5th Portuguese Young Chemists Meeting

(5th PYCheM)

&

1st European Young Chemists Meeting

(1st EYCheM)

Centro Cultural Vila Flor

Guimarães, Portugal

26th – 29th of April

ICVS/3B's

Câmara Municipal de Guimarães

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General Programme

	26 April	27 April	28 April	29 April
9:00-13:20	Registration and Workshop of Open Science and European Open Access Policies in H2020	Organic Chemistry and Medicinal Chemistry	Inorganic, Physical, Analytical and Electrochemistry	Materials Chemistry and Nanomaterials and Surface Chemistry
13:30	Opening Ceremony	Lunch	Lunch	Lunch
14:00 - 18:00	Green Chemistry + Chemistry of Natural Products	Biochemistry and Medicinal Chemistry	CHEM2NATURE Symposium: Chemical strategies for modification of natural origin materials Assembleia GQJ (17h)	Materials Chemistry and Nanomaterials and Surface Chemistry
18:00		Walking Tour		Closing Ceremony
19:00	Welcome Cocktail		Gala Dinner	
21:30	Get-together night			

P10. Contribution of plant phytochemicals to organic homeostasis: focus on the aging process and opportunistic infections

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Aging process is conceived as a normal stage during human life cycle, but it is also considered a hot topic among scientists and medical community. Alarming rates of premature aging and oxidative stress-related diseases have increasingly affect human individuals. Stress, pollution and exposition to chemical substances are considered the main triggering factors for those conditions; in addition, they also suppress the immune system and, therefore, improve organic vulnerability and occurrence of opportunistic infections [1]. Apart from the associated morbidity and mortality, the increasing rates of antimicrobial resistance improve the severity of the clinical conditions [2]. Botanical preparations possess a multitude of bioactive properties, namely acting as antimicrobials, antioxidants, and homeostasis modulators. Thus, upcoming alternatives, mainly based in plant phytochemicals, are necessary to improve the wellbeing as also life expectancy of individuals.

The present study aims to evaluate and to compare both antioxidant and antimicrobial properties of plant extracts rich in phenolic compounds. Among the tested plants, *Glycyrrhiza glabra* L. (licorice) evidenced the most pronounced free radicals scavenging and antimicrobial effects, followed by *Salvia officinalis* L. (sage), *Thymus vulgaris* L. (thyme) and *Origanum vulgare* L. (oregano). *Eucalyptus globulus* Labill. (blue gum) and *Juglans regia* L. (walnut) also showed a high effect, while *Pterospartum tridentatum* (L.) Willk. (carqueja) and *Rubus ulmifolius* Schott (elm leaf blackberry) displayed moderate effects, and lastly, *Tabebuia impetiginosa* (Mart. ex DC) Standley (pau d'arco), *Foeniculum vulgare* Miller (fennel), *Rosa canina* L. (rose hips) and *Matricaria recutita* L. (chamomile) gave only slight effects. In general, the most pronounced bioactivities were observed in the plant preparations (infusion>decoction>hydromethanolic extract) with higher levels of phenolic compounds (both flavonoids and phenolic acids).

The observed synergisms between the phenolic compounds present in the extracts highlight the use of phytochemicals as future health promoters. However, further studies are necessary to understand the effective mode of action of individual phenolic constituents as also the existence of polyvalence relationships between them.

References

[1] Martins, N.; Ferreira, I. C. F. R.; Barros, L.; Silva, S.; Henriques, M., Mycopathol 2014, 177, 223–240.
[2] Martins, N.; Barros, L.; Henriques, M.; Silva, S.; Ferreira, I. C. F. R., Ind. Crops Prod 2015, 74, 648–670.

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