

Putting a name to the fluke

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(Physorg.com) -- In a world first, a UQ researcher has developed a non-invasive screening method for potentially fatal liver and intestinal flukes plaguing the lives of an estimated 9 million people throughout southeast Asia.

The PCR test is already being used by Thai researchers to screen people for the presence of three species of liver and intestinal flukes which range in length from a few millimetres to one centimetre.

The highly accurate test can identify the species involved from one gene from an egg of a fluke among billions of other genes in a single faecal sample.

Dr Rebecca Traub and Dr Julie Macaranas, from UQ's School of Veterinary Science, developed the test after field work in Thailand, testing samples from more than 300 people in a remote village, 150km east of Bangkok.

Other researchers involved with the project included Dr Mathurit Mungthin from Phramongkutklao College of Medicine in Bangkok, Professor Darwin Murrell from the Danish Centre for Experimental Parasitology and Professor Andrew Thompson from Murdoch University.

To develop the molecular-based test, Dr Traub also called on the parasite identification expertise of UQ's Associate Professor Tom Cribb, from the Centre for Marine Studies, once back in the labs at the St Lucia

campus.

The breakthrough test is a vast improvement on existing testing methods to identify the flukes, involving a painful process of inducing people to purge fully grown flukes.

The test also allows authorities to more effectively handle infestations once they know the particular species, its life cycle and host animals if any.

Dr Traub's research was funded by a three-year, Australian Research Council Linkage grant with Bayer Animal Health GmbH as the industry partner.

The leaf-shaped flukes enter the human digestive tract through consumption of raw fish, an important cultural practice which continues despite authorities warning against it.

The creatures' life cycles involve marine snails and even dogs and cats depending on the species of fluke.

In extreme cases, the flukes can cause cancer of the bile duct and/or painful stones in the bile duct, leading to liver disease and even death.

Dr Traub said her research was important because 70 percent of the world's emerging infectious diseases involved an animal source or host. Examples include Hendra Virus, SARS, Avian Flu and Hydatid Disease.

“Multi-disciplinary research teams engaged in public health research are increasingly adopting a ‘One Medicine’ approach involving medical doctors, veterinarians and biologists. This is the most effective way of tackling the understanding and control of such diseases,” Dr Traub said.

She said she would seek further ARC or Wellcome Trust funding for the next stage of her research.

Provided by University of Queensland

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