Role of cell-cell contacts in multicellular assemblies

Géraldine Circelli[1], Audrius Jasaitis[2], Sylvie Dufour[2] and Sylvain Gabriele*[1]

[1]Soft Matter & Mechanobiology Group, Interfaces and Complex Fluids Lab, University of Mons, Mons, Belgium
2Biophysical and Molecular Basis of Cell Adhesion and Migration, CNRS UMR 144, Institut Curie, Paris, France
**Email: sylvain.gabriele@umons.ac.be*

One of the most striking features of multicellular assemblies is the orchestration of individual cells to form complex tissues with specific functions. However, how this highly ordered organization is achieved during physiological processes, such as development and wound healing, or disorganized during pathological processes, such as metastatic process, is still misunderstood. To address this question, we studied the mechanical organization of minimal tissues with a controlled number of endothelial cells (from n=1 to 4). Minimal tissues were obtained by using microcontact printing and the spatial distribution of traction forces within these tissues was determined with elastic micropillars. Here we show preliminary results that address the role of cell-cell contact on the mechanical equilibrium of multicellular assemblies.