

ラット腎細胞におけるカテプシン B の局在部位

1. 酵素抗体法を用いた光学顕微鏡的研究

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Immunocytochemical Localization of Cathepsin B in Rat Kidney. I. Light Microscopic Study using the Indirect Immunoenzyme Technique

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ABSTRACT: Localization of cathepsin B in rat kidney was studied using immunocytochemical techniques. Cathepsin B was purified from rat liver and antibody to it was raised in rabbits. The antibody reacted with a lysosomal extract of rat kidney to form a single precipitin line in a double-diffusion test. Immunoblot analysis of lysosomal cathepsin B of rat kidney showed two species of 29K and 25K MW. After removal of Epon, semi-thin sections of glutaraldehyde-fixed tissue were stained by the indirect immunoenzyme technique. Dark-brown reaction product, indicating the antigenic sites for cathepsin B, was found in cytoplasmic granules throughout the nephron. Staining intensity and size of the positive granules varied widely in each segment of the nephron. In the glomeruli and distal tubules, a few small cytoplasmic granules were stained. In the proximal tubules, the S1 segment exhibited many large granules which were most heavily stained, whereas the S2 and S3 segments contained few positive granules. All segments of the distal tubules showed the smallest amount of positive granules. A few positive granules were also noted in the cortical and medullary collecting tubules. Control experiments confirmed the specificity of the staining. The results indicate that the major site for cathepsin B in rat kidney is the S1 segment of the proximal tubule which is known to actively take up proteins leaked through the glomerulus.

KEY WORDS: Immunocytochemistry; Cathepsin B; Lysosomes; Proximal tubule; Rat kidney.

抄録 ラット腎臓におけるカテプシン B の局在部位について、酵素抗体法を用いた光顕で調べた。カテプシン B は近位尿細管の S 1 分節に集中して存在することが明らかとなった。こ

の部位は糸球体を通過した蛋白質を取り込み分解するので、カテプシンBはこれらの蛋白質の分解に関与していることが推察される。

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