

Resume_Maria Luisa Serralheiro**1. Personal data**1.1. Name **Maria Luisa Serralheiro**

1.2. date of Birth 02.07.1957

2. Designation

Assistant Professor with Habilitation

3. Professional Data

Department of Chemistry and Biochemistry. Faculty of Science,

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4. Educational Qualification

Habilitation (Biochemistry) UL 2012; Ph.D.(Biochemistry, specialty: Biotechnology) UL, 1997; MSc (Biotechnology) IST (UTL) 1990; Lic. Chemistry (5 years) FCUL, 1980.

5. Experience

5.1. Research 38 years (researcher at BioISI, FCUL)

5.2. Teaching 33 years

Courses in the area of Chemistry (early in the career), Biochemistry and Biotechnology. Responsible for the disciplines of Biochemistry and Biotechnology: Immobilized Enzymes, Applied Biochemistry, Food Biochemistry, Environmental Biochemistry, Biocatalysis, Food Science, Molecular Biotechnology and Nutritional Biochemistry, including the preparation of the respective programs.

5.3. Supervising research thesis

5.3.1 Post-Doc 1

5.3.2. PhD 7+3(in progress)

5.3.3. Master 27+1 (in progress)

5.3.4. Degree Thesis (5 yrs) 14

5.4. Jury of PhD and MSc Thesis PhD (15+4 International); MSc (28)

5.5. Evaluation of Res. Projects COST Action (2016-2019); AdI

6. Field of Research

Bioactivity of Natural Products; Nutritional Biochemistry: effect of phenolic compounds on the bioavailability of cholesterol through intestinal barrier simulated by Caco-2 cells lines; effect of phenolic compounds on the protein cholesterol transporters localized in the cell membrane and bioactivity as enzyme inhibitors.

7. Research in Data

7.1. Papers in peer-review j. 73+2 (pending of approval)

7.2. Meetings 57

7.3. h-index 18

Research Projects**As Principal researcher**

Research projects are funded by National Foundation for Science and Technology (FCT) and Agency for development (AdI) as a principal investigator or as coordinator of tasks in which the FCUL participated.

P4. «BioMol4Health: Molecules for Health: cholesterol absorption, and expression of its transporter proteins, interaction with drugs». FCT/BIA-BQM/28355/2017.

P3. "RACHIs - Reduction on the Absorption of Cholesterol by Herbal Infusions (Functional Foods)": PTDC/QUI-BIQ/113477/2009. Main Coordinator (PI)

P2. «Sulfenylcarbamates as cysteine proteases inhibitors: chemical and biochemical reactivity»- Projeto POCTI/QUI/55602/2004. Coordinator of task 3: Effect of small inhibitors on the biochemical activity of cathepsin B and C.

Projects with Industry (Adi)

"Biolactate-Optimization of Microbiological Production of Lactic Acid» -Project EUREKA-EU1870I, 1998-2001.
Responsible for: Biochemical Characterization Cheese and Cheese whey.

Selected Papers in Peer-review journals (PRJ)

PRJ-73: «Bioactivities of decoctions from *Plectranthus* species related to their traditional use on the treatment of digestive problems and alcohol intoxication». Brito E, Gomes E, Falé PL, Borges C, Pacheco R, Teixeira V, Machuqueiro M, Ascensão L, Serralheiro MLM, J. Ethnopharmacol., 220, 147–154, 2018.

<https://doi.org/10.1016/j.jep.2018.04.006>

PRJ-72: «Broad bean (*Vicia faba* L.) pods: a rich source of bioactive ingredients with antimicrobial, antioxidant, enzyme inhibitory, anti-diabetic and health-promoting properties». Mejri F, Selmi S, Martins A, Benkhoud H, Baati T, Chaabane H, Njim L, Serralheiro ML, Rauter AP, Hosni K. Food Funct., 9, 2051-2069, 2018.

DOI: 10.1039/c8fo00055g

PRJ-71: «Serum Albumin Modulates the Bioactivity of Rosmarinic Acid». Brito E, Silva A, Fale PLV, Pacheco R, Serralheiro A, Haris PI, Ascensão L, Serralheiro ML. J Med Food 00 (0), 1–7, 2018.

DOI: 10.1089/jmf.2017.0086

PRJ-70: «In vitro digestion, antioxidant and antiacetylcholinesterase activities of two species of *Ruta*: *Ruta chalepensis* and *Ruta montana*». Khadhri A, Bouali I, Belkhir S, Mokded R, Smiti S, Falé P, Araújo MEM, Serralheiro MLM. Pharm. Bull., 55, 101.107, 2017.
<http://dx.doi.org/10.1080/13880209.2016.1230634>

PRJ-69. «Isorhamnetin derivatives and piscidic acid for hypercholesterolemia: cholesterol permeability, HMG-CoA reductase inhibition, and docking studies». Ressaissi A, Attia N, Falé PL, Pacheco R, Victor BL, Machuqueiro M, Serralheiro MLM. Arch Pharm 40:1278–1286, 2017.

<http://dx.doi.org/10.1007/s12272-017-0959-1>

PRJ -68. «Phenolic compounds from *Actinidia deliciosa* leaves: Caco-2 permeability, enzyme inhibitory activity and cell protein profile studies». Henriques J, Falé PL, Pacheco R, Florêncio MH, Serralheiro ML. *Journal of King Saud University – Science*.2017.

<https://doi.org/10.1016/j.jksus.2017.07.007>

PRJ -67. «Antiacetylcholinesterase activity and docking studies with chlorogenic acid, cynarin and arzanol from *Helichrysum stoechas*». Rodrigues AM, Silva, L, Ciriani, M, Falé, PVL, Teixeira, V, Madeira P, Machuqueiro M, Pacheco R, Florêncio MH, Ascensão, L, Serralheiro, MLM. *Medicinal Chemistry Research*.26, 2942-2950, 2017.

<https://doi.org/10.1007/s00044-017-1994-7>

PRJ-66 «Phytochemical Characterization and Biological Evaluation of the Aqueous and Supercritical Fluid Extracts from *Salvia sclareoides* Brot.». Batista D, Falé PL, **Serralheiro ML**, Araújo ME, Dias C, Branco I, Grosso C, Coelho J, Palavra A, Madeira PJA, Martins A, Rauter AP. *Open Chem.* 15, 82–91, 2017.

PRJ-65. «Valorization of kiwifruit production: leaves of the pruning branches of *Actinidia deliciosa* as a promising source of polyphenols». Henriques J, Ribeiro MJ, Falé, PL, Pacheco R, Ascensão L, Florêncio MH, **Serralheiro ML**. *Eur Food Res Technol*, 2017.

DOI 10.1007/s00217-017-2845-y

PRJ-64.«*In vitro* digestion, antioxidant and antiacetylcholinesterase activities of two species of Ruta: *Ruta chalepensis* and *Ruta montana*». Khadhri A, Bouali I, Belkhir S, Mokded R, Smiti S, Falé P, Araújo MEM, **Serralheiro MLM**. *Pharm. Bull.*, 55, 101.107, 2017

<http://dx.doi.org/10.1080/13880209.2016.1230634>

PRJ-63: «Optimized Production of Hydroxamic Acid Derivatives with Antioxidant and Anticholinergic Potential by Immobilized *Pseudomonas aeruginosa* Cells». Bernardo M, Reis T, Minhalma M, Karmali A, **Serralheiro ML**, Pacheco R. *American Journal of Microbiology and Biotechnology*, 4, 53-60, 2017.

PRJ-62 «Optimization of microbial detoxification for an aquatic mercury-contaminated environment». Figueiredo NL, Canário J, **Serralheiro ML**, Carvalho C. *Journal of Toxicology and Environmental Health*, part a, 2017.

<http://dx.doi.org/10.1080/15287394.2017.1357311>

PRJ-61. «Aqueous Extracts from Nopal (*Opuntia Ficus-Indica*): Antiacetylcholinesterase and Antioxidant Activity from Phenolic Bioactive Compounds». Ressaissi A, Attia N, Falé PLV, Pacheco R, Teixeira VH, Machuqueiro M, Borges C, **Serralheiro MLM**. *IJGHC*, 5, 337-348, 2016.

PRJ-60. «Inhibition of HMG-CoA reductase activity and cholesterol permeation through Caco-2 cells by caffeoylquinic acids from *Vernonia condensate* leaves». Arantes AA, Falé PL, Costa LCB, Pacheco R, Ascensão L, **Serralheiro, ML**. *Brazilian Journal Pharmacognosy*, 26, 738–743, 2016.

<http://dx.doi.org/10.1016/j.bjp.2016.05.008>.

PRJ-58. «New In Vitro Studies on the Bioprofile of Genista tenera Antihyperglycemic Extract». Batista D, Falé PL, **Serralheiro ML**, Araújo ME, Madeira PJA, Borges C, Torgal I, Goulart M, Justino J, Maryins, A, Rauter, AP. *Nat. Prod. Bioprospect.* 5, 277-285, 2015.

DOI:10.1007/s13659-015-0077-z

PRJ- 57. «Design, synthesis and bioevaluation of tacrine hybrids with cinnamate and cinnamylidene acetate derivatives as potential anti-Alzheimer drugs». Quintanova C, Keri RS, Marques SM, Fernandes MG, Cardoso SM, **Serralheiro ML**, Santos MA. *MedChemComm*, 2015,

<http://dx.doi.org/10.1039/C5MD00236B>

PRJ -55. «Phytochemical Analysis of *Plectranthus* sp. Extracts and Application in Inhibition of Dental Bacteria, *Streptococcus sobrinus* and *Streptococcus mutans*». Figueiredo NL, Falé PL, Madeira PJA, Florêncio MH, Ascensão L, **Serralheiro MLM**, Lino ARL. *Eur J Med Plants*, 4, 794-809, 2014.

DOI : 10.9734/EJMP/2014/7544

PRJ -54. «Antioxidant capacity and phenolic contents of some Mediterranean medicinal plants and their potential role in the inhibition of cyclooxygenase-1 and acetylcholinesterase activities» Amessis-Ouchemoukh N, Madani K, Falé PLV, **Serralheiro ML**, Araújo MEM. *Ind Crop Prod*, 53, 6-15. 2014

<http://dx.doi.org/10.1016/j.indcrop.2013.12.008>

PRJ -52. «Studies on the molecular mechanism of cholesterol reduction by *Fraxinus angustifolia*, *Peumus boldus*, *Cynara cardunculus* and *Pterospartum tridentatum* infusions». Falé PL, Ferreira C, Rodrigues AM, Frazão MFN, **Serralheiro MLM**. *J Med Plant Res*, 8, 9-17, 2014.

Doi: 10.5897/JMPR2013.5273.

<http://www.academicjournals.org/journal/JMPR/article-full-text-pdf/03BB49242444>

PRJ-50. "Evaluation of cholesterol absorption and biosynthesis by decoctions of *Annona cherimola* leaves". Falé PL, Ferreira C, Maruzzella F, Florêncio MH, Frazão FN, **Serralheiro MLM**. *J Ethnopharmacol*, 150, 718-723, 2013.

<http://dx.doi.org/10.1016/j.jep.2013.09.029>

PRJ-49. «Effect of luteolin and apigenin on rosmarinic acid bioavailability in Caco-2 cell monolayers». Falé PL, Ascensão L, **Serralheiro MLM**. *Food Funct.*, 4, 426-431, 2013.

<http://dx.doi.org/10.1039/c2fo30318c>

PRJ-48. «Antioxidant and anti-acetylcholinesterase activity of commercially available medicinal infusions after in vitro gastrointestinal digestion». Falé PL, Ferreira C, Rodrigues AM, Cleto P, Madeira PJA, Florêncio MH, Frazão FN, **Serralheiro MLM**. *J Med Plant Research*, 7, 1370-1378, 2013.

Doi:10.5897/JMPR13.4438.

http://academicjournals.org/article/article1380724106_Fale%2520et%2520al.pdf

PRJ-47. Acetylcholinesterase Inhibitory Activity After in vitro Gastrointestinal Digestion of Infusions of Mentha Species. Dinis PC, Falé PL, Madeira PJA, Florêncio MH, **Serralheiro ML**. *European J Med Plants*, 3, 381-393, 2013.

<http://www.sciencedomain.org/abstract.php?iid=223&id=13&aid=1344#.UuZ37RCp3IU>

PRJ-46. "Interaction Between *Plectranthus barbatus* Herbal Tea Components and Acetylcholinesterase: Binding and Activity Studies". Falé PLV, Ascensão L, **Serralheiro MLM**, Haris, P. *Food Funct*, 3, 1176-1184, 2012.

Doi: 10.1039/c2fo30032j

PRJ-45. "Acetylcholinesterase Inhibition, Antioxidant Activity and Toxicity of *Peumus Boldus* Water Extracts on Hela and Caco-2 Cell Lines". Falé PL, Amaral F, Madeira PJA, Silva MS, Florêncio MH, Frazão FN, **Serralheiro MLM**. *J Food Chem Toxicol*, 50, 2656-2662, 2012.

<http://dx.doi.org/10.1016/j.fct.2012.04.049>

PRJ-44. "Polyphenols as Acetylcholinesterase Inhibitors: Structural Specificity and Impact on Human Disease". Bivar ML, Rauter AP, **Serralheiro ML**. *Nutrition and Aging*, 1, 99-111, 2012.

Doi:10.3233/NUA-2012-0006

PRJ-43 "Herbal Infusions Bioelectrochemical Polyphenolic Index: Green Tea-The Gallic Interference". Dulce GMA, Falé PLV, **Serralheiro MLM**, Rebelo MJ. *Food Chem.*, 129, 1537-1543, 2011.

Doi:10.1016/j.foodchem.2011.06.003

PRJ-42. "Interaction Between *Plectranthus Barbatatus* Herbal Tea Components and Human Serum Albumin and Lysozyme: Binding and Activity Studies". Falé PLV, Ascensão L, **Serralheiro ML**, Haris P. *Spectrosc. – Int. J.*, 26, 79-92, 2011.

Doi: 10.3233/SPE-2011-0532

PRJ-41. "Function of *Plectranthus Barbatatus* Herbal Tea as Neuronal Acetylcholinesterase Inhibitor". Falé PLV, Madeira PJA, Florêncio MH, Ascensão L, **Serralheiro MLM**. *Food Funct*, 2, 130-136, 2011.

Doi: 10.1039/c0fo00070a

PRJ-40. "Stability and Enzymatic Studies with Omeprazole: Hydroxypropyl - β -Cyclodextrin". Ramos M, Salústio P, **Serralheiro L**, Frazão F, Marques H. *J. Incl. Phenom. Macro.*, 70, 407-414, 2011.

Doi: 10.1007/s10847-010-9884-3

PRJ-38. "Bifunctional Phenolic-Choline Conjugates with Potential Neuroprotective Roles; Antioxidant and Antiacetylcholinesterase Activities". Šebestík J, Marques SM, Falé PL, Santos S, Arduíno DM, Cardoso SM, Oliveira CR, **Serralheiro MLM**, Santos MA. *J. Enzyme Inhib. Med. Chem.*, 26, 485-497, 2011.
Doi: 10.3109/14756366.2010.529806

PRJ-37. "Preparation and Physicochemical Characterization of Ag Nanoparticles Biosynthesized by *Lippia citriodora* (Lemon Verbena)". Cruz D, Falé PL, Mourato A, Vaz PD, **Serralheiro ML**, Lino ARL. *Colloids Surf. B*; 81, 1, 67-73, 2010.
Doi:10.1016/j.colsurfb.2010.06.025

PRJ-36. "Antiacetylcholinesterase and Antioxidant Activities of *Plectranthus Barbatius* Tea after *in vitro* Gastro-Intestinal Metabolism". Porfírio S, Falé PLV, Madeira P, Florêncio MH, Ascensão L, **Serralheiro MLM**. *Food Chem.*, 122, 1, 179-187, 2010.
Doi:10.1016/j.foodchem.2010.02.044

PRJ-35. "Chlorogenic Acid, Hyperoside, Isoquercitrin, Quercitrin and Rutin, are the Compounds Responsible for Acetylcholinesterase Inhibition and Antioxidant Activity of Several Water Extracts of *Hypericum* Species". Hernandez MF, Falé PV, Araújo MEM, **Serralheiro MLM**. *Food Chem.*, 120, 4, 1076-1082, 2010.
Doi:10.1016/j.foodchem.2009.11.055

PRJ-33. "The Inhibitory Effect of *Plectranthus Barbatius* and *Plectranthus Ecklonii* Leaves on the Viability, Glucosyltransferase Activity and Biofilm Formation Of *Streptococcus Sobrinus* and *Streptococcus Mutans*". Figueiredo N, Aguiar S, Falé PLV, Ascensão L, **Serralheiro MLM**, Lino AR. *Food Chem.*, 119, 664-668, 2009.
Doi:10.1016/j.foodchem.2009.07.008

PRJ-32. "Antioxidant, Antiacetylcholinesterase and Antimicrobial Activities of *Cymbopogon schoenanthus* L. Spreng (lemon grass) from Tunisia". Khadri A, Neffati M, Smiti S, Falé P, Lino ARL, **Serralheiro MLM**, Araujo MEM. *LWT - Food Sci. Technol.*, 43, 331-336, 2009.
Doi:10.1016/j.lwt.2009.08.004

PRJ-31. "Bioactivity Studies and Chemical Profile of the Antidiabetic Plant *Genista tenera*". Rauter AP, Martins A, Lopes R, Ferreira J, **Serralheiro LM**, Araújo ME, Borges C, Justino J, Silva FV, Goulart M, Thomas-Oates J, Rodrigues JA, Edwards E, Noronha JP, Pinto R, Mota-Filipe H. *J. Ethnopharmacol.*, 122, 384-393, 2009.
Doi:10.1016/j.jep.2008.10.011

PRJ-30. "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 barbatius* ("Falso Boldo)". Falé P, Borges C, Madeira PJA, Ascensão L, Araújo MEM, Florêncio MH, **Serralheiro MLM**. *Food Chem.*, 114, 798-805, 2009.
Doi:10.1016/j.foodchem.2008.10.015

PRJ-29. "Antioxidant and Antiacetylcholinesterase Activities of Essential Oils from *Cymbopogon schoenanthus* L. Spreng. Determination of chemical composition by GC-Mass Spectrometry and ¹³C-NMR". Khadri A, **Serralheiro MLM**, Nogueira JMF, Neffati M, Smiti, Araújo MEM. *Food Chem.*, 108, 630-637, 2008.
Doi:10.1016/j.foodchem.2007.12.070

PRJ-28. "Antioxidant and Acetylcholinesterase Activities of Five Plants Used as Portuguese Food Spices". Mata ATC, Proença C, Ferreira AR, **Serralheiro MLM**, Nogueira JMF, Araújo MEM. *Food Chem.*, 103, 778-786, 2007..
Doi:10.1016/j.foodchem.2006.09.017

PRJ-27. "The *in vitro* Screening for Acetylcholinesterase Inhibition and Antioxidant Activity of Plants Used in Portuguese Herbal Medicine". Ferreira A, Proença C, **Serralheiro MLM**, Araújo MEM. *J. Ethnopharmacol.*, 108, 31-37, 2006.
Doi:10.1016/j.jep.2006.04.010

Patents

Pat 1. «Extracto de bagaço de azeitona inibidor da enzima acetilcolinesterase». Roseiro L, Lourenço PML, Duarte LJ, Falé PLV, **Serralheiro MLM**, Rauter AP. Patente de Invenção Nacional nº 105914, 23 de Outubro de 2013.

Pat 2. “Processo para produção contínua de cristais dipéptidos num reator de hidrociclone e membrana via síntese enzimática e cristalização simultânea em sistemas de micelas invertidas”. Prazeres DMF, Dias AI, Feliciano AS, Cabral JMS, **Serralheiro MLM**, Portuguese Patent Number 102469, 2002.

Prizes

«Food and Nutrition Award » 2014. **“Infusões para redução do colesterol na corrente sanguínea e facilitação do processo digestivo»**. 2ª Menção Honrosa na área de Investigação e Desenvolvimento.

“Top Ten Accessed Articles” Function of *Plectranthus barbatus* herbal tea as neuronal acetylcholinesterase inhibitor , 31 March 2011. “During the month of February, your article was amongst the top ten accessed articles from the online version of *Food & Function*. You can browse the full list of top 10 articles “

“Best Paper Award” Antiacetylcholinesterase and Antioxidant Activities of *Plectranthus barbatus* Tea After *in vitro* Gastrointestinal Metabolism has been selected by the International Advisory Board as the winner of the *Best paper award* (CQB DAY). 26 de Março de 2011. International Advisory Board: Professor Sir William Wakeham, Professor Peter Roepstorff, Doctor Peter Villax, Professor Ana Ponces Freire. Artigo nº **RI 36**

“Best Poster Award” no 1º Encontro de Estudantes de Doutoramento do CQB com o poster “Actividades Biológicas de Três Espécies de Flora Aromática Portuguesa”. Rodrigues AM, Falé P, Ascensão L, Lino AR, **Serralheiro ML**, 2011.

International Meetings (Im) (Selected)

IM50. 5th International Conference and Exhibition on Pharmacology and Ethnopharmacology 2016 Chicago, USA. 2016(e-poster)

IM-48. CIPAM, 6th International Congress of Aromatic and Medicinal Plants. Coimbra. 29 Maio-1 de Junho 2016

IM-46. Advanced Vibrational Spectroscopy for Biomedical Applications: Faraday Discussion St Catherine's College, Cambridge, UK, 21-23 de Março de 2016.

IM-44. *Presented at:* 1st Mediterranean Symposium on Medicinal and Aromatic Plants, 17-20 April, 2013.

IM-43.: International Conference on Natural Products Utilization. From Plants to Pharmacy Shelf, ICNPU 2013, 3-6 November 2013, BANSKO, Bulgária.

IM-39. 9th International Conference on Protein Stabilisation. (ProStab), 2-4 de May 2012, IST, Lisbon.

IM-38. 5th International Conference on Polyphenols and Health, Sitges, Barcelona, 10-17 October, 2011.

IM-36. International Symposium on Health Benefits of Food-From Emerging Science to Innovative Products, 5-7 Out, Prague, Czech Republic, 2011.

IM-35. International Symposium on Phytochemicals in Health and Nutrition 27-30 Sep, Bari, Italy, 2011.

IM-33. 11th Congress of the International Society for Ethnopharmacology (ISE 2010). 20-15 Sep, Albacete, Spain, 2010.

IM-32. 1er Encuentro Hispano Portugués de Etnobiología (EHPE 2010) / I Spanish-Portuguese Meeting of Ethnobiology (EHPE 2010). 20-15 Sep, Albacete, Spain.

IM-31. International Society for Nutraceuticals and functional Foods, San Francisco, USA, 30 October-4November,2009.

IM-30. Functional Molecules from Natural Sources. Oxford, UK,2009.

IM-29. 9th International conference on Alzheimer´s and Parkinson Diseases, PO-470, Prague, Czech Republic, 2009.

IM-28. 7th Joint Meeting of AFERP, GA, PSE & SIF. Natural products with Pharmaceutical, Nutraceutical Cosmetic and Agrochemical Interest. Athenaeum Intercontinental. Athens, Greece, 3-8 August 2008.

IM-27. International Symposium on Biotechnology, 4-8 May, Sfax, Tunisia, 2008.

IM-26. 3^{eme} Symposium International sur les Plantes Aromatiques et Medicinales. 1^{ere} Congres International sur les Moléculés Bioactives. Oujda, Maroc, 28-30 May 2008.

IM-25. 41st IUPAC World Chemistry Congress. Turino, de 5-11, 2007.

IM-24. 6Th AFMC International medicinal Chemistry Symposium, Instambul de 8-11 July, 2007.

Lisbon, 6th March 2019

Maria Luisa Serralheiro