The Chancellor of Ghent University has the honour of inviting you to attend the public defense of the doctoral dissertation of

ir. Sébastien SCHOTTE

Title of the doctoral dissertation:

Towards the mechanism of action of hysparin in adventitious root induction

The public defence will take place on 16 December 2019 at 16:00 in the Academieraadzaal (Hall of the Academic Board), room A 0.030 at Campus Coupure, Coupure Links 653, 9000 Ghent.

There will be a contiguous reception to which you are heartily invited.

Please confirm your attendance before 9th of December to: sebastien.schotte@ugent.be

Abstract of the doctoral research

In this doctoral research, the mechanism of action of the compound hysparin was studied. Hysparin is a small molecule that was identified through a chemical screen for adventitious root inducers. Hysparin has the unique characteristic to stimulate the formation of hypocotyl adventitious roots in Arabidopsis thaliana seedlings, without negatively affecting the growth and development of other plant organs. The objective of this thesis was to unravel the molecular factors playing a role in the response to hysparin. This will provide valuable information on the regulation of hypocotyl adventitious root formation and the differential regulation compared to other root types. This thesis experimentally shows that the activity of hysparin is strictly linked to its cotyledon dependency and ABCB-mediated transport. This pathway is associated with the specific induction of adventitious roots and differs from the pathway addressed by synthetic auxins. The obtained information on light regulation and the newly discovered genes will serve as valuable data in the unraveling of the adventitious rooting process and to translate this knowledge towards future applications.

Brief Curriculum Vitae

Sébastien Schotte was born in Brugge (Belgium) on 31th of October 1991. In 2012, he obtained his Bachelor degree in Bioscience Engineering at Ghent University, Belgium. He received his Master degree in Bioscience Engineering, Agricultural Sciences in 2014. In 2015, Sébastien worked as a teaching assistant and as a researcher on developing new techniques for transformation and regeneration in sugar beet in the Horticell lab, Department of Plants and Crops, Ghent University. In 2016, he received a doctoral grant Strategic Basic Research from FWO Flanders. Under the supervision of prof. dr. Danny Geelen, he investigated the mechanism of action of the compound hysparin in adventitious root induction in the Horticell lab, Department of Plants and Crops, Ghent University. The goal of his research was to get insight into the genetic and molecular regulation of adventitious root formation and to explore the potential for future applications.