STSM REPORT

1. Purpose of the STSM

In general, the sperm of the fish is immotile in the testis and sperm duct, and its movement is activated by contact with fresh or salt water, depending on the species. In marine fish, motility is initiated by hyperosmotic shock that involves contact with sea water, but there is no clear consensus on the mechanisms that occur later.

We have some preliminary results in European eel sperm (Pérez et al. 2014). As the eel and the Senegalese sole are very different species, it is unknown if the results for both species will be similar or not. Regarding sperm motility activation, we can expect an inhibitory effect in some of the modified media (extender and/or activators).

For this reason, during this stay it has been reproduced the methodology of sperm activation, done previously in European eel. First, with the finality to establish a comparative of the mechanism of sperm activation between this two species of teleost. And secondly, this study will help to know the role of the ions like: sodium, potassium and calcium in the sperm activation of both species.

2. Description of the work carried out during STSM

The principal aim of this project was to study the intracellular ion changes related to sperm motility acquisition by means of flow cytometer, and to determine what ions are important in the seminal plasma or the activation media to induce the sperm motility activation in the Senegalese sole sperm.

3. Description of the main results obtained

We could make samplings in order to collect sperm samples of Senegalese sole (Fig.1A, B).

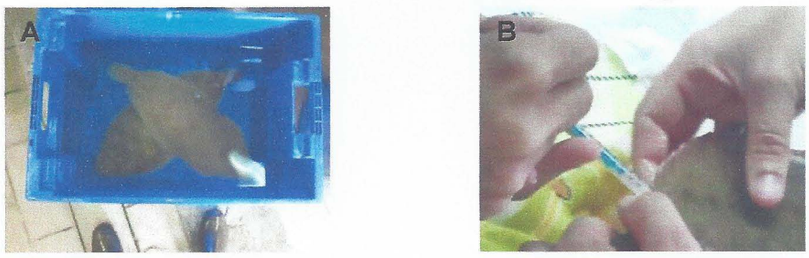

Fig. 1. (A): Two males of Senegalensis sole. **(B)** Extraction of sperm sample.

The different samples were analyzed by CASA system and Flow Cytometer in order to study the importance of the presence of these ions in the media (extender and activator media).

In the Table 1 shown the different combinations (colour yellow) between extender and activator media that we used in the study:

	SW	SW Na free	SW Ca free	SW K free
ROD	CONTROL			
ROD Na free				
ROD Ca free				
ROD K free				

Table1. Resume of different sperm activations. Extender media: ROD (control, with all ions), ROD Na free (with all ions excepted sodium), ROD Ca free (with all ions excepted calcium), and ROD K free (with all ions excepted potassium). Activator media: SW (control, with all ions), SW Na free (with all ions excepted sodium), SW Ca free (with all ions excepted calcium), and SW K free (with all ions excepted potassium).

4. Confirmation by the host institution of the successful execution of the STSM

Production manager, Elsa Cabrita, from Universidade do Algarve, (Faro, Portugal) certifies that Mª Carmen Vilchez Olivencia visited us a PhD student from 20th of September to 20th of November of 2013, thanks to a grant awarded by Short Term Scientific Mission, COST Action FA 1205.

Signed: Elsa Cabrita

Signed: Mª Carmen Vílchez