

Drug discovery a career option

Instrumentation through innovation

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A bio-technology news letter

Biotecnology, Biochemistry and pharmaceutical have one single goal of finding new contenders for disease control and cure. As a carrier option all these field are highly specialized. The tools working environment and practices are widely different. In the present day context it is impossible for any individual to excel in all the related sub fields. So to say only teams or groups of scientists can sustain and succeed in an effort in these directions. Also the venture capital required to launch and succeed in a project of this nature is pretty high and only big corporate houses can afford.

However many a time small and useful breaks are achieved by individuals in their own labs. Further inputs and direction will come from venture capitalists and other funding agencies. The discovery may lead to clinical trials, FDA approvals and trial marketing; i.e. from concept to reality it will take several steps and months of research.

There is no shortage of new tools and solution available to streamline the drug discovery and development process. The challenge for the industry now is to put these into practice and over come non-technical barriers slowing down the emergence of new medicines into the market. Out of the many impediments trained and experienced manpower is the most worrisome aspect. Various forms are discussing to meet this challenge by creating the right conditions for people to choose this field as a carrier and also imparting the necessary training. A host of new generation equipment employing chemistry and physical parameters are being introduced. These techniques, though user friendly and

fast, require additional skills such as familiarity with software solutions and modern instrumentation.

A present day estimate of US \$ 800 million for the development of a new drug and a failure rate of 50 % in the game is accepted as a reality. Many in the industry attribute this due to excessive regulation and is no longer acceptable. The F D A has setup a "critical path initiative" a venture that is calling for a new and concentrated effort on science of development. Tools such as biomarkers and manufacturing Q. C systems will help to some extent. A few of the leading companies have put up such facilities and rest has to follow. This is the emerging area and can create good employment options for budding scientists. However one has to accept that experience and acquiring skills do not come easily. The candidates have to put dedicated and concentrated effort.

Again the part to be played by institutions and colleges is to acquire the instruments and experienced staff to teach. In this area the developed as well as developing countries have the same handicap. In case of developed countries alternate employment opportunities and sustained effort required to make a mark in this emerging field is the deterrent. On the other hand in developing countries such as India lack of facilities in institutions is the main constraint. Indian pharmaceutical industry, except a few multinationals, is not yet ready to even implement the G. M. P and automation. From Jan 05 the situation is

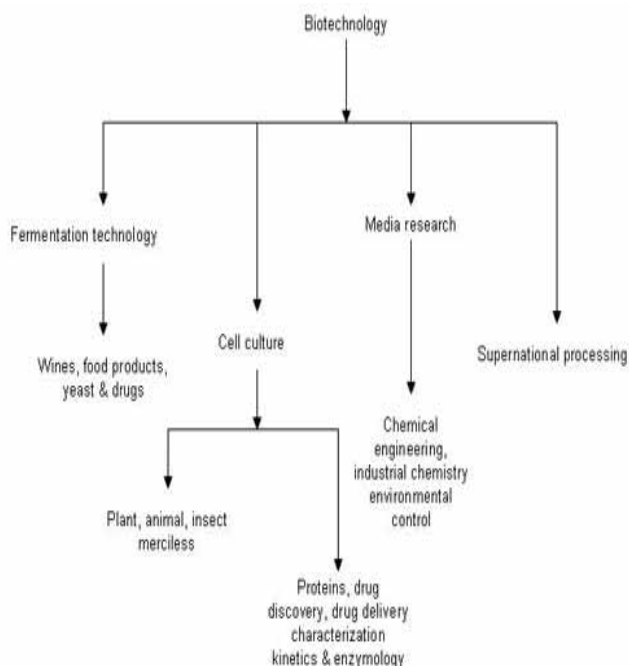
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different and to sustain most of the units have to up date the technology. Thus a lot of work force is required with a set of new skills and knowledge base. In view of this Government of India, Department of Science and Technology Department of Biotechnology had identified areas for funding. Similarly

The All India committee for technical education has accepted and granted Biotech courses in various institutes. However all these efforts will produce graduates in Biotechnology who have knowledge base and very little practical skills. On the other hand, if the institutions invest and develop excellent lab facilities, the manpower requirement of Indian industry as well as exportable surplus can be created.

In late 70^s and early 80^s Government of India Department of Science and technology identified and established some Regional sophisticated instrumentation centers. Unfortunately all these ended up as white elephants due to reasons that are not worth discussing.

If such centers are established as commercial enterprises with assistance by way of soft loans and part grants on performance basis better results can be achieved. If these facilities are dedicated for training and commercial analysis, migration of skilled personal and hence availability improves.



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