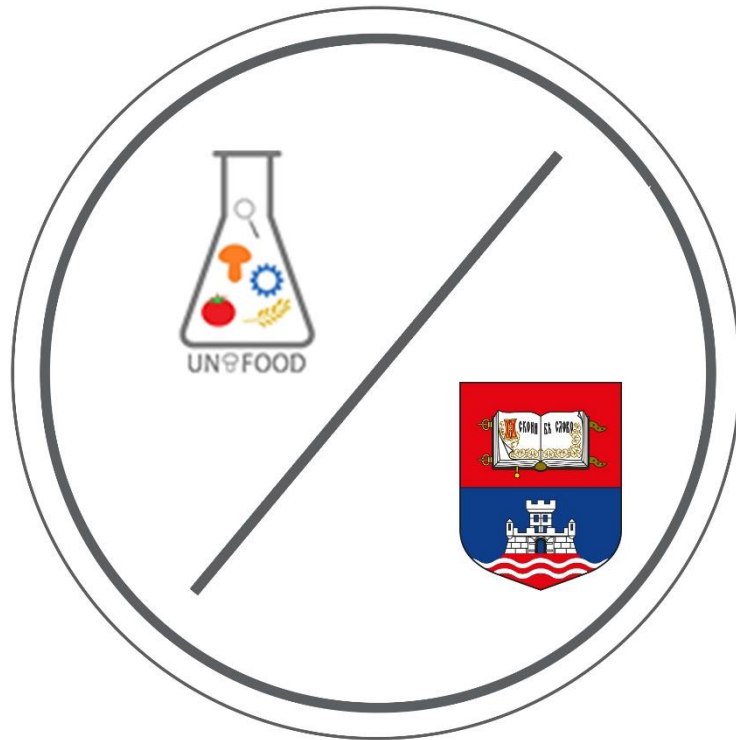


# UNIFOOD CONFERENCE



**University of Belgrade**

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# UNIFood2021 Conference

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

## 2<sup>nd</sup> International UNIFood Conference



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# UNIFood2021 Conference

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

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## The word of welcome

*Dear colleagues,*

We would like to welcome you to the **2<sup>nd</sup> UNIFood International Conference –UNIFood2021**. We hope that this gathering will engage not only academics, but also the stakeholders from all the relevant industries and business sectors, serving as a meeting point and a platform for proliferation of new ideas and development of new partnerships.

The first UNIFood conference, organized as national, was established 2018. year as one of the events in honor of the **210th Anniversary** celebration of the **University of Belgrade** that ranked at Shanghai list on 35<sup>th</sup> place for the 2017 year in subject *Food Science and Technology*. The University of Belgrade has been recognized as a leading international scientific institution by LERU when it was selected to be a member of CE7, an informal network of seven Central and Eastern European universities collaborating with LERU on key research and education challenges. Furthermore, University of Belgrade joined European University Alliance Circle U. Following the European Commission's launch of the European Universities initiative, a group of research-intensive universities has entered into a Memorandum of Understanding with the intention of establishing a new university alliance: Aarhus University, Humboldt University of Berlin, King's College London, UC Louvain, University of Belgrade, University of Oslo and Université de Paris.

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 Conference is cooperation between academia and food industry. Food scientists, technologists, researchers, nutritionists, engineers and entrepreneurs will exchange their knowledge about the latest advances in all aspects of food production, processing, sustainability, safety and security, nutrition and health, hi-tech equipment, ethics and knowledge transfer supporting environment. At this meeting, over 200 participants from 23 countries will take part.

Belgrade, one of the oldest city in the Europe, always young, at the confluence of the Sava and Danube rivers, will be your host. At the confluence of new ideas and experiences we again wish you a warm welcome.

*Sincerely,*

*Prof. Dr Mirjana Pešić*

*President of the Scientific Committee  
of UNIFood2021*

*Prof. Dr Ivanka Popović*

*Rector of the University of Belgrade*

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## **ANTITUMOR ACTIVITY OF LAMIACEAE PLANTS FREQUENTLY USED IN SERBIAN FOLK MEDICINE AND CUISINE**

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Recently, cancer research has focused on searching for new and more effective antitumor agents of natural origin that can activate multiple defence mechanisms and selectively damage transformed cells. The goal of this research was to assess different antitumor mechanisms of ethanolic extracts of 18 Lamiaceae species traditionally used in Serbian folk medicine and cuisine, as well as their genotoxic potential towards HCT-116 (colorectal cancer) cells. The viability of treated HCT-116 cells was assessed by MTT assay; the production of reactive oxygen species (ROS) by treated HCT-116 cells was determined using NBT assay, while their production of nitric oxide (NO) was evaluated using Griess assay. The genotoxic activity of the extracts on HCT-116 cells was tested in Comet assay, using etoposide as a positive control. The results indicated that lavender, basil, and rosemary inhibited the proliferation of these cells, significantly lowering their viability. Moreover, lavender and thyme extracts displayed a significant increase in ROS production, whereas ground-ivy, hyssop, lemon balm, peppermint, basil, rosemary, sage, and winter savory have significantly lowered their production. The results of the Griess assay suggested that lavender, motherwort, peppermint, basil, rosemary, sage, winter savory, ironwort, and thyme have significantly increased the production of NO. Furthermore, Comet assay results pointed out that motherwort, peppermint, basil, oregano, marjoram, winter savory, ironwort, wild thyme, thyme, and mountain germander possess genotoxic potential towards HCT-116 cells, while only basil had genotoxic activity statistically similar to etoposide. The obtained results are in accordance with our previous findings, which indicated that these extracts have antigenotoxic and genoprotective activities towards normal cells. Finally, it can be concluded that these traditionally valued plants might act as potent antitumor agents by modulating the proliferation and production of ROS and NO by cancer cells, as well as by expressing significant genotoxic properties towards cancer cells.

*Keywords: Lamiaceae, ethanolic extracts, antitumor activity, immunomodulation*

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