

## Foreword focus on polyphenols

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Polyphenols are structurally and extremely diverse plant secondary metabolites and are involved in numerous functions in plants such as defense against attack by pathogens and ultraviolet light protection. Particularly, important polyphenolic polymers, such as lignin and tannins, are essential for the structure and resistance of higher plants. Classes of polyphenols are defined according to the number of phenol rings and the structural elements that connect these rings. The main classes are flavonoids, phenolic acids, stilbenes, and lignans. The flavonoids can be further classified into several sub-groups such as anthocyanins (i.e., red and blue pigments, playing a role in plant pollination, dissemination, and defense), flavonols (yellow pigments involved in UV protection), flavones, or isoflavones. Flavonoids are also important dietary constituents, due to their occurrence in fruits, vegetables, tea, wine, chocolate, spices, etc., and attract considerable interest because of their potential benefit for human health.

Moreover, they find new applications for the development of bio-based materials.

Polyphenol research, expanding to simpler plant phenolics such as phenolic acids, is very active, covering a wide range of topics and areas. Promoting this research is the aim of “Groupe Polyphenols”, an International Society founded in 1972 (<http://www.groupepolyphenols.com/>). This is achieved in particular through International Conferences on Polyphenols (ICP) and edition of Recent Advances in Polyphenol Research (RAPR), describing the most significant advances in the field. Another series of conferences, the “Tannin conferences”, specifically focusing on tannin research have been initiated in 1988 by Pr. R. Hemingway.

The XXVIIIth International Conference on Polyphenols was held in Vienna, Austria, in July 2016. This meeting provided scientists of the polyphenol community worldwide a unique forum to exchange ideas and present novel findings on plant polyphenol research, including biosynthesis, genetics and metabolic engineering, functions in plants and ecosystems, physical–chemical properties, or biological properties related to health benefits as well as various applications in food, nutrition, natural medicine, or material science. Some of the cutting-edge contributions of the conference are presented in this issue of *Planta*.

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