SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin W (T-14): sc-14241

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The Power to Question

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 thyrocytes 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 distictive 8-amino acid carboxy- terminal extension. An extended loop structure in the second or β-sheet domain and an additional disulfide bind 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, chromosal 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 theoreical model of human cathepsin W (lymphopain), a cysteine proteinase from cytotoxic T lymphoctyes. Int. J. Biochem. Cell Biol. 32: 373-384.

CHROMOSOMAL LOCATION

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

SOURCE

cathepsin W (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of cathepsin W of human 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-14241 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cathepsin W (T-14) is recommended for detection of cathepsin W 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

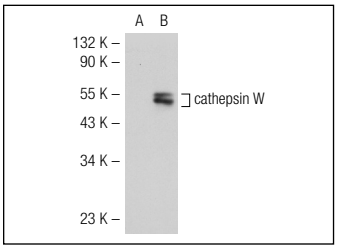
cathepsin W (T-14) is also recommended for detection of cathepsin W in additional species, including equine, canine, porcine and feline.

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.

DATA



cathepsin W (T-14): sc-14241. 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.

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.

PROTOCOLS

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