

Maria Mafalda Amaral Fonseca de Almeida

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Gender: Female

Date of birth: 9 Feb 1999

Nationality: Portuguese



ACADEMIC BACKGROUND

(2020 – 2022) **Master degree on Marine Biology** (not yet finalised)

University of Algarve, Faculty of Sciences and Technology

Address: Faro, Portugal

Final Grade (non-definitive): 16,5

Thesis: Spermatogonia cryopreservation and cell enrichment in Senegalese sole (to be presented for discussion)

(2017 – 2020) **Bachelor degree on Marine Biology**

University of Algarve, Faculty of Sciences and Technology

Address: Faro, Portugal

Final grade: 15

Final project: The effect of using an environmental enrichment in the dominance behaviour of Senegalese Sole (*Solea Senegalensis*) (18 values of 20)

RESEARCH EXPERIENCE

In the last three years, I have been involved in the Aquaculture Research group (Aquagroup) from Centre of Marine Sciences (CCMAR) performing several techniques associated with four projects based on Senegalese sole (*Solea senegalensis*). In 2020, I presented my bachelor project related to dominance behaviour in Senegalese sole juveniles and environmental enrichment under Dr Elvira Fatsini and Prof. Elsa Cabrita supervision. This project was inside the framework of REPROF1 and CONDISOLE projects. After, to continue these projects, I performed real time PCR on brain tissue from Senegalese sole to access the effect sand has on their brain gene expression. For my master thesis, I worked in Senegalese sole spermatogonia enrichment, isolation and purification to observe epigenetic modification in fresh and cryopreserved samples. For this purpose, I carried out fish maintenance in Ramalhete station, testes collection and dissociation, and techniques for spermatogonia quality assessment, such as, molecular markers, lipid peroxidation, DNA integrity, viability and DNA methylation. This study was inside the framework of AQUAEXCEL 3.0 and GERMROS projects from CCMAR under Dr Elvira Fatsini and Prof. Elsa Cabrita supervision. Currently, I am carrying out the research for these projects to try to optimize the spermatogonia enrichment techniques for Senegalese sole.

RESEARCH BACKGROUND

(1 Jun 2022 – 1 Feb 2023) **Research fellowship** – Centro de Ciências do Mar (CCMAR), Faro, Portugal.

Tasks: Fish maintenance, spermatogonia enrichment techniques (differential plating, cell culture, FACs and strainers) and quality assessment between fresh and cryopreserved spermatogonia (PI/SYBR staining for viability, comet assay, MDA assay, epigenetics analyses and real time PCR).

PARTICIPATION IN RESEARCH PROJECTS

- **As member of research team:**

(2022 - Current) – The imprinted characteristics of spermatogonia antioxidant capacity and their role in oxidative stress tolerance - GERMROS (2022-2023) (EXPL/CVT-CVT/0305/2021). **PEX project** funded by **FCT, Portugal**. Principal investigator: **Elvira Fatsini**.

(2022 - Current) - Research infrastructures in aquaculture - **AQUAEXEL 3.0**. Network. EU project (2020 - 2025). Principal investigator: **Marc Vandeputte** (INRAE, France).

- **As student:**

(2019 - 2020) - Asociación de la comunicación química y el estatus social en el lenguado senegalés según las condiciones de cultivo para la producción de reproductores - CONDISOLE (2019 - 2020) Campus de Excelencia Internacional del Mar (**CeiMar**). Principal investigator: **Elvira Fatsini**.

(2019 - 2020) - Condicionamento de indivíduos F1 de linguado senegalês com perspectivas à reprodução em cativeiro - REPROF1 (2017 – 2020) (ref. 16-02-01-FMP-0059). **Programa MAR2020**, Direção Geral das Pescas e Agricultura. Principal investigator: Prof. **Elsa Cabrita**.

TRAINING ACTIVITIES

Topics of practical work during Master Thesis:

- Difference in mRNA abundance according to dominance and enriched environment in Senegalese sole juveniles. "Laboratory Methods" proposal for a training period. From 1/01/2021 to 30/05/2021 under Dr **Elvira Fatsini** supervision.
Tasks: Tissue homogenization, RNA extraction, cDNA synthesis and quantitative real-time PCR assay.
- Biochemical responses to temperature and hypoxia in the toadfish *Halobatrachus didactylus*. From 1/10/2021 to 1/01/2022 under Dr **Pedro Guerreiro** supervision.
Tasks: Tissue homogenization, protein determination and catalase assay.

Stays in internationally recognized centres:

- INRAE-Laboratoire de Physiologie des Poisson, Rennes, France. From 1/06/2022 to 1/08/2022 under Dr **Catherine Labbé** supervision.
Objective: Assessment of rainbow trout sperm quality – motility (CASA) and state of mitochondria (JC1) – and Senegalese sole spermatogonia quality – epigenetics analyses (Whole genome sequencing).

INTERNATIONAL PEER-REVIEWED PUBLICATIONS

1. **Almeida, M.M**, Cabrita, E., Fatsini, E. "The use of an environmental enrichment modulates dominance behaviour and brain mRNA abundance in a flatfish species". AQUACULTURE REPORTS (*Under revision*).
2. Fatsini, E., Tarasco, M., **Almeida, M.M**, Félix, F., Cabrita, E. "A new marking and identification method in Senegalese sole (*Solea senegalensis*) with the focus on behavioural trials validated with a novel ImageJ macro MarkerProfiler". PHYSIOLOGY & BEHAVIOR (*Under revision*).

ORAL PRESENTATIONS

1. Fatsini, E., **Almeida, M.M**, Oliveira, C., Cabrita, E. The use of an environmental enrichment modulates dominance response in Senegalese sole (*Solea senegalensis*). *Congress of the Portuguese Ethological Society 2020 (SPE2020)*. 6 November 2020 (*Online*). Faro, Portugal.

POSTER PRESENTATIONS

1. Fatsini, E., **Almeida, M.M**, Oliveira, C., Laizé, V., Cabrita, E. A feasible method for Senegalese sole spermatogonia enrichment. *8th International Workshop on the Biology of Fish Gametes*. Gdańsk, Poland.

VOLUNTEERING

(1 Jul 2020 – 1 Aug 2020) **Fish and tanks maintenance** - Aquário Vasco da Gama. Joined a local aquarium and helped with daily routines which included feeding, cleaning and maintaining several fish.

(1 Jul 2019 – 1 Aug 2019) **Messara Project ARCHELON** - Sea Turtle Protection Society of Greece. Joined one of the resident volunteers' teams for 4 weeks

(2015 – 2017) **Animal shelter** - União Zoófila de Lisboa

ADDITIONAL RELEVANT INFORMATION

Mother tongue(s): Portuguese

Other language(s): English C1 Level (Listening C1; Reading C2; Writing C1)

French B1 Level (Listening B1; Reading B1; Writing B1)

Communication skills

Good communication skills acquired through academic and associative activities. Ease of communication in multicultural contexts was acquired mainly in the volunteer projects in which I have participated.

Management and teamwork skills

I am by nature an organized person and easy to coordinate in the execution of different activities/tasks.

I acquired good organizational skills while responsible for preparing experiments and samplings.

Computer assisted analysis

Microsoft Office Software: word, excel, power point

Basic statistical analysis: IBM SPSS Statistics 20, R (Statistics), Graph Prism.