

论文

胶原蛋白组装过程原子力显微镜的观测

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摘要 阐述一种特殊胶原蛋白物质的组装过程, 即加入 α_1 -酸性糖蛋白后形成的纤维长距胶原蛋白. 通过透析改变胶原蛋白溶液与 α_1 -酸性糖蛋白混合液的pH值, 在不同的pH值阶段利用原子力显微镜法(AFM)来辨析稳定的中间结构, 获得可靠且分辨率高的样品图像. 从而观察到了每个阶段中间纤维的形态和直径. 结果表明纤维长距胶原蛋白形成过程中存在明显的中间体.

关键词 [原子力显微镜](#) [胶原蛋白](#) [组装](#) [形态](#) [图像](#)

分类号

OBSERVATION OF COLLAGEN ASSEMBLY PROCESS BY USING ATOMIC FORCE MICROSCOPY

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Abstract The assembly process of a particular collagen, the fibrous long spacing collagen formed by adding α_1 -acid glycoprotein, was studied in detail. The pH of the mixture collagen and α_1 -acid glycoprotein was changed by dialysis. In each pH stage, stable intermediate structures were resolved by atomic force microscopy (AFM). The reliable and high-resolution images were obtained. The intermediate morphologies and diameters in every stage are observed by correlation the fibril diameters with length-wise growth in native type fibrils and by comparing the diameters and their morphologies of segmental long spacing collagen crystallites. These experimental studies demonstrated clearly the existence of intermediates in the formation process of fibrous long spacing collagens.

Key words [Atomic force microscopy](#) [Collagen](#) [Assembly](#) [Morphology](#) [Image](#)

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