



News release

9 September 2008

Clean water? Getting the answer in minutes

“New rapid in-field diagnostic devices will detect the presence of pathogenic organisms or chemical contamination in water in minutes. They will significantly improve water safety and reduce health risk from use of contaminated drinking water in areas affected by major catastrophes and in the developing world”, said Dr David Garman, EBCRC Executive Director and President of IWA at the World Water Congress in Vienna.

Environmental Biotechnology CRC researchers at Macquarie University in Sydney and Murdoch University in Perth have developed a diagnostic platform that can quickly turn around results presently achieved in twenty four to forty eight hours.

“We are developing novel technology to overcome the many challenges that rapid pathogen detection presents. New developments include effective sample concentration methods, improvement of the sensitivity of tests and design of portable in-field detection devices.”

“Our technology mimics the human body’s ability to detect pathogens. By using antibodies in combination with nano and micro particles, we can easily identify pathogens in an environmental sample.”

“A key to our success is our ability to break up the organisms and then multiply parts of it by using a special chemical at body temperature. Other systems similar to ours require complex lab equipment or high temperatures, which are just not viable in remote field operations.”

The simple-to-use system will provide results directly to portable devices via simple electronic readouts, laptops and PDAs. The system will be based on proprietary technology, which integrates sample preparation and analysis and will be applicable for the detection of a broad range of organisms for example common water borne contaminants such as faecal coliforms, *E. coli*, *Legionella*, *Cryptosporidium* and *Giardia*. The system is highly adaptable to food, environmental and point of care applications.

Currently methods used to identify waterborne microbes are either sensitive but slow (requiring up to 3 days for a result), or relatively fast but insensitive when used with dilute samples.

“There is a great unmet need to rapidly detect micro-organisms and contaminants in water partly because of increased stringency in the regulatory environment, but also because of increased concerns about the biosecurity of critical infrastructure.”

“By providing robust, highly specific results in the field, the system will enhance the early detection and management of disease outbreaks and contamination”, Dr Garman concluded.

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To arrange an interview with Dr David Garman or to find out more, please contact:
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An image:” Cryptosporidium (green) has been successfully captured on zeolite (gold-yellow)” is available on request.