Evaluate Vantage

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Moderna reminds the markets of biotech's dual purpose

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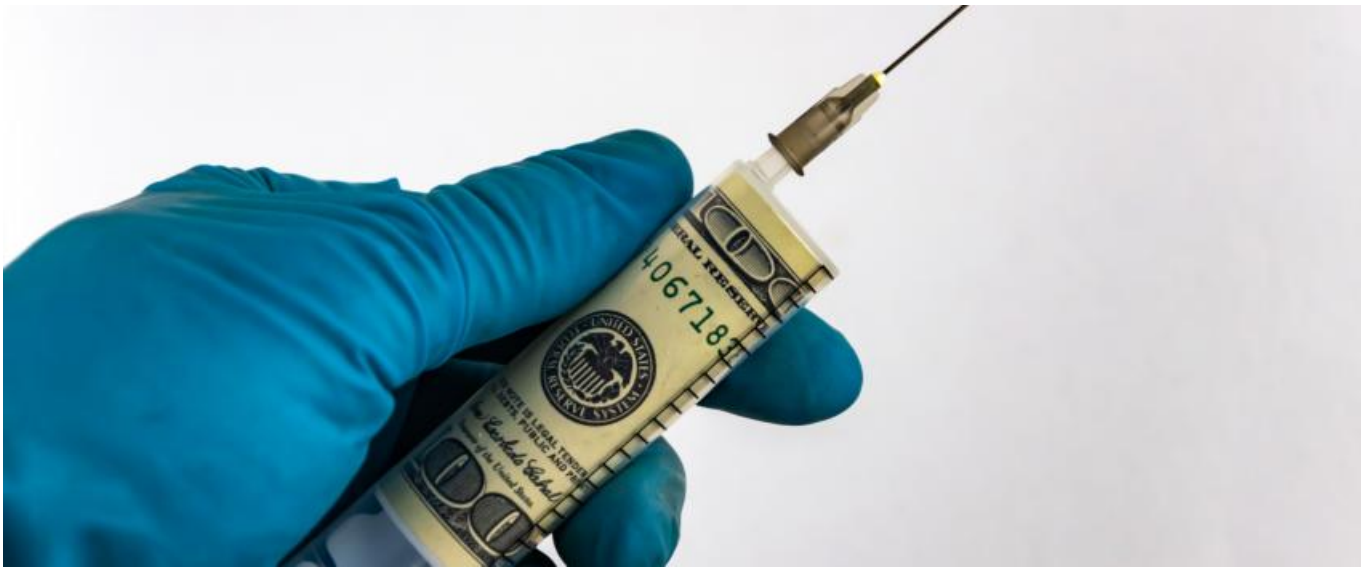


On the back of coronavirus mania, Moderna, a $30bn company heavily funded by the US government, taps investors for $1.3bn.

If biotech exists to develop new drugs then its second, equally important, purpose is to raise money. Moreover, money is raised not when it is needed but whenever this is possible.

A case in point is Moderna, a company whose valuation ballooned 20% yesterday to just short of $30bn on the back of promising early Covid-19 vaccine data in eight study volunteers. Though the programme is heavily financed by the US taxpayer, and Moderna already has $1.7bn in the bank, an equity raise – to bring in a further $1.3bn – has swiftly followed.

Of course, it would be unfair to criticise management for taking the money investors are throwing at the company, and indeed it would be strange for a biotech not to follow a 20% stock rise with a secondary offering. But the involvement of US government funding adds an uncomfortable dimension to the developments.

Though it is not clear exactly how much the taxpayer has provided so far to develop Moderna's Covid-19 vaccine mRNA-1273, April's contract with the US Biomedical Advanced Research and Development Authority was for "up to $483m ... to fund the advancement of mRNA-1273 to FDA licensure".

And the trial that has generated so much excitement is not even sponsored by the company but by the US NIAID.

Justified enthusiasm?

Is the excitement justified? Possibly. 45 volunteers have received mRNA-1273 at double 25µg or 100µg doses, or a single 250µg dose, according to a press release, and all are said to have seroconverted after two weeks.

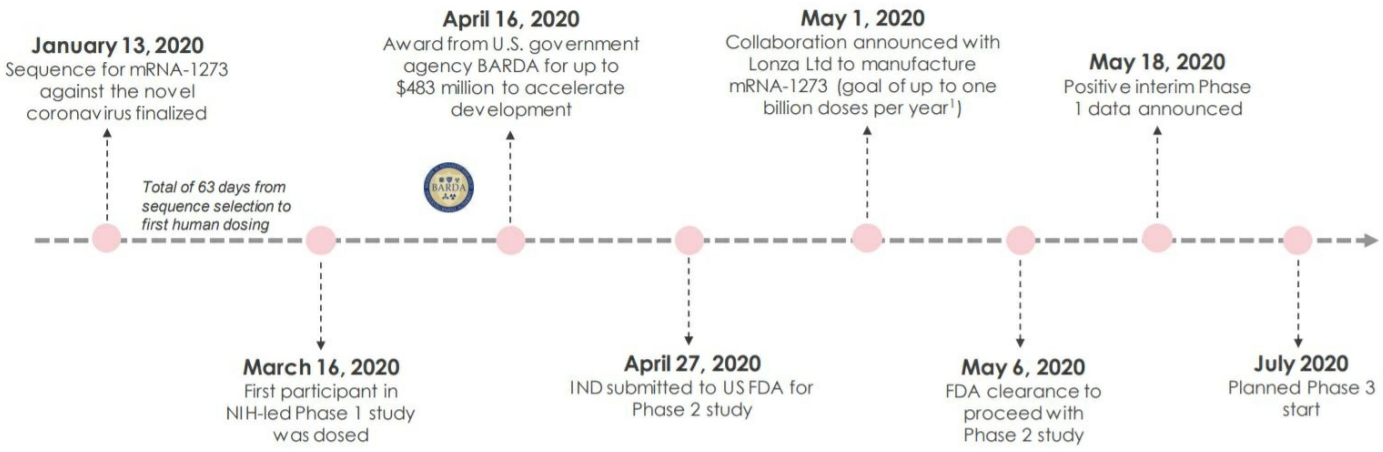
This is obviously promising, as it means that all subjects are producing binding antibodies against Covid-19. Moreover, the first 25 subjects in the 25µg and 100µg groups are all producing levels of binding antibodies equivalent to or higher than those seen in the blood of people who have recovered from Covid-19.

However, the real test of a vaccine's activity is in its ability to elicit neutralising antibodies – those that are capable not only of binding to virus but also interfering with its ability to infect a cell. Here data are available in only eight subjects (also in 25µg and 100µg groups), and again the news is good: in all eight mRNA-1273 has

elicited neutralising antibodies.

There were no grade 4 adverse events at all, and grade 3 toxicity amounted to injection site redness in a 100µg subject and three events in those on 250µg. However, this highest dose is being dropped: Moderna's initial phase II study was to test 50µg and 250µg doses, with 50µg being the commercial one, but yesterday the phase II plan changed to 50µg and 100µg.

An accelerated development plan for mRNA-1273



Source: Moderna. Note: phase II (starting in Q2 2020) will test 25µg & 100µg doses in 600 healthy volunteers; the phase III protocol has yet to be finalised.

In the big picture Moderna seems to have left behind two Covid-19 vaccine rivals, Sinovac and University of Oxford/Astrazeneca, which have generated controversy over data that are only preclinical. As such, the main criticism of Moderna's positive dataset is that it is extremely small, and cautious investors might fret over what the company's valuation now prices in.

At least further mRNA-1273 trials will be funded by Moderna. But it remains a relevant question why the US saw it fit to make a significant award of taxpayer money to an entity that was evidently already swimming in cash.

One view might be that the funding will give the US government part-ownership of a resulting vaccine, but the precedent set by Car-T therapy is that this is fanciful thinking. Perhaps it was just tacit recognition of the fact that historically vaccine development has ended up loss-making and value-destroying for industry.

Moderna's subsequent share price movement, and ability to raise huge amounts of cash, suggest that this is not always the case.