

cathepsin W (h): 293T Lysate: sc-116060

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. The cathepsin W protein is expressed specifically in CD8⁺ T lymphocytes. 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., Smeekens, S.P. and Bromme, D. 1997. Human cathepsin W, a putative cysteine protease predominantly expressed in CD8⁺ T-lymphocytes. *FEBS Lett.* 405: 253-259.
2. Wex, T., Levy, B., Smeekens, S.P., Ansorge, S., Desnick, R.J. and Bromme, D. 1998. Genomic structure, chromosomal localization, and expression of human cathepsin W. *Biochem. Biophys. Res. Commun.* 248: 255-261.
3. Wex, T., Levy, B., Wex, H. and Bromme, D. 1999. Human cathepsins F and W: a new subgroup of cathepsins. *Biochem. Biophys. Res. Commun.* 259: 401-407.
4. Bhandoola, A., Kithiganahalli, B., Granger, L. and Singer, A. 2000. Programming for cytotoxic effector function occurs concomitantly with CD4 extinction during CD8⁺ T cell differentiation in the thymus. *Int. Immunol.* 12: 1035-1040.
5. Brinkworth, R.I., Tort, J.F., Brindley, P.J. and Dalton, J.P. 2000. Phylogenetic relationships and theoretical model of human cathepsin W (lymphopain), a cysteine proteinase from cytotoxic T lymphocytes. *Int. J. Biochem. Cell Biol.* 32: 373-384.

CHROMOSOMAL LOCATION

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

PRODUCT

cathepsin W (h): 293T Lysate represents a lysate of human cathepsin W transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

cathepsin W (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive cathepsin W antibodies. Recommended use: 10-20 μ l per lane.

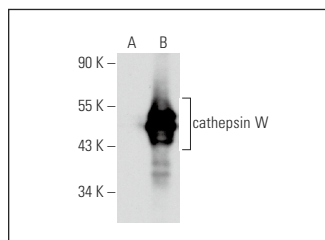
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

cathepsin W (1B1): sc-32799 is recommended as a positive control antibody for Western Blot analysis of enhanced human cathepsin W expression in cathepsin W transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



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

RESEARCH USE

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