

cathepsin W (N-20): sc-14238

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

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- 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.
- 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. *Immunol.* 12: 1035-1040.
- 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.

SOURCE

cathepsin W (N-20) 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 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14238 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cathepsin W (N-20) 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 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

cathepsin W (N-20) is also recommended for detection of cathepsin W in additional species, including equine, bovine, 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.

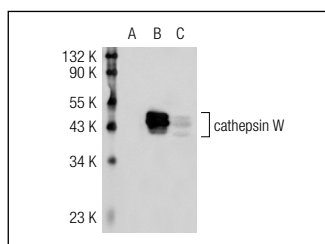
Molecular Weight of cathepsin W: 47 kDa.

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

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



cathepsin W (N-20): sc-14238. 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.

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.