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Product Information

Anti-Cathepsin L antibody, Mouse monoclonal
clone CPL33/1, purified from hybridoma cell culture

Product Number **C4618**

Product Description

Anti-Cathepsin L antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the hybridoma CPL33/1 produced by the fusion of mouse myeloma cells (P3X63Ag8.653) and splenocytes from BALB/c mice immunized with human procathepsin L (Gene ID: 1514).[1] The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Anti-Cathepsin L antibody, Mouse monoclonal specifically recognizes human cathepsin L (~ 25 kDa) and procathepsin L (~ 42 kDa). The antibody recognizes the native and denaturated forms of the protein[1] and does not cross react with human cathepsin V.[2] The antibody epitope resides within amino acids 258-261 of human cathepsin L (FYKE). Applications include ELISA,[1] immuno-blotting,[1, 2] and immunohistology.[2]

Cathepsins are lysosomal proteases that play an important role in the intracellular degradation of exogenous and endogenous proteins, activation of enzyme precursors, and tumor invasion and metastasis.[1-4] They are normally localized in lysosomes of almost all mammalian cells, but under certain conditions they can be secreted from the cell. Cathepsin L is responsible for most of the intralysosomal protein breakdown in normal cells.[3, 5] Certain specialized cells like macrophages, osteoclasts, and Certoli cells secrete the precursor of cathepsin L, procathepsin L. Procathepsin L is either directly involved in connective tissue degradation or is indirectly involved after being activated to certain forms of mature enzyme by acid activation or limited proteolysis.[1] Like other members of the family (cathepsin B and S), cathepsin L is secreted by numerous transformed cells in its inactive proform, and the level of mRNA expression of cathepsin L seems to be correlated with the metastatic potential of transformed cells.[6, 7] Because cathepsin L is capable of degrading protein constituents of the extracellular matrix, this enzyme is thought to play a crucial role in tumor progression, metastasis[8] and other disorders where the destruction of the matrix is the major cause of disease.[9, 10]

Indeed, inhibition of the enzyme or the proenzyme by low molecular weight inhibitors or by specific antibodies led to a suppression of the invasive capabilities of malignant cells, or a decline in their ability to form tumors in experimental *in vivo* and *in vitro* models.[7, 11-13]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~2 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at −20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.1-0.2 μg/mL is recommended using total cell extracts of A549 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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SG,EK,CS,PHC 08/17-1