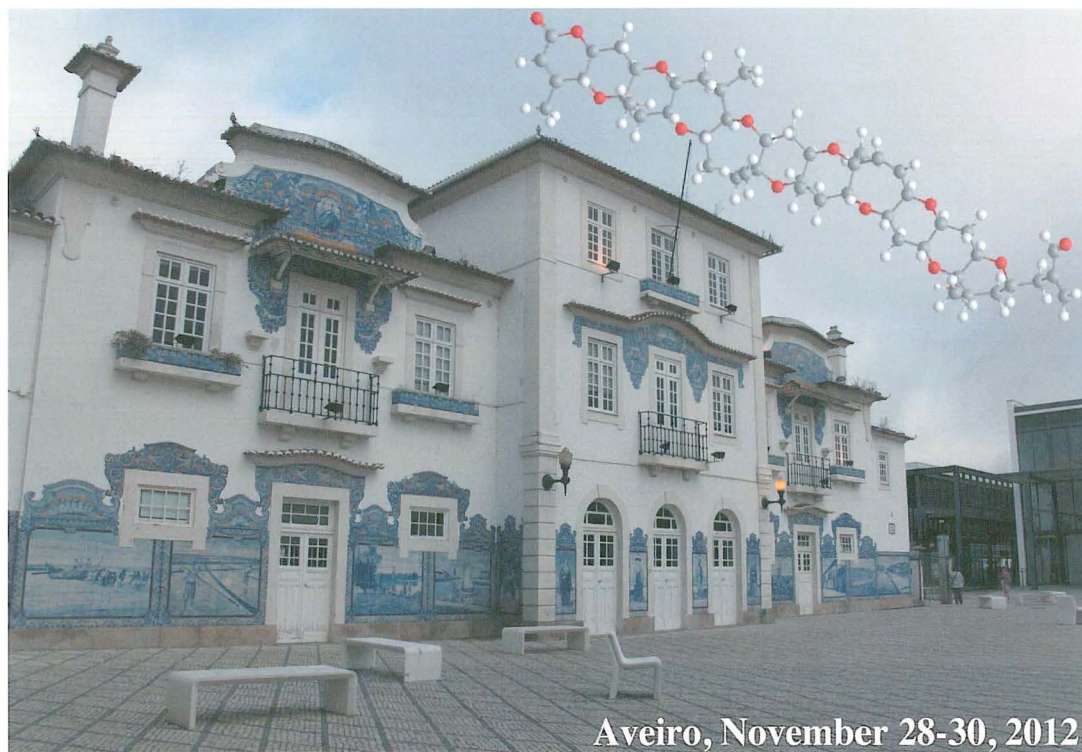


3º Encontro Nacional de Química Terapêutica



Aveiro, November 28-30, 2012

3rd Portuguese Meeting on Medicinal Chemistry
1st Portuguese-Spanish-Brazilian Meeting on Medicinal Chemistry.



universidade
de aveiro

3rd Portuguese Meeting on Medicinal Chemistry

1st Portuguese-Spanish-Brazilian Meeting on Medicinal Chemistry

Supported by The Portuguese Society of Chemistry and the University of Aveiro

Scientific Committee

Antoni Torrens	President of the Spanish Society of Medicinal Chemistry (SEQT); ESTEVE, S.A., Barcelona, Spain
Artur M. S. Silva	Department of Chemistry and QOPNA, University of Aveiro; President
Carlos Montanari	Institute of Chemistry of São Carlos, University of São Paulo, Brazil
Fernanda Proença	Department of Chemistry, School of Science, University of Minho
Hans Peter Wessel	F. Hoffmann-La Roche Ltd, Pharma Research & Early Development (pRED), Basel, Switzerland & Department of Chemistry, University of Aveiro
Madalena Pinto	Faculty of Pharmacy, University of Porto
Maria Luísa Sá e Melo	Faculty of Pharmacy, University of Coimbra
Patrício Soares da Silva	Bial - Portela & C. ^a , S.A.
Rui Moreira	Faculty of Pharmacy, University of Lisboa
William Heggie	Hovionne, Loures, Portugal

Organizing Committee

Artur M. S. Silva (Chairman – Dep. Chem., Univ. Aveiro)
Augusto A. C. Tomé (Dep. Chem., Univ. Aveiro)
Diana C. G. A. Pinto (Dep. Chem., Univ. Aveiro)
M^a Graça P. M. S. Neves (Dep. Chem., Univ. Aveiro)
Graça M. S. Rocha (Dep. Chem., Univ. Aveiro)
José A. S. Cavaleiro, (Dep. Chem., Univ. Aveiro)
M^a do Amparo F. Faustino (Dep. Chem., Univ. Aveiro)
Mário M. Q. Simões (Dep. Chem., Univ. Aveiro)
Aurora Fernandes (Dep. Chem., Univ. Aveiro)

Bioactivity of *Morchella esculenta* (L.) Pers. phenolic extracts: a comparative study between samples from Portugal and Serbia

Sandrina A. Heleno,^{a,b} Dejan Stojković,^c Lillian Barros,^b Jasmina Glamočlija,^c Marina Soković,^c Anabela Martins,^b Maria João R. P. Queiroz,^a Isabel C. F. R. Ferreira^b

^aCentro de Química, Universidade do Minho, Braga, Portugal; ^bCentro de Investigação de Montanha, Escola Superior Agrária, Bragança, Portugal; ^cUniversity of Belgrade, Institute for Biological Research "Siniša Stanković", Department of Plant Physiology, Belgrade, Serbia.

Mushrooms contain a huge diversity of biomolecules with bioactive properties^[1-3] that should be explored.

Morchella esculenta (L.) Pers. (morel) is one of the most highly prized edible mushrooms in the world. In the present work a comparative study on the antioxidant properties (scavenging activity, reducing power and inhibition of lipid peroxidation) and antimicrobial activity (antibacterial and demelanizing properties) of phenolic extracts of two samples from two countries, Portugal and Serbia, was performed. Furthermore, the extracts were chemically characterized regarding phenolic acids composition, using HPLC-DAD-MS.

The sample from Portugal (SP) gave higher radical scavenging activity and reducing power, while sample from Serbia (SS) showed higher lipid peroxidation inhibition. Both samples showed antibacterial activity against five bacteria [*Escherichia coli* (ATCC 35210), *Salmonella typhimurium* (ATCC 13311), *Enterobacter cloacae* (human isolate) and Gram-positive bacteria: *Listeria monocytogenes* (NCTC 7973) and *Staphylococcus aureus* (ATCC 6538)], in some cases even better than standard antibiotics, and demelanizing activity against four micromycetes (*Aspergillus fumigatus*, *Aspergillus flavus*, *Penicillium funiculosum* and *Penicillium ochrochloron*), SS showing higher activities. Protocatechuic and *p*-hydroxybenzoic acids were found in both samples, but *p*-coumaric acid was only quantified in the SP.

As far as we know, this is the first study reporting phenolic compounds and bioactivity of morel samples from Portugal and Serbia. Furthermore, a novel method for evaluation of demelanizing activity is presented. Further studies are needed in order to elucidate the mechanisms of action involved in morel bioactivity and contribution of the identified compounds.

Acknowledgments: The authors are grateful to Fundação para a Ciência e a Tecnologia (FCT, Portugal) and FEDER-COMPETE/QREN/EU (research project PTDC/AGR-ALI/110062/2009; bilateral cooperation action Portugal/Serbia 2011; strategic projects PEst-OE/AGR/UI0690/2011 and PEst-C/QUI/UI0686/2011), and to Serbian Ministry of Education and Science (grant number 173032) for financial support. S.A. Heleno (BD/70304/2010) and L. Barros (BPD/4609/2008) also thank FCT, POPH-QREN and FSE.

References

- [1] Ferreira, I.C.F.R., Barros, L., & Abreu, R.M.V. *Curr. Med. Chem.* **2009**, *16*, 1543-156.
- [2] Ferreira, I.C.F.R., Vaz, J.A., Vasconcelos, M.H., & Martins, A. *Anti. Canc. Agents Med. Chem.* **2010**, *10*, 424-436.
- [3] Alves, M.J., Ferreira, I.C.F.R., Dias, J., Teixeira, V., Martins, A., & Pintado, M.A. *Planta Med.* **2012**, *78*, 1-12.