

# Fulfilling the Promises

■ **Biotechnology is one of the most powerful modern technologies. Although the sector has had its financial setbacks in the past, the strength of the technology will carry it through difficult times and build it up to solve many global problems. In order to succeed, however, the biotech sector needs strong support and investments.**

**Carmela Kantor-Aaltonen**

During the past 20 years, the situation for biotechnology has changed dramatically both in Finland and globally. In Finland, the expectations for a new innovative technology that was based on intensive research and heavy public investments made in the 1980's rose to their peak at the end of the 1990's and the beginning of the 2000's.

The Finnish bio boom only lasted for a few years until both public and private sources of financing were disappointed at the lack of fast profits and gradually withdrew their investments. The impatient and unrealistic expectations of quick results, especially in the field of drug discovery, led to the hasty conclusion that biotechnology was full of empty promises and that the hype was based on false hopes.

Now, ten years later, we all know that biotechnology in all its aspects is one of the most powerful and promising technologies of today, and it was only expectations that were set unrealistically high some 10–20 years ago. The fault lies with researchers, entrepreneurs, and investors alike.

The lack of know-how and knowledge, the urgent need to develop new technologies and innovations after the IT boom and the subsequent IT bubble and, in particular, the lack of experience in the field of bio business, led to the incorrect conclusion that the technology was not practical and business opportunities did not exist.

The public investments made 30 years ago by the Academy of Finland for basic research and by the Finnish Funding Agency for Technology and Innovation (Tekes) for applied research

and development were crucial for the birth of the biotechnology sector in Finland. The important investments made by the government at that time have provided the basis for the current high quality of research, especially in the field of biomedicine.

The media criticism that Tekes and the Finnish Innovation Fund Sitra encountered for the investments they made in biotech start-up companies in the late 1990's and the beginning of 2000's contained a grain of truth but was partly unfair.

The only option at that time was to make the high risk investments needed to get the biotech industry started in Finland, as it was already blooming in other Western European countries. Finland had to be part of this rising and promising new industry. The mistakes and bad investments which were made were due to lack of experience and know-how. Hopefully we have learned our lesson.

## **New opportunities for small companies**

So, what about now? What is the situation in the year 2010?

Biotechnology is an investment-intensive industry and therefore very dependent on the economic situation. The global recession that has shaken the world has had its impact on bioindustry, too. The lack of investors has led to a situation where new business ideas have little chance of obtaining financing and the already existing bio companies are struggling for their survival. Excellent innovations keep waiting to





**From caterpillar to butterfly.  
Biotechnology is fulfilling  
the promises, and new  
innovations emerge.**



be commercialised and utilised for the public good.

Where drug development is concerned, the field is changing. Big Pharma is going through a transformation due to the fact that a significant number of patents for blockbuster drugs are expiring and the R&D productiveness of most companies is poor; however, in spite of all this they need to maintain their annual growth.

This has given small drug discovery companies an opportunity to make deals and acquisitions, and to do mergers with the Big Pharma companies. The number of deals between small companies and Big Pharma companies is growing by 12% yearly.

This phenomenon can also be seen in Finland. For instance, Hormos Medical Ltd—a subsidiary of QuatRx Pharmaceuticals Company—entered into a worldwide licensing agreement with the Japanese Shionogi & Co., Ltd. to develop and market ospemifene, a selective estrogen receptor modulator, with an up-front payment of \$25 million. It is eligible to receive in excess of \$100 million in development and regulatory milestone payments.

Biotie Therapies Ltd and FIT Biotech Ltd have also made many valuable licensing agreements with Big Pharma companies. In addition, there has been some investment activity, for example Oncos Therapeutics, a biotech company developing new cancer therapeutics based on its next generation of oncolytic viruses, obtained a €4 million investment from HealthCap.

There are several successful biotech companies in Finland that are providing research services. These include Glykos Finland Ltd, Cerebricon Ltd, and Systems Biology Worldwide, not to mention diagnostic companies such as Hytest Ltd. Some companies, such as Medix Biochemica Ltd and Orion Diagnostica, have existed since the 1980's. The production of industrial enzymes by companies like Roal Ltd represents Finland's strong traditional biotech sector.

### Support for best innovations

Bio business is risky; there is no doubt about that. But to create something new and innovative, risks have to be taken. The question is, can Finland afford not to invest in the technologies of the future. The skills, experience and know-how necessary for bio business have reached another level compared to the situation ten years ago, and we don't need to make

## Biotech Bringing on the Future

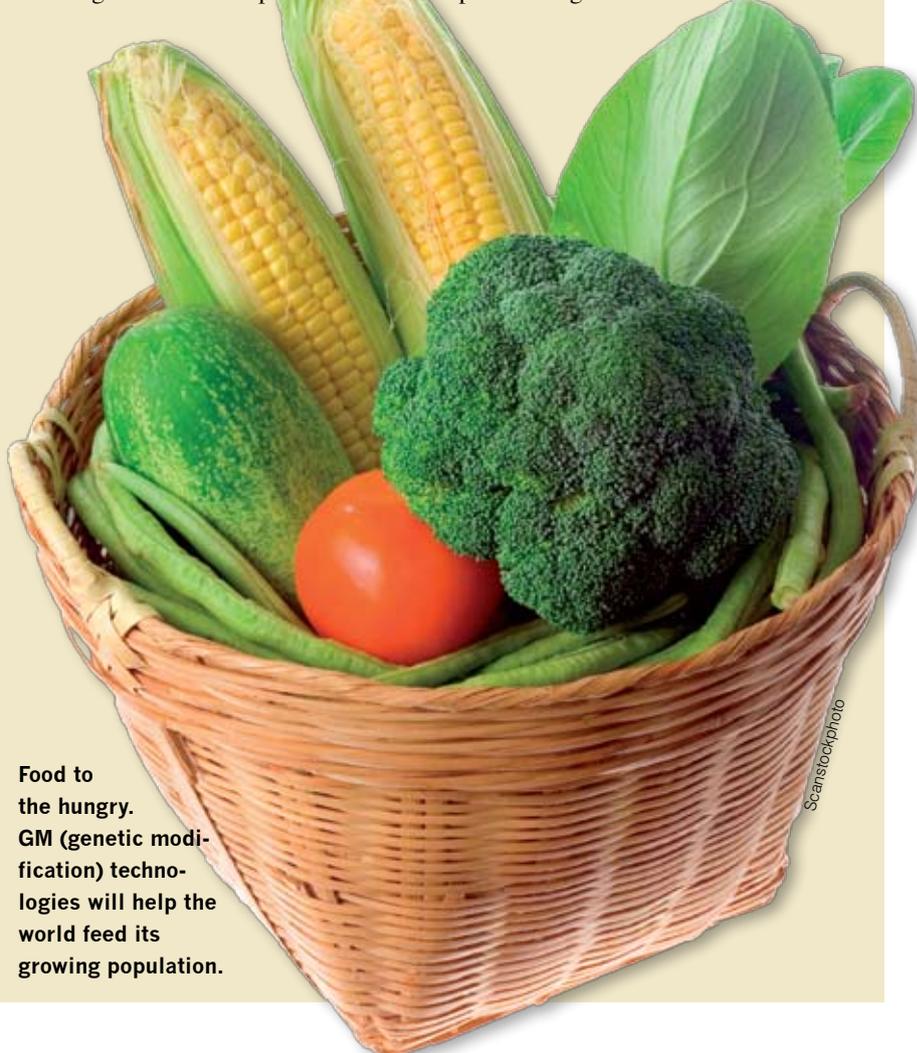
Hosted by the American industry organisation BIO, the world's largest bio event was held in Chicago in May. With 15,000 participants and distinguished speakers, BIO 2010 showed the vitality of the industry. There are no doubts about the power of biotechnology and the opportunities for it to heal, fuel, and feed the world.

The current trend towards comprehensive health care, the huge advances in gene technology, and the importance of preventive medicine present vast opportunities for the diagnostic sector and for the production and development of biologics – medicinal products created

by biological processes – to create new solutions to medical problems.

The environmental challenges we are encountering and the innovative new solutions that biorefineries are bringing to integrating biomass conversion processes and equipment, in order to produce fuels, power, heat, and value-added chemicals, are significant.

Radical solutions for feeding the world are needed due to population growth. GM crops have already had an important impact on food production, and GM technologies, combined with other cultivation methods, should be part of the global nutrition solution.



**Food to the hungry. GM (genetic modification) technologies will help the world feed its growing population.**

the same mistakes all over again.

Nominated by the Ministry of Employment and Economy, Professor **Vesa Puttonen** recently examined the evaluation report of the Finnish Innovation System produced by distinguished evaluation experts.

One of Puttonen's suggestions was that instead of dividing the innovation grants and loans between as many biotech sectors as possible, only the best innovations should be supported.

He also suggested the whole Finnish innovation structure be reorganised and clarified. The strong top-level basic research in Finland is an excellent basis for a flourishing industry. We need new innovations and global market leaders in biotech to create a new pillar for the Finnish industry. □

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