

Primary cell culture of mantle of the black-lip pearl oyster

Pinctada margaritifera

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During the pearl-sac formation in the black-lip pearl oyster *Pinctada margaritifera*, it is well-known that cells are migrating from the grafted mantle to build the pearl-sac. It should be useful to observe *in vitro*, the interactions between the different mantle cell types and to study the effect of specific molecules on the mantle cells proliferation, in order to coat the nucleus beads with substances stimulating this process or to immerse the grafted mantle a solution containing such molecules. First, we need to obtain viable primary cell cultures from the mantle of the mollusk and this is the aim of the present study.

All the experiments were carried out with black-lip pearl oysters *Pinctada margaritifera* which were raised in Takapoto atoll, Tuamotu archipelago (French Polynesia). They were collected from culture longlines and then transported in a container (room temperature) thanks to a 1-hour flight shipment to the laboratory (University of French Polynesia, Tahiti). They were then stored in filtered UV-sterilized seawater for 3 days. Small pieces (4mm²) were aseptically removed from the mantle of the oyster and then placed in small dishes in different culture media. The explants were cultured at 25°C for several days, up to 16 days.

The primary cultures were observed daily under a light inverted microscope (x320 magnification). The results showed cells migrating from the explants 8 days after the beginning of the culture. Several different cell types were observed in the dishes: epithelial cells, hyalinocytes, fusiform “muscular-like” cells. The best results of confluent cells were obtained 11 days after the beginning of the culture then the cells progressively died.