



# BOOK OF ABSTRACTS

## THE 3<sup>RD</sup> ANNUAL CONFERENCE OF THE PAN-BALKAN ALLIANCE OF NATURAL PRODUCTS AND DRUG DISCOVERY ASSOCIATIONS (PANDA)



МИНИСТАРСТВО ПРОСВЕТЕ,  
НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА

**1<sup>st</sup> November, 2021  
Belgrade, Serbia**

**Institute for Biological Research "Siniša Stanković"  
National Institute of Republic of Serbia  
University of Belgrade, Serbia**

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**ORGANIZER**

Institute for Biological Research "Siniša Stanković" – National Institute of Republic of Serbia (IBISS), University of Belgrade, Serbia

**CO ORGANIZER**

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**EDITORS**

Marina Soković, Marina Kostić

**GRAPHIC DESIGN & PREPRESS**

Marija Gačanović Gray

**Compiler**

Nađa Hadžimurtović

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## SCIENTIFIC COMMITTEE

Prof. dr. Yang Ye - Shanghai Institute of Materia Medica, CAS, China

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Prof. dr. Lijiang Xuan - Shanghai Institute of Materia Medica, CAS, China

Dr. Jasmina Glamočlija - Institute for Biological Research "Siniša Stanković" – National Institute of Republic of Serbia (IBISS), University of Belgrade, Serbia

Dr. Ana Čirić - Institute for Biological Research "Siniša Stanković" – National Institute of Republic of Serbia (IBISS), University of Belgrade, Serbia

## ORGANIZING COMMITTEE

MSc Marina Kostić - IBISS, University of Belgrade, Serbia

Nađa Hadžimurtović - IBISS, University of Belgrade, Serbia

Dr. Jovana Petrović - IBISS, University of Belgrade, Serbia

Dr. Marija Ivanov - IBISS, University of Belgrade, Serbia

MSc Dejan Stojković - IBISS, University of Belgrade, Serbia



## The emerging aspect of antimicrobial concept – exploring the antibiofilm activities of natural products

Marija Ivanov, Dejan Stojković, Marina Kostić, Jovana Petrović,  
Ana Ćirić, Jasmina Glamočlija, Marina Soković

Institute for Biological Research “Siniša Stanković” – National Institute of Republic of Serbia, Bulevar despota Stefana 142, 11000 Belgrade

Until some years ago, the antimicrobial activities of different products have been studied mainly on the planktonic microbial cells. On the other hand, we have now witnessed that when microorganisms cause infections they do not do it solely but are able to communicate and group into the structures called the biofilms. Biofilms are communities of microbial cells packed inside the extracellular matrix composed mainly of polysaccharides and extracellular DNA. By establishing the biofilm structure, microorganisms increase their ability to defy antibiotic treatment and though gain antibiotic resistance. The biofilm structures require few times higher concentrations of antimicrobial agents in order to get diminished, compared to planktonic cells studied in the antimicrobial assays. Though, in order to claim that some product has antimicrobial properties observing its effect on the microorganisms in the biofilms should be a must. Range of natural products has been studied up to date as antibiofilm agents. Some of them could act as agents to prevent infections by reducing the microorganism's ability to group into the biofilms. Others act on the already established biofilms and break down their resistant structures. Just some of the natural products studied so far for their antibiofilm effects are plants *Nepeta nuda* and *Artemisia absinthium*, different polyphenols and terpenes. These agents have displayed wide antibiofilm potential and though provide the step forward towards the development of efficient antibiofilm therapeutics.

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