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ProductInformation

Cathepsin G
from human leukocytes

Product Number **C 4428**
Storage Temperature -20 °C

Product Description

EC Number: 3.4.21.20
CAS Number: 107200-92-0
Molecular Weight: 23-30 kDa[1,2]
pI: 8.0[1]

Cathepsin G from human leukocytes is a glycoprotein containing approximately 1% carbohydrate.[2] Cathepsin G is considered to be a major constituent of human neutophil granulocytes. The enzyme is sequestered in the matrix of the granules and is only released during phagocytosis. However, upon neutrophil cell death, the enzyme may leak from the vacuole. When levels of specific inhibitor are not high enough to inhibit the released enzyme, tissue damage may occur involving the degradation of connective tissue proteins. Cathepsin G can also act as a bacteriocidal reagent. This activity is still present even after the proteolytic activity of the enzyme has been inactivated.[3]

Catrhepsin G is often referred to as a chymotrypsin-like enzyme, since it preferentially cleaves proteins on the carboxyl side of leucine, methionine, and phenylalanine. Cathepsin G can be assayed with substrates such as azocasein, Suc-Ala-Ala-Pro-Phe-NPhNO_2, and MeOSUC-Ala-Ala-Pro-Met-NPh-NO_2. Cathepsin G also has a specificity of action on the oxidized B chain of insulin and on BSA, which indicates a closer similarity to porcine chymotrypsin C than to bovine chymotrypsin A. The preference for cleavage of leucyl over phenylalanyl bonds is not seen with nitroanilide substrates.[4]

Cathepsin G does not require any activators and is inhibited by: diisopropyl fluorophosphate, phenylmethanesulfonyl fluoride, chymostatin, 3,4-dichloroisocoumarin, lima bean trypsin inhibitor, soybean trypsin inhibitor, human mucus proteinase inhibitor, α1-proteinase inhibitor, and α_2-macroglobulin.[5]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

References

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2. Travis, J., et al., in Protein Degradation in Health and Disease: Ciba Foundation Symposium 75, Excerpta Medica (New York, NY: 1980) 51-68.
3. Travis, J., Structure , function, and control of neutrophil proteinases. The American Journal of Medicine, **84(suppl 6A)**, 37-42 (1988).
4. Barret, A. J., Cathepsin G. Meth. Enzymol., **80(C)**, 561-565 (1981).
5. Handbook of Enzyme Inhibitors, 2nd ed., Pt. A, Zollner, H., (New York, NY: 1993), pp. 109-110.

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