Clouds on biotechnology horizon

Companies run short of sales and capital

Washington

The US biotechnology industry is coming down to earth with a bump, as various companies begin to experience difficulty in raising the capital needed to finance ambitious expansion plans.

Last week, for example, Bethesda Research Laboratories (BRL), one of the more successful of the many small biotechnology companies to have been set up within the past few years, announced that it was cutting back its workforce from 450 to just under 300 because of cash-flow problems, and was re-thinking plans for moving into larger facilities.

Only six months ago, the company was talking of a public offer of its stock, seeking to raise \$40 million to finance expansion over the next two or three years.

Other companies are experiencing the same problem, although none quite so dramatically. San Francisco-based Genentech, for example, is expected to have to think hard about how it is going to raise the new capital it will soon need for future expansion, although it said last week that at present the company was growing at its projected rate.

So far, out of more than 150 companies set up in the past few years, only one — Applied Genetics of Boston — is known to have folded. In most cases, according to Wall Street analysts, the cutbacks in growth being reported reflect a shake-out that had long been expected, partly a reaction against a period of over-expectation.

They point out that in the case of BRL, for example, the company is retaining most of its scientific personnel, particularly in the area of restriction enzymes for which it has established a worldwide reputation. The cuts are being made in more peripheral areas in order to maintain a healthy core.

The problems being experienced by the biotechnology companies are caused less by the current recession than by the fact that it is now much more difficult to raise new equity than it was even six months ago.

After the dramatic sale of stock in Genentech exactly a year ago, when shares rose from \$35 to \$80 on the first day of trading, shares have now stabilized around the original figure. Shares in Cetus, which went public with a far bigger proportion of its equity six months later, have slipped from \$25 to around \$13. The latest public newcomer, Collaborative Research of Waltham, Massachusetts, also received a relatively cool reaction when it went public last month.

Investment analysts claim these figures reflect a new realism in the market, which recognizes that although genetic engineering techniques still offer a large commercial potential, there is still some way to go before anyone starts reporting a substantial profit. Two weeks ago, for example, Genentech reported that profits for 1981 were double those of 1980, but at \$300,000 these compare unfavourably with a revenue of \$21.3 million.

In the case of BRL, since the company is still private and therefore does not have access to large amounts of capital, it has had to rely more heavily on the sale of laboratory products, which last year generated an income of over \$10 million. This has made the company particularly sensitive to any fluctuations in the market, contributing directly to the decision to "restructure" its activities.

BRL is divided into four divisions covering research products, instrumentation, genetics research and molecular diagnostics. Staffing cuts are being distributed across all four divisions, and although ten PhDs were among those who had received their notice, the company says that in general the cuts had fallen less heavily on scientists (who make up about one-sixth of employees) than on other staff.

The cuts mark the end of a period of

"NEVER MIND—IF THINGS LOOK UP, WE'LL CLONE A FEW MORE."

spectacular growth for BRL. Formed by Stephen Turner, who previously worked with Becton-Dickinson, with two other employees in 1976 and based close to the National Institutes of Health which have been among its most important clients for restriction enzymes, the company had sales of \$350,000 in 1977, \$1 million in 1978 and \$5 million in 1980.

Asked in a newspaper interview last September how he viewed the future prospects for his company, Mr Turner admitted that the market for his products was rapidly filling up as the expansion of new genetic engineering laboratories levelled off. "I was taught long ago that the goal of business planning is survival, not dominance", he said. **David Dickson**

Cohen-Boyer patent extended

Washington

The US Patent Office last week informed Stanford University and the University of California, San Francisco (UCSF) that it has accepted their claims for a patent on any microorganism which is made using the genetic engineering techniques developed by Dr Stanley Cohen of Stanford and Dr Herbert Boyer of UCSF.

The techniques themselves were granted a patent just over a year ago. The patent was offered for licensing last summer, and last week Mr Andrew Barnes of Stanford's Office of Technology Licensing said 73 companies have so far agreed to pay the \$10,000 annual licence fee (five times which is credited against any future royalty payments).

Initially, applications for patents on both the techniques and the products of the techniques were filed simultaneously. However, in the light of the Patent Office's subsequent challenge to the legality of patenting living organisms — eventually resolved by the US Supreme Court, which agreed that they could be patented — the application was split into two parts.

Of the two, Mr Barnes said that the process patent already granted was considered by the universities to be the more significant. He added, however, that

the product patent, which it had been generally anticipated that the universities would receive, could strengthen their hand in any future legal proceedings.

For example, if the process patent alone had been allowed, foreign companies might have been tempted to import into the United States products made in countries where the techniques had not been patented, and the universities would have had to challenge this under a slightly ambiguous ruling from the International Trade Commission. Now that the product patent, expected to be formally granted in a few weeks, has been allowed, it will be a legal challenge to such imports.

The new patent will cover any recombinant plasmid made using the techniques developed by Dr Cohen and Dr Boyer, provided that the vector is compatible with the cellular host organism. The universities have also been allowed a patent on the transformant itself, providing this is a unicellular organism, such as a bacterium or a protozoan; human and plant cells, however, would not be covered.

Rights to the use of the products are already included in the licensing agreement which Stanford and UCSF have been negotiating with interested companies.

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