

2013

Book of Abstracts of the 1st International Symposium on Profiling

2nd - 4th
September 2013
Caparica - Portugal



**Book of Abstracts of the 1st International
Symposium on Profiling 2013
ISPROF 2013 - 1st**

Caparica - Almada, Portugal

2nd – 4th SEPTEMBER 2013

Book of Abstracts of the 1st International Symposium on Profiling 2013
ISPROF 2013 - 1st

Cover design: Hugo Santos

Organization of the Book of Abstracts: José Luís Capelo, Mário Diniz, Carlos Lodeiro, Hugo Santos, Elisabete Oliveira, Eduardo Araujo

ISBN: 978-989-98415-5-0 (pdf version)

ISBN: 978-989-98415-4-3 (paper version)

Printed by Proteomass (Portugal)

Printage: 200 copies (CD-ROM); 30 copies (paper)

Caparica, Portugal, 2013

Table of contents

Welcome	ix
Preface.....	xi
Plenary Lectures.....	19
PL1. Issues in Profiling: How to identify valid proteomic biomarkers and classifiers	21
PL2. Mining the urine proteome: approaches and challenges	22
PL3. Profiling Renal Cancer Using High Throughput Targeted Sequencing for Discovery, Diagnosis and Therapy.....	23
PL4. Fuzzy Optimal Associate Memories for Modeling Chemical Profiles: Authentication of Foods and Nutraceuticals.....	24
PL5. Latest development for the profiling and dereplication of natural products in complex biological matrices: evolution of revolution?.....	25
Shot-Gun Presentations	27
S1. Proteome Profiling of primary human multiple myeloma cells in comparison to the established multiple myeloma cell line RPMI-8226	29
S2. Quantitative proteomics of the chemokine IL-8 applying orbitrap and triple quadrupole mass spectrometer	30
S3. Metabolite profiling of cancer preventive polyphenols in a <i>Terminalia chebula</i> Retzius extract	31
S4. Assessment of drug effects exemplified by activated PBMCs treated with Aspirin and Dexamethasone, respectively	32
S5. Introducing microwave-assisted digestion protocol in top-down mass spectrometric protein analysis	33
S6. Bioactive molecules profile of two <i>Lactarius</i> species from Serbia	34
S7. Metabolite profiling of propolis polyphenols by microwave-assisted extraction combined with high-performance liquid chromatography using the fused-core technology	35
S8. Titanium dioxide nanoparticles inhibits <i>Saccharomyces cerevisiae</i> BY4741 proliferation, modifying the profile of antioxidant response.....	36
S9. Application of a high-resolution mass spectrometry for identification and quantification of endothelium biomarkers.....	37
S10. Optimized chromatographic analysis of ergosterol in wild and cultivated mushrooms.....	38
S11. Comprehensive two-dimensional liquid chromatography coupled to a multichannel detector: potentials and limitations for non-target analysis of complex samples	39
S12. Enzyme activity profile of peroxidases and polyphenoloxidases of <i>Malus domestica</i> Borkh varieties from Portuguese orchards during cold storage.....	40

P9. Time profiles of cypermethrin metabolites in orally exposed volunteers	126
P10. Profiling of thyroid hormone related gene expression to access the neonatal effects of endocrine disruptors	127
P11. Comparative analysis of the exoproteomes of <i>Listeria monocytogenes</i> strains grown at low temperatures.....	128
P12. Epidermal growth factor receptor inhibitory activity of new potential antitumor di(hetero)arylethers and di(hetero)arylamines in the thieno[3,2- <i>b</i>]pyridine series.	129
P13. Nanoencapsulation of aqueous extracts and essential oils from aromatic plants to use in food systems.....	130
P14. Sample preparation with aminothiols derivatization for metabolic characterization of endothelial dysfunction.....	131
P15. 2D-DIGE of the soluble fraction of sickle cells collected under steady-state and vaso-occlusive crisis reveals candidate transition pathway	132
P16. Gold Nanoparticles and Profiling: Human Serum@Chemical Depletion@AuNPs assisted Protein Separation.....	133
Sponsors Talks.....	135
Multiplexed label-free bio-affinity measurement using Surface Plasmon Resonance imaging ...	137

P12. Epidermal growth factor receptor inhibitory activity of new potential antitumor di(hetero)arylethers and di(hetero)arylamines in the thieno[3,2-*b*]pyridine series.

Ricardo C. Calhelha^{1,2}, Daniela Peixoto¹, Pedro Soares^{1,3}, Isabel C.F.R. Ferreira², Rui M.V. Abreu², Maria João R.P. Queiroz¹

(1) Centro de Química, Univ. do Minho, Campus de Gualtar 4710-057 Braga, Portugal

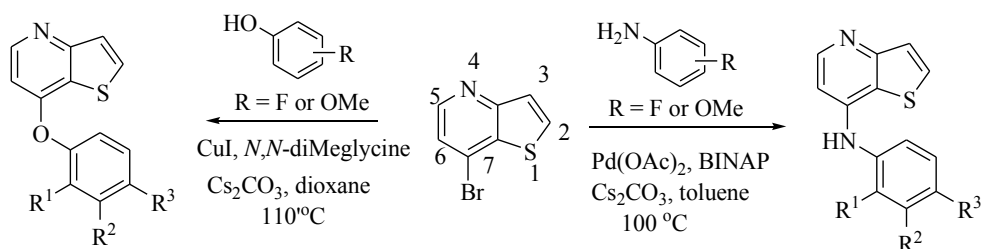
(2) CIMO/ESA, I.P. Bragança Campus de Sta Apolónia, Apt. 1172, 5301-855 Bragança, Portugal.

(3) CIQ/Dept. de Química e Bioquímica, Fac. Ciências, Univ. do Porto, 4169-007 Porto, Portugal.

calhelha@ipb.pt

Abstract

Thienopyridine skeleton has been reported as having interesting biological activity, namely as antitumorals [1] and antiangiogenics [2]. The Epidermal Growth Factor Receptor (EGFR) exists in the cell surface and is activated by binding its specific ligands. The inhibition of its intracellular tyrosine kinase domain prevents the signaling pathways of cellular proliferation [3]. In our research group we have prepared the di(hetero)arylethers **1a-f** and the di(hetero)arylamines **2a-f** functionalizing the 7-position of the thieno[3,2-*b*]pyridine in good to high yields, using copper (C-O) or palladium (C-N) catalyzed couplings, like presented below.



1a R¹ = F, R² = R³ = H; 69%

1b R¹ = R³ = H; R² = F; 63%

1c R¹ = R² = H; R³ = F; 65%

1d R¹ = OMe, R² = R³ = H; 45%

1e R¹ = R³ = H; R² = OMe; 50%

1f R¹ = R² = H; R³ = OMe; 45%

2a R¹ = F, R² = R³ = H; 75%

2b R¹ = R³ = H; R² = F; 70%

2c R¹ = R² = H; R³ = F; 73%

2d R¹ = OMe, R² = R³ = H; 80%

2e R¹ = R³ = H; R² = OMe; 83%

2f R¹ = R² = H; R³ = OMe; 54%

The di(hetero)arylethers **1a-f** and di(hetero)arylamines **2a-f** series were evaluated for EGFR tyrosine kinase inhibition activity. Compounds for series **1** presented practically no or very weak inhibition activity while compounds **2** presented good inhibition activity, with the most potent compounds **2e** presenting a IC₅₀ value of 40 nM. These compounds can be view as good starting points for the synthesis of even more potent EGFR inhibitors.

References

- [1] Queiroz, M.J.R.P., *et al.* (2011) *Eur. J. Med. Chem.* 46, 236–240.
 [2] Munchhof, M.J. *et al.* (2004) *Bioorg. Med. Chem. Lett.*, 14, 21–24.
 [3] Giamas, G., Yik *et al.* (2010). *Cellular Signalling* 22, 984–1002.

Acknowledgments

To the Foundation for the Science and Technology (FCT–Portugal) for financial support through the Portuguese NMR network (Bruker 400 Avance III–Univ Minho). To FCT and FEDER–COMPETE/QREN/EU for financial support through the research unities PEst–C/QUI/UI686/2011 and PEst–OE/AGR/UI0690/2011, the research project PTDC/QUI–QUI/111060/2009 and the post–Doctoral grant attributed to R.C.C. (SFRH/BPD/68344/2010) also financed by POPH and FSE.