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## ***ABSTRACT BOOK***

### **INFORMATION**

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***The*** Forum on Microcolumn Separations

## **BOTANICAL ORIGIN IDENTIFICATION OF FOOD TANNINS USING COMBINED PROFILES OF MINOR SUGARS AND SIMPLE PHENOLS**

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Several papers investigated the complex chemical and technical properties of the family of tannins. In particular, they studied their role in wine stabilisation phenomena, the peculiar ability to modify the beverages sensory perception (e.g. astringency, colour and flavour), but also the beneficial health effects (e.g. antioxidant and antimicrobial activity, possible uses as anti-cancer or against cardiovascular diseases) [1,2]. They are traditionally classified as hydrolysable tannins (gallotannins, ellagitannins and flavonoids) [3], that are mainly derived from several plant material [4,5], and condensed tannins, that are generally extracted from grape tissues [6]. O.I.V. identifies the tannins produced from different botanical sources as juice and wine clarification adjuvants (Recueil des methods Internationales d'analyses, 2013), while the European Authorities recognise them as flavourings and food ingredients (EU Regulation No. 2232/96, EC No 1334/2008).

This paper investigated the possibility of assessing the botanical origin of commercial tannins (N=109 samples; 10 botanical origins: Grapes, N=44; Oak, 23; Gall, 11; Tree fruit, 8; Chestnut, 6; Quebracho, 5; Tea, 5; Acacia, 4; Tara, 2 and Officinal plant, 1) on the basis of the minor sugars (by Ionic chromatography) and simple phenols profiles (UHPLC-coulometric electrochemical detection).

The O.I.V. approach [7,8] permitted to correctly reclassify roughly 80% tannins to the relevant botanic categories, while our approach achieved more than 90% correct results, also allowing to trace 6 new typologies, not considered before by O.I.V..

### **References**

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