Yong Zu Kim â?? Founder and CEO, Lego Chem, South Korea

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Yong Zu Kim, founder and CEO of Lego Chem, discusses his companyâ??s two areas of focus, anti-infectives and antibody drug conjugates. Dr Kim explains how his strategy has changed from solely licensing out to adopting in-house development and offers his view on the potential consolidation within the biotech sector in Korea.

Dr Kim, can you introduce yourself to our international readers? What has been your driving ambition for Lego Chem?

I worked for LG life Science for 23 years. At the end of 2005, there was a large debate around which therapeutic areas LG should focus on. I insisted on antibacterials, anti-cancer, and anticoagulants. However, the new president at that time wanted to change the strategy to the quality of drugs for lifestyle diseases such as diabetes. As a result of those debates, I decided to go in my own direction. I wanted to continue the research in these therapeutic areas, which was the main rationale behind founding Lego Chem. Eventually, we want to be a fully integrated pharma company.

After conducting clinical trials in the US and Europe, we have also established a joint venture company GEOM therapeutics, located in San Francisco. The CEO, Dr Thye, has established more than six companies relating to antibacterials.

Where are Lego Chemâ??s main areas of focus?

Antibacterials are the key focus for Lego Chem. We have key members of this company with experience in this area and these compounds constitute our first pipeline. After establishing Lego Chem, within three years we discovered this first product. The compound is currently in the clinical phase II stage. Moreover, in 2017 we received orphan drug designation from the US FDA. The compound was designated as a breakthrough drug against multi-drug resistant TB. We are now submitting it for global phase II studies. We will begin the phase II B study by the end of next year and should commercialise by the end of 2022, or the beginning of 2023. We are also about to submit another compound to phase I studies in Australia this year.

Lego Chem also has a focus on ADC products. Our ADC platform began 7-8 years ago. At this time, there were very few ADC drug candidates undergoing clinical trials. However, we saw the transition period from small molecule drugs into biologicals. Given that we were originally a chemistry-driven company and our idea was in linker chemistry, it was a rational decision to engage in this field.

ADC â?? antibody drug conjugates consist of three main components: the antibody, the linker, and the payload. The most important aspect is the linker. We wanted to establish ourselves as a leader in this linker chemistry. In contrast, we are not an antibody company, and we form partnerships with antibody companies and supply our linkers to them. In terms of the ADC area, there are several biotech companies engaged in this linker technology. However, big pharma lacks any significant interest as it requires so much R&D and money to develop this platform. Compared to a small molecule, ADC developed costs over $10 million, three to four times more than for a small molecule. In contrast, smaller biotech companies are more willing to take these risks.

Where does your focus on ADCs fit into Lego Chemâ??s ambitions?

Indeed, 80 percent of our resources are in fact devoted to the ADC platform. The other areas are largely designed to fund this R&D. We currently have more than ten ADC products in our pipeline. We are going to select more several ADCs to develop in the US. To achieve this, we want to form another joint venture in the US within 1-2 years. The main objective of the joint venture is to put these candidates through phase I and phase II in the USA, before selling to big pharma.

Almost all of big pharma have ADC pipelines, especially Roche, with over ten pipelines in clinical trials. Nonetheless, we require new antibodies to advance ADC technology; while there are around 60-70 ADCs in on-going clinical trials, only two have been approved by the US FDA. We wanted to first establish the platform technology and make our product only after this foundation was laid. The linker platform is an area being explored by more than 20 companies. Nevertheless, amongst the 26, we were awarded Best ADC Platform Technologyâ?• category at the World ADC Awards 2018 held in San Diego last July.

Our first ADC product was cleared for phase I clinical studies in China last month, which we hope to conclude by the end of this year

What is your business development strategy?

At first, we tried to submit our compounds through phase I and II, then to license out to big pharma for commercialisation and the later studies. This is because it requires larger financial resources to conduct the trials in phase III and beyond. However, todayâ??s situation has changed, particularly in relation to antibacterials. Big pharma no longer holds this area as a high priority, a marked difference from ten years ago. Consequently, we are taking on that role ourselves. Last year we funded more than 6 million for the commercialisation of this product. Nonetheless, our anticoagulant and IPF compounds are still open for a buyer in order for us to minimise the development costs involved. As a result, we will bring antibacterials in house, and out-license the remainder. Thus, Lego Chem will have a more mixed business strategy in the future.

With our partners, we share the profits from our collaborations 50:50. However, with large multinational pharma companies, they often demand to receive a much larger share of the rewards, Consequently. Hence, we have two types of partnerships that we engage in.

In terms of our target markets, we are actively seeking export opportunities in South America, Eastern Europe, South Africa, and India. We want to form partnerships with local companies in these export markets.

Looking at Korea and the 4th industrial revolution, where can Korea be on the world stage?

To grow and truly develop the industry in the future, the pharma companies must change the ecosystem, either through M&A, or through partnerships. We can supply the platform technology and partner with local companies to develop the pipelines globally. One of the main questions asked regarding Koreaâ??s biotech sector is regarding why there is no consolidation between the many biotech companies. I believe this situation will change in the coming years. There is a problem in that Korean companies, particularly large biotech companies, are overly conservative, but I can see this consolidation occurring in the near future.

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