A LOW-COST IMMUNODIAGNOSTIC TEST FOR PARASITIC DISEASE

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Low-cost, reliable immunodiagnostic techniques with high sensitivity for routine use to diagnose parasitic disease are needed, as many techniques available are too costly for use in laboratories in Sri Lanka. The objective of this study was to establish the Rapid-Immuno Haemaglutination test (Rapid-IHA), a simple and rapid technique, using animal helminth antigens with zoonotic potential or sharing cross- reacting proteins, for antibody detection in the diagnosis of selected parasitic diseases in Sri Lanka.

Antigens were prepared from cyst aspirates of *Cysticercus tenuicollis, Coenurus, Cysticercus cellulosae* and adult worms of *Setaria* spp. and *Dirofilaria repens*. Double-aldehyde stabilized chick red cells were sensitized with each of the antigens. Assays were carried on serial dilutions of inactivated test sera with known positive and negative controls and tested against specific hyperimmune sera prepared in rabbits. The protein content of antigen preparations was as follows; *Dirofilaria repens* 0.36 mg/ml, *Setaria* 4.5 mg/ml, *Coenurus* 0.39 mg/ml, *Cysticercus tenuicollis* 4.5 mg/ml and *Cysticercus cellulosae* 8.5 mg/ml. The optimum antigen dilution was determined as 1/32 for *Setaria* antigen, 1/8 for *Coenurus* and 1/128 for *Cysticercus tenuicollis.*

Sera from 97 workers in buffalo farms were tested for exposure to *Setaria*, and a cut-off titre of 1/128 (mean+ 2SD) was determined. The double-aldehyde treated red cells can be used as a ready-made reagent with a shelf life of 4 weeks and is an improvement on the conventional IHA. Furthermore, in the Rapid-IHA, the nucleated chick cells settle quickly and test results can be read within one hour. The Rapid-IHA using sensitized chick cells is a low –cost sensitive immunodiagnostic test for routine use in the detection of antibodies. This study has shown that this test is adaptable for disease diagnosis in different tissue parasitic infections of humans and animals in Sri Lanka.

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