

## **STSM final report**

**Name:** Sylvie Dufour

**STSM Reference:** COST-STSM-FA1205-27527

**Dates:** 26/09/15 to 04/10/15

**Location:** Group of Aquaculture and Biodiversity from the Polytechnic University of Valencia

**Host:** Prof Juan F. Asturiano

### **Impact of novel treatments and environmental factors on eel endocrinology and spermatogenesis**

#### **1- Purpose of the STSM**

The objective was to collaborate with the Group of Aquaculture and Biodiversity, Polytechnic University of Valencia (GAB-UPV; director Juan Asturiano) in the development of novel strategies, to induce European eel gametogenesis and improve sperm quality, based on novel hormonal treatments and environmental factors.

This collaboration combines the complementary skills of the team of Prof Asturiano on eel spermatogenesis and sperm quality, and of the team of Drs Sylvie Dufour and Anne-Gaelle Lafont at BOREA "Biology of Aquatic Organisms and Ecosystems" (Director Sylvie Dufour), MNHN, CNRS, Paris, on neuroendocrine control mechanisms of eel reproduction.

#### **2- Description of the work**

We participated in the development of novel experimental protocols (doses, modes of injection, duration of treatments...) to test the effects of eel homologous recombinant gonadotropins on eel spermatogenesis and spermiation. These recombinant European eel gonadotropins have been recently produced by Dr Ignacio Giménez, director of "Rara Avis", Valencia, in collaboration with Prof Asturiano. The aim of the new protocols is to investigate the specific roles of FSH and LH, and of their interactions on eel spermatogenesis.

A first trial led to the induction of spermatogenesis and spermiation. Testis histology was analyzed in Valencia. Eel gonad samples have been collected from this trial to be analyzed in Paris, BOREA, for expression of gonadotropin receptors. Our BOREA team has recently identified one FSH and two LH receptors in the European eel, and developed specific qPCR for each receptor. The continuation of this project will lead to suitable treatments to replace heterologous hCG in order to improve sperm quality.

#### **3- Confirmation by the host institution of the successful completion of the STSM**

Dr Juan F. Asturiano certifies that Dr Sylvie Dufour has completed a Short-Term Scientific Mission awarded by the COST Action FA 1205 from 26 September 2015 to 4

October 2015, thanks to a grant awarded by Short Term Scientific Mission, COST Action FA 1205.



Dr Juan F. Asturiano  
Host Institution



Dr Sylvie Dufour  
STSM applicant