

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⁺ T-lymphocyte. The expression of cathepsin W first occurs during the differentiation of thymocytes to CD8⁺ T-lymphocytes, just as the thymocytes cease expression of CD4⁺ 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 β -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

1. Linnevers, C., et al. 1997. Human cathepsin W, a putative cysteine protease predominantly expressed in CD8⁺ T-lymphocytes. *FEBS Lett.* 405: 253-259.
2. Wex, T., et al. 1998. Genomic structure, chromosomal localization, and expression of human cathepsin W. *Biochem. Biophys. Res. Commun.* 248: 255-261.
3. Brown, J., et al. 1998. Lymphopain, a cytotoxic T and natural killer cell-associated cysteine proteinase. *Leukemia* 12: 1771-1781.
4. Wex, T., et al. 1999. Human cathepsins F and W: a new subgroup of cathepsins. *Biochem. Biophys. Res. Commun.* 259: 401-407.
5. 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.
6. 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.
7. 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.

CHROMOSOMAL LOCATION

Genetic locus: CTSW (human) mapping to 11q13.1.

SOURCE

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

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 μ g per 100-500 μ 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.

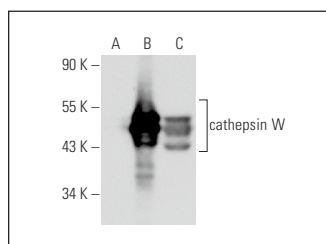
Molecular Weight of cathepsin W: 47 kDa.

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

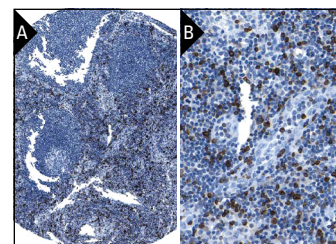
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 κ 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.

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.