

Cancer Research UK collaborates with Hummingbird Bioscience

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Aims to develop Hummingbird's anti-HER3 antibody-drug, HMBD-001, for the treatment of people with HER3 driven cancer



Cancer Research UK, the world's leading cancer charity, and Hummingbird Bioscience, an innovative systems-biology enabled biotechnology company with facilities in Singapore and the US, have announced a partnership to develop Hummingbird's anti-HER3 antibody-drug, HMBD-001, for the treatment of people with HER3 driven cancer.

Under the terms of the partnership, Cancer Research UK's Centre for Drug Development will fund the programme, manufacture the clinical-grade antibody and conduct a phase I clinical trial to evaluate drug safety, toxicity and efficacy.

Hummingbird will retain the rights to further advance the HMBD-001 programme and following completion of the trial, will have the option to acquire the rights to the clinical trial results to support further development of the antibody. If Hummingbird elects not to exercise their option, Cancer Research UK will have the right to take the programme forward in all indications.

The novel antibody brought to Cancer Research UK through its Clinical Development Partnerships scheme, was discovered by Hummingbird using its Rational Antibody Discovery Platform.

The antibody targets the HER3 receptor, which when activated through binding to other cancer-associated proteins, turns on a strong signal that causes cancer cells to grow and divide.

This activation is common in multiple solid tumours, including breast, gastric, pancreatic, ovarian and lung cancers, and is also seen when cancers develop resistance to existing cancer therapies. HMBD-001 is the only anti-HER3 antibody in development that binds to the most critical region involved in HER3 activation, turning off this signal completely.** Therefore, if successful, this new antibody could be used in the treatment of multiple cancers and be effective against drug-resistant cancers.

Dr Nigel Blackburn, Cancer Research UK's director of drug development, said: "We're thrilled to be working with Hummingbird to fast track such a promising new antibody, through one of the most difficult stages of drug development.

"For many people with cancer, targeted treatments can work in the short term, but drug resistance sometimes leads to the eventual return of their tumour. We hope this antibody may be able to overcome a key mechanism of drug resistance and help us find new lasting ways to tackle the disease."

Hummingbird's antibody is distinct from other anti-HER3 agents currently in development because it blocks all mechanisms through which HER3 can be activated, overcoming an intrinsic mechanism that has prevented previous HER3 therapeutics from working effectively.

The HER3 receptor is activated via a process called heterodimerisation, where HER3 combines with other proteins also linked to cancer growth, EGFR or HER2. This process can be aided by a ligand molecule called NRG1, which is at higher levels in patients with a specific genetic mutation.

When HER3 or its binding partners are overexpressed in cancer, excessive heterodimerisation can trigger tumour growth and lead to the spread of disease to other parts of the body. This process is also thought to contribute to some patient's cancers becoming resistant to common cancer drugs, such as trastuzumab (Herceptin), which is used to treat breast cancer.

The binding position of HMBD-001 is unique and it is currently the only antibody that can efficiently block HER3 activation in both the presence and absence of the ligand, NRG1.

Dr Jerome Boyd-Kirkup, chief scientific officer at Hummingbird Bioscience, said: "We are excited and privileged to be working with the deeply experienced team at Cancer Research UK to develop HMBD-001 into the clinic.

"As an emerging drug discovery company, the funding and management support that Cancer Research UK will provide allows us to progress a potentially transformative new cancer therapy into patients as quickly and as safely as possible. This support also allows Hummingbird to focus on developing more desperately needed drugs against new targets using our Rational Antibody Discovery Platform."