

The role of non-filamentous vimentin in amoeboid cell migration

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The presented project will be a master project carried out in the AG Lautenschläger (A8). Cell migration is a fundamental function of cells. Without cell migration the formation of multicellular structures of tissues and complex processes in higher life forms would be impossible. To understand migration, there exist already many studies about the internal cell mechanisms of single cells. However, it is still unknown how all mechanisms work together and which effect external influences have. Based on the work of Luiza Stankevics, I will analyse the role of vimentin in its *non-filamentous* form compared to its *filamentous* form in amoeboid cell migration. These experiments will be carried out under one (see Fig 1 as example) and two dimensional confinement. In order to compare the migration in our confining setups with the migration in an *in-vivo* environment I will inject the cells in a flatworm called Planarian and analyse its migration in this environment.

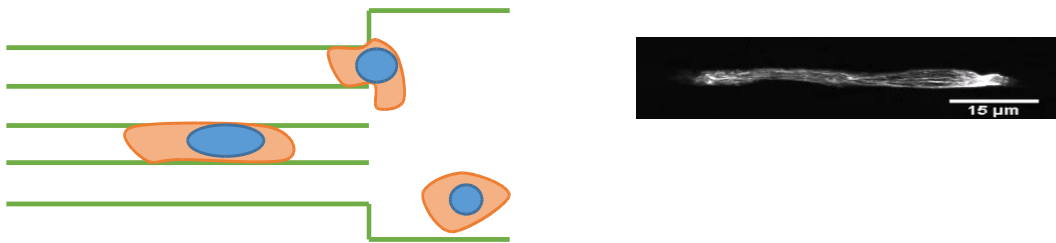


Figure 1: 1D confinement: Schematic model of cells migrating in micro-channels and confocal image of HL-60 cell stable transfected with vimentin GFP (filamentous form) migrating in micro-channels measuring $h=5\text{-}\mu\text{m}$, $w=5\mu\text{m}$. Figure courtesy of Luisa Stankevics.