Cologne Cell Death Club Seminar

SFB 1403 CELL DEATH IN IMMUNITY, INFLAMMATION AND DISEASE

Speaker: Moritz Nowack
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Information about the Nowack Laboratory

Tuesday 22.02.2022 at 1 pm

"Six feet under: Dissecting the molecular control of programmed cell death during plant root development"

Register here to receive the Zoom login data:
https://uni-koeln.zoom.us/meeting/register/tJYlcO6hrT8sE9DmHerXpsGrO9PA5DMlB_7u

Abstract:
Diverse forms of regulated cell death play important roles in development, homeostasis, and disease of animals and plants. In contrast to the extensive information that exists on the regulation of several types of animal cell death, comparatively little is known about the molecular control of cell death in plants, especially in the context of plant development. Interestingly, no obvious homologs of major animal cell death regulators such as Bcl-2, caspases, RIPKs, MLKL, or GSDMD, are encoded in plant genomes, suggesting that alternatively regulated cell death pathways have evolved in plant systems.
We are studying cell death processes are an integral part of plant development. As in animals, plants undergo a plethora of developmentally regulated cell death processes that are essential for growth and reproduction. In a comparative approach, we are exploiting several cell death model systems to identify core components of developmentally regulated cell death in plants.
During my seminar I will focus on a powerful developmental cell death model system situated at the very tip of the plant root: the root cap of the model plant Arabidopsis thaliana. The root cap has many important functions for root growth and is a rather unusual plant organ: It does combine indeterminate growth with determinate organ size, implying cell number homeostasis mechanisms are at work that are normally not found in plant organs. This homeostasis is reached by a finely tuned balance between cell proliferation and cell demise by cell death and cell shedding. We are investigating cell death mechanisms including the transcriptionally controlled cell death preparations, the execution of cell death, and the cell-autonomous post-mortem corpse clearance.

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Information on the Cell Death Club seminar series and registration are advertised via the local mailing lists and is provided on the website of the SFB 1403 and on twitter.

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