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 Organizing Committee

P7. ASSOCIATION OF REDOX STATUS AND LIFESTYLE FACTORS WITH TELOMERE LENGTH IN HEALTHY SUBJECTS

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Telomeres are DNA-protein structures located at the ends of eukaryotic chromosomes. Since their shortening is a natural process, which repeats with each cell division, telomere lengths have been proposed as a biomarker of aging. Also, there is evidence that telomere shortening and dysfunction can be accelerated by oxidative-stress and unhealthy lifestyle factors, including physical inactivity and inadequate nutrition, Thus, we aimed to evaluate the association of redox status and selected lifestyle factors with telomere length. The study included 94 apparently healthy adults, both genders with average age 46±12 years. Before anthropometric measurements and venous blood sampling, participants were asked to complete a lifestyle questionnaire. Serum antioxidant defense markers (total sulfhydryl groups, paraoxonase activity and total antioxidant status) and prooxidants and products of its activity (malondialdehyde, superoxide anion and total oxidant status) were determined. The Prooxidative score, Antioxidative score and Oxy score were calculated from measured redox status markers by using z-score statistics. Telomere length was determined by qPCR method using genomic DNA from peripheral blood leukocytes. A positive relation was found among telomere length and a moderate level of physical activity, intake of fruits and vegetables, especially for females. Increasing abdominal fat, alcohol and fried food intake, as well the Oxy score (difference between Proxidative and Antioxidative scores) were inversely associated with telomere length. Overall, these results support the impact of healthy lifestyle on healthy aging and redox control in the term of prevention of major age-related diseases.

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