10º Encontro Nacional de Cromatografia

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O Presidente da República

Instituto Politécnico de Bragança
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10th Chromatography Meeting

Título

10º Encontro de Cromatografia

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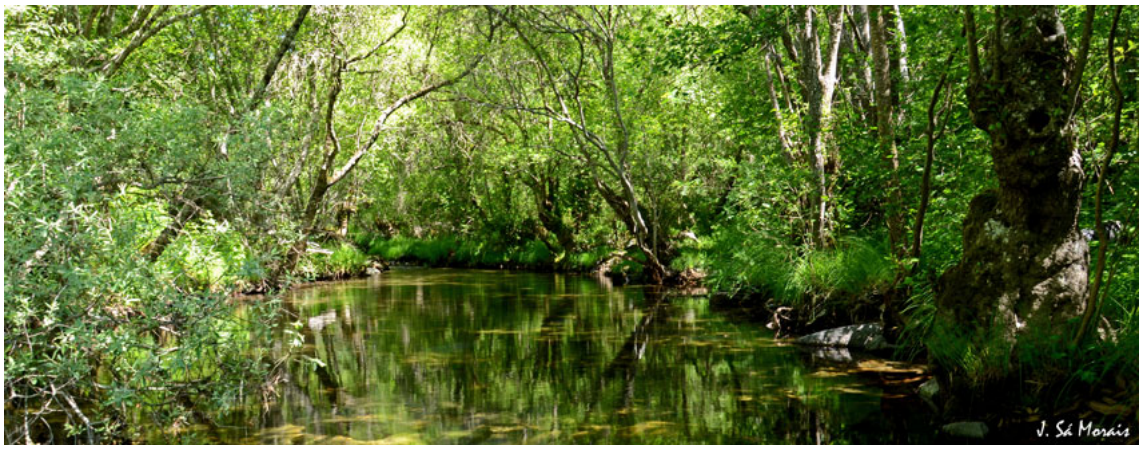

Program / Programa

Time		December 4
8:00-9:00		• Registration
9:00-10:00		• Opening session in *Auditorium Dionísio Gonçalves*
Moderator / Moderador - Auditorium Dionísio Gonçalves ***Isabel C.F.R. Ferreira*** *(Instituto Politécnico de Bragança)*		
10:00-11:00	PL-01	In-tube SPME from open tubular column (in-tube SPME-LC) to directly coupled to mass spectrometry ***Maria Eugênia Costa Queiroz*** *Universidade de São Paulo, Brasil*
11:00-11:30		• Coffee Break and panel session
Moderator / Moderador - Auditorium Dionísio Gonçalves ***Sílvia M. Rocha*** *(Universidade de Aveiro)*		
11:30-12:00	IC-01	Different Strategies Based on Micro(extraction) Followed by GC-MS/MS and LC-MS/MS for the Determination of Personal Care Products in Cosmetics and Environmental Samples ***Maria Llompart*** *University of Santiago de Compostela, Espanha*
12:00-12:30	EC-01	LCMS Technologies: Introducing the Orbitrap for Ultrahigh Resolution Exact Mass and Unequivocal ID ***Daniel Ettlin*** *Thermo Unicam Sistemas Analíticos*
12:30-14:30		• Lunch
Moderator / Moderador - Auditorium Dionísio Gonçalves ***Nuno Mateus*** *(Universidade do Porto)*		
14:30-15:00	IC-02	Back to Basics: Considerations in eco-user-friendly/cost-effective micro-extraction techniques ***José Nogueira*** *Universidade de Lisboa, Portugal*
15:00-16:30		***Oral session 1A / Sessão Oral 1A***
	OC-01	A multiresidue targeting approach for pesticide detection in olive oil: the role of dual-layer solid-phase extraction based on molecular imprinting technology ***Raquel Garcia***
	OC-02	New brush-type chiral stationary phases based on xanthone derivatives for liquid chromatography ***Carla Fernandes***
	OC-03	Chromatographic techniques to assess the profile of biomolecules in different mycorrhizal mushroom species ***Filipa Reis***
	OC-04	Multicolumn based liquid chromatography processes for the separation of nadolol racemates ***António Ribeiro***
	OC-05	An expanded bed chromatography approach for improving human mesenchymal stem cells purification ***Ricardo Silva***

OC-03

Chromatographic techniques to assess the profile of biomolecules in different mycorrhizal mushroom species

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The consumption of wild mushrooms has been preferred compared to cultivated species in many countries, comprising a large number of species with excellent nutritional properties [1]. Moreover, many species have been reported as having bioactive properties, since they are rich in different biomolecules [2,3].

In the present work seven different wild mushrooms were chemically characterized by chromatographic techniques by using different detectors, in order to evaluate the presence of nutritional and/or bioactive molecules. The studied species were: *Amanita caesarea* (Scop.) Pers., *Cortinarius violaceus* (L.) Gray, *Lactarius volemus* (Fr.) Fr., *Leccinum molle* (Bon) Bon, *Leccinum vulpinum* Watling, *Suillus granulatus* (L.) Roussel and *Suillus luteus* (L.) Roussel. Some hydrophilic compounds, namely free sugars, were identified by HPLC-RI, and phenolic acids were assessed by HPLC-PDA. Regarding lipophilic compounds, fatty acids were determined by GC-FID and tocopherols by HPLC-fluorescence detection.

Mannitol and trehalose were the main free sugars detected. Gallic, protocatechuic and p-hydroxybenzoic acids were the main phenolic acids identified, as well as the related compound cinnamic acid. Mono- and polyunsaturated fatty acids were the prevailing fatty acids and generally, β-, γ- and δ-tocopherol were the vitamers of vitamin E detected in the samples. Since these species proved to be a source of biologically active compounds, the antioxidant properties were also evaluated. The antioxidant activity was measured through the reducing power, free radical's scavenging activity and lipid peroxidation inhibition of their methanolic extracts. All the species revealed antioxidant properties, being *S. granulatus* and *L. vulpinum* the most active species. Given the results obtained, other bioactivity assays are planned including the elucidation of the mechanisms of action involved.

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References:
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[2] I.C.F.R. Ferreira, L. Barros, R.M.V. Abreu. Curr. Med. Chem. 2009, 16, 1543-1560.
[3] I.C.F.R. Ferreira, S.A. Heleno, F.S. Reis, D. Stojkovic, M.J.R.P. Queiroz, M.H. Vasconcelos, M. Sokovic. Phytochem. 2015, 38-55.