***Curriculum Vitae***

**Nuna Cláudia Peixoto de Araújo**

PERSONAL DETAILS

**Local and date of birth: Braga, Portugal,** 20th December 1975

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*Education*

* **PhD in Biomedical Sciences, Jan 2016-present:** I am now developing a PhD project, integrating the Functional Biochemistry and Proteomics Group at CCMAR, University of Algarve, focused in the ‘Interplay between mineralization and inflammation in vascular calcification and osteoarthritis: extracellular vesicles and marine bioactive compounds as new therapeutic approaches’, under the supervision of Professor Dina Simes and Carla Viegas, PhD, and supported by FCT: SFRH/BD/111824/2015.
* **Masters in Pharmaceutical Sciences, 2014:** Concluded with final classification 14/20, FCT, University of Algarve
* **PhD in Synthetic Medicinal Organic Chemistry**, **2004:** ‘New Concepts for Malaria Chemotherapy and Approaches to Improved Antimalarial Endoperoxides.**’** Department of Chemistry, University of Liverpool (Supervisor: Dr. Paul O’Neill). During my PhD, I worked on the design and preparation of antimalarial drugs and on the development of the concept of ‘Combination Chemotherapy’. I was involved in the synthesis of new endoperoxide hybrids based on well-known antimalarial drugs, such as artemisinin and quinoline. I have also participated in the ECPI Pro-Drugs investigation (Endoperoxide Cysteine Protease Inhibitors Pro-Drugs), which focused on the development of prototypes for selective intraparasitic generation of cysteine protease inhibitors and other parasitocidal species. At the same time, I was able of participating in protein activity studies, targeting *Plasmodial* cysteinic proteases in addition to the standard biological studies, concerning the activity of the new compounds towards the malaria parasite, using cultures of cells infected with the *Plasmodium.*
* **1st Class Honours Degree in Biochemistry, 1999:** FCT, University of Algarve, classification of 14/20

*Professional Experience and Research Interests*

**Research Collaborator, June 2015- Dec 2015:** During this period, I have integrated the Functional Biochemistry and Proteomics Research Group, at CCMAR, UAlg, working on the projects ‘Elucidação da função e mecanismo de acção molecular da proteína Gla-rich (GRP) na calcificação vascular (BioGlaGRP)' and "New insights into the mechanism of vascular calcification in chronic kidney disease (CKD): the role of GRP".

**Pharmacist, March 2015-May 2015:** Pharmacist activities at the Farmácia hospitalar, Hospital Particular do Algarve, Gambelas, Faro, Portugal.

**Pharmaceutical technician collaborator, April 2013-March 2014:** Farmácia Baptista, Fórum Algarve, I had the opportunity of integrating a highly motivated and dynamic team and be apt of displaying all the activities inherent to a pharmacist.

**Postdoctoral researcher**, **June 2005- June 2011,** Universities of Algarve and Liverpool: In this project, we aimed to extend and subsequently validate our concept of combining two antimalarially active components within a single chemical entity.Our strategy was based on the ability of Fe(II) or haem to selectively cleave the peroxide bridge of the artemisinin class of drug, a process which appears to be restricted to the malaria parasite. We develop new synthetic routes to produce antimalarial drug hybrids that, as a function of haem (or ferrous iron dependent) peroxide cleavage, will liberate not only free radicals (artemisinin type of action) but also a second antimalarial drug with an independent mechanism of action, in a strategy aimed at reducing parasite resistance development. Considering the degradative process of haemoglobin by the parasite a relevant and vital parasitic process, dependent on aspartate proteases plasmepsin I and II followed by actions of the cysteine proteases falcipain II and III, we have developed the design and synthesis of new endoperoxide peptidic cysteine protease inhibitors pro-drugs, that combine a falcipain inhibitor with an endoperoxide containing unit. Based in the same design concept and bearing in mind the characteristics of parasitic DNA we also developed DNA–directed endoperoxides as promising antimalarials pro-drugs. I have also the opportunity of participating in DNA complementary and stability studies.

**Research collaborator, 2008-2011** University of Algarve/ University of Liverpool: I have participated in the development of the European project ‘ARTEMIP- THE SAFETY PHARMACOLOGY OF ARTEMISININS WHEN USED TO REVERSE PATHOPHYSIOLOGY OF MALARIA IN PREGNANCY’.

**Research Collaborator, 2000,** University of Algarve: I have participated on the development of the project ‘Design and Synthesis of new Biodegradable Polymeric Materials’ funded by FCT (BIC–Project Praxis/ CTM/14185/98).

**SELECTED PUBLICATIONS:**

*ORAL COMMUNICATIONS*

* *The Drug-Hybrid Approach to Antimalarial Chemotherapy,* Nuna Araújo,XIXth International Symposium on Medicinal Chemistry, Istanbul – Turkey, 29 August- 02 September 2006, Invited Lecture 90, Session 29.
* *Design and Synthesis of Plasmodium DNA-Directed Endoperoxides*, Nuna C. P. Araújo, P. M. O’Neill, M. Lurdes S. Cristiano**,** , 1º Encontro Nacional de Química Terapêutica, Porto, 13-15 Novembro 2008, comunicação oral nº20.
* N Araújo1, CSB Viegas, J Pontes, AL Macedo , AA Matos, A Grenha, DC Simes.(2018), ‘Nano-encapsulation as a novel delivery approach for therapeutic gla-rich protein (GRP) applications ‘, 3rd International Congress of CiiEM- Research and Innovation in Human & Health Sciences, June 20th-22th, Monte da Caparica, Portugal.
* Nuna Araújo, Carla Viegas, Inês Perrolas, Rúben Costa, Catarina Marreiros, Joana Magalhães, Francisco Blanco, Acácio Ramos, Maria Miguel Carvalho, João Paulo Sousa, Cees Vermeer, Eva Zúbia and Dina Simes, (2019) “Amentadione, a Meroditerpenoide from Brown Algae with Capacity of Modulating Osteoarthritic Responses, In a Close-to-in vivo OA Model”, XVI International Symposium on Marine Natural Products & XI European Conference on Marine Natural Products, Peniche, Portugal, September 1st and 5th.

*JOURNAL PUBLICATIONS*

* *A Common “Free Iron” Dependent Mechanism of Activation Among Diverse Antimalarial Endoperoxide Structures,* Paul A. Stocks, Patrick G. Bray, Victoria E. Barton, Mohammed Al-Helal, Michael Jones, Nuna C. P. Araújo, Peter Gibbons, Stephen A. Ward, Ruth H. Hughes, Giancarlo A. Biagini, Jill Davies, Richard Amewu and Paul M. O’ Neill , *Angew. Chem. Int. Ed,* 119,1-7, 2007.DOI: 10.1002/ange.200604697
* Semi-synthetic and synthetic 1,2,4-trioxaquines and 1,2,4-trioxolaquines: synthesis, preliminary SAR and comparison with acridine endoperoxide conjugates**,** [Araújo NC](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Barton V](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Jones M](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Stocks PA](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Ward SA](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Davies J](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Bray PG](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Shone AE](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [Cristiano ML](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), [O'Neill PM](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=), Bioorg Med Chem Lett., 19, 2009, 2038.DOI: 10.1016/j.bmcl.2009.02.013
* *Endoperoxide Carbonyl Falcipain 2/3 Inhibitor Hybrids: Toward Combination Chemotherapy of Malaria through a Single Chemical Entity*, Peter Gibbons, Edite Verissimo, Nuna C. Araujo, Victoria Barton, Gemma L. Nixon, Richard K. Amewu, James Chadwick, Paul A. Stocks, Giancarlo A. Biagini, Abhishek Srivastava, Philip J. Rosenthal, Jiri Gut, Rita C. Guedes, Rui Moreira, Raman Sharma, Neil Berry, M. Lurdes S. Cristiano, Alison E. Shone, Stephen A. Ward, and Paul M. O’Neill, *J. Med. Chem.*, 2010, *53* (22), pp 8202–8206.DOI: 10.1021/jm1009567
* *Artemisinin–Polypyrrole Conjugates: Synthesis, DNABinding Studies and Preliminary Antiproliferative Evaluation*, Louise La Pens, Sunil Sabbani,Raman Sharma,Inder Bhamra, Emma Shore, Amy E. Chadwick, Neil G. Berry, James Firman, Nuna C. Araujo, Lilia Cabral, Maria L. S. Cristiano, Cerys Bateman, Omar Janneh, Adelina Gavrila, Yi Hang Wu, Afthab Hussain, Stephen A. Ward,Paul A. Stocks,Rick Cosstick, and Paul M. O’Neill, ChemMedChem, 8, 709-718, 2013.DOI: 10.1002/cmdc.201200536
* Effect of semisynthetic and synthetic endoperoxide antimalarial drugs in Perkinsus olseni, N.C. Araújo, R. Afonso, A. Bringela, M.L.S. Cristiano. M.L. Cancela, M.L.S. Cristiano, R.B. Leite, *Parasitology International*, Volume 62 (6), pp 575-582, 2013.DOI: 10.1016/j.parint.2013.06.010.
* Gla-rich protein function as an anti-inflammatory agent in monocytes/macrophages: implications for calcification-related chronic inflammatory diseases, Carla S. B. Viegas, Rúben M. Costa, Lúcia Santos, Paula A. Videira, Zélia Silva, Nuna Araújo, Anjos L. Macedo, António P. Matos, Cees Vermeer, Dina C. Simes, PLOS one, May 18, 2017.
* Carla Viegas, Evelina Edelweiss, Justine Schneider, Christine SchaefferReiss, Arnaud Poterszman, Marta Rafael, Nuna Araújo, Anjos Macedo, António Alves de Matos & Dina Simes (2019) Use of an innovative system and nanotechnology-based strategy for therapeutic applications of Gla-rich protein (GRP), Annals of Medicine, 51:sup1, 38-38, DOI: 10.1080/07853890.2018.1561804.
* Nuna Araújo, Carla Viegas, Inês Perrolas, Rúben Costa, Joana Magalhães, Francisco Blanco, Acácio Ramos, Maria Miguel, Cees Vermeer, Eva Zubía & Dina Simes (2019) Amentadione is a new modulating agent for osteoarthritis in an ex-vivo co-culture preclinical assay, Annals of Medicine, 51:sup1, 43-43, DOI: 10.1080/07853890.2018.1561895.
* Simes DC, Viegas CSB, Araújo N, Marreiros C. Vitamin K as a Powerful Micronutrient in Aging and Age-Related Diseases: Pros and Cons from Clinical Studies. Int J Mol Sci. 2019;20(17):4150. Published 2019 Aug 25. doi:10.3390/ijms20174150.