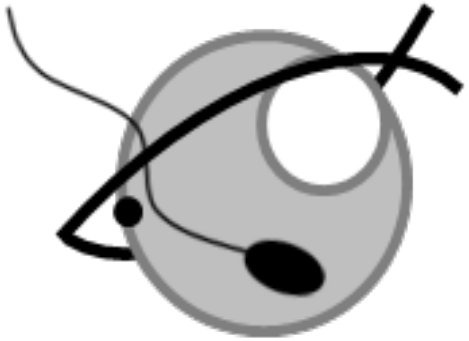
COST action preliminary proposal
(Reference oc-2011-2-10509)

Domain: Food and Agriculture (FA)

Action title: **Quality evaluation and cryopreservation of fish gametes**

Acronym: **CRYOFISH**



CRYOFISH

Involved groups

The COST proposals must involve **at least 5 partners from different countries**, but following our philosophy until now, I tried to include in this list some of the representative European groups in this area of research.

COST Member States

35 member states: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, Serbia, Former Yugoslav Republic of Macedonia

One cooperating state: Israel

COST has also signed reciprocal agreements with Australia, New Zealand, South Africa and Argentina. This means European scientists can work with other researchers in these regions and increase international collaboration.

+ Others: i.e. Canada

Participating non-COST countries

Albania (AL)
Algeria (DZ)
Andorra (AD)
Argentina (AR)
Armenia (AM)
Australia (AU)
Azerbaijan (AZ)
Brazil (BR)
Belarus (BY)
Canada (CA)
China (CN)
Colombia (CO)
Cuba (CU)
Egypt (EG)
Georgia (GE)
Hong Kong (HK)
India (IN)
Japan (JP)
Republic of Korea (KR)
Lebanon (LB)
Malaysia (MY)
Mauritius (MU)
Mexico (MX)
Republic of Moldova (MD)
Morocco (MA)
New Zealand (NZ)
Palestine (PS)
Pakistan (PK)
Russia (RU)
Tunisia (TN)
Singapore (SG)
South Africa (ZA)
Sudan (SD)
Ukraine (UA)
United Arab Emirates (AE)
United States of America (US)
Uruguay (UY)
Vietnam (VN)

Proposal and deadlines

A **preliminary proposal** of 3 pages must be sent until the September 30th and later, if the proposal if preselected, a **full proposal** should be developed in detail to be ready before March 30th.

It will include:

BACKGROUND, PROBLEMS

BENEFITS

OBJECTIVES, DELIVERABLES AND EXPECTED SCIENTIFIC IMPACT

SCIENTIFIC PROGRAMME AND INNOVATION

ORGANISATION

(Common) Background

The series of the biannual *International Workshop on Biology of Fish Gametes*:

- Vodnany, Czech Republic, 2007
- Valencia, Spain, 2009
- Budapest, Hungary, 2011

- … 2013?
- … 2015?

Derived publications in the Journal of Applied Ichthyology

Problems / Benefits

Extremely diversity of fish species

Freshwater vs seawater environments

Diversity of evaluation techniques (need of standardization)

Diversity of cryopreservation protocols (need of standardization)

Necessity of cryobanking of genetic resources (endangered species, aquaculture, biotechnology-generated fish strains)

New and unknown techniques (PGCs handling, spermatogonia selection, proteomics)

Lack of previous scientific nets

Overlapping of research

Dispersion of information

Lack of commercial-scale know-how (need of scaling-up)

High cost of samples (time and money)

…+?

Main objectives

Our main objective is to **enhance networking among scientists working in this area** to improve the exchange of theoric knowledge, experimental capacities, academic resources, etc.

Especially important will be making possible the **training of students and young scientists** (by short stays and training courses) and to **continue with the series of the biannual *International Workshop on Biology of Fish Gametes***, as a forum for the exchange of information between researchers directly involved in the proposal, as well as other groups interested in this scientific area.

+**Coordination of research**
(Working Groups meetings, workshops)…..on main research goals

+**Dissemination of results**
…at different levels and using different channels

Main research goals

Techniques for evaluation of gametes quality
-Standardize the main sperm quality evaluation techniques
-Develop protocols for fast evaluation of gametes quality
-Development and assay of new techniques

Gametes storage and preservation
-Develop media and protocols for short-term sperm storage
-Standardize sperm cryopreservation techniques for freshwater and seawater species
-Define protocols for spermatogonia cryopreservation
-Evaluate the use of new cryoprotectants
-Define protocols for ex vivo egg storage before fertilization
-Cryobanking of endangered species, selected aquaculture lines, transgenic lines…

Basic and applied research on gametes biochemistry and physiology
-Oxidative processes influencing the sperm quality
-Ionic mechanisms controlling the spermatozoa movement
-Roles of seminal plasma protein composition
-Study the role of zona radiata proteins (egg shell) on final egg quality
-PGC transplantation

DELIVERABLES AND EXPECTED SCIENTIFIC IMPACT

Dissemination of results

Progress (annual + final) reports to COST

Specific reports (i.e.: standardization of techniques)

Papers, review papers and books (i.e.: Special issues of JAI)

On-line delivered information (COST Action web and blog, Partners webs, blogs, etc.)

Press (Periodic redaction of COST Action newsletters and press releases)

Academic activities (training courses, coordination with Aquaculture Masters?, On-line resources (i.e.: manuals?))

Grants for short-term exchange of students, and researchers

Biannual workshops (International Workshop on Biology of Fish Gametes)

Final Action Publication (if demanded)

Meetings contents (seniors)

Gametes cryopreservation (standardization)

Short-term storage (standardization)

Sperm quality evaluation (standardization)

Sperm samples cryobanking (i.e.: labelling)

CASA software development

Up-scaling know-how

Interactions with mammals know-how

Interactions with humans know-how

…+?

Contents of training courses (students)

CASA use

ASMA use

Sperm cryopreservation

Egg microinjection

PGCs handling

Basic proteomic techniques

Citometry

…+?

Aquaexcel project = Possibilities of interaction?

SCIENTIFIC PROGRAMME AND INNOVATION

Definition of Working Groups (WGs) and WG leaders

WG1. Techniques for evaluation of gametes quality (Christian Fauvel)

WG2. Gametes storage and preservation (Elsa Cabrita)

WG3. Basic and applied research on gametes biochemistry and physiology (Andrzej Ciereszko?)

WG4. Organization of (students) training courses and (senior) coordination meetings (Martin Pšenička)

WG5. Organization of next editions of the *International Workshop on Biology of Fish Gametes*. (Organizers of next two Workshops?)

We need Working Groups leaders (one person per WG? + 2 persons for WG5?)

ORGANISATION

Executive Group, EG
(Responsible for ensuring the connections between the WGs)

Chair of the Action: Juan F. Asturiano

Vice-chair: Ákos Horvath

WG leaders (6 persons: one person per WG + 2 persons for WG5?)

Total: 8 persons

Management Committee, MC
(Financial aspects)

Chair of the Action + Vice-chair + COST officers

Funding

As you can see, this can mean **approx. 100.000 € (???) per year during 4 years** (subject to available budget), **covering exchanges of persons, stays, meetings assistance, etc. But no the research itself**. Involved groups should have nationally-funded projects.

What I think we could do is **reserving 20% of the annual budget (near 20.000 €) to have 40.000 € every two years.** This amount could **guarantee the full funding of two coming workshops** (*International Workshop on Biology of Fish Gametes*) even offering grants to students, trying to involve new groups, paying publications, travels of invited participants… and obviously **making easier to coming organizers the workshop organization**. Anyway, if local organizers can get their own local funding the network money will be used in other way

Rest of funding (i.e. 80%, near 360.000 €) offer nice possibilities for networking:.

Short-term scientific missions (1 week-3months)
Training courses (3 days - …)
Coordination meetings
Dissemination

The Executive Group will receive your proposes for the use of funding and will select the best way to spend it every year.

The initial intention is to form a hard-core of 18 groups of research from 10 COST-listed countries and 4 associated countries

Juan F. Asturiano – Spain
Julien Bobe – France
Elsa Cabrita - Spain/Portugal
Oliana Carnevali – Italy
Andrezj Ciereszko – Poland
Mª Teresa Dinis - Portugal
Christian Fauvel - France
Paz Herráez - Spain
Akos Horvath - Hungary
Otomar Linhart - Czech Republic
Constantinos Mylonas - Greece
Harald Rosenthal - Germany
Sebastiano Vilella - Italy
Jonna Tomkievicz - Denmark

Edward Trippel – Canada
Terrence Tiersch – USA
Paulo Carneiro - Brazil
Katsutoshi Arai - Japan

Companies!?

Hospitals/human res.?

Of course, budget dedicated to organize biannual workshops will arrive in this way to other groups joining the meetings, and even could be used for exchanges of students, travels for preparing proposals, etc.

We ask you:

-To express if you have the intention of participate in this networking movement as:

COST-listed group
Interested group
Non COST Institution

- Help defining what are the experimental capacities of your groups + full name of your institution, + full address, etc (full partners description)

- Help expressing what do you think that should be considered as our main objectives, main goals, possible deliverables, etc.

- Help expressing what do you think that could be included in the students training courses and the coordination meetings.

- Suggest keywords for Action description (until approx. 50)

We need this before the September 15th.

Group/Institution description

Center: Instituto de Ciencia y Tecnología Animal, Universitat Politècnica de València.		
Place: Valencia, Spain		
Main researcher: Juan F. Asturiano	*# full-time contracted researchers involved*: 6	
Description of capacities: Short-term sperm storage and cryopreservation. Sperm quality evaluation (CASA, ASMA, etc.). Expression of key reproduction genes (rtPCR). Fatty acid analysis. Histology techniques.		
Main species: European eel (*Anguilla anguilla*), gilthead seabream (*Sparus aurata*)		
Full address: Instituto de Ciencia y Tecnología Animal. Edificio 7G. Universitat Politècnica de València. Camino de Vera s/n 46022 Valencia, Spain		
Phone: +34 96 387 93 85	*Fax: +34 96 387 74 39*	*E-mail: jfastu@dca.upv.es*

Action activities financed by COST (Instruments)

1. Meetings
Organised in any COST country participating in the Action. They can be Management Committee meetings, Working Group Meetings, Exploratory Workshops, Workshops and Conferences. **Normally open to the whole scientific community**. **COST will contribute to the travel and subsistence costs of participating scientists, and to the organisation costs of the meeting**.

2. Short-term scientific missions (STSM, 1 week-3 months)
Missions or **exchange visits** allow scientists to visit an institution or laboratory in another COST country to foster collaboration, to learn a new technique or to make measurements using instruments and/or methods not available in their own institution/laboratory. **Particularly intended for young scientists**. **At least 4 per year.**

3. Training Schools (3 days-2 weeks)
Are aimed at **providing dissemination** of the Action activities and **intensive training in a new emerging subject in one of the laboratories of the Action with unique equipment or knowhow**. The participants are **basically but not exclusively young researchers** from across Europe

4. General Action Support Grant (GASG)
Support and development of an **Action website** as well as for **general support of the Action's Management Committee operation**, such as small-scale Action related ad-hoc activities and support for **preparatory events**.

5. Dissemination, Publications

6. COST Workshops and Strategic Initiatives

We need your input before the September 15th.

Is WGs structure accepted?

Do we have WG-leaders candidates?

Do we know who are the two next organizers of the Workshop?

Is the organization Executive Group, Management Committee accepted?