



Life Sciences Seminar

Mechanical Control of Collective Cell Migration in vivo

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Host: Michael Sixt

Collective cell migration is essential for embryogenesis, tissue repair and cancer metastasis. In order to successfully reach their destinations, cells need to know when and where to migrate. During the last years a comprehensive framework about how molecular signalling contribute to trigger and direct cell migration has been generated. However, when migrating across complex in vivo environments, cells do not only interact with molecular cues. Indeed, cells are also exposed to the mechanical nature of their migratory environment, which based on in vitro experiments it is very likely to also contribute to cell migration. Though interesting as an observation, whether and how mechanical inputs from the migratory substrate contribute to collective cell migration in vivo remained as an open question, mostly due to technical challenges. During my postdoc, I developed a toolbox that allows to measure and modify the mechanical environment of living tissues. Along my talk I will show how I used this toolbox to demonstrate that environmental mechanics first trigger and then direct the collective migration of *Xenopus laevis* cranial neural crest cells an embryonic cell population that collectively migrates long distances across developing embryos. Overall, the results that I will show support the idea that synchronisation of morphogenetic events, such as cell migration, not only require molecular signalling but certainly, such a synchronisation also requires fine-tuning of the mechanical properties of the environment.

Monday, August 12, 2019 01:00pm - 02:00pm

Mondi Seminar Room 1, Central Building



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