



Pôster – História Natural

Development and culture of *Okenia polycerelloides* (Gastropoda: Nudibranchia) in laboratory: a potential model organism for experimental studies

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To fit into the role of a good model organism, the species should meet a set of important criteria, such as being abundant, widely distributed, ecologically relevant, and experimentally manageable in the laboratory. The sea slug *Okenia polycerelloides* fits most of these conditions. Here, we present a culture protocol and describe the whole development of the species, from spawning to adult. Based on its characteristics, we propose that *O. polycerelloides* is a potential model organism for experimental studies. Adult sea slugs were collected with its host, the bryozoan *Amathia verticillata*, at Araçá Bay (São Paulo state, Brazil), brought to the Center for Marine Biology of the University of São Paulo, and kept in the laboratory. The egg masses were individualized in glass bowls with filtered (0.22 µm) seawater (FSW) (daily changed) and maintained at 24°C in a germination chamber in a 12h light/12h dark photoperiod. Egg masses were cylindrical gelatinous cords varying in length and with hundreds of eggs, in which each egg was involved by one oval capsule. Cleavage was holoblastic and spiral, the first one occurring approximately 2h after egg posture (AEP), and second and third cleavages within a 1h interval each. Blastula and gastrula were formed 12h and 24h AEP, respectively. Trochophore larva stage was reached 36h AEP. Veliger larva, which is characterized by the presence of the velum, foot, and shell, was formed about 60h AEP, still encapsulated. Larval movements increased near hatching; the oval capsules ruptured and the veligers swam freely inside the matrix of the egg mass until hatching, which occurred about 77h AEP. After hatching, the larvae were moved to glass beakers (1L) with 800 ml of FSW with 25mg/L of penicillin, and under mild aeration. Larvae were daily transferred into a clean beaker with new FSW, antibiotic, and food (live microalgae *Isochrysis galbana*, at 25,000 cells/mL). When the larvae started to swim near the bottom, pieces of *A. verticillata* were added to the cultures. After 9–12 days on the water column, the larvae settled on the branches of *A. verticillata*, which were maintained as substrate and food for juveniles and adult sea slugs. The metamorphosis took around 24 h, during which the velar lobes were shed and after which the larval shell was discarded. From then on, the juvenile started to feed on the bryozoan, later developing rhinophores, gill, and papillae. It took about 15 days for the juvenile to attain the adult stage. Therefore, the complete development of *O. polycerelloides* were reached in around 30 days. Fast development associated with abundance year-round (which is rare in sea slugs), plus the fact that it is easy to collect, maintain and rear in the laboratory, all make *O. polycerelloides* a potential model organism for experimental studies.

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