The Past, Present & Future of mRNA

mRNA activity has undergone a period of exponential growth since its successful utilization to combat the COVID-19 pandemic. In this infographic – brought to you by Citeline, in collaboration with TriLink BioTechnologies – we review the growth of the mRNA market and what we can expect in the future.

1961
mRNA is discovered

1969
Evidence of in-vitro translation of mRNA

The Past
(pre-2020)

1992
First use of mRNA as a therapeutic molecule

Limited activity beyond a couple of players in the mRNA market, with stability concerns swaying sponsors to focus more other advanced modalities, such as gene therapy.

1995
First mRNA-focused pharma company founded (Merix Biosciences)

2015
The first in-human dose of an mRNA vaccine (Moderna: mRNA-1440)

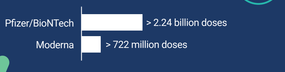
2017
First human dose of multivalent vaccine (Moderna: mRNA-1653)

The Present
(2020-2022)

There is now renewed interest in the potential of mRNA to treat and prevent other diseases outside COVID-19.

December 2020
Pfizer and BioNTech's Comirnaty mRNA vaccine is granted emergency authorization (EUA) by the FDA and EMA – the first to be available in the fight against COVID-19 – followed by Moderna's Spikevax shortly afterwards

December 2022
According to Our World In Data,
~3 billion mRNA vaccines
have been administered worldwide



The Future
(2023 and beyond)

Subject matter experts had the following predictions for mRNA utilization:

- Potential for improved lipids and payloads to solve viability problems for mRNA in chronic diseases and administration
- mRNA could replace certain modalities such as protein therapeutics and mAbs due to its potential to address undruggable targets
- mRNA therapeutics will be able to address intracellular targets
- Pipeline expansion into vaccines treating more indications, notably within oncology and infectious diseases, including malaria and HIV
- Combined therapies such as mRNA and antibody treatments will rise
- Demand for COVID-19 booster vaccines will continue as we move from pandemic to endemic

This potential will lead to increased capacity demand for the manufacture of mRNA treatments. Partnerships with specialist contract development and manufacturing organizations (CDMOs) will be critical to manage this growth and ensure patients can access mRNA vaccines and therapies.

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TriLink BioTechnologies empowers research, diagnostic, vaccine, and therapeutic programs with critical reagents, expert scientific consultation, and flexible manufacturing support.

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