Nutraceuticals in balancing redox status in ageing and age-related diseases

WGs Meeting of the NutRedOx COST Action CA16112

Belgrade, March 2-3, 2020

Book of Abstracts

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The word of welcome

Dear colleagues,

We would like to welcome you to the 3rd Group meeting within the NutRedOx CA16112 COST Action, which is entitled: “Nutraceuticals in balancing redox status in ageing and age-related diseases”. We hope that this gathering will enable us to shed more light on the healing nature of proper nutrition. Since ancient times, food was regarded as something more than a fuel for survival. The Greek doctor Hippocrates once said: “Let food be thy medicine and medicine be thy food.” Nutraceuticals or “nutritional medicines” could be the answer to difficulties encountered during aging, without neglect of official medications. In a society living longer than ever, health has become one of the most valuable assets. It would be comforting to know that in the near future old age is not associated with deteriorating quality of life.

This COST action was initiated in 2017, as a consortium of countries and scientists whose primary goal was to “focus on the impact of redox active compounds in food on healthy ageing, chemoprevention and redox control in the context of major age-related diseases”. By now, 34 COST participating countries and 6 Near Neighborhood Countries took part in this project, showing that there is great interest in this problem.

We are pleased that you have decided to take part in this mutual conversation, where many will present their recent work, through poster sessions, oral communications or simply by asking questions. One of the goals of this action is cooperation between laboratories by short term scientific missions, so we look forward hearing the results of these encounters. Although we are approaching the end of this joint venture, it is satisfying to know that participants are not yet tired, which is supported by the number of registrations and abstracts that will be presented. On this meeting 67 participants from 24 countries will take part.

Belgrade, an old city which is always young, embraced by two rivers, will be your host. We hope that you will enjoy its rugged charm and warm hospitality, its streets, restaurants and cultural heritage.

At the confluence of new ideas and experiences we again wish you a warm welcome.

Your Local Organizing Committee

P10. THE EXTRACTION SELECTIVITY OF METHANOL, N-HEXANE, DICHLOROMETHANE AND NEAR CRITICAL LIQUID CARBON DIOXIDE TOWARDS CASTICIN AND ROTUNDIFURAN FROM *VITEX AGNUS-CASTUS* FRUIT

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The activity of *Vitex agnus-castus* L. (*VAC*) fruits extract in the treatment of premenstrual syndrome, menopause or disrupted lactation in women, is linked to their content in diterpenes and other constituents [1]. We compared the extractability of the diterpene rotundifurane and flavonoid casticin from *VAC* dried fruits using Soxhlet extraction technique and four different solvents namely near critical liquid carbon dioxide, n-hexane, dichloromethane and methanol. The carbon dioxide extraction is carried out in a Soxhlet type glass vessel inserted in a high-pressure stainless-steel container in temperatures 25-26°C and pressures 62-64 bar. The classical Soxhlet glass apparatus was used to extract the *VAC* fruits by n-hexane, dichloromethane and methanol. The near-critical liquid carbon dioxide extractor, allowed to stop extraction at certain time points (15, 45, 90 min and 12 hours) yielding 0,01 g, 0,14 g, 0,25 and 0,28 g extract respectively, compared to 1,8 g n-hexane, 1,3 g dichloromethane and 0,96 g methanol extracts. HPLC and external standards were used for the quantification of casticin and rotundifurane [4]. Rotundifurane is pharmacologically relevant because of its affinity to dopamine D2 receptor [5]. It was observed that highest casticin concentration was found in the n-hexane extract. Concentrations of casticin varied between 0,002 and 1,067 g/kg in the dried fruits and between 0,13 and 1,18% in the extracts. Rotundifurane content was below limit of quantification for the n-hexane, dichloromethane and methanol extracts but was relatively high (11,75 - 301 mg/100 g drug) in the CO_2 extracts in comparison with the literature [2].

Acknowledgements: Reference standards (casticin, rotundifuran) were a kind gift from Bionorica AG.

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