



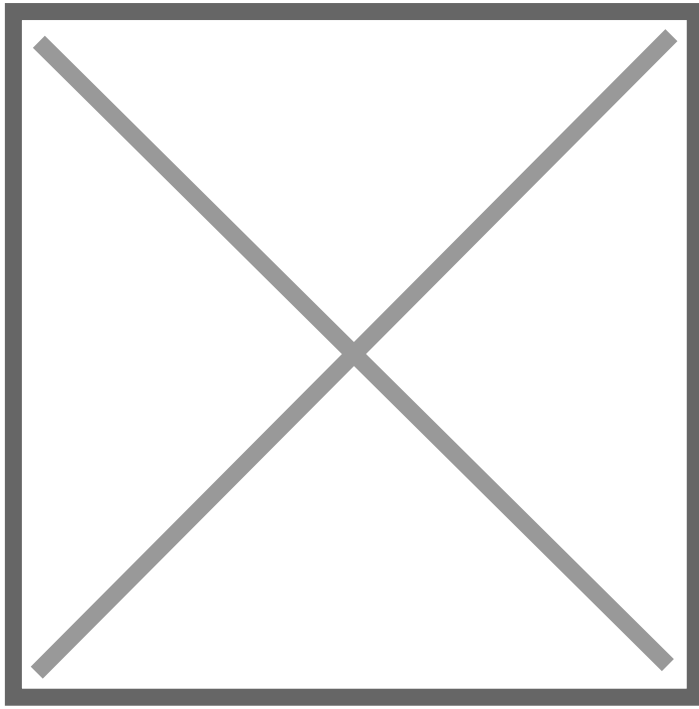
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BioPharma longs for scientists

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With the focus shifting to R&D and manufacturing of biotech-based drugs, its good news for biotechnology professionals.

Winds of change are blowing through the Indian pharmaceutical industry. More and more pharma companies are looking at biotech-based pharma products. Restructuring is the buzzword. Following news snippets in the last two months will give indications on the hiring-mart.

- Nicholas Piramal India Ltd, a BioSpectrum Top 20 company and one of the leading pharmaceutical healthcare companies in India, is expanding its operations and recruiting another 100 scientists.
- Torrent Pharma, an Ahmedabad-based pharma major is recruiting 100 scientists taking its total strength within the company from 190 to 290.
- Zydus Cadila, another Ahmedabad-based healthcare solutions company with a strong base of 200 scientists, is adding another 100 scientists to its team.
- Alembic Ltd, a Baroda-based pharma company, has planned to increase the number of scientists on its rolls from 100 to 250,
- Similarly, Cadila Pharmaceuticals plans to increase its strength from 150 to 200.

The trend is completely in favor of increased activity in bio-pharma. The marked change in human resource development initiatives is not hard to comprehend. In view of the forthcoming products patents regime, pharma companies have identified R&D as one of the key growth drivers. With a high premium on R&D and many new avenues such as clinical research, contract research, developing new drug delivery systems and new chemical entities opening up before the Indian pharma companies, the demand for qualified trained professionals in related fields is growing. Not just the Indian companies, but several MNCs are looking at India to set shop to gain the cost, time, and the trained manpower advantage as R&D costs in their home countries are very high.

Major Solution Providers

- Bharat Biotech
- Bharat Serums
- Biological E
- Haffkine Bio Pharmaceutical
- Panacea, Pfizer
- Serum Institute of India
- Shantha Biotechnics
- SmithKline Beecham
- Wockhardt, Eli Lilly
- Bhat Biotech
- Qualigens Diagnostics
- Span Diagnostics
- J Mitra & Co
- xCyton Diagnosti

Dr SD Ravetkar, senior director, Serum Institute of India, said, "The potential for Indian BioPharma segment is huge. With the implementation of WTO and patents regime in 2005, Indian companies would not be able to do backward engineering of the drugs, so they are focusing on in-house R&D. The growth prospects are bright as many contract research organizations are coming up. Besides, a large number of foreign pharma companies are setting their R&D divisions here." Serum Institute is one of the largest exporter of vaccines and immunobiologicals of the country with its products being exported to about 38 countries across the globe.

"The sector calls for professionals from various fields as biopharma is the cocktail of so many faculties—microbiology, biochemistry, molecular biology, immunology, chemistry, biotechnology and more. It requires candidates with diverse qualifications—microbiologists for the manufacturing process, biochemists for the down stream processing, immunologists for animal trials, biotech engineers for bulk manufacturing processes or process standardizing, etc." he added.

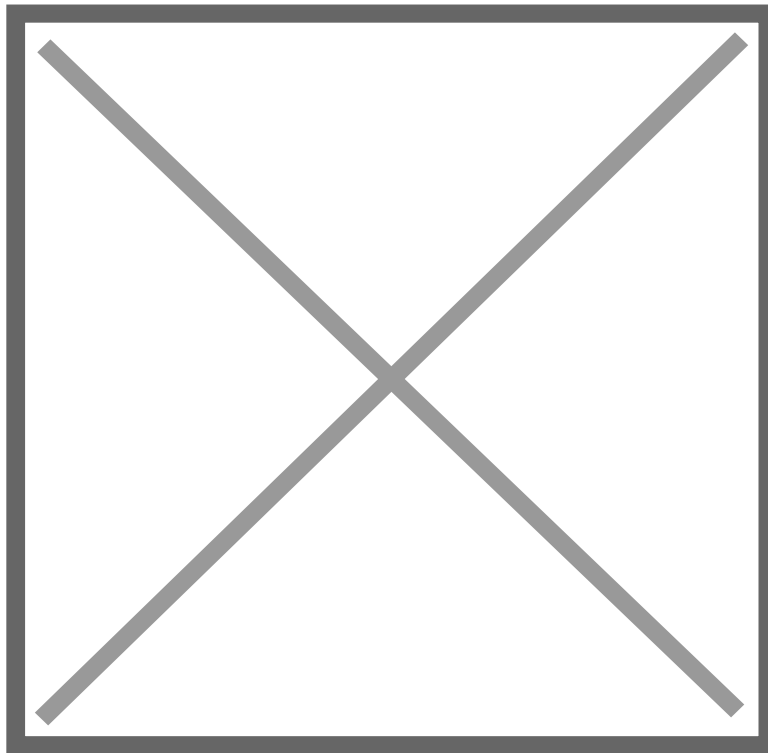
What are they looking for?

Traditional pharmacology is increasingly being considered as the downstream processing of biotech-based pharma. With this change in focus, the requirements of pharma companies at the entry level are also changing. Besides, regular pharma graduates and postgraduates, the industry is looking towards MSc and PhD candidates possessing specialized knowledge. The field requires people trained in new technologies with specialized skills, like immunoblotting, protein/genome analysis,

western blotting etc. And in today's scenario candidates possessing these skills are rare. The responsibility and specialization of the individual will depend on the process, which he or she is handling—fermentation technology, downstream processing, proteomics, genomics, etc.

"We are looking at people with a good background in biotechnology, biochemistry, or microbiology. Some basic technical skill is a must. At the same time they should have good understanding and reasoning capabilities, in addition to good communication skills and the ability to understand scientific literature," said Dr Shama Bhat, chairman and managing director, Bhat Biotech, a nine year old Bangalore-based biotech company specializing in design development, manufacture and marketing of diagnostic test devices for various types of tests like hepatitis, pregnancy, HIV.

Varaprasad Reddy, CMD, Shantha Biotechnics, further elaborated, "The biotech industry is a knowledge-intensive one and human resource is its prime asset and strength. Quite like the IT sector was in the early Nineties, the biotech sector too is witnessing a lot of hype leading to expectations and is definitely a sunrise sector for any job-seeker. Hence, there is demand for qualified and experienced personnel. For the R&D job seeker, what is needed is the right exposure to the scientific way of working and the mindset to experiment and innovate. And patience to see R&D translate into commercial success.



For people wishing to enter into other functions like sales and marketing, it would be easier as experience in a good pharmaceutical or FMCG company backed by an MBA qualification would be good enough. Also doctors wishing to enter the corporate world can find opportunities in Clinical Trials and be responsible for conducting trials and regulatory approvals."

Clearly R&D, manufacturing and production, and sales and marketing are the main job categories in the Biopharma field. The importance of R&D is obvious and proper manufacturing is equally important so as to conform to the international standards of cGMP. Also since most of the products are targeted at the global markets, they should conform to the export specifications. According to Dr Ravetkar ideally the distribution of manpower in companies developing new biotech-based cures should be equal in both research and manufacturing. "The main thrust of most companies is towards these two, while marketing and sales form the smaller divisions. This is because at present this field being new, products being less, there is little competition. The main challenge is R&D and manufacturing of the product rather than marketing the product," he said.

For companies dealing in the diagnostics market, marketing is an equally important field due to the higher number of products in this sector. For example in Bhat Biotech the distribution of employees across the categories is about 50 percent in research, 30 percent in production and 20 percent in marketing.

How are companies recruiting?

For recruiting candidates at the entry level, most companies advertise in the leading national dailies or in the careers/jobs section on their websites. After the resumes are received candidates are short-listed through one-to-one interviews or sometimes written tests followed by an interview. Some companies arrange for walk-in interviews or go for campus recruitment also. "We also go for campus recruitment in Pune University, Hyderabad University and Bombay University. In the interview we mainly consider the attitude of the student. There are three important points that we keep in mind while selecting candidates: their basic qualification, any additional courses they have done, which adds value like bioinformatics or courses in bioinstrumentation. And good project work," elaborated Dr Ravetkar.

"Basically the students should possess a basic/fundamental science degree and then do some supportive course. We have found another efficient method of selection—by absorbing candidates who come to do their MSc dissertation projects at Serum Institute. This way we get to know the students better, work with them at close quarters and are thus able to assess them better. Sometimes we have seen that though their (students) academic results are not very good but they have a

flair for R&D and do good research work. Another important consideration is good communication ability and confidence in oneself."

A common advice by pharma majors to aspiring candidates is to hone their skills. As, ironically on one side, the sector has a requirement of a large number of people and on the other hand there is an acute dearth of adequately trained students. Most of them do have a strong theoretical background but do not possess enough practical skills. Students need to gain hands-on experience in the new upcoming branches of science. It is not that companies are not willing to train but the cost of training in terms of time is high. On an average investing in human capital, i.e., training a fresh person requires about a year, which also many a times goes waste when they go for greener pastures. Thus a minimum work experience of two to three years is gaining priority and provides a crucial selection edge.

Further, several of the leading companies believe that the science colleges should try and make their students the best just like the management colleges, which promote their students. Like management companies, they should also invite premier companies for campus recruitment. They should invest in training and guiding the students.

The salaries of researchers in pharma companies are appropriate, merit based and have begun to reflect the growing demand for skilled people. "The PhDs get remuneration in the range of Rs 5 lakh and above per annum," said Reddy. The growth potential for employees is good, as it is a nascent industry. Generally employees who perform well are sent for technology development training programs both in the country and abroad, like Serum Institute sends its employees to the US and UK for training in cGMP and production techniques.

As developing new biotech-based solutions has become the main focus area for the pharma companies the demand for the scientists is expected to continue to grow. The characteristics of this business as opposed to those in other biotech segments like bioagri and bioinformatics is different too. Reddy explained, "This business is highly capital-intensive and needs a lot of R&D focus. Since development times are higher for biotech products, the employees need to have focus and motivation as well as determination to see the product through to market. Also since regulatory framework is not very industry-friendly, a lot of effort is needed for clearances and approvals." Finally, there are no stereotypes in the biotech world, except for the desire to make an impact on the world of disease.

Rolly Dureha

Sample Portfolio

Shantha Biotech employs people with a wide range of qualifications such as diplomas, MSc, MBA, M Tech, PhD in functions like research, manufacturing, quality assurance, clinical research, sales and marketing.

Some sample posts and qualifications:

Head, Protein Sciences

PhD in protein chemistry/molecular biology/biochemistry. Over five years experience in industry. Manages a group of 6-10 scientists and research associates and have experience in managing all aspects of protein expression and purification for research use.

Protein Expression and Refolding Scientist

PhD or MS in biochemistry or related field. Pharmaceutical or biotech industry experience preferred. Experience in E. coli expression, refolding, or related research field. Experience in bacterial expression and isolation of inclusion bodies. Experience in refolding proteins from inclusion bodies. Basic bioinformatics skills for manipulating DNA and protein sequences. Basic skills in protein purification and characterization, machine operation of FPLC, HPLC and PAGE.

A research associate

is responsible for research and development in collaboration with others on projects. He/she makes detailed observations, analyzes data, and interprets results. Research associates prepare technical reports, summaries, protocols, and quantitative analyses. An incumbent maintains familiarity with current scientific literature and contributes to the process of a project within his or her scientific discipline, as well as investigating, creating, and developing new methods and technologies for project advancement. He/she may also be responsible for identifying patentable inventions and acting as principal investigator in conducting his or her own experiments.

A quality control analyst

is responsible for conducting routine and non-routine analysis of raw materials. He/she compiles data for documentation of test procedures and reports abnormalities. A quality control analyst also reviews data obtained for compliance with specifications and reports abnormalities. He/she revises and updates standard operating procedures and may perform special projects on analytical and instrument problem solving. An entry-level quality control analyst's position requires a Bachelor of Science degree in a scientific discipline or equivalent and a minimum of 0-2 years' experience in quality control systems.

A clinical research associate

is responsible for the design, planning, implementation, and overall direction of clinical research projects. He/she evaluates and analyzes clinical data and coordinates activities of associates to ensure compliance with protocol and overall clinical objectives. He/she may also travel to field sites to supervise and coordinate clinical studies. An entry-level clinical research associate position typically requires a bachelor of science, a registered nurse degree or equivalent, and a minimum of 0-2 years' clinical experience in medical research, nursing, or the pharmaceutical industry. Knowledge of regulatory requirements is also preferred.

A clinical coordinator

must be familiar with the scientific/investigative process. Expertise may be limited to a specific functional area. A clinical coordinator must have good communications skills, both written and oral. He/she must also have project team experience and a familiarity with standard computer applications. Responsibilities include coordinating the clinical development plan as outlined by the company or Clinical Department, defining objectives, strategy, and studies. The clinical coordinator must provide support for planning, including detailed effort estimates, scheduling, and critical path analysis. He/she must monitor clinical activities to identify issues, variances, and conflicts, and analyze and recommend solutions.

A regulatory affairs specialist

at the entry level, coordinates and prepares document packages for submission to regulatory agencies, internal audits, and inspections. He/she compiles all material required for submissions, license renewals, and annual registrations. An incumbent monitors and improves tracking and control systems and keeps abreast of regulatory procedures and changes. He/she may work with regulatory agencies and recommend strategies for earliest possible approvals of clinical trial applications.

