STSM Scientific Report

COST Action: FA1205

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Topic: Somatic Cell Nuclear Transplantation in Goldfish (*Carassius auratus*)

Aims:

I. To learn the somatic cell nuclear transfer technique in a model species: goldfish.

II. To understand the method in Teleostean species so I can be able to establish this technique in Chondrostean species.

Work carried out

After defrosting 10ml of trout coelomic fluid using as an oocyte extender, I placed 20µl of fin cells and 30 oocytes in a petri dish and I started micromanipulations. An inactivated oocyte was held using a pipette connected to an injector in order to penetrate a fine needle holding a single cell via the micropyle. A donor single cell was placed at a shallow and not deep position in the oocyte. After fertilization, activation with tap water was performed in clone embryos. First cell stage and MBT (mid-blastula stage) was observed 10min and 5h30min after activation, respectively.

Results obtained

Daily I was able to perform more than 60% success in creating clones. Ratio of clone-embryo development until MBT stage was 100% and until epiboly stage was 30%. Cloning performance in 30min was approximately 12 transplanted embryos.

Interesting finding was that I obtained an embryo living for 9 days, although it shows malformation. Flowcytometry analysis showed that this embryo was diploid, and therefore a clone.

Confirmation by the host institution

Dr. Catherine LABBE, Head of the Cryopreservation and Regeneration group in the Laboratory of Fish Physiology and Genomics (Rennes, France) certifies that Effrosyni Fatira visited her laboratory as a guest researcher from February 25th to March 31 of 2015 thanks to a grant awarded by Short Term Scientific Mission, COST Action FA1205.

Dr. Catherine LABBE

M.Sc. Effrosyni FATIRA