



News release

1 December 2008

Speedy detection technology to prevent harmful waterborne disease outbreaks

A novel rapid screening assay has the potential to reduce harmful water borne disease outbreaks. The test can identify the major species of *Cryptosporidium* that are present in human faeces in less than three hours. *Cryptosporidium* is the most common non-viral cause of diarrhea worldwide.

Environmental Biotechnology CRC (EBCRC) research team led by Dr Belinda Ferrari, has collaborated with the *Cryptosporidium* Reference Laboratory in the United Kingdom to validate their real-time screening tool for *Cryptosporidium* detection using FISH (Fluorescent *in situ* Hybridisation). Current technologies take up to 15 hours to do the equivalent test.

“The technology is based on the detection of human infectious *Cryptosporidium* species using fluorescent probes that target specific sequences of nucleic acid. The probes can distinguish *C. parvum* and *C. hominis* which are responsible for most of the outbreaks that are harmful to humans, said Ms Anitha Alagappan, test developer and a PhD candidate at EBCRC.”

Cryptosporidium, a parasite of humans and animals, causes a gastro intestinal illness in infected individuals known as cryptosporidiosis. Although waterborne cryptosporidiosis outbreaks have been reported, the source of the contamination has rarely been identified as this requires *Cryptosporidium* species information.

“Species data is important to understand the risk of infection to exposed people. There are many different species of *Cryptosporidium*, some of which are infectious to humans and some which aren't. Many current testing methods only detect the presence/absence of *Cryptosporidium* but not the species of concern.”

“The reliability of the new technology was tested against one of the standard methods applied in the water industry. A strong correlation (0.994) between the two methods confirmed that the species identification methods based on our technology is as reliable as the currently used methods.”

“When waterborne outbreaks occur, detection of the pathogens responsible is difficult and results often take days. Our test will instantly confirm whether the micro-organisms are harmful thus increasing the safety of our scarce water resources”, Ms Alagappan concluded.

An article “Development of Fluorescent *in situ* Hybridisation for *Cryptosporidium* detection reveals zoonotic and anthroponotic transmission of sporadic cryptosporidiosis in Sydney” by Anitha Alagappan, Niina Tujula, Michelle Power, Christobel Ferguson, Peter Bergquist and Belinda Ferrari is available online in the Journal of Microbiological Methods. DOI information: 10.1016/j.mimet.2008.08.007

--End of release--

For more information, please contact:
Dr. Belinda Ferrari
Tel: (02) 9385-2032
b.ferrari@unsw.edu.au

Michaela Lauren
Marketing and Communication Manager, EBCRC
Tel: (02) 9209 4969
Mobile: 0417 260603
m.lauren@ebcrc.com.au