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Fourth-Generation HIV screening assay

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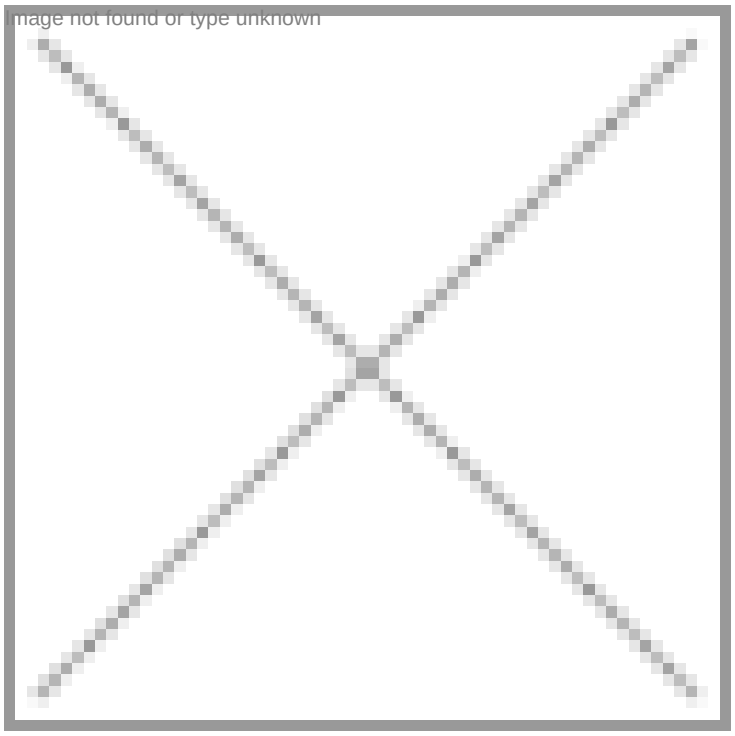

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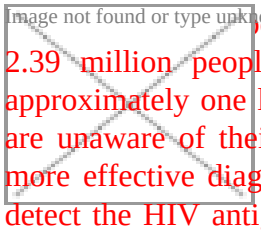

port by the United Nations Development Program (UNDP), India had 2.39 million people living with HIV at the end of 2009 and by the latest report, approximately one lakh individuals with human immunodecficiency virus (HIV) infection are unaware of their status in India. All these facts only emphasize the need for faster, more effective diagnostic assays for detection of HIV. Generally, HIV diagnostic assays detect the HIV antigen or the antibody generated in response to the virus infection, or in some cases both.

In an attempt to address this issue, Transasia BioMedicals received funding from DBT under the Biotechnology Industry Partnership Program (BIPP) scheme for developing a novel third-generation HIV antibody and fourth-generation HIV antigen and antibody immunoassay. These are said to be more advanced than other diagnostic assays, allowing for HIV antibodies to be detected in most individuals within 3-4 weeks of viral transmission, leading to an earlier diagnosis of the infection.

The BIPP funding has enabled Transasia to be the first Indian company to work towards developing an HIV diagnostic using flash type chemiluminiscent immunoassay. This

would not only allow for the automation of the assay but also facilitate a faster turnaround time. Currently there are only six companies worldwide that offer this technology, despite the fact that the HIV diagnosis segment is fairly large.

Elucidating the reason behind taking up this challenge Mr Rajeev Kumaria, senior general manager, business development, Transasia BioMedicals said, â€œIt is necessary to move towards solutions that are extremely accurate and fast. Majority of the solution providers in this segment are multinational companies. The automation in immunology and especially blood banking is an area where India lags behind and we hope to address it.â€?

Chemiluminiscent reporter methods are said to be more sensitive than the widely known photometric ELISA method for antigen or antibody detection. This type of reporter method can be either glow type or flash type. Both of these are considered to be better than fluorescent (assay), as they are known to produce lesser noise or give fewer false positives. Flash type chemiluminiscent methodology is also said to be very sensitive. Combining it with magnetic particles as matrix, the flash type chemiluminiscence reporter assay becomes further amenable to high speed automation. The surface area increases, thus reducing the amount of required reagents along with making the washing steps simpler.

Way forward

Transasia has achieved their set milestones and has also submitted a technical report on the same to DBT. Considering the HIV burden in the country, Transasia believes that the project holds great relevance to the Indian population.

Mr Kumria has a very positive outlook about the PPP model of product development. He says that it has motivated Indian biotechs to take risks. He adds, â€œOne of problematic areas is the lack of focus of the university system on entrepreneurship. The second issue which deters innovation is the lack of funding unlike the relatively easier and abundant support available in other developed countries.â€?

Manasi Vaidya