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"Development of a simple and rapid biochemical test for the accurate identification of fungi and its application in epidemiological study in LDC".

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During this year of the grant we carried out the following steps:

The final form of the diagnostic kit was produced; from a total of 117 tested substrates, 17 were chosen for use in the kit. These substrates were tested against various yeast concentrations in order to negate any dependence of the test on yeast concentrations. We finally chose a concentration of 1×10^8 cells/ml as the optimum number of yeast cells, this produced clear test results. The test conditions were carried out in a 96 well microtitration plate as follows: each of the substrates were incubated in double distilled (there was no advantage in adding buffer to the kit) with 0.1 ml of 1×10^8 cells/ml at a temperature of 30°C for 2 hours. Using these conditions we found the test would clearly identify the eleven most common pathogenic yeasts. These are Candida albicans, Candida tropicalis, Candida parapsilosis, Candida lipolytica, Candida guilliermondii, Candida rubra, Candida krusei, Torulopsis glabrata, Candida pseudotropicalis and Cryptococcus neoformans.

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In addition to the above named species a further 23 species rarely encountered in the lab were tested to ascertain whether they gave the same results as the eleven common species. This eliminates the possibility of false identification of the most important species. The 23 species are as follows: B. capitatum, C. ciferrii, C. intermedia, C. lambica, C. paratropicalis, C. albidus, C. laurentii, C. uniguttulatus, G. candidum, G. penicillatum, Hs. guilliermondii, Hs. valbyensis, H. anomala, K. lactis, K. vanudenii, P. ohmeri, Pr. wickerhamii, Pr. zopfii, R. minuta, R. pilimanae, Ts. rosei, T. candida, and Tr. beigeli.

In April 1987 Professor Muyembe from the Clinical University, Kinshasa, Zaire visited our laboratory and we discussed the specific methods proposed for the study as well as practical aspects proposed for the cooperation between our two laboratories. We also arranged the visit to Zaire of the Israeli participants proposed for the summer and we selected many different media to test them for transportation of yeast specimens between Israel and Zaire. In July 1987 Dr. Polacheck and his technician visited the laboratory in the Clinical University, Kinshasa, Zaire. While there, they gave advice to the staff in Zaire on specific techniques for specimen collection, processing and isolation of fungi. They also trained them how to perform the new diagnostic test, and chose the most appropriate transportation medium.

In November 1987, Dr. Luki, an assistant to Professor Muyembe, visited our lab for one month. While with us, he learned all the conventional methods for yeast identification as well as the newly developed test. This visit was successful and the ensuing collaboration between Israel and Zaire has been most satisfactory.

To date we have received 65 clinical yeast isolates from them; these were examined in Israel, and as a result the new test was modified to suit the particular needs of their clinical specimens. We have also sent a number of Israeli clinical isolates to Zaire. Both sets of isolates have been tested in both laboratories by new and conventional methods to test the reproducibility of results from both labs. So far there have been no major discrepancies between the results obtained in both labs.