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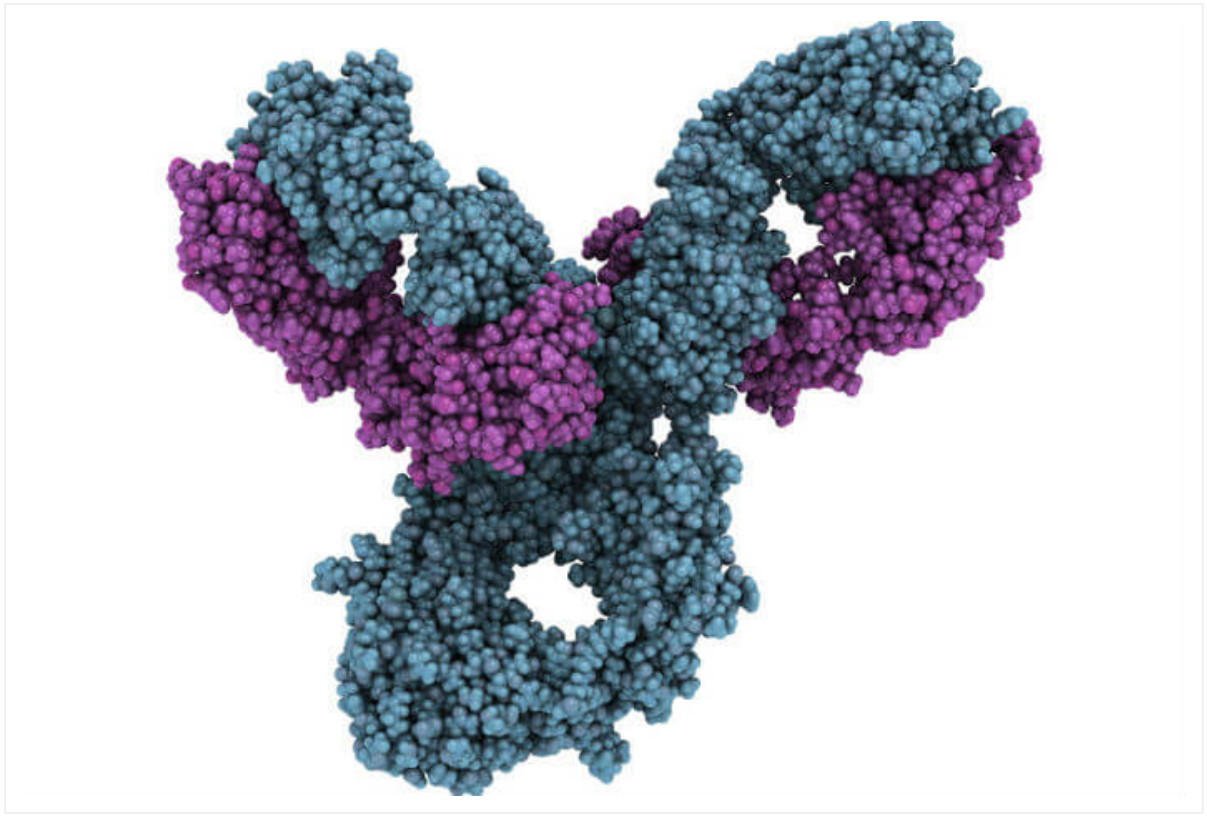
Keytruda success a crowning moment for cancer immunotherapies, but are more on their way?



By Guy Martin

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The accelerated US Food and Drug Administration (FDA) approval of the first ever chemotherapy and immuno-oncology (I-O) combination as a first-line therapy in lung cancer last month is described by Frédéric Triebel, the man nicknamed the ‘grandfather of I-O’, as “a moment that changes everything”.

Merck & Co’s Keytruda (pembrolizumab) won this race on showing an improved response in combination with chemotherapy, sending the company's share price surging up by 4% on the news, with analysts predicting that Keytruda will generate nearly $7 billion in sales by 2020[1].

By then the total immuno-oncology market will be worth more than $19 billion, and by 2024 this will have risen to $34 billion, predicts the research and consulting firm GlobalData.

“I-O will be the backbone of oncology treatment,” says Dr Triebel, who is best known for discovering the LAG3 immune control mechanism in 1990.

“For us, 2017 is the year of immunotherapy and chemotherapy, yet nobody was talking about this approach two years ago – now everybody is.”

Clinician-led change

The proof and acceptance that the combined I-O and chemotherapy mechanisms work together is what made this moment so important, he says, and companies are also investigating using different I-O drugs together. While researchers have been working on such concepts for decades, Dr Triebel believes that the change in recent years to treatments being tested in patients was prompted initially by clinicians looking at pathology slides of tumors and recognizing their potential.

Of course, risk-taking biotechs and adventurous big pharma companies have since started taking these therapeutics into big trials and towards market, with significant portfolios at Swiss giant Novartis (NOVN: VX), the USA’s Bristol-Myers Squibb (NYSE: BMY) and Amgen (Nasdaq: AMGN), and Anglo-Swedish AstraZeneca (LSE: AZN), among others. Venture firms have been active too[2].

About 70% of big pharma assets in this area come from external sources, usually innovative biotechs, says Marc Voigt, chief executive of an Australian illustration of this, Prima BioMed (ASX: PRR), where Dr Triebel is chief scientific officer. Its partners include Novartis and UK pharma major GlaxoSmithKline (LSE: GSK).

“Big pharma externalize the risk,” says Mr Voigt. “They develop different products and have a lot of different partnering agreements – Merck & Co has more than 200 agreements around different combinations.”

The licensing deals, mergers and acquisitions, and excitement at events such as ASCO in the last couple of years, have of course come in combination with the impressive data that clinical trials are yielding, notes Sean Mackay, the chief executive of IsoPlexis. Its partners include the cancer immunotherapy specialist, Kite Pharma (Nasdaq: KITE).

“The reason there is such a high potential is rooted in the data,” Mr Mackay says. “Some of the core problems that existed in previous cancer therapies were of course the lack of durability and the level of toxicity, so if you think about what these therapies are doing, you're trying to make it so these immune cells in the body are durable, with the promise of lower toxicity, which I think is exciting.”

Better biomarkers a key feature

But Mr Mackay adds: “We still see that there are a couple of limiting factors in the really broad application of these cancer immunotherapies in every cancer indication. It basically comes down to some elements of low-response rates in patients and higher degrees of immune-related toxicity.”

He says that advances in biomarker technologies could be key to predicting, and gaining an innate understanding of, how certain patients will respond to the therapies and to break them down into more specific data subsets, helping drugmakers and clinicians edge towards personalized solutions.

The fact that such advances are happening, and the healthy flow of money around cancer immunotherapies, give experts like Mr Mackay and Dr Triebel confidence that these therapies will deliver the results that Keytruda is an early indicator of.

Mr Mackay says: “There is a tremendous amount of funding going into these areas, there are a lot of tests going on, clnical trials in innovative areas - as we improve our understanding, our targeting of some of these cancers, we’re seeing more and more advanced mechanisms of essentially creating little homing missiles that are more aggressive.

“The idea of being able to put different types of on-switches and off-switches, co-stimulatory targets, these types of things on one cell, that's very exciting for being able to eradicate these very difficult cancers.”

References

1 Merck Can't Say How Good its Good News Is (2017). Retrieved June 6, 2017, from the Bloomberg website: https://www.bloomberg.com/gadfly/articles/2017-05-11/merck-keytruda-combination-approval-good-news-but-how-good

2 Immuno-Oncology: Scratching The Surface (2017). Retrieved June 6, 2017, from the Forbes website: https://www.forbes.com/sites/brucebooth/2015/01/08/immuno-oncology-scratching-the-surface

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