

PARASITOLOGY

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An evaluation of three commercial assays for the rapid diagnostic testing of imported malaria within Scotland**Michael Coyne, E Goldstein, B L Jones and C L Alexander**
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Malaria, a life-threatening parasitic disease requires a timely, accurate diagnosis to allow prompt administration of effective treatment. Rapid dipstick tests (RDTs) are commonly used in laboratories throughout the UK and elsewhere to assist with identification. These are particularly useful in settings where microscopy expertise is lacking or where parasitaemia is low which is common in travelers who have visited malaria endemic regions. Using microscopy for comparison, the Scottish Parasite Diagnostic and Reference Laboratory, Glasgow (SPDRL) examined the performance of three commercial RDTs, two of which are commonly used in Scottish Hematology laboratories, namely the OptiMAL-IT and BinaxNOW and a third, more recent product, the Humasis RDT. The performance of each RDT was examined using 65 EDTA-whole blood samples submitted by Hematology laboratories as part of the Scottish Malaria Surveillance Program at SPDRL. In addition to antigen detection, thick and thin blood films were examined for the presence of *Plasmodium* species. Forty nine samples were microscopy positive for *Plasmodium* species and 16 negative. Fifteen of those samples were negative by the OptiMAL-IT and Humasis kits and 14 using BinaxNOW. Of the 49 microscopy positive samples, agreement was reached with 45, 44 and 42 samples using BinaxNOW, OptiMAL-IT and Humasis kits respectively. Additional positives were detected using all three kits (BinaxNOW, n=2; OptiMAL-IT, n=1; Humasis, n=1). This study provides supportive evidence for the use of RDTs in assisting with a malaria diagnosis and highlights that their use should be combined with the microscopic examination of blood films to achieve a rapid and accurate malaria diagnosis.

Biography

Michael Coyne is a Lab Manager at SPDRL, where he has been based since 2007. He is also IT Manager at Scottish Microbiology Reference Laboratories, Glasgow and has a keen interest in systems development. His recent publications include *C. hominis* diversity in Scotland and *Acanthamoeba* keratitis diagnosis.

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