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Medigene-Bluebird pairing thrusts TCRs into the spotlight

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Yet another immuno-oncology approach rose to prominence today. A transatlantic deal pairing the US gene therapy favourite Bluebird Bio and resurrected German biotech Medigene will bring together their respective cell engineering expertise and T-cell receptor (TCR) technology.

The collaboration will see Medigene deliver tumour-specific receptors, which Bluebird will transfect into patients' T cells to activate an immune response. Signs of progress from the deal could show the sector an alternative to CAR-Ts, which have seen their reputation tarnished by questions about durability and a shift in emphasis by Novartis (*A day of soul-searching for CAR-T bulls, August 31, 2016*).

Immuno-oncology shift pays off for Medigene

Bluebird paid $15m up front for access to four TCRs from Medigene's platform, which Medigene built from the assets of its January 2014 takeout target, a university spin-out called Trianta Immunotherapies. Bluebird will also pay for preclinical development before assuming clinical and commercial development responsibilities.

Medigene is eligible for preclinical and commercial milestones as well as royalties. Chief operating officer Dave Lemus said co-marketing rights were not considered for this deal: "Given our relatively early involvement it didn't make sense. Could it happen in another one? Potentially yes."

Shares in Medigene rose 18% today and Bluebird was down 1%. For the German group, the first commercial deal on the TCR platform affirms that it has clinical appeal, while for Bluebird it could be taken as a sign that the company is diversifying beyond gene therapy in rare diseases and CAR-T oncology.

More targets

In the scheme of adoptive T cell therapies for cancer, Medigene is far from the lead – CAR-Ts have made it all the way to pivotal trials, while in the TCR space Adaptimmune, for one, has advanced to phase II.

The TCRs have on their side a greater number of attack points than CAR-Ts – TCRs bind to intracellular proteins presented on the cell surface, while CARs bind to surface proteins. They also seem to have greater potential in solid tumours than CAR-Ts – witness Adaptimmune's trials in sarcoma and lung and hepatocellular cancer – but are not universally applicable, owing to MHC restriction.

Medigene's own proprietary pipeline, meanwhile, is nearing some milestones of is own. An acadmic partnership of the Max Delbrück Centre for Molecular Medicine in the Helmholtz Association and Charité – Universitätsmedizin Berlin is preparing to study a candidate that targets Mage A1 in advanced multiple myeloma. This is to advance into the clinic in 2017, along with two other TCR projects targetig undisclosed antigens.

With the Bluebird-Medigene partnership the sector will perhaps get a glimpse of more TCR projects sooner, allowing for a better comparison of this approach versus CAR-T and other immuno-oncological strategies.

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