

Mechanical imprints of cell fate and cell competition

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Abstract

Epithelia are communities of cells with close intercellular communications and highly coordinated motion. The mechanical properties of epithelial tissues are crucial for understanding important biological processes such as homeostasis, morphogenesis, and metastasis. These properties are tightly regulated by cell-cell interactions. I will provide examples to demonstrate the significance of mechanical forces during cell extrusion and cell competition. In the first part, I will focus on how mechanical stresses can determine the fate of cells being extruded from epithelial tissues. In the second part, I will show how cell competition, a mechanism involving the expansion of one cell population leading to the elimination of another, can be governed by the transmission of intercellular forces.