

BioSpectrum

the business of life sciences

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ASIA EDITION

Asian countries like Singapore have taken nanotech to the big league

Asia in the Nanorace



Columns

- Licensing travails: Mark Ravera
- Korea master plan in action: Youngguk Cho



Thai scientists crack Jasmine rice gene



Human mAbs to dominate next wave of approvals

Taiwan

Vita Genomics drives pharmacogenomics



Dr. Ebin Chen, President & CEO, Vita Genomics

Dr. Kuo-Chung Lin, CEO, PharmaGenetics Corp.

**2008****Year of the Entrepreneur**

ALMOST a decade ago, when Dr Ko-Chung Lin was working with Biogen as head of drug discovery in Boston, a few high ranking government officials from Taiwan visited the city. He had the chance to host them and arrange meetings with the CEOs and senior management of many biotech companies. At the end they asked Dr Lin if he was interested in starting a biotech company back home in Taiwan? It was a tough call for Dr Lin to take, after staying in the US for over 20 years. However, he decided to start a biotech company in Taiwan. PharmaEssentia came into existence in September 2003..

The government promised investments in the company from, 'The Development Fund,' which has also funded Taiwan Semiconductor Manufacturing Company (TSMC). TSMC is the largest chip producer in the world and also the world's largest dedicated independent semiconductor foundry, with high-ranking scientists and people from Silicon Valley working for it.

The company that started with four experienced scientists from the US, now employs about 30 researchers. Over a period of close to five years these scientists nurtured local talents giving them hands-on practical experience while they were doing their Masters. "We have a good number of people who are interested in working in biotechnology companies in

Taiwan

Taiwan. Taiwan produces really good Masters' degree holders with hands on practical experience in life sciences. However, not many PhDs are available in Taiwan. In order to produce novel products, in-depth knowledge is a

BioSpectrum has named year 2008 as "Year of the Entrepreneur". We are celebrating it by bringing you a series profiling top entrepreneurs from the Asia Pacific region.

In the fifth part of the series, *BioSpectrum* goes to Taiwan

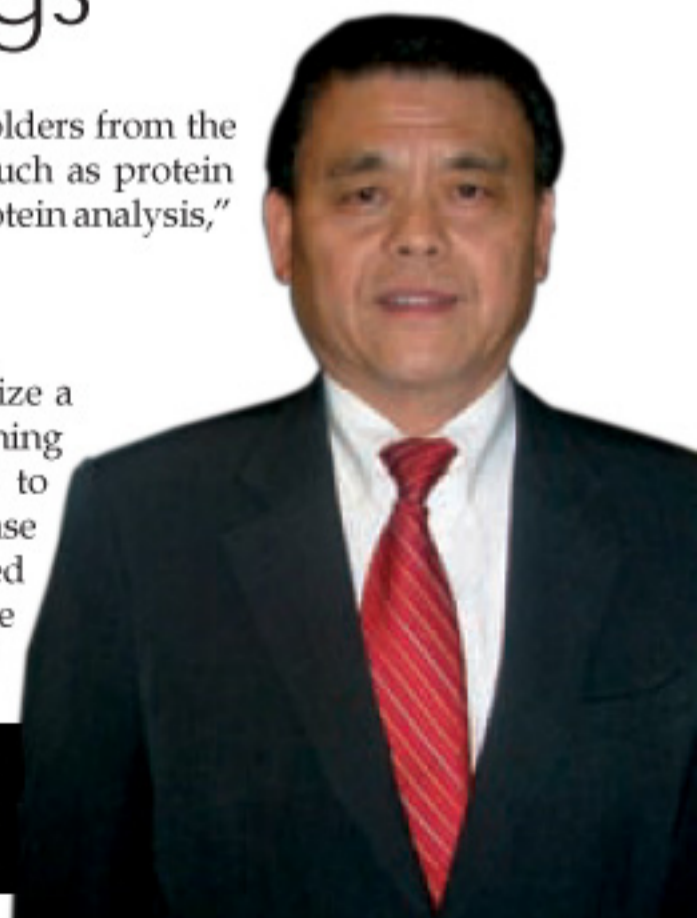
Mixing protein engineering, chemistry for new drugs

must. That is why I looked at PhD holders from the US who worked on different areas such as protein therapeutics, small molecules, and protein analysis," adds Dr Lin.

NOVEL DRUG DISCOVERY PLATFORM

The scientists at PharmaEssentia utilize a novel technology platform of combining protein engineering and chemistry to create new products for better disease treatment. These products are designed to increase a protein's effective size and slow its clearance from the body.

Dr KO Chung Lin, CEO,
PharmaEssentia Corporation,
Taiwan



The scientists at PharmaEssentia, overcoming the common problems encountered in the development of pegylated biologics—namely product heterogeneity and loss of biological activities—are working on developing Pegylated—Interferon alpha and beta, Peg-GCSF, Peg-Growth Hormone and Peg-EPO. “We are working on preclinical trials for our novel molecule P1101 for hepatitis and expected to start phase I trials in the US soon. We are in the process of filing an IND for the same with the USFDA,” says Dr Lin. “We are looking for partners with whom we can work together. Phase II and III, particularly the latter, needs huge money. We are looking for partners to do phase III trials in the US, Europe and Japan.”

“Over a period of four years our scientists have successfully redesigned the whole synthesis of an anti-cancer chemotherapy drug, Gemcitabine (global sales of \$1.8 billion annually) that is used as a treatment for different types of cancer like lung, breast, pancreatic—developed by Eli Lilly. We have filed patent for the same and by end of the year we will be launching this as an API or finished product through our partners in Taiwan. We are also looking for partners in South East Asia for marketing the product,” says Dr Ko-Chung Lin.

FUNDING RESEARCH

PharmaEssentia raised about \$15 million initially. In the second round, the company raised \$18 million.

“Currently we are working for C round funding. Probably we hope it will be realized in next few months. In this round we expect to raise about \$20 million,” Dr Lin adds.

REVENUE STREAMS

Besides new drug research and development, PharmaEssentia is producing specialty chemical products that take advantage of Taiwan’s manufacturing infrastructure. These products include active pharmaceutical ingredients (API), their key intermediates, and new dosage forms of APIs.

Dr Lin says, “Utilizing a proprietary synthesis method we produce PharmaQ10, the purest Coenzyme Q10 or CoQ 10. At the same time our manufacturing process in comparison produces a purer product at a lower final price. Based on our technique, we are confident of providing PharmaQ10 in quantities enough to satisfy current and future global market needs.”

“We produce CoQ 10 for the local market. Recently we signed an out-licensing agreement with a Malaysian company—Black Gold Global (BGG)—allowing the company the rights to manufacture CoQ10 using our proprietary process for Asia and the Middle East. We have generated couple of millions-a-year by selling coenzyme Q10. Now we hope we can generate more revenue with technology transfer as well in the coming years,” Dr Lin adds.



Making the most of pharmacogenomics

SUCCESSFUL completion of human genome project in 2000 generated a lot of interest among scientific community in understanding the genetic risk factors. It was natural for Dr Ellson Chen, a renowned scientist in the field of large-scale DNA sequencing and human genomics who has 28 years of experience working in companies such as Celera Genomics and Genentech to do something new as an entrepreneur in the field of genomics research. Hence Vita Genomics was established in 2001 in Taiwan after he successfully raised \$75 million. Over a period of time Vita Genomics has developed expertise in using genomics and bioinformatics tools to offer streamlined and customized pharmacogenomics services and solutions. Currently, it has about 50 people conducting pharmacogenomics research, in vitro diagnosis product development, and specialty contract

Dr Ellson Chen, President & CEO,
Vita Genomics, Taiwan

research services in both genomics and pharmacogenomics fields and about 70 people working