



Life Sciences Seminar

Myosin 1f is specifically required for neutrophil migration in 3D environments during acute inflammation

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Neutrophil extravasation and interstitial migration are important steps during the recruitment of neutrophils to sites of inflammation. In the present study, we addressed the functional importance of the unconventional class I myosin 1f (Myo1f) for neutrophil trafficking during acute inflammation. In contrast to leukocyte rolling and adhesion, the genetic absence of Myo1f severely compromised neutrophil extravasation into the inflamed mouse cremaster tissue when compared to Myo1f^{+/+} mice as studied by intravital microscopy. Similar results were obtained in experimental models of acute peritonitis and acute lung injury. In contrast to 2D migration which occurred independently of Myo1f, Myo1f was indispensable for neutrophil migration in 3D environments, i.e. transmigration and migration in collagen networks as it regulated squeezing and dynamic deformation of the neutrophil nucleus during migration through physical barriers. Thus, we provide evidence for an important role of Myo1f in neutrophil trafficking during inflammation by specifically regulating neutrophil extravasation and migration in 3D environments.

Wednesday, June 6, 2018 12:30pm - 01:30pm

Mondi Seminar Room 1, Central Building



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