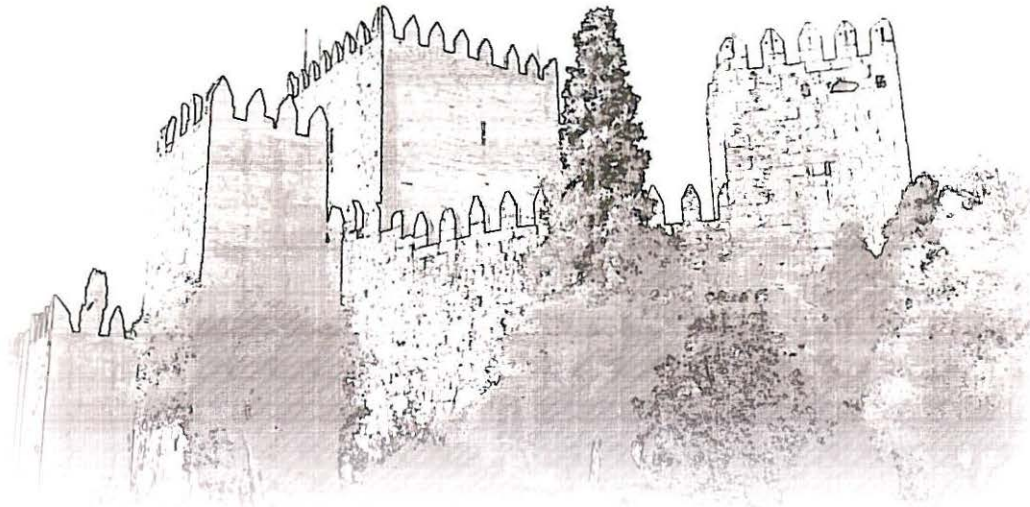
62nd International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research - GA2014

Universidade do Minho
Escola de Ciências

Programme



31st August - 4th September 2014

University of Minho, Campus of Azurém
Guimarães, Portugal

http://ga2014.bio.uminho.pt/

15:15 SL7 Exploring the hidden biosynthetic potential of fungi - Evaluation of epigenetic modifications through metabolomics
Allard, P.-M., Perisic, M., Mehl, F., Boccard, J., Wong, Y.-S., Gindro, K., Wolfender, J.-L.

16:00 SL8 New cytotoxic polyketide from the fungus *Talaromyces stipitatus* selected by genome mining
Zang, Y., Mann, S., Li, Y., Genta-Jouve, G., Thomas, O., Escargueil, A., Nay, B., Prado, S.

16:15 SL9 Extraction and separation strategies of [7.7]paracyclophane derivatives
Preisitsch, M., Neidhardt, I., Füssel, A., Günther, B., Westerhausen, L., Niedermeyer, T., Mundt, S.

16:30 SL10 Sulfated galactofucan from brown alga *Saccharina latissima* interferes with the SDF-1/CXCR4 axis in Burkitt lymphoma cells
Ehrig, K., Schneider, T., Alban, S.

Short Lectures 3

Monday, 1st of September, 15:00–16:45, Lecture Hall B

15:00 SL11 4-Me-6E,8E-hexadecadienoic acid isolated from a marine-derived strain of *Clonostachys rosea* reduces viability of MCF-7 breast cancer cells and gene expression of lipogenic enzymes
Santos Dias, C., Ruiz, N., Couzinet-Mossion, A., Rabesaotra, V., Huvelin, J.-M., Chaillou, C., Grovel, O., Duflos, M., Pouchus, Y., Barnathan, G., Nazih, H., Wielgosz-Collin, G.

15:15 SL12 Antitumoural activity of *Cystoseira* species: Insights into the mechanism of action
Vizetto-Duarte, C., Rodrigues, M.J., Pereira, H., Neng, N., Nogueira, J., Vasconcelos, H., Acosta, G., Custódio, L., Barreira, L., Rauter, A., Albericio, F.

16:00 SL13 Symbioses: An environmentally-relevant source of natural substances in the search for antimicrobial compounds
Eparvier, V., Nirma, C., Sorres, J., Stien, D.

16:15 SL14 Effects of alginates on legumain activity in RAW 264.7 cells and on prolegumain autoactivation
Berven, L., Solberg, R., Samuelsen, A.

16:30 SL15 Comparative bioactive properties of *Coprinopsis atramentaria* extract, organic acids and synthesized derivatives
Heleno, S., Martins, A., Queiroz, M., Ferreira, I.

SL15 Comparative bioactive properties of *Coprinopsis atramentaria* extract, organic acids and synthesized derivatives

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Organic acids, namely phenolic acids, have been largely studied for their bioactivities and, in particular, mushrooms are interesting sources of these compounds [1]. However, very little is known about the bioactive forms *in vivo* and the mechanisms by which they may contribute towards disease prevention. There is accumulating evidence suggesting that these molecules are rapidly metabolized in the human organism. After absorption from the gastrointestinal tract, phenolic acids suffer conjugation reactions and several changes in their initial structure and circulate in human plasma as conjugated forms, glucuronide, methylated and sulfated derivatives. These changes in their structures may increase or decrease the bioactivity of the initial phenolic acids [2]. In the present work, the extract of *Coprinopsis atramentaria*, a wild mushroom species from the northeast of Portugal, was studied and revealed interesting bioactive properties (e.g., antioxidant, cytotoxic for human tumor cell lines and antimicrobial), being *p*-hydroxybenzoic (HA), *p*-coumaric (CoA) and cinnamic (CA) acids identified in the mentioned extract. Furthermore, methylated and glucuronated derivatives of the mentioned compounds were synthetized and their bioactivities were evaluated and compared with those of the parental molecules and extract. In almost all of the cases the glucuronated and methylated derivatives increased the bioactivities of the parental compounds, revealing stronger properties than the extract, the parental compounds and, in the case of antimicrobial properties, even than the standards used [3]. This report allows the comparison between parental compounds and metabolite derivatives. Therefore, detailed knowledge concerning the conjugative/metabolic events and resulting plasma levels following the ingestion of organic acids-rich diet is crucial for the understanding of their bioactivity.

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Keywords: *Coprinopsis atramentaria, antioxidant activity, cytotoxicity, antimicrobial activity, phenolic acids, sinthesized derivatives*

References:

[1] Ferreira ICFR, Barros L, Abreu RMV. Antioxidants in wild mushrooms. Curr Med Chem 2009; 16: 1543-1560.
[2] Rechner AR, Kuhnle G, Bremner P, Hubbard GP, Moore KP, Rice-Evans CA. The metabolic fate of dietary polyphenols in humans Free Radical BioMed 2002; 33: 220-235.
[3] Heleno SA, Ferreira ICFR, Calhelha RC, Esteves AP, Martins A, Queiroz MJRP. Cytotoxicity of Coprinopsis atramentaria extract, organic acids and their synthesized methylated and glucuronate derivatives. Food Res Int 2014; 55: 170-175.