



NovaUCD

Technology Transfer Opportunity

Rapid Diagnostic Tests for Animal and Human Parasitic Diseases

OPPORTUNITY:

Rapid diagnostic tests for animal and human parasitic diseases.

Description of Technology:

Two immunoassays have been developed for detection of Fasciolosis. These assays use a recombinant antigen in testing serum samples for an enzyme secreted by the parasite. The tests have been developed in two formats – a Latex Agglutination Test (DriDot™) for use in rapid field-test situations and an ELISA test more suited to veterinary practice or large-scale laboratory testing.

Antigens for the neosporosis and toxoplasmosis tests have been developed and validated. These are important as, toxoplasmosis is a very prevalent infection in domestic cats, which also infects dogs and sheep and neosporosis is one of the most common causes of abortion and neonatal abnormalities in cattle, resulting in huge losses to the agricultural community worldwide. Formatting of these tests is currently under development and the convenient DriDot™ format will make them available for point-of-care diagnosis.

Value Proposition:

Current tests for detection of fasciolosis, the disease caused by liver fluke, are lab intensive and based on faecal egg count, ELISA or post mortem pathology. ELISA assays however, are based on crude antigen extracts, which lack the specificity of a recombinant antigen test. No rapid on-site test is available and suspect samples must be sent to external reference labs for confirmation. DriDot™ is the first and only rapid latex agglutination test available for on-site detection of liver fluke.

Annual losses to the world's agricultural community due to liver fluke infestation are estimated to be in excess of US\$2 billion. A companion ELISA test has also been developed for laboratory-based testing for the parasite. Tests for neosporosis and toxoplasmosis will also be available for commercialisation shortly, providing a range of novel diagnostic kits for detection of economically important parasitic infections in domestic animals and man.

Market:

Fasciolosis is one of the most common parasite diseases affecting domestic animals and is increasing in prevalence in humans with an estimated 20 million people infected worldwide. The main market opportunities are in Australia, Argentina, Brazil, Europe, New Zealand, USA.

Inventors:

Professor Grace Mulcahy, UCD School of Agriculture, Food Science and Veterinary Medicine and Professor John Dalton (Associated Faculty Member).

Publications:

O'Neill, S.M., Mulcahy, G., Dalton, J.P. (2005) Isolation of Cathepsin L and use in the serological diagnosis of human fasciolosis. In Food Borne Pathogens: Methods and Protocols. (Catherine Adley, Ed.). Humana Press Inc., Totowa, NJ, USA.

Status:

User-friendly diagnostic kits using recombinant antigens have now been developed to facilitate the efficient detection and surveillance of these economically important parasitic infections and stem their cross-transmission to human populations.

Opportunity Sought:

Licensees are sought for manufacture and sale of these diagnostic kits on a market territory basis. Key reagents will be provided as part of any licence deal.

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