

# iberPhenol International Conference

Advances in the role of phenols  
in health effects and other uses

**5-6 November 2020**

Faculty of Pharmacy  
UNIVERSITY OF COIMBRA

**Coimbra, Portugal**



# BOOK OF ABSTRACTS

## SCIENTIFIC PROGRAM

### Thursday, 5th November

#### Opening Ceremony

- 15.00 - 15.30 Prof. Fernando Ramos - Chairperson  
 Prof. Amílcar Falcão - Rector of the University of Coimbra  
 Prof. Francisco Veiga - Director, Faculty of Pharmacy, University of Coimbra  
 Prof. M. Teresa Escribano Bailón - IBERPHENOL coordinator

#### Session I | Chairperson: Eduardo Rosa

Phenolics in plants and food products and their valorization as co-products

- 15.30 - 16.00 Giovanna Ferrari **PL01:** Phenolic compounds and Food Industrial Engineering: let them living together
- 16.00 - 16.15 Ana Barros **OC01:** Biological activities of grape stems for potential application in the cosmetic and pharmaceutical industries
- 16.15 - 16.30 Antia Pereira **OC02:** Design of new functional foods based on new additives obtained from algae by treatments with high hydrostatic pressures
- 16.30 - 16.45 Filipa Fernandes **OC03:** Chemical profile of nutraceutical formulations with natural preservatives
- 16.45 - 17.00 João Bernardo **OC04:** Extraction of phospholipid-rich fraction from egg yolk and development of phenolics-nanoliposomes with neuroactive potential
- 17.00 - 17.15 Marcelo Catarino **OC05:** *Fucus vesiculosus* phlorotannins as potential anti-inflammatory and antitumor agents
- 17.15 - 17.45 Coffee Break and Poster session I (P1 to P26)
- 17.45 - 18.00 Catarina Andrade **OC06:** Antidiabetic screening of plant species from Thailand: Phenolic profile and *in vitro* antidiabetic activity of *Caryota urens* L. inflorescences
- 18.00 - 18.15 Maria Lopes **OC07:** Antioxidant activity and phenolic content of *Salicornia ramosissima* and *Sarcocornia perennis alpine*
- 18.15 - 18.30 Mariana Monteiro **OC08:** Complexation of resveratrol with  $\gamma$ -cyclodextrin toward lemon juices supplementation
- 18.30 - 18.45 Paula García-Oliveira **OC09:** The hidden link between medicinal plants and their therapeutic uses
- 18.45 - 19.00 Tiane Finimundy **OC10:** *Sanguisorba officinalis* L., an alternative source of phenolic compounds and remarkable bioactivities

### Friday, 6th November

#### Session 2 | Chairperson: Carlos Cavaleiro

Studies of bioavailability of phenolics

- 09.00 - 09.30 Patrícia Valentão **PL02:** Approaching phlorotannins bioavailability: challenges and opportunities
- 09.30 - 09.45 Carla Varela **OC11:** Discovery and optimization of new phenolic cinnamic acid derivatives as selective COX-2 inhibitors. Chemistry and structure-activity relationships

## ORAL PRESENTATIONS

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### OC14 | José Pedro Baptista

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## ***Sanguisorba officinalis* L., an alternative source of phenolic compounds and remarkable bioactivities**

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*Sanguisorba officinalis* L. or great burnet, belongs to the Rosaceae family and it is a perennial plant widely distributed throughout Europe, Asia and North America (1). It is well known as a traditional herbal medicine due to its bioactive compounds content (2).

This study aimed to evaluate the phenolic profile and bioactivities of leaves and roots of *S. officinalis* plants were cultivated in central Greece, using different types of fertilizers, namely: i) control - without fertilization (A: leaves; B: roots); ii) inorganic fertilizer at a rate of 330 kg/ha (C: leaves; D: roots); and iii) inorganic fertilizer at a rate of 660 kg/ha (E: leaves; F: roots). Phenolic compounds were identified and quantified by HPLC-DAD-ESI/MSn. Four Gram-negative and four Gram-positive bacteria, and six fungi were used to screen the antimicrobial activity of the samples. Cytotoxic activity was tested on tumor cell lines of MCF-7 (breast adenocarcinoma), NCI-H460 (non-small cell lung cancer), HeLa (cervical carcinoma), HepG2 (hepatocellular carcinoma) and a non-tumor cell line (PLP2).

Concerning phenolic composition, twenty-two phenolic compounds were identified, among them, phenolic acids, flavonoids, and tannins. In all samples, hydrolysable tannins were prevalent, namely Sanguin H-10. Sample F presented the highest content of flavonoids, especially catechin derivatives, whereas sample D presented the highest content of total phenolic compounds, due to the high amount of ellagic acid and total hydrolysable tannins. Sample D showed the most promising result against *S. typhimurium* (MBC = 0.44 mg/mL). Moreover, root samples (B, D and F) revealed the best cytotoxic activity against most of the tested cell lines, while leaves' samples (A, C and E) showed the highest cytotoxicity against HeLa cell line. None of the samples revealed hepatotoxicity (PLP2) up to the tested concentration.

This study highlighted the potential of using *S. officinalis* as a source of natural bioactive compounds with further use in pharmaceutical and medicinal applications.

### **References:**

1. Karkanis AC, Fernandes Â, Vaz J, Petropoulos S, Georgiou E, Ciric A, et al. Chemical composition and bioactive properties of *Sanguisorba minor* Scop. under Mediterranean growing conditions. *Food Funct.* 2019, 10(3):1340–51.
2. Li W, Yang C, Wang L, Wu J, Dai C, Yuan Y, et al. A tannin compound from *Sanguisorba officinalis* blocks Wnt/ $\beta$ -catenin signaling pathway and induces apoptosis of colorectal cancer cells. *Chin Med* 2019, 14(1):22.

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