CURRICULUM VITAE

RUTE CASTELO FÉLIX

PERSONAL DATA:

Name:	**Rute Castelo Félix**
Adress:	Rua Dr. Guerreiro Ascensão, Nº 6, 2 Frt
	8005-179 Montenegro, Faro
Mobile:	00351 912 481567
E-mail:	rutecfelix@gmail.com
Birth date:	24th July 1980
Nacionalidade:	Portuguese

EDUCATION:

2007-2011

PhD in Biomedical Sciences – Speciality in Parasitology, by Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa.

1998-2003

Academic Degree in Biology – Scientific, by Universidade de Évora

Final grade: 15 / 20

1995-1998

High School Degree – Sciences, by High School Alfredo dos Reis Silveira, Seixal

Final grade: 17 /20

PROFESSIONAL ACTIVITIES:

2013 – Posdoctoral scholarship entitled “Modulation of feeding behaviour in nematodes: a conserved model in metazoan involving secretin-like GPCRs?” developed in Molecular Comparative Endocrinology Lab/ Centre of Marine Sciences, University of Algarve.

2012 – Technical research scholarship, Centre of Marine Sciences, University of Algarve. Orientation by Dr. João Cardoso and Professor Deborah Power (CCMAR/BTI/0057/2011).

2007/2011 – PhD entitled “The role of detoxification in the mosquito *Anopheles gambiae* response to *Plasmodium* infection” developed in the Centro de Malária e outras Doenças Tropicais / Instituto de Higiene e Medicina Tropical (CMDT/IHMT) and in the Faculdade de Ciências e Tecnologia / Universidade do Algarve. Orientation by Professor Henrique Silveira and Professor Vera Marques.

2007/2008 – PhD research internship of 3 months in *Vector Resistence Laboratory* with orientation by Dr. Pïe Muller and Dr. Hilary Ranson, Liverpool School of Tropical Medicine, Liverpool, United kingdom, to learn microarrays.

2006/2007 – Research scholarship in the Malaria unit, Centro de Malária e Outras Doenças Tropicais, Instituto de Higiene e Medicina Tropical, orientation by Professor Henrique Silveira.

2003/2005 – Research scholarship in the *Genomics and Stress laboratory*, Instituto de Tecnologia Química e Biológica, orientation by Professor Claudina Rodrigues-Pousada.

2002/2003 – Research internship in *Genomics and Stress Laboratory,* Instituto Tecnológico de Química e Biologia. Orientation by professor Solange Oliveira and Professor Claudina Rodrigues-Pousada.

SCIENTIFIC PUBLICATIONS:

Cardoso JC, Bergqvist CA, **Félix RC**, Larhammar D. (2016). Corticotropin-releasing hormone family evolution; five ancestral genes remain in some lineages. Journal of molecular endocrinology Jul;57(1):73-86. Doi: 10.1530/jme-16-0051.

Cardoso JC, **Félix RC**, Bjärnmark N, Power DM (2015). Allatostatin-type a, kisspeptin and galanin gpcrs and putative ligands as candidate regulatory factors of mantle function. Mar Genomics. 2016 Jun; 27:25-35. doi: 10.1016/j.margen.2015.12.003.

Bjärnmark NA, Yarra T, Churcher AM, **Félix RC**, Clark MS, Power DM (2016). Transcriptomics provides insight into Mytilus galloprovincialis (Mollusca: Bivalvia) mantle function and its role in biomineralisation. Mar Genomics. 2016 Jun ;27:37-45. doi: 10.1016/j.margen.2016.03.004.

Félix RC, Trindade M, Pires IRP, Fonseca VG, Martins RS, Silveira S, Power DM and Cardoso JCR (2015) Unravelling the evolution of the Allatostatin-type A, KISS and galanin peptide-receptor gene families in bilaterians: insights from the Anopheles mosquitoes. PLoS ONE. 10(7):e0130347. doi: 10.1371/journal.pone.0130347.

Cardoso JCR, **Félix RC**, Martins RS, Trindade M, Fonseca VG, Fuentes J, Power DM (2015) PACAP system evolution and its role in melanophore function in teleost fish skin. Mol Cell Endocrinol. S0303-7207(15)00211-7. doi: 10.1016/j.mce.2015.04.020.

Félix RC, Terra SR, Cardoso JCR, Martins LA, Souza DO, Guma FC, Canário AV, Schein V (2015) STC1 interference on calcitonin family of receptors signaling during osteoblastogenesis via adenylate cyclase inhibition. Mol Cell Endocrinol. 403:78-87. doi: 10.1016/j.mce.2015.01.010.

Cardoso JCR, **Félix RC**, Bergqvist CA, Larhammar D (2014) New insights into the evolution of vertebrate CRH (corticotropin-releasing hormone) and invertebrate DH44 (diuretic hormone 44) receptors in metazoans. Gen Comp Endocrinol. 209:162-70. doi: 10.1016/j.ygcen.2014.09.004

Cardoso, JCR, **Félix RC**, Trindade M, Power DM (2014) Fish genomes provide novel insights into the evolution of vertebrate secretin receptors and their ligand. Gen. Comp. Endocrinol. 209:82-92. doi: 10.1016/j.ygcen.2014.05.025.

Cardoso JCR, **Félix RC**, Power DM (2014) Nematode and Arthropod Genomes Provide New Insights into the Evolution of Class 2 B1 GPCRs. PLoS ONE 9(3):e92220. doi:10.1371/journal.pone.0092220

Felix RC, Cardoso JCR, Fonseca VG and Power DM (2013). Distinct evolution of putative ghrelin and related receptors in nematode and arthropod genomes. Advances in Comparative Endocrinology vol.VII. (book of the congress)

Cardoso JC, **Felix RC**, Fonseca VG, Power DM. (2012). Feeding and the rhodopsin family g-protein coupled receptors in nematodes and arthropods. Front Endocrinol (Lausanne) 3: 157.

Silveira H, Gabriel A, Ramos S, Palma J, **Felix R**, Custódio A, Collins LV. (2012) CpG-containing oligodeoxynucleotides increases resistance of Anopheles mosquitoes to Plasmodium infection. Insect Biochem Mol Biol. ;42(10):758-65.

Félix RC, Silveira H (2011) "The Interplay between Tubulins and P450 Cytochromes during Plasmodium berghei Invasion of Anopheles gambiae Midgut". PLoS ONE 6(8): e24181. doi:10.1371/journal.pone.0024181

Félix, RC, Silveira, H. "The role of *Anopheles gambiae* P450 cytochromes in insecticide resistance and infection" Insecticides / Book 1. Intech- Open Access Publisher ISBN 978-953-307-895-3.

Félix, RC, Müller, P, Ribeiro, V, Silveira, H. (2010) "*Plasmodium* infection alters *Anopheles gambiae* detoxification gene expression". *BMC Genomics.* 11:312.

Mendes, C, **Félix, R**, Sousa, AM, Lamego J, Charlwood, D, do Rosário, VE, Pinto J, Silveira, H. (2010). "Molecular evolution of the three short PGRPs of the malaria vectors Anopheles gambiae and Anopheles arabiensis in East Africa". *BMC Evol Biol.* 10:9.

Félix, R, Rodrigues, R, Machado, P, Oliveira, S, Rodrigues-Pousada, C. (2006). "A chemotaxis operon in the bacterium *Desulfovibrio gigas* is induced under several growth conditions". *DNA Sequence*. **17(1)**: 56-64.

Machado, P, **Félix R**, Oliveira, S, Rodrigues-Pousada, C. (2006). "Characterisation of the cytochrome bd coding operon in *Desulfovibrio gigas*". *Current Microbiology*. **52(4)**:274-81.

Rodrigues, R, Vicente, JB, **Félix, R**, Oliveira, S, Teixeira, M, Rodrigues-Pousada, C. (2006). "*Desulfovibrio gigas* flavodiiron protein affords *in vivo* protection against nitrosative stress". *Journal of Bacteriology*. **188**: 2745-51.

THESIS:

Félix, R.C. 2011. PhD thesis entitled: *The role of detoxification in the mosquito Anopheles gambiae response to Plasmodium infection.* Universidade Nova de Lisboa. 103pp.

Félix, R. 2003. Academic degree thesis entitled: *Characterization of a chemotaxis operom in the genome of the sulfate reducing-bacteria Desulfovibrio gigas.* Universidade de Évora. Évora. 80pp.

ORAL PRESENTATIONS:

Félix, R., "Diversity in Feeding and life-style may be linked to rhodopsin family G-protein coupled receptors evolution in nematodes and arthropods". 9th AIEC- Asociación Ibérica de Endocrinología Comparada in Barcelona, 13-14 July 2013

Félix, R., "Alterações na expressão dos citocromos P450 em mosquitos *Anopheles gambiae* durante a infecção por *Plasmodium"*. Scientific Journeys of Instituto de Higiene e Medicina Tropical in Lisbon; December 13rd 2010.

Félix, R, Müller, P, Ribeiro, V, Silveira, H. "*Plasmodium berghei* infection alters *Anopheles gambiae* cytochrome P450 genes expression". Plataforma Ibérica de Malária, 2nd Meeting in Madrid, December 17th-18th 2009.

Félix, R, Müller, P, Ribeiro, V, Silveira, H. "Nitric oxide and P450 interactions in the *Anopheles gambiae* response to infection by *Plasmodium".* Apicomplexan Biology in the Post-Genomic Era, COST Action 857, Forth PhD Students Retreat Geneve, October 29th-30th 2008.

Félix, R, "Characterization of PGRP S1 e S3 polymorphims in *Anopheles gambiae* s.s. e *Anopheles arabiensis* mosquitões from Mozambique and Tanzania". *Journal Club*, Centro de Malária e Outras Doenças Tropicais in Lisbon, April 26th 2007.

POSTER PRESENTATIONS:

Rute C Félix, Joao CR Cardoso and Deborah M Power. Speciation in the evolution of Allatostatin-type A receptors (AST-AR) in Diptera. 10th AIEC- Asociación Ibérica de Endocrinología Comparada in Castellón , 23-25 September 2015

Rute C Félix, Marlene Trindade, Isa RP Pires, Vera G Fonseca, Rute S Martins, Henrique Silveira2, Deborah M Power, João CR Cardoso. Allatostatin type-A receptors and blood feedingin the malaria mosquito (Anopheles gambiae). 27th CECE- Conference of European Comparative Endocrinologists in Rennes, France from 25th to 29th August 2014.

Rute C Félix, João CR Cardoso, Marlene Trindade, Isa Pires, Henrique C Silveira, Deborah M Power. Homologues of the fruit-fly Diuretic Hormone 44 receptors have a divergente evolution and a complex transcript regulation in the malaria mosquito *Anopheles gambiae*. 17th ICCE 2013 – International Congress of Comparative Endocrinology in Barcelona, 15th to 19th July 2013

Félix R, Müller P, Ribeiro V, Ranson H, Silveira, H. "*Plasmodium* infection alters *Anopheles gambiae* detoxification gene expression". Encontro Nacional de Ciência 2010, Centro Internacional de Congressos in Lisbon, July 4th-7th 2010.

Silveira H, Gabriel A, Ramos S, **Felix R**, Collins V. (2008) Activação Imunomodelação por oligodeoxinucleotidos CpG da resposta do mosquito à infecção por Plasmodium. LIV Congresso da Sociedade Brasileira de Medicina Tropical, III Encontro de Medicina Tropical dos Países de Língua Portuguesa e II Encontro de Medicina Tropical Cone Sul. 4-7 Abr Porto Alegre, Rio Grande do Sul, Brasil. Revista da Sociedade Brasileira de Medicina Tropical 2008 41 Suppl.1:204

Félix R, Müller P, Ribeiro V, Ranson H, Silveira, H. "*Plasmodium berghei* infection alters *Anopheles gambiae* cytochrome P450 gene expression". Apicomplexan Biology in the Post-Genomic Era, Final MC + WGs, Orthodox Academy of Crete, Kolymbari, Creta, May 27th-30th 2008.

Ramos S, Gabriel A, **Félix R**, Silveira H. "Activation of melanization in response to *Plasmodium* sporozoites in mosquito hemolymph". SF-FWF-LFUI Conference on "The Impact of the Environment on Innate Immunity", Obergurgl, Austria. April 22nd-27th 2007.

Félix R, Sousa M, Pinto J, Arez AP, do Rosário VE, Silveira H. "Variabilidade genética das proteínas de reconhecimento de peptidoglicanos em mosquitos vectores da malária." XLIII Congresso da Sociedade Brasileira de Medicina Tropical and I Encontro de Medicina Tropical dos Países de Língua Portuguesa, Campos do Jordão, São Paulo, Brasil, Mars 11th-15th 2007.

Ramos S, Gabriel A, **Félix R**, Silveira H. "Activação da melanização em resposta à presença de esporozoítos de *Plasmodium* na hemolinfa de mosquitos." XLIII Congresso da Sociedade Brasileira de Medicina Tropical and I Encontro de Medicina Tropical dos Países de Língua Portuguesa, Campos do Jordão, São Paulo, Brasil, Mars 11th-15th 2007.

LABORATORY TECNHICAL EXPERIENCE IN THE FOLLOWING:

Molecular Biology - Preparation of genomic DNA, plasmid DNA, phage DNA, total RNA and cDNA; survey of genes in genomic libraries; radioactive hybridization, Southern blot, Northern blot, cloning, PCR, Real-Time RT-PCR, automated sequencing and gene disruption.

Cell Biology - Maintenance of human and mosquito cell lines, experimental cell transfections and infections. High-throughput screening in vitro cell assays measuring the production of intracellular secondary messengers responses (cAMP, Ca2+).

Microarrays – Material reparation and bioinformatic analysis of the results.

Microbiology - Maintenance of bacteria under aerobic and anaerobic conditions.

Entomology - Maintenance of mosquito insectaries (*Anopheles gambiae* and *Anopheles stephensi).* Experimental mosquitoes infections and microinjection

Animal experimentation - Handling of mice and rats. Experimental *Plasmodium berghei* infections of mice. Experience in injection, anesthesia and blood collection protocols.

Parasitology - Maintenance of malaria-causing protozoan parasites of the genus Plasmodium, including experimental infections in mice and in cells.

Bioinformatics - Microsoft Office (Word, Excell and Power Point etc.), sequence analysis, including research databases (GeneSkipper Program, Mega Blast, ClustalW ExPASy and others); Statistica; GraphPad;, Statgraphics, R and Bioconductor .

PARTICIPATION IN INVESTIGATION PROJECTS:

Functional characterisation of orphan family 2 GPCR receptors in the malaria model (PTDC/BIA-BCM/114395/2009) – project financed by FCT/PTDC – participation as a researcher.

Immune stimulation of the mosquito Anopheles gambiae response against the malaria parasite Plasmodium berghei (PTDC/SAU-MII/102596/2008) - Project financed by FCT/PTDC – participation with a PhD scholarship.

Gene variability of pattern-recognition-molecules (PRM) involved in mosquito immune response to Plasmodium (POCTI/SAU-IMI/59489/2004) - Project financed by FCT/POCTI – participation with a research scholarship.

Genes involved in bioenergetic mechanisms in the sulphate reducing bacterium Desulfovibrio gigas (POCTI/BME/37480/2001) - Project financed by FCT/POCTI – participation with a research scholarship.

TEACHING RELATED ACTIVITIES:

2012/2014 – Colaboration in the technical-scientific formation of highschool students in the context of the *Ciência Viva program* of the Agência Nacional para a Cultura Científica e Tecnológica, entitled “Finding the *x gene* ” in the Molecular and Comparative Endocrinology group, Centre of Marine Sciences, University of Algarve.

2013- Participation in the project "Mitose: ciência a sul", that was directed to high school students from Algarve that wanted to see how the scientific research centers work and then do an audiovisual presentation about what they learned.

2009 and 2010 – Colaboration in pratical and teorical-pratical classes of the discipline *“Murine models of malaria”* leccioned by Professor Henrique Silveira included in the Malaria Model of the Parasitology masters, Instituto de Higiene e Medicina Tropical.

2008 – Technical and scientific formation to high school students, with the theme “Immune response of the mosquito vector of malaria” in the Malaria unit, CMDT/IHMT, Lisbon. Program *Ciência Viva* of Agência Nacional para a Cultura Científica e Tecnológica.

EVALUATION ACTIVITIES:

Reviewer of a scientific paper to be published in International Scholarly Research Notices, Hindawi Publishing Corporation.

Reviewer of a ImmunDetox proposal in the frame of the “Young researchers” (Jeunes Chercheuses et Jeunes Chercheurs) call, 2013 Edition. SVSE7 Evaluation Committee of the French National Research Agency (ANR).

COURSES AND WORKSHOPS:

“Hands-On Proteomics course”, in Centro de Espectometria de Massa, Universidade de Aveiro, Portugal, September 8th - 10th 2010.

“Proteomics Workshop 2010”, in Universidade de Aveiro, Portugal. September 6th – 7th 2010.

“Forth PhD Students Retreat” in Geneva. Apicomplexan Biology in the post-genomic era, COST Action 857. October 29-31th 2008

"Harmonisation and Distribution of Pathogen Detection and Differentiation Tools", EU-FP6 INCO-DEV INCOME Workshop, in Instituto de Biologia Experimental e Tecnológica (IBET), Carcavelos, Portugal, May 15th – 17th 2007.

"Course in Laboratory Animal Science" coordinated by Instituto de Biologia Molecular e Celular in Instituto de Higiene e Medicina Tropical. April 17th – 28th 2006. The course followed FELASA recommendations in the education and train of people whoch work with laboratory animals of category C.

"*Analysis of Biological Sequence*s", in Instituto Gulbenkian de Ciência, Oeiras, Portugal. Mars 17th – 21st 2003.

Monitors Training Course in Environmental Education, held at the League for the Protection of Nature. Lisbon, October 2003.

ORGANIZATION OF CONGRESSES / WORKSHOPS:

COST Action 857, "transfection workshop" for young scientists, in Faculdade de Medicina Veterinária de Lisboa in Lisbon. October 19th - 22nd 2008.

2nd International Congress on Stress Response in Biology and Medicine, in Tomar. September 24th – 28th 2005.

GRANTS/AWARDS:

Professor Doutor João Fraga de Azevedo Award – Best Parasitology Phd student of 2011 from Instituto de Higiene e Medicina Tropical

Research travel award for:

- "*Life inside cells*" symposium
- "Forth PhD Students Retreat"
- Final meeting of "Action 857: Apicomplexan Biology in the Post-Genomic Era"

LANGUAGES:

First language: Portuguese

Other languages: English - Certificate in Advanced English by University of Cambridge

CONGRESSES AND SEMINARS:

"Epidemiologia e Estatística – Um futuro complexo?", seminar presented by Marília Sá Carvalho, IHMT/CMDT, May 19th 2010.

From biochemistry to pharmacogenetics: a journey of a life-time – a tribute to honor Professor Maria Celeste Lechner, Faculdade de Farmácia, Universidade de Lisboa, June 6th 2008.

Final meeting of "Action 857: Apicomplexan Biology in the Post-Genomic Era", Final MC + WGs at Orthodox Academy of Crete, Kolymbari, Crete, Greece. 27-30th May 2008

"*Life inside cells",* symposium organized by Professor Karl Lingelbach (COST), November 13th – 14th 2007.

Workshop on Leishmaniasis Therapeutics, in CMDT/IHMT, Lisbon, February 7th 2007.

"I Seminário de Terapêutica da Malária da CPLP", seminar organized by CMDT, in Lisbon. October 9th – 11th 2006.

"Metals in Biology and Medicine", international symposium organized by Instituto de Bioquímica Vegetal y Fotosíntesis, in Universidade de Sevilha, Sevilha. Mars 1st – 2nd 2005.