Interview: Jassy Wang â?? CEO, MegaPro Biomedical, Taiwan

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Jassy Wang, CEO of MegaPro Biomedical, a nanomedicine development company specializing in developing nanoparticles and nanomicelles, discusses the evolving nanomedicine market in Taiwan and reveals the companyâ??s plans for future growth.

Can you introduce MegaPro Biomedical to our readers?

MegaPro Biomedical is a spin-off company from ITRI, established in early 2015. Its core team consists of original inventors of nanoparticle and nanomicelle. The company is focusing on nanomedicine â?? a unique niche market evolving from 2000 and expected to be a very prospective industry in the upcoming years. We have two major technology platforms â?? nanoparticle and nanomicelle â?? which allow us to develop different indications. Our nanoparticle can be used as an iron supplement or cell sorting kits. Moreover, nanomicelle is a technology platform that can encapsulate the drug into the nanosize. Nanosize features many advantages; amongst them I would highlight the ability for the passive targeting of the cancer site. Additionally, anti-cancer drugsâ?? strong side effects can be reduced.

The Nanomedicine Market globally is expected to grow at a CAGR of 17.1% during the forecast period 2017-2023 to aggregate $392.80 Billion by 2023. Is Taiwan a prospective market for the development of nanomedicine?

Nanotechnology is an area that is specific for integrating different disciplines; interdisciplinary collaboration is crucial. Taiwanese nanomedicine professionals include physicians, clinical scientists,

chemical engineers and protein science professionals. We pride ourselves on being unique for investing collaborative efforts into the development of nanotechnology in Taiwan. The government initiated the National Nano Research Program in 2003 which brought together many professors and researchers from different domain fields. These professionals work together towards the common goal. Interdisciplinary collaboration is the main success factor of this program and I am proud to be the leader of the program while our team has been a member for over ten years.

The major drivers of the nanomedicine market include significant investments in clinical trials by the government as well as the private sector. What is your assessment on the level of investments in nanomedicine in Taiwan?

Taiwanâ??s government is strongly supporting the industry. The biotech industry is very prospective in Taiwan as we have a lot of professionals in the industry and a strong clinical study team. Therefore, the government is financially supporting clinical studies. Our company was supported by venture capital companies who invested in MegaPro Biomedical due to the vision to grow the company and move our product further into clinical trials. Additionally, the government encouraged us as well. Phase I clinical trial was partially sponsored by the government who covered 40 percent of the entire cost of the trial. In general, the government supports the industry through programs from which the companies can receive financial support ranging from 30 to 50 percent of the clinical trial cost if they have received an approval from the regulatory agency. This initiative shows firmly the commitment of the government to drive the growth of the industry.

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MegaPro Biomedicalâ??s unique technology is PEGylation technology for development of nano-iron oxide injection (IOP Injection) and drug nano-carrier. What sets apart your technology and makes it competitive?

The core of our technology is the composition design. We design and develop suitable surface, chemica and physical properties to make nanoparticle and nanomicelle unique for its specific purpose and function. Our first drug candidate is an iron oxide nanoparticle with balancing hydrophilic and hydrophobic surface. Special composition provides a well water-suspension particle that is stable and the liver specific uptake function. Secondly, nanoparticle manufacture is not easy as it requires well size control and repeatability. Our team has been dedicated to developing a special technique for controlling the size for many years. Finally, we have experts in clinical and protein science that identify the suitable indications of the drug candidate. Therefore, the clinical trial protocol and clinical study can be accelerated.

MegaPro Biomedical focuses on developing iTrast, an iron supplement with iron oxide nanoparticles for treatment of iron-deficiency anemia in CKD patients. What is the present status of the drug candidate? When do you expect to hit the market?

We completed phase I trial last year. This year we plan to submit phase II to the regulatory agencies including FDA and TFDA. Due to shorter clinical endpoint, we can finish clinical trial phase II within a year. For instance, clinical trial for cancer drug lasts from two to five years as the aim is proving the increasing survival rate. However, iron deficiency anemia drug can show its efficacy after one month of drug injection. As a result, the clinical trial is much shorter. We expect to finish phase III studies within two years. The product should be available on the market in 2021 or 2022.

What is your marketing and distribution strategy?

The focus of the company is development of nanomedicine drug. Therefore, we will not invest in manufacturing or sales force. For the manufacturing part, we will collaborate with professional

contract manufacturing companies. As for the distribution strategy, we will license-out the drug to the big pharmaceutical companies that already have established sales and marketing channel. Our company can then to develop more nano medicines through in-house development and licensing-in suitable drug candidates.

Do you have any plans to expand your product portfolio?

Yes, at the end of next year we will complete pre-clinical study for our second product pipeline which is an anti-cancer drug. MegaPro Biomedical is looking forward to further develop products for different applications.

MPB-1514 PEGylated iron oxide nanoparticles for iron deficiency anemia treatment is currently under phase I study in Taiwan and is anticipated entering the phase II studies in the second quarter of 2017 for which MegaPro is seeking partners for out-license or co-develop MPB-1514. What is your partnership strategy? What kind of partners are looking to attract?

We want to partner with players present on the anemia market. Iron deficiency anemia drug would be suitable for companies specializing in nephrology drug related field. Additionally, dialysis is very common in China and Taiwan. Several companies from Europe and Taiwan are trying to establish their business in dialysis field. Our product would be suitable and in line with their business. Moreover, our second product MPB-1523 focuses on MRI and we are also interested in finding a partner that can introduce the product to the market after finishing the clinical trial.

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What is your competitive advantage? Why should potential partners choose to collaborate with you?

We are continuously comparing the efficacy of our product to the one available on the market. Human and animal study showed higher performance of our product in terms of efficacy and safety. Consequently, hemoglobin response is faster. Additionally, side effects will be reduced. Hopefully, more efficient and safer products will attract potential partners.

How do you plan to ensure the future growth of MegaPro Biomedical? Do you have any plans for international expansion?

We are looking for international collaboration. However, we are not pursuing rapid growth of the company, but development of a better product. Our vision is to be a professional, but efficient company focused on the nano medicine development. We will continue our collaboration with upstream and downstream players on the market.

What are your strategic objectives for the upcoming years? Where will we find MegaPro Biomedical in five years?

Currently, our focus is on developing iron deficiency anemia nanoparticle and MRI contrast agent. However, our product will be suitable for immunotherapy and cell therapy in the future- we see those areas as our potential targets to ensure the growth of the company.

What would you like our readers to think when they hear the name MegaPro Biomedical?

A professional nanomedicine developer that is willing to collaborate.

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