第３回産学官連携サミット　〈パネルディスカッション〉

ルイス・ウイリアムズ　ファイブプライム会長

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The essential ingredients for starting biotech companies include:

1) Initial entrepreneurial concept with a rationale for technical and commercial competitive advantage,
2) Intellectual property portfolio, and
3) an effective entrepreneurial team including technical, financial and business experts.

The initiative for starting the company most commonly emerges from an academic discovery or technology. However government-sponsored programs, private investment groups or pharmaceutical companies can also provide the founding concept of a biotechnology “start-up”. The following case studies are examples from my past and recent experience.

1. Cor Therapeutics: Venture Capital +Academia + A Reptile

Cor Therapeutics was founded by a venture capitalist and a professor, and was initially based on intellectual property licensed from the Professor’s University lab and a platform of technologies related to a subset of cardiovascular diseases. The University’s competent legal and business staff facilitated the license of technology The University had a transparent conflict-of interest policy and a committee that helped the Professor to understand his obligations. Cor Therapeutics was successful in raising money from multiple venture capital groups and within a short time discovered a new cardiovascular drug based on a chemical analysis of the venom of a snake! The company reached a value of $2B USD and had several compounds in its portfolio

when it merged into a larger company. The final result was the venture capitalist made the largest profit, but both the university and the scientists benefited financially, and an important new drug was developed.

2. Daiichi Research Center at the University of California: Collaboration between a pharmaceutical company and a University

In the early 1990's Daiichi Pharmaceuticals became interested in developing a strategic relationship with a research group focused on cardiovascular disease. Daiichi executives visited several U.S. institutions and selected the University of California at San Francisco. This collaboration continued for five years in the cardiovascular area and was later expanded into cancer. Both the University and Daiichi benefited from the intellectual property that was generated by the scientists and by the training of both Japanese and American scientists funded by the program. There were three unusual points related to this collaboration:

a. The University is a State University and is a public institution. It was unusual that a State Institution collaborated on a large scale with a private company, especially one from abroad.

b. In the 1990's there was fear among some in the U.S. this type of collaboration between a Japanese commercial entity and a publicly funded U.S. University would result in a "drain" of important U.S. intellectual assets towards another country. After the Center was operational, this issue was not a problem.

c. Although the Daiichi Center did not generate conflict in the University, there was a conflict with the Howard Hughes Institute (HHMI) which funded research in the laboratory of the Professor who was the Head of the Center. The only resolution was for the Professor to leave the HHMI. Although this decision was in the best interest of the University and Daiichi Center, it created some difficulties for the Professor.

The Center generated value for both Daiichi and the University.

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3. Chiron Corporation and the Economic Development Board of Singapore: A New Biotechnology Company in Singapore

Chiron Corporation had developed some genomics and chemistry technology with uses beyond the capability of Chiron's resources. Chiron decided to share the technology with a government sponsored venture group in Singapore. This group wished to catalyze the biotechnology industry in Singapore by in-licensing Chiron's technology and by funding a training program in which Singapore scientists received training from Chiron. The new company, S*BIO, is now flourishing in Singapore. Chiron had rights to some, but not all, of S*BIO's discoveries.

4. FivePrime Therapeutics: A Small Biotechnology Start-up with Academic Collaborators.

The pharmaceutical industry has expressed disappointment that the progress in sequencing the human genome did not translate into improvements in the discovery of new drugs. This is because new paradigms are required to assign functions to a large numbers of genes. FivePrime Therapeutics was founded in 2002 as a new type of drug discovery company based on parallel processing of protein function information. FivePrime has important collaborations with two Japanese small biotechnology companies and multiple academic laboratories in the US, Japan and Europe.

In summary, there are numerous means of starting biotechnology companies. The foundation is always great science. The mix of business, government and academic interests often requires a balance of competing interests with a common goal: to create new therapies. It is important for academia, governments and the business community to join together to improve health in a cost-effective manner, sustain the scientific enterprise and to achieve economic benefits.