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Title: CHARACTERIZING EPITHELIAL MONOLAYER DEVELOPMENT IN VITRO

Abstract

Epithelial tissues line the surfaces of organs throughout our bodies, providing functions including but not limited to, protection, absorption, and secretion. These functions require tissues to have specific architectures; disruption of architecture can lead to a loss of tissue function. We have been using Madin-Darby Canine Kidney (MDCK) cells to study how epithelial cells organize into a monolayer in culture. We have found that MDCK cells can form 4 different epithelial architectures and have developed an automated method to characterize these architectures in an unbiased manner. Using this tool, we are now studying how epithelial processes, particularly cell reintegration, affect epithelial architecture. L1Cam is a member of the immunoglobulin superfamily of adhesion proteins and its Drosophila ortholog Neuroglian is required for misplaced cells to incorporate into the underlying follicular epithelium. By manipulating L1Cam expression levels via shRNA, we aim to determine whether the mechanism of cell reintegration is conserved in vertebrates.