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LegoChem offers new platform in anti-cancer therapy

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Korea-based LegoChem Biosciences (LCB) was started in 2006 with the objective to accelerate discovery and development of new small molecule drugs. The company is committed to building sustainable pipelines in therapeutic areas of antibiotics, anti-coagulants, anti-cancer and antibody-drug conjugate (ADC) platform technology.

Traditionally, drugs are conjugated at lysine or cysteine residues in antibody, the result of which is inseparable mixtures. Moreover, majority of the current methods employ thiol-maleimide conjugation and the resulting products are unstable thiol-maleimide conjugates (easily dissociated into thiol and maleimide). LCB is working on a technology that consists of site-specific functionalization (to avoid mixture generation) and orthogonal drug conjugation step (which avoids the thiol-maleimide route).

It received the BioSpectrum Asia Pacific Bioscience Industry Emerging Company of the Year Award for 2012.

LegoChem Biosciences anticipates that its ADC technology will define a new paradigm, particularly in the area of anti-cancer, and play a pivotal role in the field of new drug R&D, both in Korea and across the world. Currently, it has 12 projects and the leading ones are second generation oxazolidinone antibiotics, anti-coagulants FXa inhibitor and next generation ADC platform technology.

In its current format, LCB's methodology is not a cost-effective technology. However, CEO Dr Yong-Zu Kim believes that when it is well-optimized, it will surely be regarded as cost-effective.

LCB's technology takes a two-step process: the first is a specific functionalization step at specific amino acid residue and the second is a drug conjugation step at the functionalized position. The method requires a large excess of chemical linkers and drug part, but these reagents can be readily recycled.

With the vision to become a leading pharmaceutical company by holding more than five global clinical pipelines, LCB also offers joint and contract research, chemical library, and screening services for lead identification and optimization based on medicinal chemistry. It provides chemical library packages to research companies for early-ADMET information and customized compound synthesis and services, including in vitro early ADMET screening, metabolic stability tests, protein binding and plasma stability.

Since its inception, LegoChem Biosciences has raised $10 million and is now preparing for an IPO. It expects to be listed with KOSDAQ by mid 2012.

"We believe that the IPO will help us gain improved global competitiveness. With the raised R&D fund, LegoChem will be able to go further in clinical study and drug development to generate more profits, and it will raise the possibility of deals at a global scale," says Dr Yong-Zu Kim.