



Laudatio for the Award Ceremony of the Prix Schläfli Biology 2020 of the Swiss Academy of Sciences (SCNAT) for Dr Alice Berhin

The Jury of the Prix Schläfli (Biology) 2020 of the Swiss Academy of Sciences (SCNAT), consisting of Prof. Dr. Roman Ulm (University of Geneva), Dr. Marc Creus (University of Basel), and Prof. Dr. Oliver Heiri (University of Basel), has reviewed 22 applications and suggested to award the prize to Dr. Alice Berhin for her achievements in the field of Plant Molecular Biology published in the journal *Cell* with the title: 'The Root Cap Cuticle: A Cell Wall Structure for Seedling Establishment and Lateral Root Formation'.

The board of the Platform Biology has unanimously decided to award the Prix Schläfli Biology 2020 to Dr. Alice Berhin for her discovery of a novel anatomical structure in plants, the root cap cuticle. The cuticle is a multi-layered structure of lipid components that is long known to protect aerial parts of plants against desiccation and other environmental stresses. In her PhD work, Alice first provided solid evidence for a root cap cuticle, a structure until then unknown despite the thorough description of the general anatomy of plants since the 19th and early 20th century. Her discovery was supported by the analyses of the root surface ultrastructure using electron microscopy, lipid staining as well as chemical analysis by gas chromatography-mass spectrometry. Moreover, Alice could further substantiate the existence of the root cap cuticle by characterizing transgenic plants expressing a cutinase degrading cutin at the root cap and mutants in biochemical pathways providing potential cuticular substrates. Furthermore, she succeeded in demonstrating the biological relevance of the root cap cuticle for root growth, seed germination and abiotic stress resistance. The PhD work of Dr. Alice Berhin is a true breakthrough study that represents a paradigm shift in the understanding of root anatomy and root cap function.

Dr. Alice Berhin studied Bioengineering at the Catholic University of Louvain, Belgium. Then Alice performed her PhD work in Life Sciences entitled 'Identification and characterization of atypical polyester in the root of *Arabidopsis thaliana*' in the Department of Plant Molecular Biology at the University of Lausanne, under the supervision of Dr. Christiane Nawrath. In February 2020, Dr. Alice Berhin became a SNSF funded Postdoctoral Researcher at the Catholic University of Louvain, Belgium, in the laboratory of Prof. Dr. Charles Hachez.

Prof. Dr. Roman Ulm (University of Geneva), Dr. Marc Creus (University of Basel), and Prof. Dr. Oliver Heiri (University of Basel), members of the board of the Platform Biology of the Swiss Academy of Sciences (SCNAT)

Award Ceremony, 17 February 2020, LS² Annual Meeting