

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 pH_i on the motility activation, as well as the changes in pH_i produced by modifications in external K^+

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