

若手イニシアティブセミナー

Wakate-Initiative Seminar

“White wave assay”: 上皮損傷修復における細胞集団運動の可視化と解析

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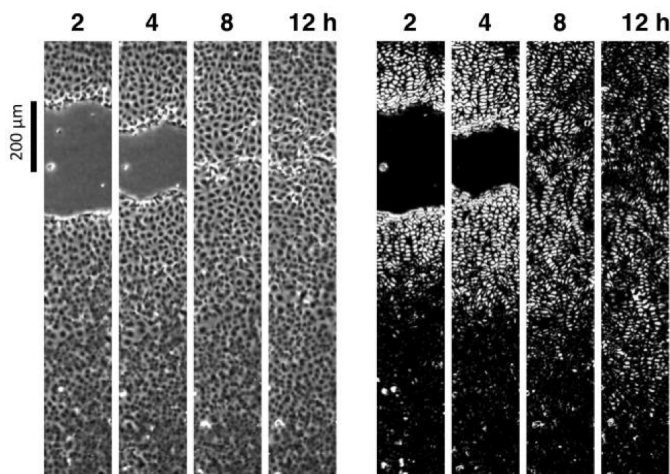
School of Biochemistry, Faculty of Medical and Veterinary Sciences,
University of Bristol, UK

日時 : 2011年1月14日 (金) 15:00 – 16:30

会場 : 筑波大学 総合研究棟A棟107プレゼンルーム

During a wide variety of tissue remodelling events including embryonic morphogenesis, wound repair and tumour metastases, cohesive groups of cells move together as a unit. Understanding the mechanisms of these collective cell migrations is therefore of great importance, both clinically and at a fundamental cell biology level. However, because of the difficulties in quantitatively analysing the behaviours of a large body of cells, it is still mostly unknown how the movement of entire cell group is coordinated to achieve proper tissue remodelling.

To address this question, we have designed a novel image subtraction method with which we can visualise and quantify collective cell mobilisation as a “white wave” propagating in a “scratch wounded” monolayer of cultured epithelial cells. Our results show that myosin II negatively regulates cell mobilisation and that the advancement of cell sheets and the mobilisation of cells behind their leading edges are independently regulated. We also find that inhibition of myosin II activity accelerates wound healing in the long term, raising the possibility that this motor protein might be a therapeutic target for improving tissue repair. Other results of the dissection of cell mobilisation processes will also be discussed.



多数の皆様のご来場をお待ちしております。
本セミナーは、筑波大学若手イニシアティブ主催セミナーです。

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