

Project 8/2004 - Development of pre-bloom Fluorimetric Assays for the monitoring of harmful algal blooms

Purpose

This paper seeks Members' approval to fund the captioned application for ECF made by Hong Kong University of Science and Technology (HKUST).

Background

2. The funding requested by this project is \$960,000. The project requires two research staff including one Senior Research Assistant (PhD) and one Research Assistant. The total staff cost for two research staff amounts to \$720,000 for 24 months. The remaining \$240,000 is for purchase of consumables including cell culture medium, molecular reagents and general chemicals. The project is expected to last for 24 months.

3. The project aims to develop an array of combinatory micro-fluorimetric assays, that are based on the detection of agents that modulate membrane potential and intracellular calcium and sodium ions. As the vast majority of algal toxins involved in harmful algal blooms (HABs) belong to such modulation agents, and their assays require only a small amount of algal materials and a short sample preparation time, a combinatory micro-fluorimetric assay will generate timely information before the actual bloom is formed. The present proposal will standardize a range of sodium-binding, calcium-binding and membrane potential fluorescence dyes for reporting the effects of algal toxins and toxic algal extracts on neuronal and non-neuronal cell lines. The standard response to the different agents can then be used as references for the routine monitoring of HABs.

4. In addition to examination by AFCD, EPD and FEHD, two external expert reviewers had been invited to assess the proposal. All of them considered that the project worthy of support. The ECF Research Projects Vetting Subcommittee discussed the proposal at its meeting held on 2.12.2004. Members supported the proposal since it addresses an environmental problem that is of great concern to Hong Kong.

Advice sought

5. Members are invited to advise whether the application for ECF should be approved with a grant of \$960,000 as detailed in paragraphs 2 to 3 above.

Secretariat, ECF Committee
February 2005