

Evaluation of the Biosynex AMPLIQUICK™ Fecal Parasitology assays in a Belgian travel clinic

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Molecular diagnostics have improved infectious disease detection, yet their role in parasitology remains nuanced. Conventional methods, including microscopy and antigen testing, are time-consuming, whereas PCR offers rapid and sensitive detection. The AMPLIQUICK™ Fecal Parasitology assay (Biosynex, France) comprises a pre-treatment step with the AMPLIQUICK™ Fecal Pretreatment kit and a ready-to-use multiplex PCR panel for protozoa, helminths, and microsporidia.

We evaluated its performance in 107 fecal samples from 99 patients with suspected gastrointestinal parasitic infections, by comparing the multiplex PCR results with the conventional methods encompassing microscopy, antigen testing and in-house PCR testing at the reference laboratory for parasitology of the Institute of Tropical Medicine (ITM), Belgium. Forty stored positive specimens were tested retrospectively, and 67 samples were collected prospectively.

AMPLIQUICK™ detected 188 of 239 unique parasites compared to 200 with the conventional workflow. It showed high accuracy for (pathogenic) protozoa (94.6%, 35/37) detecting all *Entamoeba* (*E.*) *histolytica*, *E. dispar*, *E. bienersi*, and *Encephalitozoon* spp., and most *G. duodenalis* and *Cryptosporidium* spp. The assay outperformed the conventional methods for *Dientamoeba fragilis* (24 vs. 12) and *Blastocystis* spp. (61 vs. 44). AMPLIQUICK™ reliably detected most clinically relevant helminths, including *A. lumbricoides*, *S. stercoralis*, *H. nana*, *Taenia* spp., and *E. vermicularis*. Hookworms *T. trichiura*, *S. mansoni*, *Heterophyidae*/*Opisthorchidae*, *Trichostrongylus* spp. were occasionally missed.

AMPLIQUICK™ demonstrated good performance for protozoa, microsporidia, and helminths, compared to the conventional methods. AMPLIQUICK™ has potential to streamline parasitology diagnostics in laboratories with limited expertise. Clinicians should interpret findings in the patient's clinical context.