

研究業績 英文表記

和文	
表題	電顕トモグラフィーによる結合組織の 3D 観察
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英文	
Title	Three dimensional tomographic observation of fibrous structures in connective tissues by transmission electron microscopy
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Abstract	<p>We often face the problems with the morphological analysis of the fibrous components of the connective tissue because of their amorphousness. It is known that well developed anchoring fibril attach to lamina densa of epidermal basement membrane. Three-dimensional observation of the anchoring fibrils by SEM is possible, however the diameter of the anchoring fibril becomes thicker by coating, and its inner structure cannot be observed. It has been said lamina densa contain frameworks composed by type IV collagen, however there are small number of morphological studies on them. Honeycomb structure in the basement membrane of the skin of tadpole only has been morphologically reported. We do not have enough data about this structure. Collagen fibrils in the skin of sea cucumber sometimes contain hollows. It is difficult to understand their 3D structure by ordinal transmission electron microscopy. We overcame those problems by 3D tomography by TEM in the present study. Three-dimensional morphologies of the anchoring fibrils were observed without artifacts by coating in their diameters. Three-dimensional tomographic observations revealed that the honeycomb structure and the ladder structure are the different aspects of the same structure in skin basement membrane of <i>Rana</i>. The inner structure of the collagen fibrils, which have hollows, of sea cucumber skin could be observed by three-dimensional tomography. It is demonstrated that the three-dimensional tomographic observation is useful for the studies on the fibrous structures in connective tissues.</p>
keyword	collagen fibril, basement membrane, anchoring fibril, tomography, SIR

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