September 19-20, 2024

University of Milan, Italy

Abstracts Book

Polyphenols
APPLICATIONS

17th World Congress on Polyphenols Applications

September 19 – 20, 2024

Milan & Online

Prof. Jan Frederik Stevens

President of Polyphenols Applications World Congress

Oregon State University, USA

Prof. Andreas Schieber

Vice-President of Polyphenols Applications World Congress

University of Bonn, Germany

Abstract Book DOI

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DOI Information

We are pleased to announce that the *Polyphenols Applications 2024 Abstracts Book* will be assigned a **DOI (Digital Object Identifier)**, ensuring a permanent and easily accessible online presence for the entire collection of work.

The DOI will be activated **after the congress**, and it will be communicated to all attendees.

How to cite your paper in the Abstracts Book?

To cite a paper presented at the *Polyphenols Applications 2024 Congress*, include the author's name, the conference date, the paper title (italicized), page number, the conference name, location, and DOI.

Citation example:

Smith, J. (2024, September 19–20). **The impact of polyphenols on cardiovascular health**. *p. 45*, Polyphenols Applications 2024, Milan, Italy. DOI

Practical Information

We would like to take the opportunity to give you some additional information about the meeting arrangements.

The Abstract book contains:
• Speakers' abstracts (the abstracts of the oral presentations follow the order of the program)
• The abstracts of posters on display

Badges

Upon registration you have received your own personal badge. Please wear this badge during the entire meeting including the coffee breaks and lunch.

Instructions for participants

Chairpersons: The Chairpersons will be seated at the president's table.

Speakers: Speakers are invited to give their Power Point presentations for downloading on the computer to the technical team outside and not inside the conference hall. As the schedule is rather tight and to allow sufficient time for discussions, we would be very much obliged if the timing requirements were respected.

Poster Contributors: Please ensure that your poster is displayed at the appropriate location, please respect your poster number. Posters will be divided between day 1 and day 2. Please bring your posters accordingly and fix/remove them according to the day of presentation. The Poster contributors are invited to stand by their poster during the poster sessions.

Speakers Dinner
A dinner is organized on September 19 at Metropolitan Restaurant of Crowne Plaza Milan City Hotel.
If you registered for this dinner, please join the group at 20h00 at the restaurant.

Mobile Phones
As a courtesy to the speakers and other delegates, please turn off your mobile phones or to silent whilst in the conference room. Please do not take pictures of the slides without the consent of the presenting author.

Questions
Please state your name and institution or company before asking your question.

Conference Staff
Staff at the conference registration desk will be happy to deal with any queries you may have. If we receive any messages for you, they will be announced at the break in the session and can be collected from the desk.

Personal Belongings
Please keep your valuables and working materials with you at all times. We would advise you to keep your name on the conference notes, as we may not be able to replace these if lost. Università degli Studi di Milano Statale and Polyphenols Applications can't be held responsible for any loss or damage to your belongings.

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Abstracts for Oral Presentations

Day 1 – September 19, 2024

STRATEGIES TO OVERCOME RESISTANCE IN PHYTOPATHOGENIC FUNGI USING MULTITARGET NATURAL AND NATURE-INSPIRED STILBENOIDS

PRINCIOTTO, Salvatore; PINNA, Cecilia; SACCHI, Francesca; DOZIO, Denise; KUNOVA, Andrea; GHOSH, Sharmila; PIZZATTI, Cristina; CORTESI, Paolo; PINTO, Andrea; DALLAVALLE, Sabrina

Department of Food, Environmental and Nutritional Science (DeFENS), University of Milan, Milan

salvatore.princiotto@unimi.it

Introduction: Phytopathogenic fungi heavily affect crop production worldwide, thus representing a serious threat for food security and availability1. Moreover, intensive monoculture cropping and treatment by fungicides with a single-site mechanism of action contribute to the emergence of resistant strains2. For their high diversity and versatility, natural products are considered the first step towards the developement of new biofungicides. Among them, stilbenoids, as phytoalexins overexpressed from plants in response to stress conditions3, represent suitable substrates for the obtainment of multitarget agrochemicals, potentially able to limit the onset and spread of fungicide resistance.

Material & Methods: The reported stilbenoids were synthesized, purified and chemically characterized. The fungicide activity was evaluated as micelyum growth inhibition on P. oryzae (wild-type and resistant strains).

Results: Resveratrol, its methylated derivatives, and the corresponding dimers were prepared by chemical or chemoezymatic protocols, resulting in a small collection of multitarget compounds, based on the stilbenoid core. Natural deoxyrhapontigenin resulted as the best potential antifungal agent, inhibiting the mycelium growth by 60-80%, both on wild-type and resistant strains.

Conclusion: A collection of stilbenoid-derivatives was prepared and tested as multitarget antifungal agents. Further efforts are needed to improve the activity profile of the most promising compounds, especially against resistant strains.

References:

1. Asibi, A. E.; Chai, Q.; Coulter, J. A. Agronomy 2019, 9 (8), 45.

2. Fernandez-Ortuo, D.; Tores, A. J.; De Vicente, A.; Perez-Garcia, A. In Fungicides; InTech, 2010; 203−220.

3. Stark-Lorenzen, P.; Nelke, B.; H.n.ler, G.; Mühlbach, H. P.; Thomzik, J. E. Plant Cell Rep. 1997, 16 (10), 668−673.