

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

S11. IS ERUCIN A PROMISING BIOACTIVE AGAINST RENAL CELL CARCINOMA?

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A large number of epidemiological studies have linked cruciferous vegetable consumption to a reduced risk of various types of cancer, including renal cell carcinoma. Organosulfur compounds from cruciferous vegetables, glucosinolates and their metabolic breakdown derivatives, isothiocyanates and indole-3-carbinol, rise scientific interest by exerting unique anticancer properties. Erucin (ER) is an isothiocyanate that is generated by enzymatic hydrolyzes of glucoerucin, a glucosinolate predominant found in rocket species, or by *in vivo* reduction of sulforaphane, its structural oxidized analog. In the present study, the inhibitory effects of ER on renal cancer cell viability, migration and invasion were investigated. The 786-O human renal cancer cell line and the Vero normal-like cells were treated with different concentrations of ER (10-100 μ M). Cell viability was determined using the MTT and PI assays. The intracellular level of reactive oxygen species was evaluated using dichlorodihydrofluorescein diacetate. The collective cell migration and chemotaxis/chemoinvasion were studied by a wound healing and transwell assay, respectively. ER induced a concentration-dependent decrease in cell viability, with more cytotoxicity for 786-O cells than against Vero cells. Non-cytotoxic concentration of ER significantly reduced cell migration rate, chemotaxis and invasiveness potential of 786-O cells. The observed favorable anticancer potential of ER against human renal carcinoma *in vitro* requires further investigation.

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