

Cellular activity assays in *Pinctada margaritifera*

Manon RAISON and Gael LECELLIER

UMR EIO, Université de la Polynésie française - BP 6570 - 98702 Faa'a - French Polynesia

Corresponding author : Gael Lecellier, gael.lecellier@upf.pf

Keywords: *cellular assay, cell culture, marine invertebrate*

In the aim to analyze the cellular response in different culture conditions of the black-lip pearl oyster *Pinctada margaritifera*, we investigated the ability to develop cellular activity assays from primary cell cultures. After sterilization of the crude mantle tissue extracted extemporaneously from an organism, small pieces (1 mm²) of tissue or dissociated cells, obtained after an incubation with proteases in an appropriated culture cell medium, were grown in different conditions with or without different cytotoxic drugs, in 96 wells microtiter plate during 24 hours. After incubation, we tested the effects of the drugs with a cytotoxic assay kit. We observed that (i) the cellular response can be measured independently from isolated cells or small pieces of tissue, (ii) the responses are consistent with the expected results according to the different drugs used and (iii) the response is more sensitive and rapid with isolated cells than with small pieces of tissue. It is also possible to analyze the dose response effect and the kinetics of the reaction as another standard cell lines. These first results suggest the ability to analyze the cytotoxic impact in invertebrate marine organisms according to the environmental conditions.