

Curriculum vitae

Márcio Simão

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Address: Rua Mateus Moreno, Lt 68 R/C esquerdo, 8100 Loulé, Algarve, Portugal.

Date of birth: 14/03/1979

Nationality: Portuguese

Scientific Career Synopsis

I have a Biochemistry degree (Pre-Bologna) and a specialization in Molecular Biology with a master degree in molecular biology, and microbiology obtained at the University of Algarve (UALG). From 2013 to 2017, I was enrolled in the PhD programme in Biomedical Sciences at UALG. Meanwhile I have been working as invited Professor in the Faculty of Medicine and Biomedical Sciences (FCMA) in University of Algarve, teaching Cell Biology, Cell Differentiation and Microenvironments, and created a new discipline, Laboratories in Biomedicine, for the master in biomedical sciences-mechanisms of diseases. This discipline aims to promote students to develop its own mini-research project based on basic background methods and reagents available in the university. In addition, is proposed to students develop the experimental design, execute experiments and present their results. In addition, I am involved in the Lab-It - Itinerant Laboratory within KCITAR-Algarve project, promoting the development of molecular biology activities for students and teacher training in Algarve high schools.

As a researcher I have initiated my scientific career with a fellowship in a biogeochemistry project about oxygen dynamic coupled to organic carbon in intertidal areas and done my graduation thesis in research about bioturbation of iron biogeochemistry and in molecular response of the clam *Ruditapes decussates* upon

Perkinsus olsenii Infection, which allowed the publication of a paper. After I was a fellowship researcher in a project which aimed to identify and characterize genes involved in synthesis of isoprenoids in parasite Perkinsus olsenii. For the master thesis my research project was related with the expression of four new ferritins from grooved carpet shell clam Ruditapes decussatus challenged with Perkinsus olsenii and metals (Cd, Cu and Zn), which led to a new publication. After a master thesis I have done a pause in research activities and was involved for 3 years in project Lab-It development which aimed to support secondary schools and teachers in the formation and dissemination of concepts associated with molecular genetics.

Following my scientific interest I was able to be recipient of a FCT PhD fellowship (SFRH/BD/77056/2012) with the project "Contribution to the molecular characterization of osteoarthritis and osteoporosis phenotypes associated with Hereditary Hemochromatosis". It was developed under the supervision of Professors Leonor Cancela (BIOSKEL lab, at UALG), Ea Heng Kong (INSERM U1132, BIOSCAR at Hôpital Lariboisière, service de Rhumatologie, Université Paris 7 Denis Diderot, Paris, France) and Graça Porto (I3S Research Center at University of Porto, Portugal). The work focused on the study of osteoarthritis and osteoporosis associated to hereditary hemochromatosis using mice models for the molecular characterization of musculoskeletal complications. Part of this work was done at INSERM U1132 (Paris) and at I3S, Porto thus allowing the establishment of external national and international collaborations. I have been accumulating experience in research of osteoarthritis and osteoporosis associated to iron overload phenotypes with knowhow in histological approaches for characterization of cartilage and bone tissues and micro computerized tomography (micro-CT) technique for bone histomorphometric analysis and in the development of primary cultures of mammalian osteoblasts and chondrocytes, in fluorescent and confocal microscopy and in molecular biology techniques. I have also experience in coordinating the research projects of undergraduate and master students from biochemistry, biomedical sciences and medical degrees, as well as in dissemination of science, being responsible Lab-It practical session application in schools and invited to several seminars about molecular genetics in biomedicine. In addition, in the last 3 years I was invited to review more than 40 manuscripts for international research journals.

Education:

-PhD in Biomedical Sciences, Universidade do Algarve, (2017). Thesis: “**Contribution to the molecular characterization of osteoarthritis and osteoporosis phenotypes associated with Hereditary Hemochromatosis**”. 24th of May, 2017.

-Final grade: Approved and classified with Muito bom (Very good) by unanimity

-Master: Molecular Biology and Microbiology- University of Algarve (2010) Thesis: “**Cloning, expression and characterization of Ferritin genes identified in clam R. decussatus and its role in the infection of parasite Perkinsus olseni.**”

-Final grade: 17 (0-20)

-Graduation: Biochemistry (Licenciatura PreBolonha, 4 years, 160 ECTS) – University of Algarve (2006) Thesis: **Molecular response of Ruditapes decussatus clam to Perkinsus olseni parasite infection and its relation with the iron biogeochemistry in inter-tidal sediments.**

-Final grade: 14 (0-20)

Skills:

Molecular biology methods: DNA and RNA extraction, PCR, qPCR, cDNA synthesis, DNA cloning.

Cell culture methods: Cell culture maintenance, handling and primary culture establishment (chondrocytes and osteoblasts). In vitro experimental design.

Proteomic methods: Isolation and purification of proteins. Expression in bacterial systems. Protein expression analysis (Western blot)

Micro-CT analysis: Bone Histomorphometric characterization by micro-CT. Practical formation in X-ray scans acquisition in micro-CT Skyscan 1272.

General histology techniques: Processing tissues for inclusion in paraffin and methylmetacrylate. Staining and histomorphometric analysis of mineralized tissues (Aniline blue, Trap activity, Toluidine blue). Histological characterization, (H&E, Safranin-O/Fast green/Mayers Hematoxylin, Perls staining). Immunohistochemistry assays.

Bioinformatic analysis: protein sequences and identification, analysis of functional features and motifs, protein modifications, protein structure, protein interactions. Gene structure analysis, transcription factor prediction, evaluation of pathogenic SNP's potential. DNA sequence analysis using available databases

Phylogenetic analysis: Multiple alignment methods and phylogenetic tree constructions using bayesian inference and maximum likelihood models. Software: RAxML, MrBayes, Concatenator, MEGA, FigTree.

Spectrophotometer methods (UV/VIS): Quantification of dissolved elements (Fe, Zn, NH₄, Cd, P...).

Experimental design using microcosmos: In vivo studies with bivalves.

Languages:

	Portuguese	English	French	Spanish
Written comprehension:	Excellent	Excellent	Excellent	Excellent
Written expression:	Excellent	Excellent	Average	Average
Oral expression:	Excellent	Excellent	Average	Good

Fellowships and positions:

-15/09/2018- Present- Invited Professor of department of Biomedical Sciences and Medicine (DCBM), University of Algarve, Lectures: **Cell differentiation and microenvironments; Cell Biology (Practical classes); Laboratories in Biomedicine (Biomed Lab).**

-01/03/2019-31/05/2019- Post-doc in project PTDC/MAR-BIO/4132/2014, **“Reversing the pathophysiology of Perkinsosis in clams hatcheries through the use of analogues of Artemisinin”**, Instituto Gulbenkian de Ciência (IGC) and Instituto Português do Mar e da Atmosfera (IPMA) at centro de Maricultura Tavira.

-01/09/2017-Present: Post-doc research collaborator - at BIOSKEL- Comparative, Adaptive and Functional Skeletal Biology-CCMAR-Centre of Marine Sciences-University of Algarve.

-01/02/2012-31/03/2017- PhD fellowship funded by FCT (ref. SFRH/BD/77056/201-
" **Contribution to the molecular characterization of osteoarthritis and osteoporosis phenotypes associated with Hereditary hemochromatosis**"- BIOSKEL- Comparative, Adaptive and Functional Skeletal Biology-CCMAR-Centre of Marine Sciences-University of Algarve.

-01/02/2010-31/01/2012-Fellowship in project Lab-IT (Laboratório itinerante) – University of Algarve- **Project devoted to the divulgation of molecular biology and biotechnology principles and basic techniques in Algarve public high-schools.**

-04/05/2009-12/11/2009- Research fellowship in project entitled “**Characterization of isoprenoids biosynthesis and determination of potential therapeutic targets**”- (PI: Leonor Cancela) BIOSKEL- Comparative, Adaptive and Functional Skeletal Biology-CCMAR-Centre of Marine Sciences-University of Algarve.

-01/07/2008-31/03/2009- Professional internship with the objective of increase the knowhow in molecular biology and proteomic methods with emphasis on clam **Ruditapes decussatus iron metabolism** –BIOSKEL- Comparative, Adaptive and Functional Skeletal Biology-CCMAR-Centre of Marine Sciences-University of Algarve.

-01/11/2007-31/01/2008- Research fellowship in project entitled “CERATÓNIA” (PI: Henrique Gomes) **Development of method for in vitro cell culture mineralization and proliferation monitoring with microcircuits**, CEOT - Centro de Electrónica, Optoelectrónica e Telecomunicações da UAlg.

-01/06/2006-31/10/2007- Internship in project with the objective of **identifying the clam *Ruditapes decussatus* molecular response to environmental factors, temperature, metal toxicity (Cd, Cu, Zn) and its correlation with susceptibility for infection with parasite Perkinsus olseni.**- BIOSKEL- Comparative, Adaptive and Functional Skeletal Biology-CCMAR-Centre of Marine Sciences-University of Algarve.

-02-/04/2005-20/04/2006- Research fellowship in project O-DOIS (PI: Carlos Rocha)- “**Oxygen dynamic coupled with organic carbon mineralization in intertidal sandy zones.** -Biogeochemistry lab- CIMA- Center of Marine and Environmental Investigation- University of Algarve.

Course / Discipline Taught

- 2019/02/01 – present, Discipline: **Cell differentiation and microenvironments** Oncobiology Master, Faculty of Medicine and biomedicine Sciences, Universidade do Algarve, Portugal
- 2020/09/15 - Present Discipline: **Laboratories in Biomedicine** master's in biomedical sciences-Disease mechanism, Faculty of Medicine and Biomedicine Sciences, Universidade do Algarve, Portugal
- 2018/09/15 - present **Cell Biology** Biomedical Sciences Course, Faculty of Medicine and Biomedicine Sciences, Universidade do Algarve, Portugal
- 2018/09/15 – Present: **Cell Transitions and tissue engineering** master's in biomedical sciences-Disease mechanism, Faculty of Medicine and Biomedicine Sciences, Universidade do Algarve, Portugal

Publications:

Márcio Simão; Natércia Conceição; Susana Imaginário; João Amaro; Maria Leonor Cancela. "**Lab-It Is Taking Molecular Genetics to School**". *BioChem* (2022): <https://doi.org/10.3390/biochem2020011>.

Márcio Simão; M. Leonor Cancela. "**Musculoskeletal complications associated with pathological iron toxicity and its molecular mechanisms**". *Biochemical Society Transactions* (2021): <https://doi.org/10.1042/BST20200672>.
10.1042/BST20200672

Márcio Simão; Ricardo B. Leite; M. Leonor Cancela. "**Expression of four new ferritins from grooved carpet shell clam *Ruditapes decussatus* challenged with *Perkinsus olseni* and metals (Cd, Cu and Zn)**". *Aquatic Toxicology* (2020): 105675-105675. <https://doi.org/10.1016/j.aquatox.2020.105675>.
10.1016/j.aquatox.2020.105675

M. Kyla Shea; Sarah L. Booth; Stephanie G. Harshman; Donald Smith; Cathy S. Carlson; Lindsey Harper; Alexandra R. Armstrong; et al. "**The effect of vitamin K insufficiency on histological and structural properties of knee joints in aging mice**". *Osteoarthritis and Cartilage Open* (2020): <https://doi.org/10.1016/j.ocrto.2020.100078>.
10.1016/j.ocrto.2020.100078

Simão M, Gavaia PJ, Camacho A, Porto G, Pinto IJ, Ea HK, Cancela ML. (2019) **Intracellular iron uptake is favored in Hfe-KO mouse primary chondrocytes mimicking an osteoarthritis-related phenotype**. *Biofactors*. 2019 Jul;45(4):583-597. doi: 10.1002/biof.1520. Epub 2019 May 27. PubMed PMID:31132316.

Erratum in: *PLoS One*. 2019 Apr 29;14(4):e0216377. PubMed PMID: 30427936; PubMed Central PMCID: PMC6241130.

Simão M, Camacho A, Ostertag A, Cohen-Solal M, Pinto IJ, Porto G, Ea HK, Cancela ML. (2018) **Iron-enriched diet contributes to early onset of osteoporotic phenotype in a mouse model of hereditary hemochromatosis**. PLoS One. 2018 Nov 14;13(11):e0207441. doi: 10.1371/journal.pone.0207441. eCollection 2018.

Camacho A, Simão M, Ea HK, Cohen-Solal M, Richette P, Branco J, Cancela ML. (2016) **“Iron overload in a murine model of hereditary hemochromatosis is associated with accelerated progression of osteoarthritis under mechanical stress. Osteoarthritis Cartilage”**. S1063-4584(15)01321-7

Camacho A, Funck-Brentano T, Simão M, Cancela L, Ottaviani S, Cohen-Solal M, Richette P. (2015) **“Effect of C282Y genotype on self-reported musculoskeletal complications in hereditary hemochromatosis”**. PLoS One. 30;10(3):e0122817 (doi: 10.1371/journal.pone.0122817)

Simão MF, Leite RB, Rocha C, Cancela ML (2010). **“Changes in Bioturbation of Iron Biogeochemistry and in Molecular Response of the Clam Ruditapes decussates upon Perkinsus olseni Infection”**, Arch Environ Contam Toxicol. 59(3):433-43. doi: 10.1007/s00244-010-9490-9

Oral communications:

Márcio Simão (2022) **“Molecular mechanisms associated with iron-related musculoskeletal complications”** Invited speaker, ABC Days – V Annual meeting of Algarve Biomedical Center, “Aging Challenges” 13 October 2022, Sagres, Portugal

Márcio Simão, Graça Porto, I. Jorge Pinto†, Martine Cohen-Solal, Hang-Korng Ea, M. Leonor Cancela (2019) **“HFE loss of function is a susceptibility factor for bone loss and early osteoporosis onset”**. 11th Symposium in Metabolism, "Ageing & Metabolism", Porto, 30 October, Portugal.

Márcio Simão, António Camacho, Paulo Gavaia, I. Jorge Pinto, Graça Porto, Ea Hang Korng, M. Leonor Cancela (2018) **“Characterization of osteoarthritis associated with Hereditary Hemochromatosis using Hfe-KO mouse e model”**. II Jornadas do Algarve Biomedical Center (ABC), Olhão, 16 March, Portugal.

Camacho A, Simão M, Branco J, Richette P, Cancela ML (2014) **“Characterization of The Histological And Morphological Profile Of Articular Damage In A Hemochromatosis Mouse Model”**. 34th Congress of the Portuguese Society of Orthopaedics and Traumatology in Algarve | Herdade dos Salgados, Albufeira from 23 to 25 October, Portugal.

Mira S, Simão M, Conceição N, Cancela ML (2014),” **CSI and Prenatal Diagnosis to Teach Molecular Biology: Lab-it – itinerant laboratory.**” HSCI’2014: Science Education with and for Society, July 21st to 25th Aveiro, Portugal.

Simão M., Gomes H. L. Stallinga P, Leite R. B. Cancela M.L. and Ferreira M. (2008)

“Non-invasive monitoring of bone tissue growth in culture using polymer functionalized microelectrode arrays”; International Conference on Science and Technology of Synthetic Metals (ICSM), Porto de Galinhas Pernambuco Brazil 6-11 July.

Severino Ibánhez; Catarina Leote; Márcio Simão; Sérgio Pólvora; Catarina Moita; Carlos Rocha; (2006) **“Fontes de Poluição por Nitrato para a Ria Formosa com Origem nos Sedimentos Arenosos das Ilhas Barreira”** Apresentação II seminário sistemas lagunares Santo André, Portugal.

Poster communications:

Márcio Simão, Natércia Conceição, M. Leonor Cancela **“Impact of Lab-it to consolidate molecular genetics concepts in high schools within the context of Biomedical sciences”** (2022), Presented in III International Meeting of the Portuguese Society of Genetics, 27-28 July.

Mafalda Lázaro, M. Leonor Cancela, Márcio Simão **“Characterization of the expression of ZFP36L1 gene within a context of osteoarthritis and osteoporosis pathogenesis”** (2022), Presented in III International Meeting of the Portuguese Society of Genetics, 27-28 July.

Silva, Joel M.; Simão, Márcio; Cancela, M. Leonor. **“Molecular characterization of regulatory elements in the 5'- and 3'- UTRs of Bmpr1a transcripts”** (2020). Presented in Annual Meeting of the Portuguese Society of Human Genetics.

M. Kyla Shea; Stephanie G. Harshman; Sarah L. Booth; Donald Smith; Cathy S. Carlson; Lindsey Harper; M. Leonor, Cancela; Simão, Márcio; Richard F. Loeser. **“The effect of vitamin K insufficiency on the development of osteoarthritis in aging mice”** (2020). Presented in American Society of Nutrition meeting -NUTRITION 2020 LIVE ONLINE-

Felício, Daniela; Camacho, António; Cancela, M. Leonor; Simão, Márcio. **“Identification and characterization of polymorphisms in HLA-B*27 allele in ankylosing spondylitis patients”** (2020). Presented in International Meeting of the Portuguese Society of Genetics,

Silva, Joel; Cerqueira, Manuel; Simão, Márcio; Cancela, M. Leonor. **“Characterization of 5' and 3' UTRs from Bone morphogenetic protein receptor type 1A (Bmpr1A) transcripts under the context of bone metabolism”** (2020). Presented in International Meeting of the Portuguese Society of Genetics.

Daniela Felício, António Camacho, M. Leonor Cancela, Márcio Simão (2019) **“Bioinformatic analysis and characterization of pathogenic mutations on HLA-B27 alleles and its putative implications on protein structure”** III Jornadas do Algarve Biomedical Center (ABC), Albufeira, 29 March, Portugal.

Márcio Simão, António Camacho, Agnès Ostertag, Martine Cohen-Solal, I. Jorge Pinto, Graça Porto, Ea Hang Korng, M. Leonor Cancela. (2018) **“Iron enriched diet in association with Hfe loss of function promote iron toxicity mechanism and accelerate bone loss phenotype”** Free Radical Biology & Medicine biennial meeting: 4-7 June, Lisbon, Portugal.

Beatriz Estremores*, Márcio Simão*, Paulo J. Gavaia, M. Leonor Cancela (2018) "**Phylogenetic and molecular characterization of *Slc39a14 (Zip14)* zinc transporter in *Danio rerio***". Interdisciplinary Approaches in Fish Skeletal Biology (IAFSB), 5th Conference: April 16 to 19, Tavira, Algarve, Portugal

Márcio Simão, Jorge I. Pinto, Graça Porto, Ea Hang Korng, Martine Cohen-Solal, M. Leonor Cancela (2015) "**Iron enriched diet is a determinant factor for osteoporosis onset and progression in hereditary hemochromatosis mouse model (Hfe-KO)**". 4th Barcelona PhD Students Symposium- Science fights back: Tackling disease to recover homeostasis. 12-13 November 2015- Barcelona, Spain

Márcio.F.Simão, Paulo J.Gavaia, Hang K. Ea, Jorge P. Pinto, M. Leonor Cancela (2014) "**Chondrocytes from a hemochromatosis mouse model reveal altered expression of genes associated to iron and cartilage metabolisms**". December 17-20 XVIII Congress of the Portuguese Biochemical Society, Coimbra, Portugal

Marcio Simao, Paulo Gavaia, Jorge Pinto, Ea Korng & M Leonor Cancela (2013) "**Establishing an in vitro system to study chondrocyte phenotypes associated to human hereditary hemochromatosis and identify molecular players involved in chondrocyte related iron metabolism**". European Calcified Tissue Society (ECTS) Congress, 18-21 May, Lisboa-Portugal

Carvalho F.R.; Cardeira J.; Simão M.; Gavaia, P.J.; Cancela M.L. (2013) "**Inducing a transient diabetic phenotype in zebrafish: can this model be used to study insulin related changes in bone metabolism?**". Interdisciplinary Approaches in Fish Skeletal Biology (IAFSB) 4th Conference: April 27 to 29 (30) 2015, Tavira, Algarve, Portugal

Márcio F. Simão, Ricardo B. Leite, M. Leonor Cancela (2010) "**Identification and characterization of two Ferritin isoforms in clam *R. decussatus* and evaluation of their Fe²⁺ oxidation potential**". XVII Congresso Nacional de Bioquímica, 15-17 December, Porto – Portugal.

Ricardo B. Leite, Ricardo Afonso, Márcio Simão, Sandra Joaquim, Domitilia Matias, M. Leonor Cancela. (2007) "**Evaluation of Perkinsus infection levels within a Variable Range of Temperatures and Salinities in Clam *Ruditapes decussatus*. Effect on Clam Oxidative Stress and Expression of Antioxidant-related genes**"; WOPER (Workshop for the Analysis of the Impact of Perkinsosis to the European Shellfish Industry) 12-14 September, Vigo.

Márcio Simão; Ricardo B. Leite; Ricardo Afonso; Sandra Joaquim; Domitilia Matias; M. Leonor Cancela. (2006) "**Evaluation of Oxidative Stress Levels and Antioxidants mRNA Expression within a Variable Range of Temperatures in Clam *Ruditapes decussatus***". XV Congresso Nacional de Bioquímica, 8-10 December, Aveiro – Portugal

Leite RB, Fonseca L, Afonso R, Simão M, Ascenso RM, Cancela ML; (2008) “**Clam Lectins: Species-specific patterns of expression upon perkinus exposure: Evolutionary considerations**”; Final Assembly of Marine Genomics Europe (MGE) Faro (Portugal), 13-16 May

Ricardo B. Leite; Ricardo Afonso; Rita Ascenso; Márcio Simão; M. Leonor Cancela. (2005) "**Effect of Perkinsus infection on expression of Ruditapes decussatus biomarkers genes in response to environmental pollutants.**" Marine Genomics International Congress, 28 October to 1 November, Sorrento, Italy

Márcio Simão; Ricardo Leite; M. Leonor Cancela; Carlos Rocha. (2005) “**Effect of iron dynamics stress on the response of clam R. decussatus to an infection by the protozoan parasite Perkinsus olseni.**” 2nd International Congress on Stress Responses in Biology and Medicine, September 24-28, Tomar, Portugal

Márcio Simão; Ricardo Leite; M. Leonor Cancela, Carlos Rocha. (2004) “**A preliminary study of the effect of benthic iron dynamics on the response of the clam R. decussatus to an infection by the protozoan parasite Perkinsus atlanticus /olseni**”. XIV Congresso Nacional de Bioquímica, 2-4 de Dezembro 2004, Vilamoura, Portugal

-Workshops and courses

-Course in laboratory aquatic animal sciences (CAL-AQUA), (2018), Certification for animal experiments. Lectured by Centro Interdisciplinar de Investigação Marinha e Ambiental (CIIMAR) in Faro, Universidade do Algarve, 2 a 6 June 2018.

-Introduction to Light microscopy (ILM) (2016) -Center for Biomedical Research (CBMR), Universidade do Algarve.

-Advance course in phylogenetic (2015)- Centre for Ecology, Evolution and Environmental Changes (CE3C) - Faculdade de Ciências da Universidade de Lisboa. Lectured by professor Octávio Paulo.

-Advance course: “European Calcified Tissue Society (ECTS) PhD training course”, 15-18 September 2013, University of Hamburg, Hamburg, Germany: Oral presentation of PhD project and main results.

-Advance course: “Human Genetics: From Basic Science to Clinics and Genetic Counseling” na universidade do Algarve, departamento de ciências biomédicas: 26 e 27 Outubro de 2012.

Scientific orientation of students:

Co-supervisor: Larissa Kussaba Miguel, Master thesis, (ongoing) “Molecular, functional and morphological characterization of zebrafish mutants associated with the Keutel syndrome” (2023), Biomedical Sciences-disease mechanisms (Master), Universidade do Algarve, Portugal

Co-supervisor: Ana Portela, Master thesis, (ongoing) “Zebrafish as a model to assess the effects of thalidomide in limb development” (2023) Master in Molecular and Microbial Biology, Universidade do Algarve.

Supervisor: Mafalda Lázaro, Master thesis, “Characterization of ZFP36L1 gene expression associated with osteoarthritis and osteoporosis pathogenesis mechanisms” (2022), Biomedical Sciences-disease mechanisms (Master), Universidade do Algarve, Portugal

Supervisor: André Ferreira, graduation conclusion, “The impact of excess iron on the onset of Alzheimer's disease” (2022), Biomedical Sciences course, Universidade do Algarve.

Supervisor: Joel Mourato, Master thesis, “Characterization of 5’ and 3’ UTRs from Bone morphogenetic protein receptor type 1A (Bmpr1A) transcripts under the context of bone metabolism”, (2019) Master in Molecular and Microbial Biology, Universidade do Algarve.

Supervisor:: Daniela Felício, graduation conclusion, “Espondilite Anquilosante: Identificação de polimorfismos no alelo HLA-B27 e possíveis suscetibilidades dos hábitos alimentares”, (2019) Biomedical Sciences course, Universidade do Algarve.

Co-Supervisor:: Bernardo Barbosa Franco, graduation conclusion, “Associação entre Osteoartrose, Obesidade e Metabolismo do ferro, um estudo exploratório”, (2018). Biomedical Sciences course, Universidade do Algarve.

-Co-Supervisor:: Xavier Guerreiro Anastácio, graduation conclusion, “Abordagem morfológica e molecular ao estudo de factores de desenvolvimento da osteoporose”, (2017). Biomedical Sciences course, Universidade do Algarve.

- Co- Supervisor: Beatriz Estremores, graduation conclusion. ”Caracterização da expressão do transportador de Zinco ZIP14 no peixe-zebra (*Danio rerio*) e sua validação para estudos biomédicos”, (2016). Biomedical Sciences course, Universidade do Algarve.

- Co- Supervisor: Gabriela Carrasqueira, graduation conclusion.” Caracterização de uma cultura de osteoblastos primária isolada a partir de ratinhos Hfe KO. Impacto do excesso de ferro na mineralização”, (2015). Biomedical Sciences course, Universidade do Algarve.

- Co-Supervisor:: Filipa Lourenço, practical project. “Avaliação da cartilagem articular em ratinhos Hfe-KO e Hfe-KO, modelos para hemocromatose hereditária”, (2016),

Peer review of Papers

The screenshot shows the 'Peer Review' tab of an author record on Web of Science. The left sidebar lists various journals with the number of verified peer reviews for each: Bioscience Reports (27), Genes (4), Clinical Science (3), Journal of Clinical Medicine (3), Biochemical Society Transactions (2), Clinical Rheumatology (2), Journal of Cellular Physiology (2), International Journal of Environmental Research and Public Health (1), and Toxins (1). The right sidebar displays 'Metrics' including H-index (5), Publications in Web of Science (9), Sum of Times Cited (80), and Citing Articles (17). It also shows 'Peer Review Metrics' with 45 Verified Peer Reviews and 0 Verified Editor Records. An 'Author Impact Beamplot Summary' and 'Author Position' bar chart are also visible.

The screenshot shows the 'Reviewer Hub' interface on Elsevier. The left sidebar contains navigation options: Reviews, Invitations, In progress, History, Review preferences, Scopus profile, Rewards & Reports, Rewards, Certificates, Reports, and Volunteer to review. The main content area lists several journals with their respective review history links and 'Recognised Reviewer Certificate' buttons: Aquatic Toxicology, Archives of Biochemistry and Biophysics, Experimental Hematology, Fish & Shellfish Immunology, Gene, and Osteoarthritis and Cartilage.

Seminars lectured to Graduation and Master students:

Title: Hemocromatose e patologias das articulações, 30/10/2012.

Title: Hemochromatosis and articular defects, 28/02/2012.

Title: Hemochromatose and articular defects, Identification of the molecular players involved in Hereditary Hemochromatosis-related osteoarthritis, 12/03/2013.

·Title: Patologias multigénicas associadas ao metabolismo do ferro, 27/05/2013.

·Title: Patologia hereditárias associadas ao metabolismo do ferro, 28/05/2014.

·Title: Mouse as model for hemochromatosis associated bone defects, 17/10/2014.

·Title: O papel central da Biologia no desenvolvimento da Biomedicina, 30/10/2015.

·Title: Hereditary hemochromatosis: molecular basis and pathogenic phenotypes, 22/04/2016

Title: Isolation of primary chondrocytes cultures and possible biomedical applications, 25/10/2016

Title: Hereditary hemochromatosis: molecular basis and pathogenic phenotypes, 06/04/2018

Prizes and awards:

Good practices excellence prize (2021)

Good practices excellence prize (2021) given by University of Algarve by the activities done within Lab-it project, 13 July 2022, Universidade do Algarve, Portugal

Best oral communication (2019):

Grisp prize for best oral communication in the 11th Symposium in Metabolism, "Ageing & Metabolism" (2019), Porto, 30 October, Portugal.

Best poster (2018):

Interdisciplinary Approaches in Fish Skeletal Biology (IAFSB), 5th Conference: April 16 to 19 of 2018, Tavira, Algarve, Portugal