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Axcynsis Therapeutics Pte Ltd

Transforming the Course of Cancer Treatments to Benefit Patients

Axcynsis Therapeutics, a platform-based biotechnology company developing Antibody-X Conjugate (AXC) therapies, is transforming cancer treatments. Leveraging proprietary technologies, it is developing a robust pipeline of AXC candidates that can address unmet medical needs for new treatment options.

“Our company’s goal is to produce an AXC molecule with a homogeneous drug-to-antibody ratio (DAR) to achieve the widest therapeutic window benefitting cancer patients,” says Dr. Zou Bin, Founder and CEO.

In Antibody Drug Conjugates (ADCs), the active species is the payload (chemotherapy drug), and the role of the antibody is to deliver the payload to the target and into the cells, where the payload is released and in turn, causes the death of the cancer cells. The clinical benefits of ADC have already been demonstrated, and there are currently 15 FDA approved ADCs in the market as of November 2022. However, payloads need not be only chemotherapy drugs, they can be other types of payloads, such as protein degraders or oligonucleotides – Antibody-X conjugates.

Axcynsis’ technology platform is based on four significant pillars. Antibody discovery is the first step toward the selective delivery of payloads into cancer cells. The second pillar is biology - to understand the target antigen and how it works, how the antibody can selectively target or bind to it, and how the antigen differentiates between cancer and normal cells. A deep understanding of the target biology ensures efficient translatability from bench to bedside.

As most global FDA-approved ADC molecules do not contain a homogenous DAR, Axcynsis’ conjugation technology aims to develop AXCs with a homogenous DAR. This third pillar consists of proprietary and classic enzymatic and chemical site-specific conjugation supporting this development. The last and fourth pillar, the linker-payload (LP) technology, adds another significant aspect to its technology platform. Building on and expanding the readily available LP option pool, Axcynsis introduces new innovative and proprietary payloads with multiple mechanisms of action.

The four pillars combine the efforts of internal innovation and external collaboration.

Collaborating and co-developing novel technologies with academic research groups in Universities and Research Institutes expand and strengthen Axcynsis’ platform technology, further establishing their AXC synthesis “toolbox.” Axcynsis believes there is no “one formula fits all” when developing a homogenous AXC. Setting up a solid platform technology in the

initial stages will allow Axcynsis to create a diverse pipeline consisting of different antibody formats, conjugation strategies, and payload options to attain the best molecules. This supports the ongoing projects currently in the pipeline and would allow Axcynsis to differentiate its AXC molecules from the competitive landscape. All in all, Axcynsis’ AXC molecules are custom-built to allow for fine-tuning of safety and efficacy according to each target.



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The chances of drug failures are generally high in Phase 2 and 3 clinical trials, and this is also true for AXC molecules. The company aims to mitigate this risk by demonstrating a large enough therapeutic window in the early stages to move the project forward or to quickly cut losses. Unlike chemotherapy, which is systemic, the AXC molecule specifically target cancer cells thus minimizing the often significant side effects of traditional chemotherapy. In addition, AXC molecules manifest a so-called bystander effect, meaning that after killing cancer cells, the released payload can penetrate neighboring cancer cells and kill them as well.

Axcynsis is now set to file patents for its newly developed technologies and intends to demonstrate in vivo efficacy in different models (animal models or patient-derived xenograft (PDX) models – which are more clinically relevant and translatable), and demonstrate safety efficacy in cynomolgus monkeys. In the next 18 months, the company will be ready for IND-enabling studies and hope to reach clinical trials within the next three years.

In its current pipeline, Axcynsis focuses on using chemotherapy drugs as payloads. It is also in the process of building a diverse pipeline with different conjugation methods and payloads.

Headquartered in Singapore, Axcynsis has a team of 21 members of seven nationalities with a diverse training backgrounds in biology, chemistry, and pharmacology.

As a result, the company leverages its unique position and expertise to develop the best ADC to improve patient treatment outcomes and meet unmet medical needs. 🌐



Dr. Zou Bin,
 Founder & CEO

AXCYNIS THERAPEUTICS PTE LTD



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