



17TH

WORLD
CONGRESS



Polyphenols
APPLICATIONS

September 19-20, 2024

► University of Milan, Italy

► Abstracts Book



Polyphenols
APPLICATIONS

17th World Congress on Polyphenols Applications

September 19 – 20, 2024

Milan & Online

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Abstract Book DOI (*Activated after the meeting*)

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Welcome to Polyphenols Applications 2024

Dear Colleagues,

It is a great pleasure to welcome all of you to our 17th World Congress on Polyphenols Applications, which will be held on September 19-20, 2024, at Università degli Studi di Milano Statale, Milan, Italy.

Polyphenols Applications 2024 aims to bring together experts from academia and industry to discuss the latest scientific advancements in fundamental and applied research on polyphenols. This year the conference will feature a balanced mix of invited talks and short talks, based on suggestions from the audience at the previous year's conference.

The conference will cover various topics, including the latest advancements in polyphenol research, focusing on their health benefits, interactions with microbiota, and applications in food processing. Sessions will cover diverse topics, including the potential of anthocyanin-rich extracts in chemotherapy, the antiviral activity of polyphenols, and their impact on obesity and diabetes.

We would like to thank all the speakers and scientific committee members of Polyphenols Applications for their excellent contributions.

We also wish to thank the Local Organizing Committee: Sabrina Dallavalle, Andrea Pinto, Cristian Del Bo', and Daniela Martini from the University of Milan.

Finally, we are grateful for the support of our sponsor HealthTech Bioactives (HTBA).

We hope that you will enjoy the Polyphenols Applications 2024 Congress and that your interactions with colleagues from many countries will stimulate a creative exchange of ideas and challenges.



Prof. Jan Frederik Stevens
President of Polyphenols Applications
Oregon State University, USA

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.

17th World Congress on Polyphenols Applications

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17th World Congress on
Polyphenols Applications

Abstracts for Oral Presentations
Day 1 – September 19, 2024



SKIN BENEFICIAL EFFECTS OF POMEGRANATE PEEL EXTRACT AND ITS DOMINANT COMPOUNDS

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Introduction: The peel of pomegranate (*Punica granatum* L., Punicaceae) fruit is usually treated as a waste. On the other hand, it is a rich source of polyphenols, including phenolic acids, flavonoids, and tannins. A broad range of biological activities was reported for pomegranate peel extracts.

Material & Methods Extract of pomegranate peel (PPE) was obtained by double percolation using 50% EtOH and spray dried. HPLC was applied for the chemical analysis of the most abundant phenolics. PPE and individual compounds were tested using in vitro inhibition of hyaluronidase, elastase, collagenase, and tyrosinase. In vitro anti-inflammatory potential of PPE was investigated in the erythrocyte membrane stabilization assay.

Results: The most abundant compounds in PPE was punicalagin, followed by punicalin, ellagic and gallic acid. PPE showed IC₅₀ values of 534.76 µg/ml for hyaluronidase, 651.81 µg/ml for elastase, 1013.81 µg/ml for collagenase, and 537.60 µg/ml for tyrosinase inhibition. The most active individual compound was ellagic acid, except for collagenase inhibition assay where punicalin was the strongest inhibitor (IC₅₀ value of 95.63 µg/ml). Also, PP extract showed promising concentration-dependent in vitro anti-inflammatory activity.

Conclusion: Both, PPE and individual compounds showed promising skin beneficial effects to meet trends in cosmetic and healthcare sector.

Supported by the HORIZON 2020-MSCA-RISE-2017 project EthnoHerbs and Ministry of Education, Science and Technological Development of the Republic of Serbia 451-03-66/2024-03/ 200178 and 451-03-66/2024-03/200019.

References:

1. M. Radan, N. Čujić Nikolić, S. Kuzmanović Nedeljković, Z. Mutavski, N. Krgović, T. Stević, S. Marković, A. Jovanović, J. Živković, K. Šavikin. *Plants* 13(2), (2024) 281
2. P. Kandylis, E. Kokkinomagoulos. *Foods* 9 (2020) 122.