

The COVID-19 pandemic has reinforced the strength of the innovative life sciences sector

The COVID-19 pandemic propelled life sciences to the forefront of global events. It has demonstrated the rapid pace of innovation possible. Strong fundamentals in the UK support the continued growth of the life sciences sector.



Continued strong growth in global clinical trial pipeline:

13%
Increase in number of registered clinical trials in 2020 v 2019¹

Continued strength of UK life sciences industry

4/10
World's leading life sciences and medicine universities are in Europe²

£81bn
In annual turnover in 2019³

256k
Employed 256,100 people in the UK in 2019⁴

12%
Of global trials in cell and gene therapies take place in the UK⁵

18%
Of the world's top life science publications published in the UK⁶

50%
COVID-19 Genomics UK has achieved rapid sequencing of over 50% of all the known SARS-CoV-2 genomes in the world⁷

Innovation in clinical trials accelerated

The COVID-19 pandemic has required rapid acceleration in the processes of discovery, development and regulatory approval to enable innovation to reach patients. The UK regulator, the Medicines and Healthcare products Regulatory Agency (MHRA), is a sophisticated regulator and has overseen the safe and rapid approval of vaccines. Drug development timelines have been condensed and adaptive trial designs have enabled modifications in studies after they have begun. Regulators such as the Food and Drug Administration (FDA) and European Medicines

Agency (EMA) have issued guidance in support of virtual trials, with this flexible approach following on from a pre-existing trend acknowledging the benefits of real-world evidence (RWE) in clinical development⁸. The logistical and clinical benefits of either fully or partially virtual trials are varied; participants can be drawn from a wider geographic area which does not need to be dictated by the location of infrastructure, costs can be more carefully managed, whilst patients can react to treatments in an environment which more closely resembles their normal lives.

An agile approach to clinical trials

The COVID RECOVERY trial, launched in March 2020 and led by the University of Oxford, is the world's largest trial of potential COVID-19 treatments. The study has been able to scale at speed and quickly rotate through unviable treatment options due to the close collaboration between the broad range of organisations involved, as well as a focus on simplification to minimise the barriers to patient inclusion, and innovative use of the NHS DigiTrials platform to log patient data.

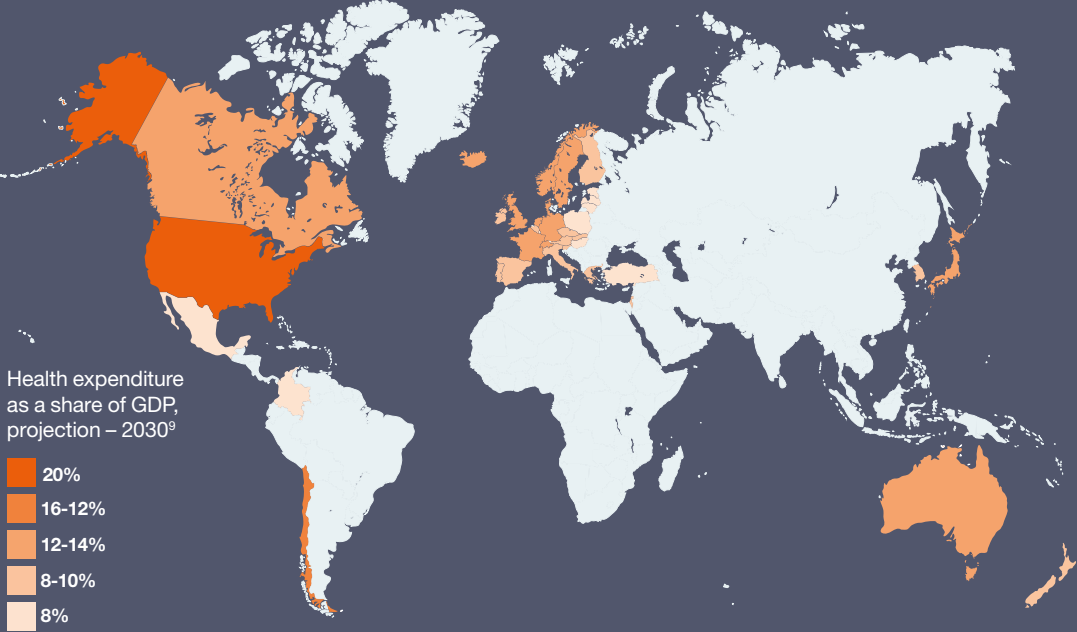


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Poised for continued growth post-COVID-19

The life sciences sector has attracted increased capital flows over the last three years, with the value creation opportunity presented by global macro trends encouraging investment in the sector.

With data suggesting that healthcare spending will continue to increase beyond the rate of economic growth, the global life sciences sector is well positioned to be an attractive proposition for investment over the medium term.



£2.8bn
Raised in UK biotech in 2020⁹

81m
People expected to be added per year to the global population by 2023¹⁰

3%
Global expected GDP CAGR to 2024¹¹

3.9%
Global expected healthcare spending CAGR to 2024¹¹

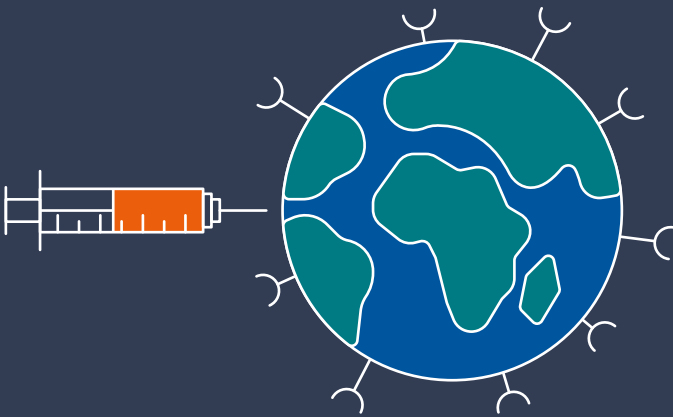
mRNA vaccines further proof of coming-of-age status of Third Wave technologies

Messenger RNA (mRNA) is a technology at the forefront of the Third Wave of medicine (see next page).

Whilst mRNA research has been ongoing for decades, it is the approval of mRNA COVID-19 vaccines in 2020 which has seen this type of therapy propelled into the public consciousness.

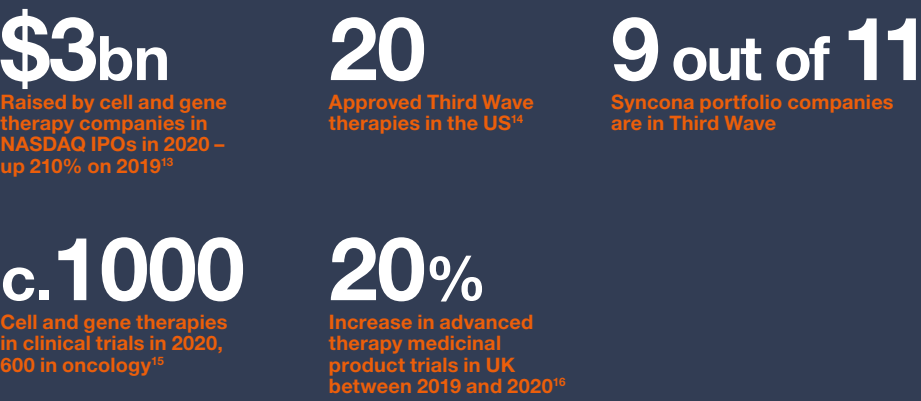
When introduced to the body, mRNA vaccines induce the creation of proteins, enabling the body to launch an immune response against a given virus. Two of the more prominent approved COVID-19 vaccines, from Pfizer and Moderna, use this technology, with both illustrating high levels of efficacy.

As well as the increasing body of evidence which shows positive outcomes for patients, mRNA treatments also have significant benefits from a manufacturing perspective. The cell-free process of production reduces complexity significantly, whilst clinical batches can be generated within a very short period of a sequence encoding the immunogen being available. Research is ongoing into mRNA treatments for HIV, sickle cell disease and cancer, with the funding and research in this area which has been accelerated by COVID-19 likely to lead to further breakthroughs in treatments for other illnesses.

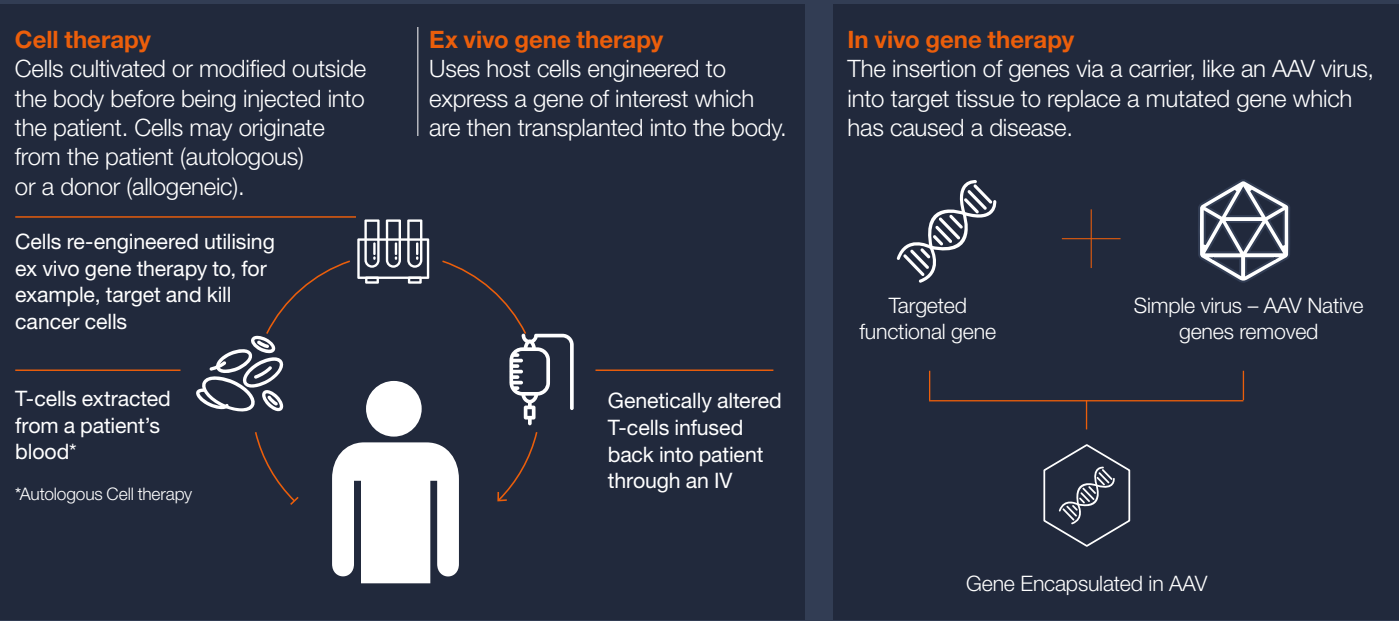


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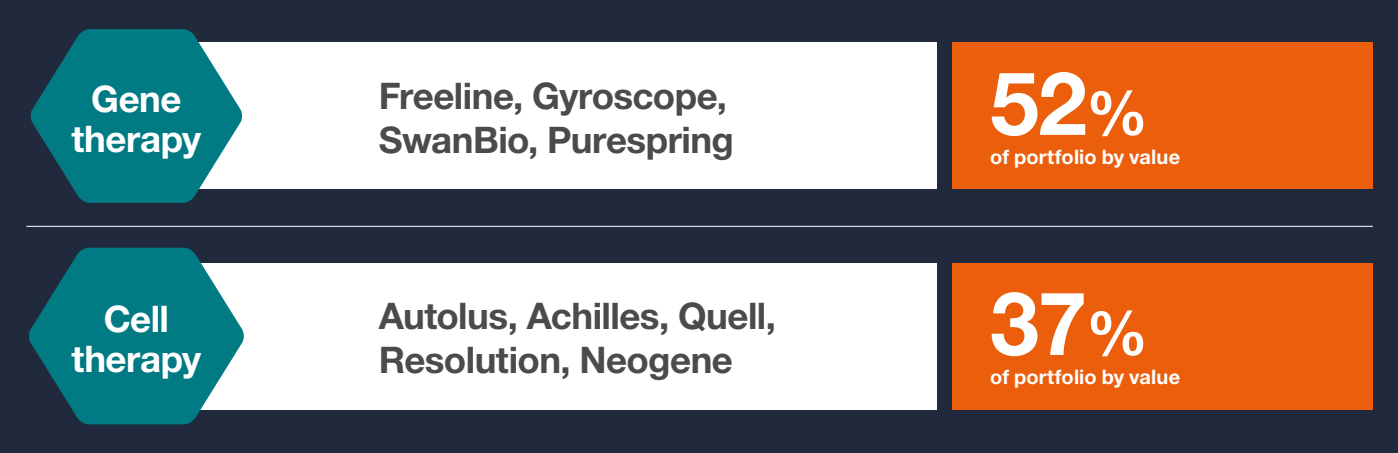
Established leadership in Third Wave therapies



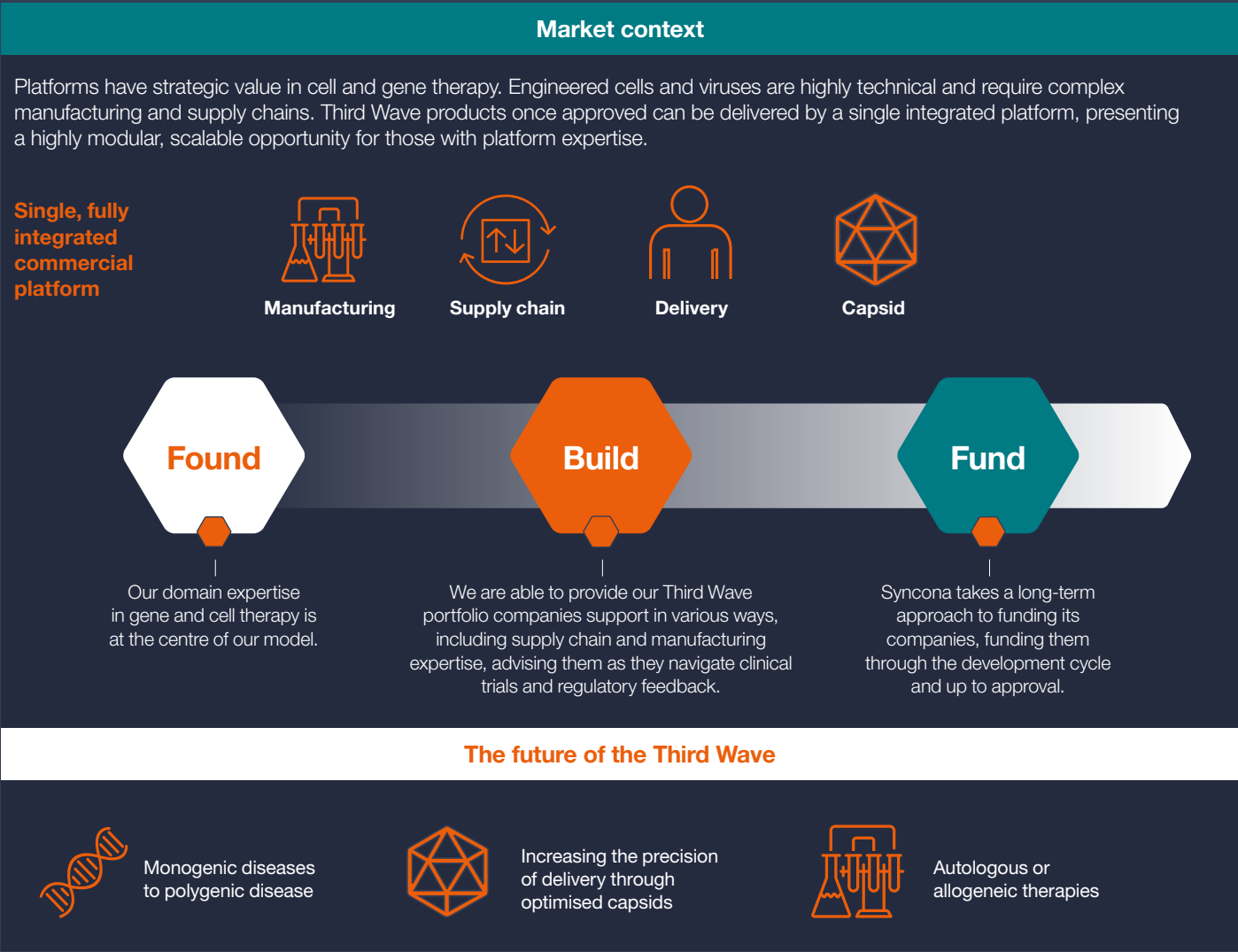
What is cell and gene therapy?



Syncona has deep domain expertise in Third Wave technologies



Syncona’s model is complementary to Third Wave companies



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