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Oxford Biomedica set to flirt with venture financing

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The UK biotech Oxford Biomedica has had its share of ups and downs over a 22-year history, and its latest chapter might be the most surprising of all. The group has revealed plans to spin out some of its early-stage projects into venture capital-backed special-purpose entities.

The decision is a clear result of the overwhelming importance of Oxford's lentiviral manufacturing business, which is backed by an all-important contract with Novartis. As such, rowing back from R&D is perfectly logical, though Oxford might find that financial returns from such an early-stage portfolio will be a long time coming.

That said, Oxford is "well advanced in talking to leading VCs", the group's chief business officer, Peter Nolan, told the press at an event at its revamped headquarters yesterday. Such a spin-out would typically involve Oxford retaining a "significant slice of equity", with new investors initially providing something akin to series A financing in return for a stake, he speculated.

Oxford also mooted the possibility of licensing deals for these assets, though realistically the chances of finding a partner are low given that they are effectively at the preclinical stage. Mr Nolan accepted that to get VC backing multiple assets would typically need to be bundled together.

Ready for a spin? Some of Oxford Biomedica's lentivirus assets

Project	Description	Note	Plan
OXB-102	Gene therapy encoding dopamine-synthesising enzymes	Tenfold more potent version of Prosavin, which failed in the clinic	Phase I/II Parkinson's disease trial designed
OXB-202	Gene therapy encoding endostatin and angiostatin	Based on Retinostat	Phase I/II wet AMD trial designed
OXB-302	Anti-5T4 CAR-T therapy	Targeting 5T4 with Trovax, a cancer vaccine approach, failed	Awaiting preclinical proof of concept in solid tumours

Oxford's chief executive, John Dawson, stressed that the company would keep a discovery platform, historically its bread and butter, but investors want it to minimise spending on clinical trials. This suggests an internal battle between R&D and contract manufacturing, but then the importance of Oxford's deal with Novartis cannot be denied.

Oxford is the sole lentivirus manufacturer for Novartis's CTL019, which is vying with Kite Pharma's KTE-C19 to be the first CAR-T therapy to make it to market. And Novartis funding has prompted Oxford to invest some £26m ($32m) in what the UK group says is now the biggest lentiviral manufacturing capability in the world.

Of course, the actual CAR-T cells are manufactured by Novartis at Morris Plains, New Jersey, for worldwide distribution (*Ash – Novartis makes its case for driving a CAR into the real world, December 5, 2016*).

Limits on internal work

Interestingly, the contract prevents Oxford from developing for itself certain CAR-T therapies, for instance any targeting CD19, it revealed yesterday. Thus while the UK biotech has been able to carve out 5T4, the target of the CAR-T asset OXB-302 above, it might not be able to do significant further internal CAR-T research.

Moreover, Novartis recently said it would use Oxford to make lentivirus for a separate, undisclosed CAR-T project, which is most likely the humanised BCMA-targeting construct MCM998.

Other Novartis CARs, such as those targeting CD123, EGFRvIII and mesothelin, still rely on the University of Pennsylvania's academic manufacturer of lentiviral material. Clearly, if any is chosen as a commercial project,

Oxford would be expected to take over as the Swiss firm’s commercial lentivirus manufacturer.

Interestingly, while Oxford aims to work towards closed-system manufacturing, which offers the highest standard of consistency and reproducibility, the lentivirus process is not a closed one. Novartis says it will file CTL019 in the US early this year, and Oxford expects to be FDA-inspected in a couple of months.

Such high ambitions draw an obvious comparison between Oxford’s humble $158m valuation and the $3.2bn market cap of its lentivirus rival Bluebird Bio. Mr Dawson puts this down largely to the fund-raising power of a US biotech; in terms of lentivirus science there is nothing Bluebird has done that Oxford has been unable to do, he insists.

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