Ghent University (UGent)

Research Infrastructure Information

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1.1 Introduction

Operating institution:	**Laboratory of Aquaculture & Artemia Reference Center, Ghent University**
Type Operating Institution:	University
Research Infrastructure(s):	Gnotobiotic culture system for Artemia and sea bass

1.2 Research Infrastructure: Gnotobiotic culture system for Artemia and sea bass

Name of the infrastructure:	**Gnotobiotic culture system for Artemia and sea bass**
Location:	Lab of Aquaculture & Artemia Reference Center, Rozier 44 9000 Gent Belgium
Web site address:	http://www.aquaculture.ugent.be/index.htm
Contact:	Kristof Dierckens E-mail address: kristof.dierckens@ugent.be Phone: ++ 32 (0)9 264 37 54
AQUAEXCEL TNA facility:	Yes
Short description	The gnotobiotic set up is placed in a temperature controlled room. The set up consists of sterile falcon tubes mounted on a rotor (4 rpm). The axenic Artemia are fed axenically cultured food, such as yeasts (Saccharomyces cerevisiae wild type and strains with different cell wall composition) or axenically cultured microalgae (Dunaliella tertiolecta, Tetraselmis suecica). The axenic sea bass larvae are fed axenic Artemia nauplii or a gamma-irradiated compound diet.
Keywords	Host-microbe interactions; probiotics, feed composition effects, Artemia, sea bass
Technical labs	The infrastructure is located in a temperature controlled room equipped with 2 Laminar air flow cabinets.
Processing labs	The laboratory of Aquaculture also can perform FAME and Vitamin C analyses. A multi-plate reader and spiral-plater are available for microbiology samples.
EU projects	**Promicrobe**: Microbes as positive actors for more sustainable aquaculture **Pro-eel**: Reproduction of European Eel: Towards a Self-sustained Aquaculture **Aqua TNET III**: European Thematic Network in aquaculture, fisheries and aquatic resources management **ASEM**: ASEM Aquaculture Platform
Number of researchers	Staff: 12 PhD students: 30
Number of technicians	5
Lodging facilities	No, there are several hotels in the vicinity of the laboratory
SERVICES - scientific support	For gnotobiotic Artemia experiments, local staff will teach the methodology. Experiments will subsequently be performed by the visitor with the supervision and help of UGent staff. For gnotobiotic sea bass experiments, a research plan will be

	described by the visitor and discussed with the local scientific staff. The experiment will be executed by the local staff in which the visitor will participate.
SERVICES - electronic databases	No
SERVICES - quality assurance	Standard operating procedures for the disinfection and incubation of both Artemia and sea bass are in place. Standard operating procedures, common in microbiology labs are also applied in these facilities.
Safety and ethical issues	Disinfection methods are according to general rules for microbiology labs. Ethical framework: for tests with sea bass larvae, prior to each test, an approval of the ethical commission of the Ghent university needs to be obtained.

1.2.1 Facility Unit Information: Gnotobiotic culture system for Artemia and sea bass

Name Facility Unit	**Gnotobiotic culture system for Artemia and sea bass**
TNA	Yes
Contact (Researcher)	Kristof Dierckens E-mail address: kristof.dierckens@ugent.be Phone: ++ 32 (0)9 264 37 54
URL	http://www.aquaculture.ugent.be/index.htm
Postal Address	Lab of Aquaculture & Artemia Reference Center, Rozier 44 9000 Gent Belgium
General description	Gnotobiotic Artemia: 1 replicate: 35 mL of autoclaved artificial sea water, from nauplius till 5 days old. Gnotobiotic sea bass larvae: 1 replicate: 10 ml of filtered autoclaved artificial sea water, from egg stage till 15 DAH, 16°C.
Technical description	The replicates of both culture systems are mounted on a rotor at 4 rpm. There is no water renewal. Artemia can be fed from 24 hrs after hatching onwards. The sea bass are fed Artemia from DAH 7 onwards, but can be fed smaller items (live or dead particulate matter) from DAH 4 onwards.
Remote monitoring & control	No remote facilities available
Water and environmental conditions	There is no water renewal facilities
Flowrate	No in- and outlets
Temperature	Artemia: normally 28°C, can be adjusted Sea bass: normally 16°C, can be adjusted Temperature: controlled (Air conditioning)
Salinity	Artemia: normally 35 g/L, can be adjusted Sea bass: normally: 33-35 g/L
Oxygen	Not monitored
pH	Not monitored
Light intensity and wavelength	Artemia: 2500 candela steradian m−2 No info on wave length Sea bass: intensity: 10 candela steradian m−2 No info on wave length

Photoperiod	Both set ups- 24 hours light
Fish measurements	Artemia: size, dry weight, survival, pathogen load Sea bass: size, dry weight, survival, re-isolation of added bacteria Samples of both organisms for PCR analyses of added microbial communities can be taken
Pictures/videos	

1.3 Modality of access

UGent can give access to these gnotobiotic set-ups under different conditions.

For Artemia, access is easy and can be arranged for on a short term basis. The visitor will be assisted to a very high degree in setting up the experiment by the trained technicians. The goal and the specific experiment will be discussed with the UGent scientist.

For sea bass experiments, the visitor will participate in the experiment, which will be mainly executed by local staff. A visitor will need about 5-6 weeks continuous at UGent for such an experiment (preparation and rounding off).

1.4 Unit of access

Experiments with bacteria-free Artemia are conducted in sterile vials mounted on a rotating device. For each experiment, we use an access unit of 50 vials for the control and the treatment. Hence, the unit of access is 50 axenic recipients/week.