

CURRICULUM VITAE

Name: Maria Helena Ferreira da Silva Florêncio

Birth: Alcanede - Portugal

Affiliation: Departamento de Química e Bioquímica, DQB, Faculdade de Ciências da Universidade de Lisboa, FCUL; Centro de Química e Bioquímica, CQB, da FCUL, Edifício C8, Campo Grande, 1749-016 Lisboa

Telef: 217500878; **Ext:** 28313; **FAX:** 217500088

E-mail: mhflorencio@fc.ul.pt

ACADEMIC DEGREES:

Aggregation in Chemistry, Faculdade de Ciências da Universidade de Lisboa, FCUL, 1994;

PhD in Chemistry - Mass Spectrometry, University of Utrecht, the Netherlands, 1979;

Chemistry Degree Faculdade de Ciências da Universidade de Lisboa, FCUL, 1969.

PRESENT POSITIONS

Full Professor Analytical Chemistry, FCUL;

Member of the General Council of the University of Lisbon;

Head of the Environmental and Biological Mass Spectrometry Group of the Chemistry and Biochemistry Centre, CQB;

Leader of the National Mass Spectrometry Network, RNEM, included in the Portuguese Roadmap of Scientific Research Infrastructures of Strategic interest;

Head of the Scientific Council of ASAE (Economic and Food Security Authority), Portuguese Focal point of EFSA (European Food Security Authority);

Member of the Executive and Scientific boards of PCISBIO (the Portuguese Centre affiliated to Instruct (European platform for Integrated Structural Biology)

Portuguese Representative at the International Mass Spectrometry Foundation, IMSF

Member of the Chemistry Portuguese Society, SPQ

OTHER POSITIONS (PREVIOUS)

Chairman of the College Assembly of FCUL, (2009-2013)

Chairman of the Commission for Internal Evaluation and Quality Assurance, FCUL, (2009-2013)

Coordinator of the Chemistry and Biochemistry 3rd cycles of the Department of Chemistry and Biochemistry, DQB, FCUL, (2012-2014)

Member of the Directive Committee of the Research Centre for Chemistry and Biochemistry, CQB, FCUL, (2012-2014; 2008-2009).

President of the Department of Chemistry and Biochemistry, DQB, FCUL, (2003-2004;

Coordinator of the 1st and 2nd cycles in Chemistry of DQB, FCUL. (2009-2011);

Coordinator of the Master course in Applied Analytical Chemistry, DQB, FCUL, (2000-2008);

Coordinator of the 1st cycle in Chemistry of DQB, FCUL, (2001-2003);

Scientific Coordinator of the Centre for Mass Spectrometry of the University of Lisbon (2000-2002);

Member of the Coordinating Committee of the Scientific Council of FCUL (1990–1992; 1995-1997 e 1999-2008)

MAIN SCIENTIFIC AREAS OF RESEARCH

Mass spectrometry; Analytical Chemistry

OTHER SCIENTIFIC AREAS OF INTEREST

Environment; Biochemistry

ACADEMIC AND SCIENTIFIC ACTIVITIES

Teaching analytical chemistry, mass spectrometry, spectroscopy, and environmental chemistry courses in pre-graduated courses at FCUL and postgraduate courses at FCUL and other universities and institutes, namely FFUL, IST, ex-INETI;

Supervisor of *ca* 25 PhD, MSc and Post graduated students, in the areas of analytical chemistry, mass spectrometry and environmental chemistry.

Author/(co-author) of over 100 *peer-reviewed* scientific publications, in addition to book chapters in the areas of mass spectrometry, analytical chemistry and environmental chemistry.

Scientific coordinator of several scientific research projects funded at European level as well as National level in the field of mass spectrometry and its applications in analytical, environmental and biological areas. One of these was at the origin of the Portuguese Mass Spectrometry Network, RNEM.

OTHER ACTIVITIES/ COMPETENCIES

Reviewer in several SCI scientific journals in analytical chemistry, mass spectrometry and environment (Ex: RCM; J. Chrom. A and J. Chrom B; Chemosphere; Talanta);

Member of chemistry evaluation panels at national level (PRAXIS, PROTEC) and European Union level, under the framework of the 6th and 5th Human Capital and Mobility programs (Research Training Networks and Marie Curie actions). *Vice Chairman in 2001.*

RELEVANT PUBLICATIONS (LAST 10 YEARS)

“Mass spectrometric studies of the reaction of a blocked arginine with diketonic α -dicarbonyls”, M. A. Saraiva, C. M. Borges, M. H. Florêncio, Amino acids, Published *on line* 23 November **2015**. DOI: 10.1007/s00726-015-2135-6

“Wittig Reaction: Domino Olefination and Stereoselectivity DFT Study. Synthesis of the Miharamycins' Bicyclic Sugar Moiety, Vasco Cachatra *et al.*, *Org. Lett.*, **2015**, 17, 5622–5625. DOI: 10.1021/acs.orglett.5b02849

“Phytochemical Analysis of *Plectranthus sp.* Extracts and Application in Inhibition of Dental Bacteria, *Streptococcus sobrinus* and *Streptococcus mutans*”, N. L. Figueiredo, *et al*, European Journal of Medicinal Plants **2014**, 4, 794-809.
<http://imsear.hellis.org/handle/123456789/164153>

“Can semi empirical calculations help solve mass spectrometry problems? Protonation sites and proton affinities of aminoacids”, P. J. A. Madeira, P. D. Vaz, R. J. N. Bettencourt da Silva, M. H. Florêncio, ChemPlusChem **2013**, 78, 1149 – 1156.
DOI: 10.1002/cplu.201300173

“Molecular Recognition of Rosmarinic Acid from *Salvia sclareoides* Extracts by Acetylcholinesterase. A New Binding Site Detected by NMR”, F. Marcelo *et al.*, Chemistry A. European Journal, **2013**, 19, 6641–6649.
DOI:10.1002/chem.201203966.

“Acetylcholinesterase Inhibitory Activity After *in vitro* Gastrointestinal Digestion of Infusions of *Mentha* Species”, P.C. Dinis, *et al.*, European Journal of Medicinal Plants, **2013**, 3, 381-393. <http://www.sciencedomain.org/review-history/1344>

"Antioxidant and anti-acetylcholinesterase activity of commercially available medicinal infusions after *in vitro* gastrointestinal digestion", P.L Falé *et al.*, Journal Medicinal Plant Research, **2013**, 7, 1370-1378. DOI: 10.5897/JMPR13.4438

P. J. A. Madeira, M. H. Florêncio, "Applications of Tandem Mass Spectrometry: From Structural Analysis to Fundamental Studies" in Tandem Mass Spectrometry - Applications and Principles, Ed. Jeevan K. Prasain, Intech, February **2012**.

"Acetylcholinesterase inhibition, antioxidant activity and toxicity of *Peumus boldus* water extracts on HeLa and Caco-2 cell lines", P. L. Falé *et al.*, Food Chemistry and Toxicology, **2012**, 50, 2656–2662. DOI: 10.1016/j.fct.2012.04.049

"Reactions of aminoguanidine with α -dicarbonyl compounds studied by electrospray ionization mass spectrometry", M. A. Saraiva, C. M. Borges, M. H. Florêncio, European Journal of Mass Spectrometry, **2012**, 18, 385-97. DOI: 10.1255/ejms.1191.

"Function of *Plectranthus barbatus* herbal tea as neuronal acetylcholinesterase inhibitor", P. L.V. Falé *et al.*, Food Funct. **2011**, 2, 130-136. DOI: 10.1039/c0fo00070a

"Possible key intermediates in arsenic biochemistry: Synthesis and identification by liquid chromatography electrospray ionization mass spectrometry and high resolution mass spectrometry", A. M. de Bettencourt *et al.*, Microchemical Journal, **2011**, 99, 218-234. DOI: 10.1016/j.microc.2011.05.007

"Furanose C-C-linked γ -lactones: a combined ESI FTICR MS and semi-empirical calculations study". P. J. A. Madeira *et al.*, Journal of Mass Spectrometry, **2010**, 45, 1167-1178. DOI 10.1002/jms.1806

"Electrospray ionization Fourier transform ion cyclotron resonance mass spectrometric and semi-empirical calculations study of five isoflavone aglycones.", P. J. A. Madeira, C. M. Borges, M. H. Florêncio, Rapid Commun. Mass Spectrom., **2010**; 24, 3432–3440. DOI: 10.1002/rcm.4791

"Behaviour of HEPES under electrospray ionization mass spectrometry conditions", M. A. Saraiva, C. M. Borges, M. H. Florêncio, Eur. J. Mass Spectrometry, **2010**, 16, 199-213. DOI 10.1255/ejms.1061

"Electrospray ionization mass spectrometric analysis of newly synthesised α,β -unsaturated γ -lactones fused to sugars", P. J. A. Madeira, *et al.*, Rapid Commun. Mass Spectrom. **2010**, 24, 1049–1058. DOI: 10.1002/rcm.4490

"Antiacetylcholinesterase and antioxidant activities of *Plectranthus barbatus* tea, after in-vitro gastrointestinal metabolism", S. Porfírio, *et al.*, Food Chemistry, **2010**, 122, 179-187. DOI: 10.1016/j.foodchem.2010.02.044

"Electrospray ionization Fourier transform ion cyclotron resonance mass spectrometric and semi-empirical calculations study of five isoflavone aglycones", P. J. A. Madeira, C. M. Borges, M. H. Florêncio Rapid Communications in Mass Spectrometry, **2010**, 24, 3432–3440. DOI: 10.1002/rcm.4791.

“Electrospray ionization tandem mass spectrometry fragmentation of protonated flavone and flavonolaglycones: a re-examination” G. C. Justino, C. Borges, M. H. Florêncio, *Rapid Communications in Mass Spectrometry* **2009**, 23, 237–248. DOI: 10.1002/rcm.3869

“Plant extracts with anti-inflammatory properties – A new approach for characterization of their bioactive compounds and establishment of structure-antioxidant activity relationships”, S. Amaral, L. Mira, J.M.F. Nogueira, A. Pereira da Silva, M. H. Florêncio, *Bioorganic & Medicinal Chemistry* **2009**, 17, 1876-1883. DOI:10.1016/j.bmc.2009.01.045

“Rosmarinic Acid, scutellarein 4'-methyl ether 7-*O*-glucuronide and (16S)-Coleon E are the main compounds responsible for the antiacetylcholinesterase and antioxidant activity in herbal tea of *Plectranthus barbatus* (“Falso Boldo”)” P. Falé *et al.*, *Food Chemistry*, **2009**, 114, 798-805. DOI:10.1016/j.foodchem.2008.10.015

“Doped titanium dioxide nanocrystalline powders with high photocatalytic activity”, A.L. Castro *et al.* *Journal of Solid State Chemistry* **2009**, 182, 1838-1845. DOI:10.1016/j.jssc.2009.04.020

“Synthetic Approaches to Novel Thiosugar Scaffolds Containing α,β -Unsaturated Carbonyl Groups”, N. M. Xavier, P. J. Amorim Madeira, M. H. Florêncio, A. P. Rauter, *European Journal of Organic Chemistry*, **2009**, 4983- 4991. DOI: 10.1002/ejoc.200900573

“Flavonoid-Matrix cluster ions in MALDI Mass Spectrometry” P. J. A. Madeira, M. H. Florêncio, *Journal of Mass Spectrometry* **2009**, 44, 1105-1113. DOI:10.1002/jms.1588

“Structure and antioxidant activity of brominated flavonols and flavanones” G. C. Justino, M. Rodrigues. M. H. Florêncio, L. Mira, *Journal of Mass Spectrometry* **2009**, 44, 1459-1468. DOI: 10.1002/jms.1630

“Synthesis of Anatase TiO₂ Nanoparticles with High Temperature Stability and Photocatalytic Activity” A. L. Castro, M. R. Nunes, A. P. Carvalho, F. M. Costa, M. H. Florêncio, *Solid State Sciences* **2008**, 10, 602-606. DOI:10.1016/j.solidstatesciences.2007.10.012

“Influence of the metabolic profile on the in vivo antioxidant activity of quercetin under a low dosage oral regimen in rats” M. Santos, M. J. Rodriguez-Gomez, G. C. Justino, N. Charro, M. H. Florêncio, L. Mira, *British Journal of Pharmacology* **2008**, 153, 1750-1761. DOI: 10.1038/bjp.2008.46

“TiO₂ Anatase as Matrix for MALDI Analysis of Small Molecules” A. L. Castro, P. J. A. Madeira, M. R. Nunes, F. M. Costa, M. H. Florêncio, *Rapid Communications in Mass Spectrometry* **2008**, 22, 3761–3766. DOI: 10.1002/rcm.3795

“Synthesis and Biological Evaluation of Sugars Containing α,β -Unsaturated γ -Lactones”, N. M. Xavier *et al.*, *European Journal of Organic Chemistry* **2008**, 6134-6143. DOI: 10.1002/ejoc.200800763

“New Strategies to Screen Endocrine-Disrupting Chemicals in the Portuguese Marine Environment by Large Volume Injection-Capillary Gas Chromatography-Mass Spectrometry Combined with Retention Time Locking Libraries (LVI-GC-MS-RTL)”, C. Almeida, P. Serôdio, M. H. Florêncio, J. M. F. Nogueira, Analytical and Bioanalytical Chemistry, **2007**, 387, 2569-2583. DOI: 10.1007/s00216-006-1101-2

“Reactions of a modified lysine with aldehydic and diketonic dicarbonyl compounds: an electrospray mass spectrometry structure/activity study”, M. A. Saraiva, C. M. Borges, M. H. Florêncio, Journal of Mass Spectrometry, **2006**, 41, 216-228. DOI: 10.1002/jms.980

“Non-enzymatic model glycation reactions – a comprehensive study of the reactivity of a modified arginine with aldehydic and diketonic compounds by electrospray mass spectrometry”, M. A. Saraiva, C. M. Borges, M. H. Florêncio, Journal of Mass Spectrometry, **2006**, 41, 755-770. DOI: 10.1002/jms.1031

“Towards the control and inhibition of glycation - the role of the guanidine reaction center with aldehydic and diketonic dicarbonyls. A mass spectrometry study”, M. A. Saraiva, C. M. Borges, M. H. Florêncio, Journal of Mass Spectrometry, **2006**, 41, 1346-1368. DOI: 10.1002/jms.1109

“Benzidine photodegradation: a mass spectrometry and UV spectroscopy combined study”, Paulo Madeira, M. R. Nunes, C. Borges, F. M. A. Costa, M. H. Florêncio, Rapid Communications in Mass Spectrometry, **2005**, 19, 2015-2020. DOI: 10.1002/rcm.2019