

## 7th Call for STSM-Scientific report

**COST Action FA1205: AQUAGAMETE** - Assessing and improving the quality of aquatic animal gametes to enhance aquatic resources. The need to harmonize and standardize evolving methodologies, and improve transfer from academia to industry.

### 1. Description of the work

#### **Trial 1. Induction to maturation with new recombinant gonadotropins (FSH and LH)**

By first time in teleosts, specific recombinant gonadotropins have produced good results in terms of sperm production, demonstrating that the half-life of these recombinant gonadotropins is long enough to induce *in vivo* effects. The experimental groups that were induced to sexual maturation with a combination of different doses of FSH and LH had more than 50% of motility, while the groups that were treated with only FSH or LH did not reached a notable testis development and thus, they showed a poor sperm production in terms of quantity and quality.

#### **Trial 2. Intracellular evaluation of the main ions involved in the sperm motility activation**

By first time in European eel have been demonstrated the effect of the variations of  $\text{pH}_i$  on the motility activation, as well as the changes in  $\text{pH}_i$  produced by modifications in external  $\text{K}^+$

In hyperosmotic medium, the  $\text{pH}_i$  acidification does not cause variations in the sperm motility compared to the control group. However, in isosmotic conditions the alkalization of the  $\text{pH}_i$  increased very weakly the sperm motility. Moreover, the elimination of extracellular  $\text{K}^+$ , (which we have previously demonstrated that inhibited the sperm motility) induced an increase in  $\text{pH}_i$  before and after motility activation if it is compared with control samples (with extracellular  $\text{K}^+$ ).

So, these results could suggest that protons (pH) and ion potassium are involved in sperm motility activation in the European eel, causing a membrane hyperpolarization probably by the exchange across the membrane of both ions.

## **2. Confirmation by the host institution of the successful completion of the STSM**

Dr Juan F Asturiano certifies that Rossella Caccia has completed a Short-Term Scientific Mission awarded by the COST Action FA 1205 from 1 June to 31 July 2015, thanks to a grant awarded by Short Term Scientific Mission, COST Action FA 1205.

Valencia, 25/08/2015.

A handwritten signature in blue ink, appearing to be 'J. Asturiano', written over a faint 'AQUANAMETE' watermark.

Signed Grant Holder:  
Dr Juan F Asturiano

A handwritten signature in blue ink, appearing to be 'Rossella Caccia', written over a faint 'AQUANAMETE' watermark.

Signed STSM applicant:  
Rossella Caccia