



## BIOGRAPHICAL SKETCH

<b>NAME</b> Alice Isabel Mendes Martins	<b>POSITION TITLE</b> Post-Doc Researcher		
<b>EDUCATION / TRAINING</b>			
<b>INSTITUTION AND LOCATION</b>	<b>DEGREE</b>	<b>DATE</b>	<b>FIELD OF STUDY</b>
Universidade de Lisboa, Faculdade de Ciências	PhD	10/06	Chemistry
Universidade de Lisboa, Faculdade de Ciências	Master	12/91	Plant Biotechnology
Universidade Técnica de Lisboa, ISA	Graduation	03/88	Agro-Industrial Engineering

### Scientific Interests

- Natural products chemistry: extraction, isolation and identification of organic compounds from natural resources.
- Plant extracts analysis by modern chromatographic techniques
- Bioactivities of natural and synthesized organic compounds: antimicrobial, antioxidant, anticholinesterase and antidiabetic properties.
- Nutraceuticals and functional foods to prevent neurodegenerative impairments
- Nutritional requirements for an active and healthy ageing

### Research Activity

Post-doc fellow of Fundação da Faculdade de Ciências, Universidade de Lisboa: Project "PERsonalised ICT Supported Service for Independent Living and Active Ageing (PERSSILAA)", Ref. FP7-ICT-2013-10 – Proj. nr. 610359, co-funded by the European Commission (From May 2014 to the present).

Post-Doc Researcher granted by FCT (BPD/42567/2007) at Carbohydrate Chemistry Group, CQB-FCUL (2008-2014).

Visitant Researcher at:

- University of Sheffield, UK, Chemistry Department (2009)
- University of Texas at Austin, USA, Chemistry Department (2008)
- Faculdade de Farmácia da Universidade de Lisboa – Laboratório de Farmacologia (2003)
- University of Newcastle-upon-Tyne, UK-Medicinal Plant Research Center (2002)
- University of Heidelberg, Institut für Pharmazeutische Biologie (1998)
- Instituto de Biologia Experimental e Tecnológica – Laboratório de Microbiologia (1997)
- Université René Descartes, Paris V – Faculté de Pharmacie, Laboratoire de Pharmacognosie (1995)
- Universidade de La Laguna, Tenerife – Instituto de Productos Naturales y Orgánicos (1994)
- Laboratório Nacional de Engenharia e Tecnologia Industrial – Departamento de Análises Industriais (1991)

Participation, as a team member, in the following research projects:

From May 2014 to the present- “PERSONALISED ICT supported Service for Independent Living and Active Ageing”, ICT Call 10, FP7-ICT-2013-10.

From 2008 to the present -“Strategic Project of CQB”. PEst-OE/QUI/UI0612

2012/2014- “Halophytes; A Precious Resource of Nutritional Elements and Bioactive Compounds”, XtremeBio (PTDC/MAR-EST/4346/2012), funded by FCT.

2008/2011- “New Antidiabetic Agents from *Genista tenera*- Isolation, Structural Characterization, Synthesis and Mechanisms of Action”, in collaboration with Escola Superior Agrária de Santarém, funded by FCT (PTDC/QUI/67165/2006).

2009/2010- “Anticancer Drugs from *Artemisia gorgonum* Extracts – A Case of Study for Human Health”, Treaty of Windsor- Anglo-Portuguese Joint Research Programme, involving The University of Manchester and Escola Superior Agrária de Santarém.

2007/2010- “Development of New Antidiabetic Agents”, Project approved by Fundação Luso-Americana para o Desenvolvimento, in collaboration with the Section of Carbohydrates of The National Institutes of Health, NIDDK, in Bethesda, USA.

2008/2009- “Valuation of Portuguese *Salvia* Species in Terms of Food Quality and Functional Food Production”, research network approved by Fundação para a Ciência e Tecnologia – British Council Convenium, involving The University of Sheffield and Escola Superior Agrária de Santarém.

2007/2009- “Study of the Active Principles of Plants Endemic to Portugal Focusing their Potential Use for the Alzheimer and Prion Diseases and their Antioxidant Activity”, Treaty of Windsor-Anglo-Portuguese Joint Research Programme, involving The University of Sheffield and Escola Superior Agrária de Santarém.

2005/2007- “Study of the Anti-Hyperglycemic Constituents of *Genista tenera*”, Treaty of Windsor - Anglo-Portuguese Joint Research Programme involving the University of York and Escola Superior Agrária de Santarém.

2001/2002- “Neuroactivity of Natural Products and Related Synthetic Analogues Relevant to Cognitive Disorders”, Treaty of Windsor - Anglo-Portuguese Joint Research Programme involving the University of Newcastle and ESASantarém.

1992/1994 -“*Estudo Químico de Espécies Vegetais Endémicas de Portugal*”, JNICT-CSIC (Tenerife, Espanha).

## Publications

A. Martins, R. Mignon, M. Bastos, D. Batista, N. R. Neng, J.M.F. Nogueira, C. Vizetto-Duarte, L. Custódio, J. Varela, A. P. Rauter. In vitro antitumoral activity of compounds isolated from *Artemisia gorgonum* Webb. *Phytotherapy Research*, 2014, DOI: 10.1002/ptr.5133.

F. Marcelo, C. Dias, A. Martins, P. J. Madeira, T. Jorge, M. H. Florêncio, F. J. Cañada, E. J. Cabrita, J. Jiménez-Barbero, A. P. Rauter, Molecular recognition of rosmarinic acid from *Salvia sclareoides* extracts by acetylcholinesterase: a new binding site detected by NMR spectroscopy. *Chemistry*, 2013, 19: 6641-6649.

L. B. Roseiro, L. C. Duarte, D. L. Oliveira, R. Roque, M. G. Bernardo-Gil, A. Martins, C. Sepúlveda, J. Almeida, M. Meireles, F. M. Gírio, A. P. Rauter. Supercritical, ultrasound and conventional extracts from carob (*Ceratonia siliqua* L.) biomass: Effect on the phenolic profile and antiproliferative activity. *Industrial Crops and Products*, 2013, 47: 132– 138.

A. Martins, M. S. Santos, C. Dias, P. Serra, V. Cachatra, J. Pais, J. Caio, V. H. Teixeira, M. Machuqueiro, M. S. Silva, A. Pelerito, J. Justino, M. Goulart, F. V. Silva, A. P. Rauter. Tuning the bioactivity of tensoactive deoxy glycosides to structure: antibacterial activity versus selective cholinesterase inhibition rationalized by molecular docking. *European Journal of Organic Chemistry*, 2013, 1: 1448–1459.

C. Airoidi, E. Sironi, C. Dias, F. Marcelo, A. Martins, A. P. Rauter, F. Nicotra, J. Jimenez-Barbero. Natural compounds against Alzheimer's Disease: Molecular recognition of Ab1–42 peptide by *Salvia sclareoides* extract and its major component, rosmarinic acid, as investigated by NMR. *Chemistry Asian Journal*, 2013, 8: 596 – 602.

A. P. Rauter, C. Dias, A. Martins, I. Branco, N. R. Neng, J. M. Nogueira, M. Goulart, F. V.M. Silva, J. Justino, C. Trevitt, J. P. Waltho. Non-toxic *Salvia sclareoides* Brot. extracts as a source of functional food ingredients: Phenolic profile, antioxidant activity and prion binding properties. *Food Chemistry*, 2012, 132, 1930–1935.

A.P. Rauter, A. Martins, C. Borges, H. Mota-Filipe, R. Pinto, B. Sepodes, J. Justino. Antihyperglycaemic and protective effects of flavonoids on streptozotocin–induced diabetic rats. DOI: 10.1002/ptr.3017. *Phytotherapy Research*, 2010, 24, S133-S138.

Salta, A. Martins, R. G. Santos, N. R. Neng, J. M.F. Nogueira, J. Justino, A. P. Rauter, Phenolic composition and antioxidant activity of Rocha pear and other pear cultivars – A comparative study. *Journal of Functional Foods*, 2010, 2, 153-157.

F. V. M. Silva, A. Martins, J. Salta, N. R. Neng, J. M. F. Nogueira, D. Mira, N. Gaspar, J. Justino, C. Grosso, J. S. Urieta, A. M. S. Palavra, A. P. Rauter. Phytochemical profile, anticholinesterase and antimicrobial activities of supercritical versus conventional extracts of *Satureja montana*. *Journal of Agriculture and Food Chemistry*, 2009, 57(24), 11557-11563.

A. P. Rauter, J. Ferreira, A. Martins, R.G. Santos, M. L. Serralheiro, C. Borges, M. E. Araújo, F. Silva, M. Goulart, J. Justino, J. Rodrigues, E. Edwards J. P. Thomas-Oates, J. P. Noronha, R. Pinto, H. Mota-Filipe. Bioactivity studies and chemical profile of the antidiabetic plant *Genista tenera*.. *Journal of Ethnopharmacology*, 2009, 122 (2), 384-393.

A.P. Rauter, R. Lopes, A. Martins. C-Glycosylflavonoids: Identification, bioactivity and synthesis. *Natural Product Communications*, 2007, 2, 1-22.

A. P. Rauter, A. Martins, C. Borges, J. Ferreira, J. Justino, M.R. Bronze, A.V. Coelho, Y.H. Choi, R. Verpoorte. Liquid chromatography – diode array detection – electrospray ionisation mass spectrometry / nuclear magnetic resonance analyses of the anti-hyperglycemic flavonoid extract of *Genista tenera*. Structure elucidation of a flavonoid – C – glycoside. *Journal of Chromatography A.*, 2005, 1089, 59-64.

A. Martins, M. Wink, A. Tei, M. Brum-Bousquet, F. Tillequin, A.P. Rauter. A phytochemical study of quinolizidine alkaloids from *Genista tenera* by gas chromatography- mass spectrometry. *Phytochemical Analysis*, 2005, 16, 264-266.

A.Martins, M. Wink, A. Tei, A.P. Rauter. Quinolizidine alkaloid profiles of two taxa of *Teline maderensis*. *Zeitschrift fur Naturforschung*, **2003**, 58C, 776-778.

C. Borges, P. Martinho, A. Martins, A. P. Rauter, M.A. Almoester-Ferreira. Structural characterization of flavonoids and flavonoid – O – glycosides extracted from *Genista tenera* by fast – atom bombardment tandem mass spectrometry. *Rapid Communications in Mass Spectrometry*, 2001, 15, 1760-1767.

C. Borges, P. Martinho, A. Martins, A. P. Rauter, M.A. Almoester – Ferreira Characterization of flavonoids extract of *Genista tenera* by FAB MS/MS. *Advances in Mass Spectrometry*, 2001, 15: 847-848.

### **Proceedings**

J. Salta, N. Neng, A.Martins, R. Santos, J.M. Nogueira, F. Vinagre, J. Justino, A.P. Rauter. Perfil químico da Pêra Rocha e sua valorização em termos das actividades antioxidante e anticolinesterásica. *Actas do 9º Encontro de Química dos Alimentos*, 2009, pp. 73, Angra do Heroísmo, Açores, Portugal.

A.P.Rauter, L. Serralheiro, J. Ferreira, A. Martins, J. Justino, F. Silva, M. Goulart, H. Mota-Filipe. Actividades antihiperlipicemiante, antioxidante e anticolinesterásica de extractos do piorno da Madeira. *Actas do 8º Encontro de Química dos Alimentos*, 2007, pp. 157-160, Beja, Portugal.

J. Justino, F. Silva, M. Goulart, A. Neves, H. Mota-Filipe, A. Martins, A.P.Rauter. Bioactive flavonoid glycosides from *Genista tenera*. 4th Eurasian Meeting on Heterocyclic Chemistry. *Book of Abstracts*, 2006, pp. 265-266. Thessaloniki, Greece.

A.Martins, H. Mota-Filipe, R. Pinto, B. Sepodes, A. P. Rauter, C. Borges, J. Justino, R. Wilkins. Efeito antihiperlipicemiante de um extracto de flavonóides de *Genista tenera*. *Actas do 6º Encontro de Química dos Alimentos*, Vol.II, (Eds M. L. Nunes, N. M. Bandararra, SPQ/IPIMAR), 2003, pp. 918-922, Lisboa, Portugal.

A. Martins, M.A. Almoester – Ferreira, C. Borges, A. P. Rauter, M. Brum – Bousquet, F. Tillequin, A.G. Gonzalez, J. Bermejo. Flavonoids from *Genista tenera*. In: Natural Products in the New Millennium: Prospects and Industrial Application. *Proceedings of the Phytochemical Society of Europe*. Vol. 47 (Ed. by A.P. Rauter, F. Sales, J. Justino, E. Araújo and S.P. Santos), 2002, pp.111-117. Kluwer Academic Publishers. Dordrecht, The Netherlands.

A.Martins, L. Ascensão, S. Feio. M.L. Quinta, A.P. Rauter. Biocide activity of phenolic compounds from *Artemisia campestris* ssp. *maritima*. *Proceedings of XVI th International Conference. Groupe Polyphenols*. Bulletin de Liaison Groupe Polyphenols. Tome I, Vol. 16, 1992, pp. 284-291. Lisboa, Portugal.

### **Patents**

A. P. Rauter, A. Jesus, A. Martins, C. Dias, Rogério Ribeiro, M.- P. Macedo, J. Justino, H. Mota-Filipe, R. Pinto, B. Sepodes, M. Medeiros, J. Barbero, C. Airolidi, F. Nicotra, New C-glycosylpolyphenol antidiabetic agents, effect on glucose tolerance and interaction with beta-amyloid. Therapeutic applications of the synthesized agent(s) and of *Genista tenera* ethyl acetate extracts containing some of those agents, PT106202, submission 2012.

A. P. Rauter, A. Martins, J. Caio, J. P. Pais, P. Serra, M.- S. Santos, A. Pelerito, J. P. Gomes, J. Justino, R. Dias, R. Tenreiro, Sugar derivatives as inhibitors of *Bacillus* species, process for their preparation and utilization [Compostos derivados de açúcar inibidores de espécies de *Bacillus*, processo de obtenção e respectivas utilizações], PCT/IB2012/050123, submission 2012.

A. P. Rauter, A. Martins, J. Caio, J. P. Pais, P. Serra, M.- S. Santos, A. Pelerito, J. P. Gomes, J. Justino, R. Dias, R. Tenreiro. Inibição de espécies de *Bacillus*, PT105475, submission 2011.

L. B. Roseiro, L. J. Duarte, D. L. Oliveira, R. M. Roque, M. G. Gil, A. I. Martins, C. Sepúlveda, J. M. Almeida, M. M. Meireles, A. P. Rauter, Antiproliferative activity of different extracts of carob kibbles (*Ceratonia siliqua* L.) [Actividade anti-proliferativa de diferentes extractos de polpa de alfarroba triturada (*Ceratonia siliqua* L.)], PT105731, submission 2011.

## Conferences (communications, participation, organisation)

### Oral Communications

Sugar-based surfactants as selective antimicrobial agents: a multidisciplinary approach. A. Martins, V. Cachatra, C. Dias, J. Pais, P. Serra, M. S. Santos, A. P. Rauter.\* *10<sup>o</sup> Encontro Nacional de Química Orgânica*. Faculdade de Farmácia da Universidade de Lisboa, 4-6 Setembro 2013.

New antimicrobial structures with anti-aging potential: an efficient synthesis towards 2-deoxy glycosides and their thio analogues. C. Dias,\* A. Martins, R.A. Stanford, A. P. Rauter. *10<sup>o</sup> Encontro Nacional de Química Orgânica*. Faculdade de Farmácia da Universidade de Lisboa, 4-6 Setembro 2013.

Chemical profile and bioactivity studies of the antidiabetic plant *Genista tenera*. A. Martins\*  
Departamento de Química e Bioquímica/Centro de Química e Bioquímica, Faculdade de Ciências da Universidade de Lisboa. Lisboa, 11 Setembro 2009.

J. Salta, N. Neng, A. Martins, R. G. Santos, J. M. Nogueira, A. P. Rauter,\* F. Vinagre, J. Justino, "Perfil químico da Pêra Rocha e sua valorização em termos das actividades antioxidante e anticolinesterásica", *9<sup>o</sup> Encontro de Química dos Alimentos – Qualidade e Sustentabilidade: Uma Abordagem Integrada*, Abril 2009, Angra do Heroísmo, Açores.

Flavonoid glycosides of the anti-hyperglycemic extract of *Genista tenera* by LC-DAD-ESI-MS and NMR. A. P. Rauter, \* A. Martins, C. Borges, J. Ferreira, J. Justino, M.-R. Bronze, A. V. Coelho, Y. H. Choi, R. Verpoorte. *14<sup>th</sup> International Scientific Congress*, CNIC, Havana, Cuba, 9 June 2005.

### Poster communications

Poster communications (c.a.45) in international and national conferences.

### Conferences organization

#### As member of the local organizing committee

*16th. Spanish-Portuguese-Japanese Organic Chemistry Symposium*. FCUL, Lisbon, Portugal, 18-20 July 2012.

*Glycosciences in the International Year of Chemistry-Applications to Human Health and Disease*. FCUL, Lisbon, Portugal, 8-10 September 2011

*Actualization course: Industrial Drug Research* lectured by Dr. Hans Peter Wessel, Section Head Infrastructure and Administration (Discovery Chemistry) from F. Hoffmann La Roche, Ltd. FCUL, Lisbon, Portugal, May 2010.

*Open Day of FCUL*: collaboration in the experiments and groups orientation. FCUL, Lisbon, Portugal, April 2010.

*European Science Foundation Research-Networking Programme: Euroglycoscience Forum – 2nd Steering Committee Meeting*. FCUL, Lisbon, Portugal, February 2010.

*Actualization course: Molecular Mechanisms of Drugs*, lectured by Prof. Beat Ernst from University of Basel. FCUL,

Lisbon, Portugal, September 2009.

*CORM V- Carbohydrates as Organic Raw Materials- Building a Sustainable Future*, FCUL, Lisbon, Portugal, 20-23 January 2009.

*PSE –Phytochemical Society of Europe Meeting – Lisbon 2000*. Fundação Calouste Gulbenkian, Lisboa, Portugal, 2- 5 April 2000.

### **Other activities**

As a member of CQB:

Since 2008: Laboratory training of graduate and post-graduate students

Since 2009:Co-supervision of Chemistry graduate students

Since 2011: Teaching of laboratory courses in General Chemistry at DQB-FCUL.

### **Languages**

Portuguese (Reading: Very Good; Writing: Very Good; Conversation: Very Good).

English (Reading: Very Good; Writing: Very Good; Conversation: Good).

French (Reading: Very Good; Writing: Very Good; Conversation: Very Good).

Spanish (Reading: Very Good; Writing: Good; Conversation: Good).