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Deal flurry comes just in time for JP Morgan

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Innate Pharma can do little about its lead project, lirilumab, other than await Bristol-Myers Squibb's presentation of key phase II data in the second quarter, but it can hardly be expected to sit on its hands, as shown by yesterday's deal with Sanofi.

Also unwilling to sit still were a clutch of other companies with more impressive upcoming news flow, all desperate to make a splash at this week's JP Morgan conference. This explains the flurry of small oncology deals struck in the past day or two, seeing the private groups Abvitro, Tensha Therapeutics and Iomet Pharma bought out, in addition to several licensing transactions.

Roche's acquisition of Tensha for $115m up front centres on TEN-010, a lead BET bromodomain inhibitor in phase I for haematological malignancies. This mechanistic approach is an example of epigenetics – the study of molecular mechanisms that influence gene expression – which was given a new lease of life when Merck & Co bought Oncoethix in 2014 (*Merck & Co gives epigenetics a boost, December 19, 2014*).

Interestingly, however, Roche already had a stake in this game, through a separate alliance with another private biotech, Constellation Pharmaceuticals. Continuing interest could spell good news for the remaining players in this field, including Epizyme and 4SC.

Merck itself has remained active in various oncology areas, yesterday buying out Iomet, a private UK biotech focusing on IDO and TDO inhibitors, for an undisclosed amount. IDO inhibition is one of the most keenly watched mechanisms in immuno-oncology, and Iomet's scientific presentations at October's Society for the Immunotherapy of Cancer meeting might well have drawn Merck's attention.

Most lucrative

The most lucrative of the three acquisitions was the one by Juno, which yesterday paid $78m in cash plus $50m in stock to get its hands on Abvitro, a Harvard Medical School spin-out.

Abvitro's technology seeks to identify fully human binding domains for use in CAR-T as well as engineered T-cell receptor constructs. Lack of persistence of the current CARs is a major problem, and substituting murine binding domains with humanised or fully human ones is one possible way to avoid immune system rejection (*Juno and Kite follow Novartis to make CAR-T human, January 8, 2016*).

The pressure to make some kind of impression on JP Morgan is intense, and venture financiers will cheer biopharma's continuing interest in private companies. This was also evidenced in one of the licensing deals Innate struck in the space of 24 hours, bringing in a new immune checkpoint target from a virtually unknown private French biotech, Orega.

Innate's tie-up saw Sanofi endorse an early pipeline asset – NKp46, a natural killer (NK) cell activating receptor to which Innate holds rights, but about which it had said little until now. NK cell biology forms the group's central focus, though other targets, such as the inhibitory checkpoints KIR and NKG2A, over which Innate holds key patents, are more advanced.

Bispecific tech

Sanofi and Innate are now to focus on developing two bispecific antibodies. One arm of such a bispecific would be expected to bind to an as yet undisclosed tumour antigen, while the other would bind NKp46, thus bringing NK and cancer cells into close proximity and hopefully stimulating tumour destruction.

Innate's collaboration with Orega Biotech, a group that appears to focus solely on CD39, is a bet on this recently discovered immune system checkpoint. This protein, also known as ENTPD1, is normally found on T regulatory cells, a type of lymphocyte that modulates immune response.

Its presence on cancer cells is thought to promote immunosuppression, helping the tumour evade the immune system, hence the rationale behind its inhibition. Innate and Orega collaborated on some early work, and the formal licensing deal gives Innate global rights to the anti-CD39 programme. There appear to be no other commercial entities working on the CD39 antigen.

BiolineRx and JHL Biotech have a preclinical project looking at BL-9020, an anti-NKp46 MAb against type 1 diabetes, based on the research finding that NKp46 is involved in destruction of pancreatic beta cells. A more direct comparator with the Innate/Sanofi NKp46 project might be Affimed's AFM13, a bispecific construct targeting the activating NK receptor CD16A, in phase II for Hodgkin's lymphoma.

Innate's central focus remains on lirilumab, an anti-KIR MAb, and its Effikir study, which recently passed a fifth monitoring board assessment. One dosing arm of Effikir having been discontinued owing to futility has pushed readout from 2015 into the second quarter of 2016, and this is now Innate's most important stock trigger.

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