

Genome editing attracts big bucks from Bayer and Baxalta



[Jacob Plieth](#)

The market might have turned sour, but one area still attracting significant financing is genome editing, as shown last week by two companies that do not have a cell therapy presence to speak of: Bayer and Baxalta.

Bayer has been conspicuous by its absence in immuno-oncology, but is now seeking to rectify matters, partly through a planned \$35m investment in Crispr Therapeutics, a player in the hot technology called Crispr/Cas. And Baxalta has made an even bigger bet – \$105m up front – on a rival private biotech, Precision Biosciences.

Baxalta has, of course, agreed to be taken out by Shire, but curiously this has not stopped it from continuing on the business development front. And oncology was until very recently not a focus for Shire, either.

But in initially trying to fight off the takeover Baxalta added to its cancer pipeline through small deals, and when the takeover was finally hammered out this was a challenge that Shire accepted ([CTI's déjà vu is now Shire's problem](#), February 9, 2016).

Missed the boat

Bayer, on the other hand, has an oncology presence, but at last week's financial press conference its head of innovation, Kemal Malik, admitted that it had missed the boat on the first wave of PD-1/PD-L1-targeting products, saying: "It's fair to say we haven't participated, but we wish we had."

Its Crispr investment dates back to a joint venture signed in December, under which the companies are to investigate Crispr/Cas in blood disorders, blindness and heart disease. The \$35m equity stake the German group plans to buy in Crispr will thus put it squarely in the human therapeutics space – its crop science division is separately also developing Crispr/Cas.

Bayer's interest comes hot on the heels of two recent Crispr/Cas successes: Intellia Therapeutics' \$70m series B round and Editas Medicines' \$98m Nasdaq IPO. This is not bad for a relatively new technology, and for Editas to have floated in the face of a force 10 biotech bear market gale is remarkable.

Crispr/Cas is one of several novel approaches to editing the genome – precisely deleting and inserting certain sequences. Others include zinc fingers, an approach being used by Sangamo, and Talen nucleases, as pioneered by Collectis.

All are especially popular at present because of their potential to transform the adoptive cell therapy treatment of cancer. For instance, some degree of genome editing expertise is needed to express engineered T-cell receptors, and additional know-how might be needed to delete genes to prevent allo-reactivity and/or T-cell fratricide in the event of targeting a T-cell antigen.

Litigation?

Indeed, CAR-T is the stated aim of [last week's Baxalta/Precision tie-up](#). Precision's technology focuses on Arcus nucleases, and is a variation on the Talen nuclease theme.

Such minutiae are vitally important given the potential for litigation in this burgeoning field. A year ago [Collectis was issued with an unusually broad US patent](#) covering Talen meganucleases, though competitors subsequently reassured investors that their approaches lay outside this; Precision, for instance, is focusing on a synthetic nuclease.

If anything it is surprising that Bayer has so far not made more of its crop science genetic modification expertise in seeking human therapeutic applications. For now Bayer has committed to investing at least \$300m in R&D over the next five years, and bankers might look to the Crispr tie-up as a sign that the German group is becoming less conservative, and might even do more acquisitions.

In fact, its outgoing chief executive, Marijn Dekkers, stated last week: "It's not a bad time to do M&A; interest rates are so low." But he stressed that most of the hard work comes from digesting the target companies,

perhaps showing a lack of appetite for a big deal.

Of course, while Mr Dekkers' successor, Werner Baumann, might have other ideas, with Bayer's fourth quarter and 2016 guidance disappointing, it is clear that the new chief exec has a big job on his hands.

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