

HIV Dipstick

Health need

The spread of HIV by parenteral infection via blood or blood products has been largely eliminated in the developed world through the routine screening of blood. However, blood supplies may still not be routinely screened in developing countries, where the current cost of test kits and equipment is prohibitively high or where access to appropriate tests is low. In addition, there are continual needs for low-cost, highly accurate HIV tests to supplement available diagnostic-test algorithms for research purposes and for field surveillance and epidemiology.

Technology solution

In the early 1990s, PATH developed a rapid, inexpensive method for detection of antibodies to HIV-1 and HIV-2. The HIV dipstick was developed with the primary goal of providing an accurate, simple, HIV screening method for small- to medium-sized blood banks in developing countries. The cost per test from manufacturers was initially lower than the cost of other commercially available rapid tests. The assay takes approximately 20 minutes to perform and requires no special equipment.

The affordability and ease of use of the HIV dipstick make it suitable for low-volume HIV testing where more sophisticated, automated methods are neither cost-effective nor appropriate. The HIV dipstick is currently being used in blood banks and public health laboratories for diagnosis of HIV and also as a screening tool in HIV surveillance studies. A study by the World Health Organization (WHO) in Burkina Faso demonstrated that using the HIV dipstick in combination with another commercial test is an accurate and cost-effective method of serodiagnosis of HIV.

Current status and results

The HIV dipstick test was evaluated in the laboratory as well as under field conditions using over 10,000 serum samples, and has consistently demonstrated a sensitivity of over 99%, while retaining a specificity of 98% or more. An independent evaluation by WHO of the HIV-1 version of the test was completed in 1990. The dipstick was subsequently optimized for combined detection of HIV-1 and HIV-2 in 1992, and has now been evaluated in 17 different countries.

PATH transferred the technology for production to local firms in Argentina, India, Indonesia, and Thailand. Kits from these producers were evaluated by WHO's Global Programme on AIDS in 1995 and 1998 and received high marks for accuracy, ease of use, and suitability. HIV tests from three of the manufacturers were added to the WHO/UNICEF bulk procurement list for HIV tests in 1997. Since the initial technology transfers, total sales of the HIV dipstick to both public- and private-sector buyers have exceeded 19 million tests. In 2004, the licensees worked together to reengineer and upgrade the product. One major outcome of the development of the technology was the lowering of the cost and increased availability of rapid HIV tests from multiple companies, resulting in much more affordable HIV testing throughout the developing world.



First low-cost, rapid HIV-1 and HIV-2 test on the market.

“The availability of the dipstick and other quick, easy tests has enabled countries in the South to develop effective, on-site diagnostic testing procedures and provide same-day results.”

From the International Development Research Centre website.

Availability

For more information regarding this product, contact Joachim Oehler, The Concept Foundation, 111 Paholyothin Road, Thailand Science Park, Klong 1, Klong Luang, Pathumthani 1212, Thailand, Tel: 662-564-8021, Fax: 662-564-8024, joehler@conceptfoundation.org.

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