

Mentoring the Biotech firms

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When the anthrax scare hit the world headlines last year, only one company was not afraid. For, it did not shy away from seeing a marketing opportunity in the outbreak of the epidemic by making available a new technology vaccine for anthrax developed in the laboratories of Jawaharlal Nehru University (JNU), New Delhi.

The company, the Biotechnology Consortium of India (BCIL), played the crucial role in transferring the vaccine technology developed by JNU's department of biotechnology(DBT)to a medical firm, Panacea Biotech, facilitating the manufacture of the vaccine on a commercial scale.

Today, Panacea Biotech is ready to commercially launch the vaccine in the market. Naturally, BCIL is smiling, as the potential sales of this vaccine are immense, fetching it an all-time high know-how fee of Rs two crore for the technology transfer excluding the royalties it will get from the sales. This recombinant vaccine will be available for first time in the world developed by fermentation using ribosomal deoxyribo nucleic acid (rDNA) technique by the JNU biotechnologists, replacing the old method of using sheep brain tissue to produce the vaccine.

Quietly but surely, BCIL is behind the biotechnology revolution in India. The company, set up with the objective of facilitating accelerated commercialisation of biotechnology, has been behind the transfer of many key medical, agricultural and environmental technologies including diagnostics for HIV 1 and 2, dengue, japanese encephalitis, and hepatitis A and

therapeutics such as the recombinant anthrax vaccine.

Quiet Birth

BCIL's birth was unique. With scientists being wary of looking for commercial gains from their research and the DBT not wanting to defile its hands looking for profits, a separate company was set up to provide the linkages between the industry and the scientists.

“BCIL was incorporated as a public limited company in 1990 with token equity participation from DBT and rest of the corpus coming in from financial institutions (FIs) and the corporate sector,” says Dr SR Nair, managing director, BCIL. A corpus of Rs 5.3 crores was contributed by FIs including IDBI, ICICI, IFCI and UTI. Ranbaxy, Glaxo, Cadila laboratories, Lupin, Rallis, SPIC and a few other corporate houses also contributed to this corpus. BCIL has three government secretaries in its board of directors and representation from the FIs and corporates, but functions independently.

“In biotech investments, we are way behind” - Dr S R Nair, managing director, BCIL

Dr SR Nair is a scientist at heart but has turned into a successful venture capitalist. Over the years he has successfully started and managed venture funds for the Andhra Pradesh industrial development corporation, Hyderabad and the Risk Capital and Technology Finance Corporation, New Delhi, which has helped him turn the Biotechnology Consortium of India (BCIL) into a thriving company, leading the biotechnology revolution in India. His basic training was in chemistry with a master's from University of Kerala and a doctorate in polymer chemistry from the University of Manchester, UK. After a stint as a polymer scientist at the Shriram Research Institute, New Delhi, Dr SR Nair shifted to venture funds. His experience in both the scientific and venture fund management have come handy in running BCIL. He has not only facilitated the commercialisation of biotechnology in the country but is now onto starting biotech parks in the country and a venture funding biotech projects. In an interview to Bio Spectrum, Dr SR Nair talks about the future of biotechnology in the country.

The booming biotechnology industry in India and Dr SR Nair's background in managing venture capital funds had proved to be a bonus for BCIL. “We have not touched the corpus of Rs 5.3 crore as yet,” he says, proudly. In fact BCIL has been growing at a steady rate of 15 per cent per annum, with a turnover of Rs 2.5 crore this year. “Six years ago, our turnover was Rs one crore, today it has crossed Rs 2.5 crore,” Dr SR Nair says.

“Across the country, government and university laboratories have been successful in developing many new technologies based on biotechnology. But it was their experience in realising these products into commercial ventures that saw BCIL taking shape,” explains Dr Purnima Sharma, general manager and co-ordinator (technology transfer), BCIL. Since its inception more than a decade ago, BCIL has become the perfect interface between the research laboratories and companies looking for new technologies.

Little wonder then that today both companies looking for new technologies and research labs looking for partners approach BCIL. The success of some of the technologies that BCIL has transferred to launch successful commercial products is perhaps the reason for so many people knocking at its doors. One of its biggest success stories is helping the cancer research institute, Mumbai, see the commercial realization of its fool-proof HIV 1 & 2 testing kits based on the Western Blot technique. “This is a unique products as no other test is 100 percent error-proof. BCIL evaluated the product through DBT and then packaged its salient features in such a manner that commercialisation would be easy. We transferred the technology to J Mitra and Co., a Delhi-based diagnostics manufacturer, who is now ready to export these kits to African nations and the East Asia countries,” points out Dr Purnima Sharma.

The evaluation of the products is done by DBT or an independent agency on a case-by-case basis. “BCIL looks into all aspects of scaling up the technology from the lab level to the commercial level,” she explains. With the HIV 1 & 2 testing kits, initially blood bags were being used to culture the virus but when the ban on the sale of blood bags came into force, BCIL helped in finding an alternative method of culturing the virus,” Dr SR Nair says. Many times a product may not be ripe for commercialization and the lab has to work on improving the technology. “With our vast contacts in the field, we are able to help them in improving their technology,” says Dr SR Nair.

For its efforts, BCIL charges a know-how fee and gets royalties from the company. “We usually keep the know-how fee low and recover the balance from the royalties. This fees vary according to the market potential of the product,” explains Dr Purnima Sharma. So, a product like the anthrax vaccine fetched much higher know-how fees as it has vast market

potential.

BCIL is slowly expanding its repertoire of skills. Other than technology development and transfer, BCIL is working on syndication of funds from FIs for eligible biotech projects. The latest addition to its portfolio is the setting up of biotechnology parks in six locations, Kerala, Pondicherry, Andhra Pradesh, Uttar Pradesh (Greater Noida and Lucknow) and Punjab. In Hyderabad, a location has been identified and many companies have already set up infrastructure there. BCIL will be the consulting agency for these companies," says Dr SR Nair.

Despite staff strength of seven professional biotechnologists, other than the support staff, BCIL has been able to crank-up the biotechnology revolution in India. And with a sunny forecast for the biotechnology industry, BCIL's future too looks bright.

Interview with Dr S R Nair

Q: How does India compare with other countries in biotechnology development?

A: India is quite advanced in biotechnology. Quality-wise, we are not far behind any developed nation, but investment-wise, we are way behind. Our total investment in biotechnology research & development (R&D) by the government is about Rs 100 crore, equal to what a single corporate in the US invests in biotechnology. Even the big Indian companies like Ranbaxy, Wockhardt, Nicholas Piramal or Dr Reddy's have moderate investments of Rs 350 to Rs 400 crore compared with what US corporations pump into their R&D set ups. We really need to setup investments in biotechnology R&D to keep pace with world standards.

Q: Which are the fastest growing areas in biotechnology in India?

A: Agriculture and medical biotechnology are two areas in which there is rapid growth. Within agriculture, organic farming has huge potential and will be a major focus area for BCIL. Along with the ministry of commerce, we will look at exports of rice, horticulture products, oilseeds and honey produced from organic farms.

Q: What is BCIL's role in organic farming and what is the market potential for these products?

A: We are already in the process of setting up model farms and organic agricultural zones for rice in Assam and Orissa, for oilseeds and horticulture in Madhya Pradesh. Organic cultivation in the North East is much simpler as the farmers there have not been using pesticides, one of the major criteria for organic produce.

Europe is a big consumer of organic products. People pay more for organically grown food there. But India's biggest problem was certification. BCIL played a role in standardization and accreditation of the standards with European governments. For example, a farm has to be free of pesticides for three years before organic cultivation can begin. BCIL has now trained the staff of tea, coffee and spices boards so that they can oversee the production on organic farms.

Q: Are there any other areas in which India can excel?

A: Yes, areas like medical plant extraction, bio pesticides and bio fertilizers have huge potential in the western markets and we must focus attention on these areas. BCIL has already identified 20 species of medicinal plants from which core extracts can be made. We are also trying to promote in-situ cultivation of medicinal plants so that our biodiversity is preserved.

Q: What role do you see for BCIL in the future?

A: Biotechnology is a growing industry and will grow by more than three-folds in the next decade. BCIL will have a very large role to play especially in assisting companies to get regulatory clearances. Many new entrants find this to be a major bottleneck and BCIL can play an intermediary role here.

BCIL will soon begin to venture fund biotechnology projects that have great commercial potential. We could even look at soft loans for technology development and are working with FIs to work out a deal.

Awareness generation will be another important area of emphasis. Biotechnology is such a new area that the fear of the unknown plays on the minds of the people. We need to work with them and change these perceptions.

Vidya Deshpande