

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

**WGs Meeting of the NutRedOx COST Action CA16112
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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 Organising Committee

P3. IMPACT OF DEFATTING PROCESS ON ANTIOXIDANT POTENTIAL OF GRAPE SEEDS

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Grape seeds contain a wide range of phenolic compounds responsible for its health promoting effects. Interest for grape seed utilization has increased significantly along with a growing recognition that present biologically active compounds were not completely isolated during the extraction process. Numerous studies have been conducted in order to achieve the best extraction recovery. Nevertheless, there is still a question concerning the pretreatment of grape seeds. The aim of the present study was to investigate the impact of defatting process on total polyphenol content and antioxidant activity of grape seed extracts. For that purpose seeds were obtained from eight different grape varieties. Extraction with 70 % ethanol was performed on both, crude and defatted seeds (lipid fraction was removed by *Soxhlet* method of extraction). Determination of total phenolic content (*TPC*) was done using *Folin-Ciocalteu* assay. Antioxidant activity was investigated through four different tests (*FRAP*, *CUPRAC*, *DPPH* and *ABTS*) and obtained results were combined in unique Antioxidant Composite Index (*ACI*). *TPC* values ranged from 50.48 to 121.06 and from 38.04 to 108.17 mg GAE/g dry weight for crude and defatted grape seed extracts, respectively. Higher phenolic content determined in extracts obtained from crude seeds could be explained by the presence of lipophilic biologically active compounds in non-removed lipid fraction. Discrepancies between varieties are presumably present due to different morphological properties of seeds, environmental and agricultural conditions. Concerning antioxidant activity, all tests were significantly correlated with *TPC*, suggesting the strong contribution of phenolic compounds to this biological activity.

Keywords: grape seeds, polyphenols, antioxidants, extraction, defatting process

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