How soon can we respond to COVID-19?

Blog Post

The development of a vaccine or an antiviral treatment is a long and complex process. So why are we hearing that a vaccine against COVID-19 may be ready in a year from now, or even sooner?

Typical development of a vaccine or antiviral

It usually takes anything from 10-15 years to fully develop a vaccine or antiviral and bring it to market, but what does that process entail?

The Research & Preclinical phase involves identifying active substances or approaches to dealing with a virus or disease. For biotechnology companies, this can involve using human genes and cells. By exploring our genetics, biotechnology can find workable materials which are used to develop treatments. The Research & Preclinical stage involves preparing a treatment for lab testing to gain preliminary insights into potential efficacy. This stage typically takes 2 years.

Clinical Trials are the longest part of the development process and take on average about 8 years to complete. In the case of viruses, the late clinical trial stages are particularly important to ensure that treatments do not make people sicker than the virus would. This is because vaccines rely on introducing extremely low dosages of a virus into our immune systems, so that our antibodies can develop defence mechanisms. Antivirals are treatments often developed using innovative biotechnologies. These could trigger immediate immune reactions in a COVID-19 infected patient which attack the virus directly, as opposed to vaccines that need to wait for a protective response to be triggered.

Market Authorisation has to be sought for a treatment in the EU. The European Medicines Agency generally take 210 days to issue a recommendation for market authorisation to the European Commission. There is also a fast-track process that can reduce this timeframe to 150 days. For an authorised treatment to become available to patients, treatment developers need to reach individual agreements with each EU Member State, a process which can take several years in the EU, and can vary greatly depending of the country.

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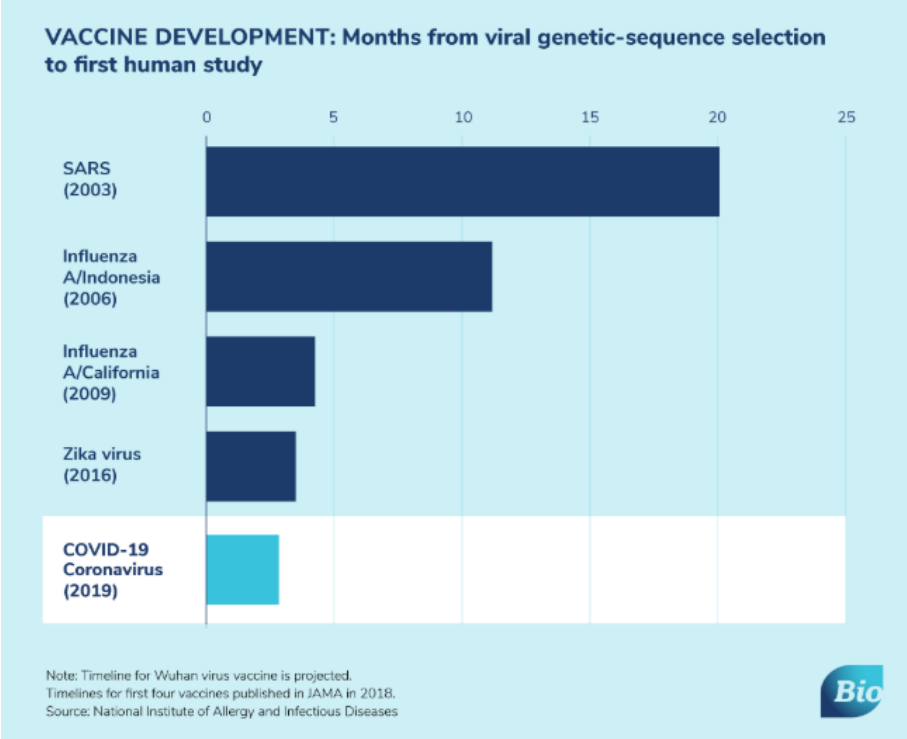
Developing a vaccine or an antiviral for the coronavirus

The current strain of the coronavirus, COVID-19 (COronaVIrus Disease 2019), is closely related to previous coronavirus strains, such as SARS and MERS. When the new coronavirus was identified in China in January, scientists around the world were ready to respond and the entire genome of the virus was published within days. In fact, COVID-19 shares 80-90% of its genetic material with SARS. Nevertheless, there are still gaps in our knowledge of how coronaviruses work in general and what makes the new coronavirus so special.

Biotechnology companies in particular have responded faster than ever in comparison to any emerging health threat in the past. See our blog post here for more.



Because of the wealth of existing information already available, the Research and Preclinical development stage for the coronavirus has been intensively accelerated and existing research, diagnostics, and treatments have been recycled and repurposed.

Last week, initial clinical trials began on potential treatments for the coronavirus. Later trial phases will also likely be expedited. Potential vaccines from Johnson & Johnson and antivirals from Gilead provide promising examples which may quickly lead to novel treatments against the coronavirus. The European Medicines Agency recently gave recommendations on the use of Gilead's Remdesivir as part of compassionate use programmes in the EU, i.e. giving patients with a life-threatening disease and no available treatment options access to treatments that are still under development.

Whether having a vaccine or a novel treatment is possible in 12-18 months still needs to be confirmed, but no effort is being spared by the biotechnology industry to find solutions. Scientists, regulators, and governments are working together to ensure the solidarity and collaboration needed from all sides in this fight against COVID-19.

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About EuropaBio

EuropaBio, the European Association for Bioindustries, promotes an innovative and dynamic European biotechnology industry. EuropaBio and its members are committed to the socially responsible use of biotechnology to improve quality of life, to prevent, diagnose, treat and cure diseases, to improve the quality and quantity of food and feedstuffs and to move towards a biobased and zero-waste economy. EuropaBio represents 75 corporate members and 17 national biotechnology associations and bioregions.

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