive 8-amino acid carboxy-terminal extension. An extended loop structure in the second or  $\beta$ -sheet domain and an additional disulfide bond are two of several signature features of cathepsin W. Other features of cathepsin W include an additional cysteine, an S2 pocket and an additional residue. Cathepsin W may exist as a dimer with each monomer forming a disulfide bond.

## REFERENCES

- Linnevers, C., et al. 1997. Human cathepsin W, a putative cysteine protease predominantly expressed in CD8<sup>+</sup> T-lymphocytes. *FEBS Lett.* 405: 253-259.
- Wex, T., et al. 1998. Genomic structure, chromosomal localization, and expression of human cathepsin W. *Biochem. Biophys. Res. Commun.* 248: 255-261.
- Brown, J., et al. 1998. Lymphopain, a cytotoxic T and natural killer cell-associated cysteine proteinase. *Leukemia* 12: 1771-1781.
- Wex, T., et al. 1999. Human cathepsins F and W: a new subgroup of cathepsins. *Biochem. Biophys. Res. Commun.* 259: 401-407.
- Wex, T., et al. 2001. Human cathepsin W, a cysteine protease predominantly expressed in NK cells, is mainly localized in the endoplasmic reticulum. *J. Immunol.* 167: 2172-2178.
- Buhling, F., et al. 2002. Characterization of novel anti-cathepsin W antibodies and cellular distribution of cathepsin W in the gastrointestinal tract. *Biol. Chem.* 383: 1285-1289.
- Meinhardt, C., et al. 2004. Identification of a novel isoform predominantly expressed in gastric tissue and a triple-base pair polymorphism of the cathepsin W gene. *Biochem. Biophys. Res. Commun.* 321: 975-980.

## SOURCE

cathepsin W (1B1) is a mouse monoclonal antibody raised against recombinant human procathepsin W.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

cathepsin W (1B1) is recommended for detection of cathepsin W of human origin by Western Blotting (starting dilution 1:100, dilution range ), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for cathepsin W siRNA (h): sc-72807, cathepsin W shRNA Plasmid (h): sc-72807-SH and cathepsin W shRNA (h) Lentiviral Particles: sc-72807-V.

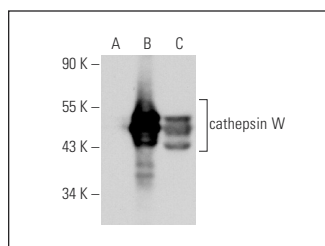
Molecular Weight of cathepsin W: 47 kDa.

Positive Controls: cathepsin W (h): 293T Lysate: sc-116060 or Jurkat whole cell lysate: sc-2204.

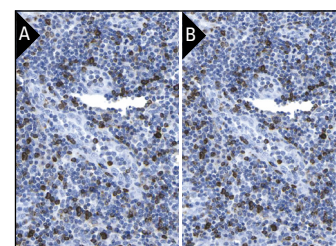
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



cathepsin W (1B1): sc-32799. Western blot analysis of cathepsin W expression in non-transfected 293T: sc-117752 (A), human cathepsin W transfected 293T: sc-116060 (B) and Jurkat (C) whole cell lysates.



cathepsin W (1B1): sc-32799. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of lymphoid cells at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.