



Federation of European
Microbiological Societies

FEMS Online Conference on Microbiology

28 – 31 October 2020

ELECTRONIC ABSTRACT BOOK

in association with
the Serbian Society
of Microbiology





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Message from the organizers

Dear colleagues and friends,

We would like to cordially greet you at the end of the FEMS 2020 ONLINE Conference on Microbiology, that has been successfully organized at the end of October 2020.

One great idea became reality. It would not have been possible without all of you, for which we are grateful. A pioneering endeavor in many different aspects and in challenging times. First, as a first Conference of the kind in the FEMS history, planned as a middle sized event, oriented in parallel to regional and global audiences, both in terms of content delivery and participation and an event done in partnership with the national/regional association and the dedicated PCO. Second, as a first major Conference event fully organized as an ONLINE format in European microbiology in 2020. Third, as the first major FEMS Conference event organized in complex times, with numerous challenging, even adverse psychological, societal and economic effects for the whole professional community, and, in addition, microbiologists being the one of the few medical professions directly standing in the front line of the COVID-19 response.

We made a brave decision and it paid off. With the new world of ONLINE possibilities, we strive and succeed to organize the most suitable formats to cover the scientific content of the conference, discuss the most challenging topics of the day and to enable scientific exchange and the interaction with the participants in a safest possible manner.

We are happy to say that, despite all different complexities, overall results of the Conference and the whole concept went beyond our bravest expectation. Almost 700 microbiologists from 40 European countries and another 20 worldwide, making the ONLINE Conference global event, eight scientific sessions, including one session with best selected grantees presentations and four Symposiums, organized in two parallel streams, four plenary lectures and COVID-19 Round Table for the whole audience, total of over 70 invited lectures with prerecorded lectures. In addition, over 50 prerecorded presentation prepared by participants-authors in the main program, in 7 corresponding ORAL ONLINE sessions, all together more than 30 hours of prerecorded material. Finally, another 60 video presentations, over 400 e-posters and some 10 Company materials, in total almost 600 presentational items, uploaded on the Conference ONLINE platform and accessible to participants until the 27. October 2021.

As FEMS, we are delighted that we were able to put together a great scientific program and contribute to the Conference success. Moreover, in light of the challenging times we live in and all different complexities it entails, and also to support your enthusiasm and scientific rigour, we decided to support your effort by waiving conference fees for the ONLINE Conference for almost 300 colleagues, authors of scientific papers, submitted until 15. March 2020.

Despite the circumstances, the pharmaceutical and medical industry has been with the Conference, providing valuable support and building solid basis for broader future collaboration.

We sincerely hope that you also enjoyed all different contents and aspects of the Conference and that you would be able to catch up with those recordings and presentations you may have missed or have a detailed look at posters.

We would like to warmly wish you health, love and happiness, Merry Christmas and a Happy New Year and are looking forward to the new encounters, in the next occasion, FEMS 2022 Conference in Belgrade.

Sincerely

Prof. dr Vaso Taleski, Chair, COC

Director of Events & Internationalization, FEMS

Prof. dr Hilary Lappin Scott

FEMS President

Prof. dr Bauke Oudega, Chair, CSC

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Prof. dr Lazar Ranin, Co-chair, COC

Vice President, SSM

Prof. dr Dragojlo Obradović, Co-chair, CSC

President, SSM



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ANTIMICROBIAL ACTIVITY OF 2-TERT-BUTYL-1,4-BENZOQUINONE AND ITS SELECTED ALKYLTHIO AND ARYLTHIO DERIVATIVES

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Background: Biologically active compounds, originating from a variety of natural sources: plants, animals and microorganisms, have great potential for use as antimicrobial agents. Avarol, a compound originating from the Mediterranean sponge *Disidea avara*, exhibits a number of biological activities including antimicrobial activity. Considering that, avarol was taken as a model for the synthesis of 2-tert-butyl-1,4-benzoquinone (TBQ) derivatives.

Objectives: TBQ was chosen because of its similar chemical structure with avarol who showed strong biological activity but is more accessible and economical than avarol. By selecting the thiol group, we aimed at combining the action of two strong functional groups of natural origin, quinones and thiols, which both have antimicrobial activity.

Methods: In this work antimicrobial activity of TBQ and its derivatives: 2-tert-butyl-5-(isopropylthio)-1,4-benzoquinone, 2-tert-butyl-5-(propylthio)-1,4-benzoquinone, 2-tert-butyl-5,6-(ethylendithio)-1,4-benzoquinone, 2-tert-butyl-5-(phenylthio)-1,4-benzoquinone and 2-tert-butyl-6-(phenylthio)-1,4-benzoquinone was evaluated by the MIC microdilution method on 7 different ATCC bacterial strains.

Results: All compounds tested showed stronger antimicrobial activity against Gram positive bacterial strains (*Enterococcus faecalis*, *Staphylococcus aureus*, *Bacillus* spp.). A strong antimicrobial effect (MIC value less than 100µM) was shown by 2-tert-butyl-5,6-(ethylendithio)-1,4-benzoquinone, 2-tert-butyl-5-(phenylthio)-1,4-benzoquinone derivatives and 2-tert-butyl-6-(phenylthio)-1,4-benzoquinone against *S.aureus*. TBQ, 2-tert-butyl-5-(isopropylthio)-1,4-benzoquinone, 2-tert-butyl-5,6-(ethylendithio)-1,4-benzoquinone and 2-tert-butyl-5-(phenylthio)-1,4-benzoquinone showed strong antimicrobial effect against *Bacillus* spp. According to our results, chemical modifications of TBQ increase its antimicrobial activity while derivative 2-tert-butyl-5,6-(ethylendithio)-1,4-benzoquinone is the best candidate for further testing.