

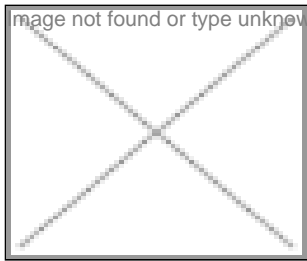
India's Dr Diagnostics

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When AIDS (acquired immuno deficiency syndrome) hit the Indian shores in a

"I found this situation unique. And also challenging. I spotted an opportunity here and wanted to make use of it. It was a challenging task for me as it was a politically sensitive issue too. With the support and encouragement from the experts and academicians I over came all the hurdles to develop an indigenous product to detect the HIV virus accurately," said Dr BV Ravi Kumar, chairman and managing director, XCyton Diagnostics Ltd, Bangalore.

The same product got the first Best Bio Product Award presented by Rabo India at Bangalore Bio 2003 in mid-April. "I was really thrilled and encouraged when I got the Rabo India Bio Business Award for my product. The award will help me to do more things differently and achieve some thing in life," he added. Expecting to repeat the achievements many times over, Dr Ravi Kumar recalled the Conqueror King Napoleon's word: " Give me more medals. I will win more wars".

Father's influence on young child

"When I was in the first year of schooling, my father, Narasimha Rao, a lawyer, used to say that a country like India required lots of the medical field and take up new drug discovery efforts in a big way. A great admirer of Mahatma Gandhi, he always used to say that doctors should not look at the wounds but think about preparing the ointment which cures the ailment," recollected Dr Ravi Kumar.

My father also felt that such an approach would serve not just the injured patient but would help millions of people in the same category. He believed in the potential of the marginalized people, and emphasized that they could contribute a lot to the country. This was the message ingrained in me since childhood, observed the award winner.

There were other strong influences too on Dr Ravi Kumar who grew up in a family which placed a lot of emphasis on patriotism. His father had provided many legal services to a large number of poor fishermen of Andhra Pradesh free of cost. Dr Ravi Kumar's father had apparently helped many fishermen to win cases against big fishing companies creating problems for the local fishermen.

" I really didn't know at that time why he had wanted me to take up a career in medicine but he influenced me a lot. His vision about the country had pushed me to embrace medicine and medical research in particular", said Dr Ravi Kumar. After completing his MBBS from the Jawaharlal Nehru Institute of Post-graduate Medical Education and Research (JIPMER), Pondichery, he worked with a cardiologist and professor Dr GD Gupta for a short period. It was Dr Gupta who pushed him to take up medical practice. But when Dr Gupta left JIPMER, he too left the profession to continue his master's in medicine. Later he joined the Indian Institute of Science (IISc), Bangalore, to pursue postdoctoral research.

After completing a PhD degree at IISc, where he received Prof. Giri memorial gold medal for the best thesis, he got an offer to work at the Astra Research Center India (ARCI). During his 8-year stint at ARCI he got good exposure to diagnostic kits. He developed two kits, one to detect the tapeworm and the other for tuberculosis diseases. He learnt the art of developing the kits at Astra and also acquired the skills of developing the same. "It's totally a different experience for me, " recollected Ravi Kumar.

Venturing into diagnostics with XCyton

During the mid-1990's the country used to import diagnostics kits to conduct HIV tests. The public awareness about the HIV tests was not very encouraging during that time. Yet the medical community was clear that this area required a lot of attention but they recognized this as a major gap in India's health care systems. India used to import about 2-2.5 million kits in 1996. No company was eager to come out with diagnostic kit to conduct HIV tests. Apparently, companies were unsure of the market size. There was also a lot of stigma and fear attached to the HIV tests.

"My exposure and experience at ACRI helped me to take up this task. The challenge before me was to develop a kit of high quality that will bring in confidence among the medical community and also among the public" Dr Ravi Kumar observed.

With the support and encouragement of experts and academics like Dr V Ravi, Prof. P Balram, Prof. Chandramukhi, Prof.G Padmanabhan, the recipient of the first distinguished biotechnologist award from the Department of Biotechnology, Dr Ravi Kumar ventured into the manufacturing of diagnostic kits for HIV by starting XCyton Diagnostics Ltd, in December 1993, with an initial capital of just Rs 7 lakh.

Passing through hurdles

Narrating his experiences in developing the company, he said, "the initial days were very tough for us. I had a very bad experience from a venture capital funding agency. In September 1994, a venture capitalist firm went back after completing all negotiations and finalizing the legal documents. That was the first set back. Without losing the faith in our technology we took it as a challenge to continue in our project. I had already left Astra at that time and it was a nightmarish experience."

But friends from the research community came to his rescue. They had full faith in the technology under development at XCyton. They encouraged him to go ahead and complete the project. Despite not having much surplus funds, they helped the young company to continue with the business. Prof. AK Rao supported the company by contributing Rs 2.5 lakh out of his retirement fund of Rs 6 lakh. Prof. Gopal Krishna also helped the firm. Although they were not the professional entrepreneurs, their support helped the company to continue with the diagnostic kit development. With this seed money Dr Ravi Kumar and his team completed the product and took it to the Drug Controller General of India (DCGI) for approval tests.

In 1995, he managed to get some funds from the Small Industries Development Bank of India (SIDBI) to set up a laboratory, the first of kind in the country. In 1996 the company got the license to develop the kit for commercialization purpose. Later the

firm also received funds from Canara bank. The Technology Development Board (TDB) also chipped in with some funds to help the struggling company.

Contributions in medical diagnostics

Dr Ravi Kumar made a significant contribution to biotechnology, particularly in the field of medicinal diagnostics, by conducting the necessary basic research in a goal-oriented fashion to develop a diagnostic kit. These were the kits for neurocysticercosis and HIV.

In 1993, the National Aids Control Organization (NACO) compiled data from across the country and confirmed that more than 95 percent of HIV infections in India were due to HIV 1C and by 1997, HIV-Chex with peptides of HIV 1C was introduced into the market. The HIV-Chex kit was developed in association with the IISc and NIMHANS, Bangalore.

XCyton also developed a product called HEP-Chex C from the results of the research conducted at International Center for Genetic Engineering and Biotechnology and All India Institute of Medical Science (AIIMS), New Delhi. This Elisa kit was launched to detect Hepatitis C. Then XCyton got the license from AIIMS for using the technology for commercialization.

AIIMS has already used this test kit to screen over 1.5 lakh samples at its institute with satisfactory results, Dr Ravi Kumar said. The kit specifically incorporates the antigen of HCV subtype 3g, which accounts for 35 percent of the cases in India. When asked about any memorable event Dr Ravi Kumar said, "I felt satisfied when I used to receive evaluation reports saying that the kit is good. I was amazed when I got the customers' reports saying that they have detected the cases using our HIV-Chex kit."

Areas of interest

Leading a happy family with a son, who is pursuing medical education, and a daughter, studying in the 10th class, Dr Ravi Kumar loves to do mimicry, miming, quiz and reading books on marketing. He had won many prizes during his college days by participating in many cultural events. "I even love to act but it is the time that is not permitting me to do so," he quipped.

Narayan Kulkarni

"India is a potential market for diagnostic kits"

Dr BV Ravi Kumar, chairman and managing director, XCyton Diagnostics Ltd explained his company's position and also about the future plans in an interview with BioSpectrum's Narayan Kulkarni

What is the present financial status of your company?

The XCyton was started with a seed capital of Rs 7 lakh. And later we got a core fund of Rs 50 lakh from private investors. Now we have 20 people. We have grown from Rs 7 lakh to a Rs 2.2 -crore company in the last five years. I must say I am lucky enough to get good people. As a start up company which is making losses, it is very difficult to get highly talented people. But in my case I have got a lot of talented people.

We have crossed the break-even point this year by making a small operating profit over last year's heavy losses. We are supplying kits to conduct about four million tests in the country. We are in the process of acquiring another company. Once the process is over we will double our supply.

What is your marketing strategy?

We have established our marketing and distribution network in the last five years in south India and Maharashtra. Now we have signed an exclusive marketing arrangement with Qualigens Diagnostics, the chemical division of GlaxoSmithKline Pharmaceuticals Ltd, to expand our market and to get an exposure across the country. Qualigens Diagnostics will market HIV and hepatitis-C kits under the brand name HIV- CheX and HEP-CheX C in the country.

What is your future plans?

With a strong foothold in Elisa kits we are now moving towards the development of rapid tests and polymerase chain reaction (PCR) kits. There is immense potential for PCR kits in the near future. At present we are developing DNA based PCR kits for Bacterial Meningitis in children with technology from Astra Zeneca. We will also be developing rapid kits for neurocysticercosis, which is at present available in the form of Elisa. Rapid tests for HIV, HCV and PCR for TB will soon be

added to our product portfolio.

We are also developing an Elisa kit that can detect cases of Pulmonary Tuberculosis, which are sputum smear negative for acid fast bacilli but show the growth of bacilli when sputum is subjected to culture of Mycobacterium Tuberculosis. This kit will be a useful substitute to X-ray examination of chest in the private practice. This kit uses multiple but highly purified antigens of mycobacteria. It also takes in to consideration those antigens that circulate as immune complexes. This kit is being developed in collaboration with the Tuberculosis Research Center, Chennai. XCyton is also in the process of developing an Elisa kit for the detection of Tuberculosis Meningitis. This kit takes into consideration the differences in immunological responses observed between serum and central nervous system due to synthesis of immunoglobulins in side the blood brain barrier.

What are your R&D initiatives?

The R&D of diagnostics, though faces technology barriers, is not as expensive as drug development. A drug development is a huge program but this is not the case with diagnostics. We are going to create novel immuno-diagnostics for diseases like TB Meningitis. The R&D facilities are strong in terms of strong collaborations and in each sector with best expertise in the country.

We have invested more than what we can afford to spend on our R&D program. Even during the crucial timings we spent a lot. The substantial amounts spent on technology has helped us to cross the break-even mark this year. We are planning to invest Rs 1.5 crore for the next one-year for technology and products development. We want to grow bigger in the next one and a half years.