

**FUNCTIONAL MICROANATOMY OF INITIAL LYMPHATICS WITH
SPECIAL CONSIDERATION OF THE EXTRACELLULAR MATRIX****A. Castenholz**

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ABSTRACT

In current conceptions on the functional morphology of initial lymphatics, the extracellular matrix (ECM) as an integral part of the lymphatic vascular wall has not been duly considered. In the present study based on scanning electron microscopy (SEM) and confocal laser scanning microscopy (CLSM) of tongue tissue in rats, new insights were obtained into both the architecture of the fibrous network of the ECM and its functional features. A digestion technique was applied, by which the endothelium of initial lymphatics was detached thereby allowing a direct view of the ECM from both sides. Fluorescent latex particles and liposomes were used as indicators of transmural permeability, whereas labeled macrophages served as a model for penetrating cells. The two layers of the lymph vascular wall were also examined under experimental edema conditions with tissue pressures ranging from 10 to 150 mmHg. A concept is proposed which considers the histomechanics of the initial lymphatics with the surrounding connective fiber tissue including the structural basis for the permeability of the lymphatic vascular wall. The role of the ECM as a supporting element and prefilter for the lymphatic endothelium is emphasized.