Interview with Byoung Joo Gwag, CEO, President, Neurotech Pharmaceuticals

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What was the vision behind the creation of Neurotech back in 1998, originally as a Research Center, and then as an independent bio-tech company?

It all began in 1998 when special new laws were passed by the Korean government aiming to get professors to contribute to the development of the biotech business. At the time, I was doing research in the United States, as were my other three Korean colleagues and future co-founders of Neurotech. We often got together and exchanged many ideas about what was happening in the bio-sector, and when we heard about this law we thought that it sounded like an interesting opportunity, even though we were scientists with no idea about business or industry.But we had the science and research experience, which is what we realized was lacking in Koreaâ??s bio-industry. So we thought that we could simply set up a research network in the country, providing industry people with the scientific rationale necessary to develop bio-medicines. The problem was that Korean industry was not very used to working with academic people, and we were not really able to understand each other. After trying this route for about a year, we decided to go for it ourselves. We were to focus on the science and hire businessmen to deal with the other aspects of running a company. So we actually started Neurotech with this basic idea, with no concrete leads or compounds.

How would you describe Neurotechâ??s early days and the main milestones in its evolution over this last decade?

We had a dream which was to work on new drug development, based simply on our excellent scientists. After securing funds supported by the Ministry of Science and Technology in 1998, we decided that our main focus was to be on Alzheimer â??s disease and stroke. We were quite lucky that in those early days of Neurotech our labs found a lead compound, actually based on Aspirinâ??s properties as a NMDA receptor antagonist, meaning great potential for fighting stroke and other neurological diseases.However, despite the scientific value of this discovery, in reality it was useless on the industry side due to the fact that the necessary doses in order to have the desired effect were far too toxic for humans. But this lead was a good start and our medical chemists began analyzing hundreds of compounds in order to overcome this problem. A couple of years later, one of the research students working in Neurotech found that sulfasalazine also blocked NMDA receptors, which allowed us to design a non-toxic structure with increased potency to help prevent neuronal death in stroke patients.Contrary to other pharmaceutical companies which have taken a singe-path approach and eventually failed in Phase III trials (particularly AstraZenecaâ??s NXY-059), Neurotechâ??s Neu2000 is an anti-oxidant which attacks both NMDA and free-radicals at the same time. I would call this a combination therapy concept, which as avoided us making the same

translational errors of others while going from the basic research to the clinical trials phase. We have completed pre-clinical work on Neu2000 and began Phase I studies in the United States in 2008, and the results have been very promising in terms of adverse effects. However, as we prepare for Phase II there have been some challenges due to the negative won-dollar exchange rate, ongoing economic crisis â?? which has made raising funds more difficult â?? and to big pharmaâ??s reluctance to partner with stroke drugs due to the recent failures. For these reasons, we have changed our initial plans to do Phase II in Europe and will instead focus on trials in Asia and particularly China, where there are many stroke patients and we have found a partner who is very interested in investing in Neu2000â??s development.

What role does Neurotechâ??s US subsidiary, Amkor, play within your strategy?

Well aware of our lack of personal experience in new drug development and the clinical trials process, we decided to recruit experts in these fields in the United States and founded Amkor Pharma to this end. Since we are looking towards becoming a global biopharmaceutical company in years ahead, it is essential to have such a structure in order to enter the American and European markets. This will be within our reach once Neu2000â??s clinical trials advance and the effects on stroke patients are proven.You and the other co-founders of Neurotech took a bold step by deciding to leave your positions at prestigious universities in the United States to come and start something from scratch in Korea.

What is your assessment of the biotech sector in your country after all these years being back?

Things have been gradually changing in South Koreaâ??s biotech sector and today the environment is quite favorable. The Korean government has designated biotech as one of the future engines of economic growth for the country, and has therefore been supporting its development through special funding and other policy measures. Moreover, Koreans have a very strong background in research and nowadays many are publishing papers in prestigious magazines such as Science and Nature. Now all we need is to develop one global drug to show that it is possible and to lead the way for other Korean companies.I am always surprised by a company like Samsung which has become a global leader thanks to being highly competitive, innovative and having its own research pipeline. On the other hand, in the bio-business all the players are very small and following different strategies. The start-ups and academia have the science and the passion, but are still struggling to take their ideas to the industry and finally the market. In the end, there is a need for a successful model in biotechnology first before we can truly work on IT-BT-NT combination technologies which the government is trying to promote. And as we learned with the case of LG Life Scienceâ??s Factive, it is not enough to achieve US FDA approval, but you also need to be able to have the right business model for the market.

What role do you think that Neurotech can play within this aim to make South Korea a world class player on the global biotech arena?

I believe that Neurotech can be one of the leaders for the Korean biotech sector in the future. So far we have just completed Phase I in stroke and have moved into Phase I in Alzheimerâ??s disease. We are working on unmet medical needs by taking basic science to the industry, communicating better at al phases of development in order to avoid translational errors. Backed by the feedback of a big scientific panel and network, we are confident that Neu2000 will reveal its benefits to stroke patients in Phase II.Few people manage to successfully mix science and business.

Which of the two do you prefer today as you are at the head of a biotech company in South Korea?

I have a natural passion for research and academic work and still spend much time on these activities, but I also realize that the country needs people who can take these ideas and carry out the

whole drug development process. I still have many things to learn in this regard and that makes it very interesting for me. I will continue doing this until Neurotech is successful in developing our drug pipeline and marketing it to patients. That is my mission.

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