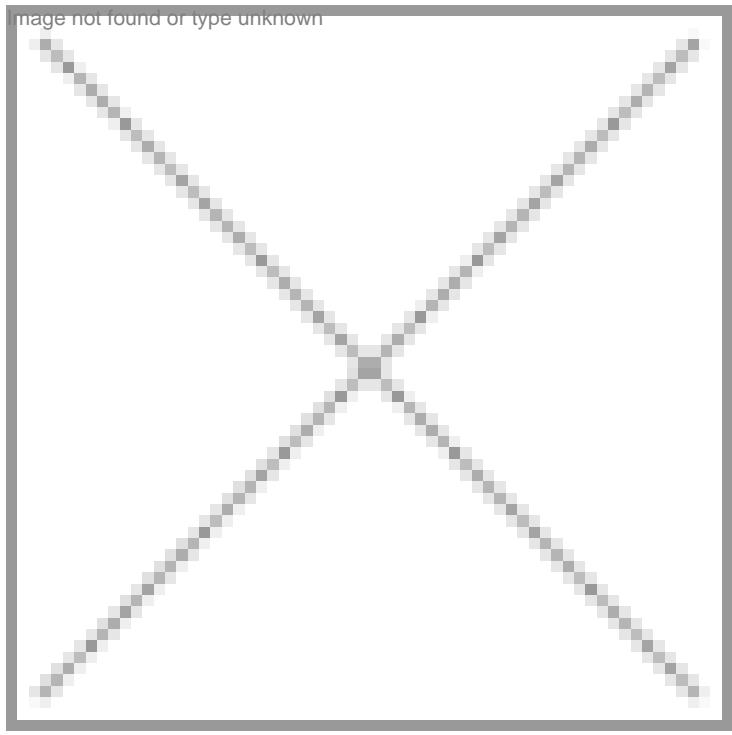


Biotech bay

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Indian biotech companies have zeroed in on the pharma sector, especially clinical trials, contract research and drug discovery, to tap the tremendous growth opportunities offered by the increasing demand for biotech-based health care products. This has resulted in the emergence of a large number of research and development (R&D) initiatives in the country. This is the reason why it has a major share among new careers and the job seekers are eagerly eyeing the health sector for opportunities. Wockhardt, Reliance Life Sciences, Ranbaxy, Dr. Reddy's Laboratories, Astra Zeneca, Zydus Cadila, Eli Lilly, Pfizer, and Nicholas Piramal are some of the major players in this field.

According to biotech industry sources, some 15,000 scientists are employed by the sector nationally. Nearly a third of them are involved in research work. Based on current and future investment prospects, the biopharma sector would require at least 50,000 more researchers in the next five years, majority of them in the contract research services area.

On the other hand, the annual output of doctorates (Ph.Ds) in biosciences and engineering is around 1,500, according to the latest joint industry survey by CII and Rabobank India. Overall, annually India produces around three million graduates. About eight percent or 250,000 are from the disciplines of biosciences and engineering. They are the ones who have the best chance of getting into the biopharma industry.

In the last 20 years, India has built an excellent infrastructure, thanks to heavy government funding, in churning out human resources in thousands in classical biotech sectors such as biochemistry, organic chemists, taxonomy, pharmacology and traditional systems of medicine. Indian experts in this field are in great demand abroad. The CII-Rabobank study estimates that approximately 10 percent of the researchers and 15 percent of scientists in Pharma/ Biotech R&D in the US are of Indian

origin.

The All India Biotech Association (AIBA) Secretary UN Mallik said, "India has developed competence in selected biotechnology areas including diagnostics, therapeutics in health care and pharmaceuticals. Some Indian companies have also teamed up with foreign collaborators for sourcing technology and are experimenting new products produced with the help of foreign technologies. This is with a view to introducing them into the Indian market within the framework of Indian laws."

The pharmaceutical market (both biotechnology-based pharmaceuticals and traditional pharmaceuticals) was estimated at \$8 billion and is expected to grow to \$37 billion by 2010. There are approximately 250 large, research-based pharmaceutical companies in India, with as many as 3000 companies active in pharmaceutical (particularly generics) manufacturing. The industry employs approximately 460, 000 and is the world's fifth-largest producer of medications by volume.

The Indian biotechnology industry is ranked third in the world in terms of stem cell research, primarily because both the government and private industry have invested heavily in research institutes studying human disease and searching for treatments.

Today the biopharmaceutical business includes contract research and manufacturing services, clinical research including therapeutical vaccines and stem cell researches.

"Biopharma is indeed a developing market and is expected to grow significantly over next 10 years. However, issues like GMP (good manufacturing practices) and related regulatory aspects are still little blurry because of insufficient guidelines," says Dr Kulvinder Singh Saini, director of biotechnology and bioinformatics, Ranbaxy, New Delhi.

Pharma companies spend \$300-500 million (Rs 1,500-2,500 crore) for developing a new drug. Three fourths of this cost is accounted for by expenses on clinical research and evaluation. Also the pharma companies in the US have recognized that they cannot do all the research by themselves. And the latest trend in the American market is partnering of pharma companies with niche biotech players focusing on highly specialized domains. These companies have realized that the labor costs are comparatively low (almost a tenth of their own). Thus this field provides tremendous job opportunities for the large number of job seekers in India.

Take the case of Mumbai-based Wockhardt. This company was ranked 24 among the largest value creator across all companies and industries in India by a premier business magazine. And the company is making a lot of efforts to upgrade the profile of its employees.

A new initiative, in collaboration with the London College of Management, UK, has been launched in the company. More than 300 Wockhardians in sales and marketing, have enrolled in a three-year MBA program. Wockhardt has also made available scholarships to performing Wockhardians. The company has invested over 50,000 man-hours in training and development of its staff in 2001. Almost 1800 employees out of the total staff strength of 2700 of Wockhardt undertook the training in 2001.

The University of Pune has already recognized the importance of biopharma and has started several courses in the university last year. These include: MBA (biotechnology), M.Sc.(pharmaceutical chemistry), M.Sc.(bioinformatics), B.Sc.(biotechnology), B.Sc.(applied) biotechnology - one year's course after B.Sc.

"We are also starting integrated five year M.Sc. / M.Tech., in bioinformatics and biotechnology. M.Sc. degree will be given to those who complete five years of successful training after 12th and M.Tech., degree will be given in addition to M.Sc. if the students continue for the sixth year. We have also established major interaction with the companies such as Emcure, Frontier Tech. Serum Research Inst. etc." says Ashok Kolaskar, vice chancellor, University of Pune.

"Over the next five to seven years, it is expected that the ongoing efforts of R&D institutions and Indian biotech industry would contribute substantially to import substitution, augmentation of local production and introduction of some new products for global marketing. This will be in the areas such as diagnostics, vaccines, therapeutics, pharmacogenomics as well as bioinformatics, agricultural biotechnology, industrial biotechnology etc. The major strength of India are low operational cost, government initiatives to develop biotech parks and a world-class infrastructure, the government support for start-ups and early-phase companies, excellent R&D infrastructure and an established pharmaceutical industry. In view of the above information, we feel that there is going to be big contribution by the biopharma sector towards career opportunities for young generation students and researchers in biotechnology" emphasized UN Mallik, secretary of AIBA

Biotechnology includes a variety of industries, but pharmaceutical drug discovery is one of its most significant facets. The biotech and pharmaceutical industries offer a more stable and better-paying alternative. This biotech bay gives hope for a broad range of job seekers interested in science.