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Product of the Year

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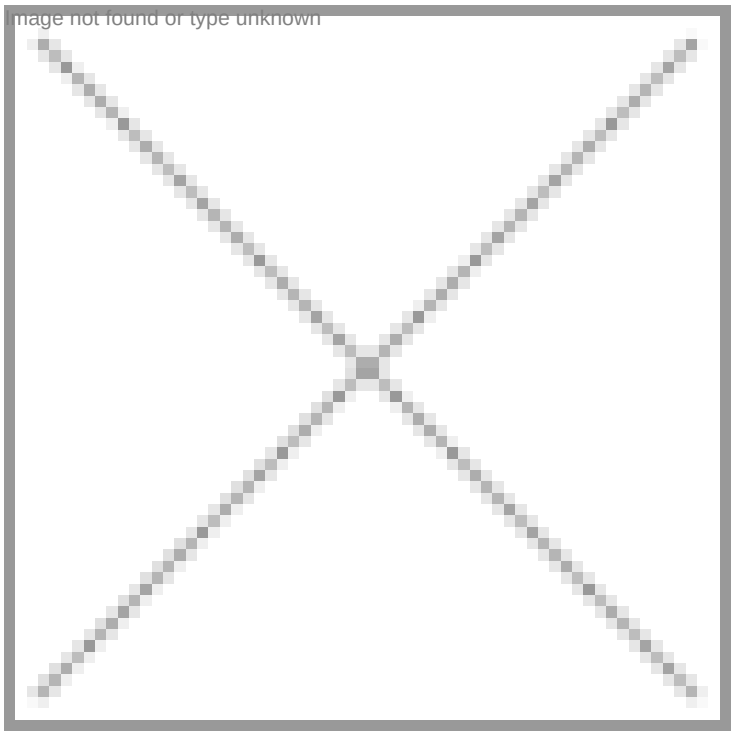

JEV CheX of XCyton

Japanese Encephalitis detector

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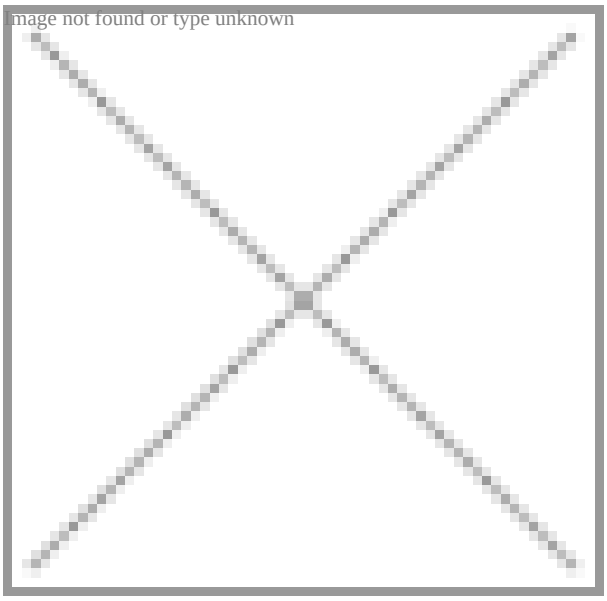

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JEV CheX is a diagnostic kit for diagnosing Japanese Encephalitis, a disease that is specific and prevalent in rice-growing regions, especially in India.

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The kit is a tool that can be used for early detection. The detection can, over a period of time, eliminate the disease.

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There was no simple diagnostic kit earlier. It used to take 36 hours to do the testing and the components had to be kept at -700 C. JEV CheX has reduced the testing time to 3 hours and the test can be conducted in even public health institutes.

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The project involved public, private partnership.

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The product was developed even though the market for this is very small.

Dr Banda Venkata Ravi Kumar, chairman & managing director, XCyton Diagnostics Limited, Bangalore has made a big difference to the diagnostic market. He started the company in 1993 with a mission to develop, manufacture and market diagnostic kits for infectious diseases. The company developed the first indigenous kit to detect antibodies to HIV 1 and 2 called HIV-CheX. It introduced its second product, a detection kit for a parasite in brain in the year 2000, called CYSTI-CheX. The third product, HEP CheX, a Hepatitis detection kit, was launched in 2001. Xcyton's latest product JEV CheX, a detection kit for Japanese Encephalitis, was launched in June 2004.

"We were approached by an US-based organization called PATH, Programme for Appropriate Technologies for Health, last December to develop a kit for Japanese Encephalitis. Despite the fact that it would not be economically feasible for us to develop the kit, it was our determination and a sense of commitment to eradicate Japanese Encephalitis (JE) from the country that made us take up the challenge. A lot of money and efforts went into developing this kit which was ready by June this year, and it was subjected to clinical trials at the National Institute of Mental Health Neurosciences (NIMHANS), Christian Medical College, Vellore and King George Medical College, Lucknow", said Dr B V Ravi Kumar.

Giving details about the kit he said, "The JEV CheX is a rapid ELISA kit for the detection of IgM antibodies against JEV in Human CSF and serum. This kit has been developed in collaboration with NIMHANS. The research for this was conducted at Department of Neuro-Virology, NIMHANS, Bangalore, National Institute of Immunology, New Delhi and K.G. Medical College, Lucknow under the DBT umbrella programme. I am proud to say that for the first time this is a 100 percent DBT-funded, multi-institutional venture, and the leader of technology is of course NIMHANS."

"Right now we have taken up the marketing and will continue to nurture the product for another year or so. This gives us the feel of how the product moves and an idea of the technical support that the customers may require," Dr B V Ravi Kumar said. "Each test will cost about Rs 120," he added.

"The unique features of the JEV CheX are â€“ it is IgM capture ELISA, which eliminates competition with IgG and thus helps in diagnosing recent infection. It uses cell culture antigen and avoids preparation of antigen in suckling mice. It is a stabilised kit and can be stored at 40C for 6 months unlike the conventional test conducted at institutes which required storage of reagents at -700C. JEV CheX has an assay time of 3 hours when compared to the 36 hours of time taken by the conventional test conducted at public health institutes," Dr Ravi Kumar informed.

The other products developed by XCyton in the past include HIV-CheX, CYSTI-CheX and HEP CheX C. Each one of them has been unique.

HIV-CheX is an ELISA kit for the detection of antibodies to HIV 1 and 2 in serum and plasma. The kit has incorporated peptides of HIV 1 C in addition to the peptides of HIV 1A & 1B. HIV 1C causes 95 percent of Indian HIV infections and more than 60 percent of HIV infections in the world. HIV CheX is in the list of kits approved for usage in blood banks by the Drug Controller General of India and WHO has evaluated this kit at ITG Antwerp, Belgium.

CYSTI-CheX is a detection kit for neurocysticercosis, a disease very prevalent in Latin America and China apart from India. This is the product of research conducted at Astra Research Centre India, Bangalore which was the tropical disease centre for Astra AB, Sweden (now called Astra Zeneca). CYSTI-Chex was launched in April 2000 and is a patented product of Astra Zeneca, Dr B V Ravi Kumar being the inventor. This is the only kit in the world market which uses excretoryâ€œsecretory proteins of Cysticercus cellulosae as antigens, the metabolic product of live Cysticerci maintained in vitro. These are the only antigens seen by the human immune system. The kit is a special tool for neurologists to distinguish between Neurotuberculosis and Neurocysticercosis.

The team at XCyton Diagnostics Limited: LtoR - Sunil Govekar, Aditi Banerjee, Dr B V Ravi Kumar, Dr Lakshmi M Balaji Chettiar.

XCyton's HEP-CheX C is the only indigenously developed ELISA kit, in collaboration with International Centre for Genetic Engineering and Biotechnology and All India Institute of Medical Sciences (AIIMS). It is the only HCV ELISA kit to incorporate antigens from the 2b and 3g subtypes of the virus, which are prevalent in India. Imported HCV kits lack in this regard and are totally based on 1a subtype.

The company has been licensed to manufacture and market HIV-CheX, CYSTI-CheX and HEP-CheX C by the Drug Controller General of India. The kits developed by XCyton are in the list of kits approved for usage in blood banks by the Drug Controller General of India. Its HIV-CheX kit is in the bulk purchase list of WHO and is purchased by WHO.

For developing new technologies and products, it has strong technical collaborations with premier institutes in India such as IISc, Bangalore, NIMHANS, Bangalore, ICGEB, Delhi, TRC, Chennai, AIIMS, New Delhi, DRDE, Gwalior Vipra Inc. USA.

Namratha Jagtap with Ch. Srinivas Rao