

A prototype of the biomonitoring system for assessing water quality using heliozoon cells

Chisato YOSHIMURA¹, Motonori ANDO² and Toshinobu SUZAKI³

(¹Ctr. Environ. Management, Kobe Univ., ²Lab. Cell Physiol., Grad. Sch. Educ., Okayama Univ.,
³Dept. Biol., Grad. Sch. Sci., Kobe Univ.)

SUMMARY

An improved model of biological monitoring system for detecting toxicants in the source of public water supply has been developed by using the heliozoon *Raphidiophrys contractilis* as a test organism. In this system, adhesiveness of the heliozoons to the substratum was utilized as an indication of the healthiness of the organism. A flow-through type chamber was designed for toxicity testing, in which cells that had been damaged by toxic materials were to be flushed away by the water flow. The number of heliozoons was continuously monitored with a CCD camera with LED illumination and a built-in microcomputer. A temperature control unit and a newly developed small pump were installed in the device, which enabled us to monitor the water quality in a continuous manner.