A KJELDGAARD LECTURE

Thursday 23 March 2017 at 13:15
1534-125 Auditorium F Mathematics
Same location for the PhD session

Lieven De Veylder

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The importance of stem cells for tissue recovery following DNA damage

Similar to mammalian stem cells, plant stem cells divide at a high frequency with the unique characteristic that the original mother cell retains stem cell activity whereas the daughter cell will acquire over time a certain cell type. Remarkably, at the center of the root stem cell niche, a small group of cells can be found that exhibit a division rate being far below that of its surrounding stem cells, being the quiescent center (QC) cells. Their low division rate is likely contribution to their stress resistance, as indicated by the observation that induced cell proliferation renders the QC cells sensitive to e.g. DNA damage. Moreover, whereas QC cells are more resistant to DNA damage, they appear to be engaged into cell division upon perceiving stress. Using a combination of genetics and biochemical purifications we identified a new transcription complex that controls cell division upon loss of stem cells. Remarkably, the co-expression of all complex subunits grants differentiated cells the ability to obtain QC identity, resulting in ectopic de novo establishment of stem cell niches. Reversely, activity of both subunits is required for re-establishment of new stem cell niches upon loss of QC cells by stress.

Host: Simona Radutoiu, Plant Molecular Biology
Department of Molecular Biology and Genetics, Aarhus University

The lecture will be followed by a chalk-board session for PhD students

The Kjeldgaard Lecture Series is organised by
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