

COVID-19

EU research and innovation supporting vaccine development for COVID-19



17 June 2020
#Coronavirus



“Decades of investment in research and innovation give us a better chance of developing a coronavirus vaccine quickly. But we must further boost investments in technologies and research infrastructures, and enhance coordination of European efforts. This will allow us not only to address the current crisis rapidly and effectively, but also to better prepare for future pandemics.”

Mariya Gabriel, Commissioner for Innovation, Research, Culture, Education and Youth



EU quickly mobilised support for research and innovation to address the COVID 19 outbreak

Today, the Commission is proposing an [EU strategy](#) to accelerate the development, manufacturing, and deployment of vaccines against COVID-19, where research and innovation can contribute greatly. The EU Strategy for COVID-19 vaccines lays down how the EU and Member States together will accelerate the development and manufacturing of vaccines against COVID-19. The strategy rests on two pillars: providing financial support to de-risk developers' investments and adapting the regulatory framework to the current urgency.

In the domain of Research and Innovation, the European Union reacted immediately to the COVID-19 outbreak with several rapid actions. It has pledged to invest **€1 billion from Horizon 2020**, the EU programme for research and innovation (2014-2020), under the [Coronavirus Global Response initiative](#), of which at least €350 million are to support coronavirus vaccine development. These actions include:

- Amongst [18 new research and innovation projects](#) funded within weeks of the outbreak through a special emergency call for expressions of interest (total €48.2 million), 2 projects focused on developing safe and effective vaccines: [OPENCORONA](#) and [Prevent-nCoV](#).





- A [second expression of interest for research and innovation actions](#) was launched end April with some 450 proposals received in response, of which many deal with vaccine manufacturing technologies and public health vaccination strategies.

- **The European Innovation Council (EIC) Accelerator Pilot** [invested](#) €148 million in 36 companies, highlighting 2 vaccine projects; the RapCo-19 Rapid COVID-19 Passive Therapy Response Platform and the OSIVAX multi-season influenza vaccine.

- **Boosting of EIB financial instruments with an additional €400 million** of Horizon 2020 funding dedicated exclusively to combatting COVID-19. This funding aims to counter the risks to companies inherent in the high-stakes endeavour of coronavirus vaccine development.

Two EU-backed, large EIB funding agreements to promising European biotech firms were announced:



- > On 11 June, the EIB [concluded](#) a **€100 million debt financing agreement with BioNTech** to support the development of BNT162, the company's COVID-19 vaccine programme. BioNTech became the first EU company to begin clinical testing.

- > On 23 April, the EIB Board [approved](#) a **€75 million debt financing agreement with CureVac**, a highly innovative European vaccine developer, to scale up development and production of a vaccine against the coronavirus.

Both BioNTech and CureVac companies are developing mRNA vaccines, which consist of genetic material, called messenger RNA that provides instructions for a human cell to make proteins of the virus. The proteins activate the body's immune response which could prevent infection.



EU investments for the next generation of vaccines

Research and innovation projects aim to speed up vaccine development, which usually takes more than 10 years and has a high risk of failure. European projects (e.g. [EAVI2020](#), [EHVA](#), [TBVAC2020](#), [Rabyd-vax](#)) are developing and making use of a wide range of technologies (DNA, RNA and viral vectors) to expand vaccine candidate pipelines. The [ADITEC](#) and [OptiMalVax](#) are among projects developing new immunisation technologies and taking these forward in clinical trials to make vaccines more effective – also for unmet needs of the elderly and young.



Promising results

[Prevent-nCoV](#): On 9 June, EU-funded researchers from the University of Copenhagen announced their vaccine against COVID-19 shows [promising results](#). It passed tests in mice and they hope to commence clinical trials before the end of the year.





Building on 20 years of EU investment in vaccine research and innovation

In addition to the COVID-19 investment, through H2020, so far over **€650 million** has been invested in vaccine and vaccination research and innovation also building on efforts from previous programmes.

- The EU has supported the development and selection of the most promising vaccine candidates **against HIV, TB and malaria** as well as in the development of vaccines against several **neglected infectious diseases**. It was at the forefront for the fast-track development of vaccines against more recent threats such as **Ebola, Zika, and now the coronavirus**.
- **Vaccine research is supported through different ways:** collaborative research, EDCTP, IMI, research infrastructures, ERC and EIC.



Frontier research efforts

Vincenzo Cerullo's ERC projects '[PeptiCRAD](#)' & '[PeptiChip](#)' developed new technologies for novel vaccine candidates for COVID-19 (prophylactic and therapeutic). His spin-off ValoTherapeutics makes these technologies available commercially.

- A number of existing platforms or mechanisms at European and international level are also mobilising efforts to support COVID-19 vaccine research more generally; [the European Virus Archive](#), [TRANSVAC2](#), European infrastructure for translational medicine ([EATRIS](#)), and European Clinical Research Infrastructure Network ([ECRIN](#)).
- The Commission, together with the Member States, supports the implementation of large-scale, multi-centric clinical trials across Europe. An EU-wide clinical trials network will assure the speed, scope and solidarity that are the driving forces of the EU response to the pandemic. It is anticipated that the network will also be open to the participation of the pharmaceutical industry, SMEs and public institutions to conduct vaccine trials.
- The [COVID-19 Data Portal](#) was launched in April 2020 to bring together datasets for sharing and analysis in an effort to accelerate coronavirus research. Researchers can upload, access and analyse COVID-19 related reference data and specialist datasets.
- The Coalition for Epidemic Preparedness Innovations (CEPI), an international initiative with European input from its inception, has received a total of €136 million from [Horizon 2020](#), **of which € 100 million is earmarked** for vaccine development and trials. It combines a strong focus on product development with a competitive element to ensure that only **the most promising vaccine candidates** get support.

Coronavirus research and innovation

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