

BioSyM Seminar Series 2017

Impact of osmotic pressure on cancer cell migration

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Time : 12 pm to 1 pm
Venue : Level 5, Perseverance Room

Abstract

The maintenance of precise cell volume is critical for cell survival. Changes in extracellular osmolarity affect cell volume and may impact various cellular processes (e.g. mitosis, mitochondrial functions, DNA repair). Interestingly, metastatic cells not only behave normally in such stressful environments, but also tend to take advantage of an osmotic gradient in order to migrate successfully. Indeed, an alternative migratory strategy which relies on fluxes of ions and water into/out of the cell has been described (Stroka et al., 2014). Although previous studies on osmotically-stressed cancer cells have been performed in 3D, those models lack the precision to fully recapitulate the environment of cancer cells. In this project, I intend to use microfluidic devices developed by Pr Kamm's team to characterize the impact of osmotic compression on cancer cell migration during different steps of the metastatic cascade.

Short Biography

Dr. Agnes Miermont recently joined SMART - BioSyM. She received her MSc in Biology at the University Paris Diderot (France) in 2009 and her PhD in Biophysics at the same University in 2013. She then joined the Laboratory for Molecular and Cell Biology (MRC LMCB) at University College London (UCL - UK) as Research Fellow.