Sars-CoV-2 vaccine could be approved shortly

How safe are RNA technologies?

24 November 2020 / Sars-CoV-2 vaccines based on mRNA technology could be approved very soon. It would be the first mRNA vaccine to be approved for use in humans.

In biology, mRNA is a molecule used by living cells to translate DNA into proteins. The new mRNA-based vaccine is based on this principle; mRNA molecules that can be translated into a viral surface protein are produced in the laboratory and then injected. The aim is that the cells produce specific proteins which can be used by the immune system as a template to build up immunity to the virus.

The strategy behind the vaccine is to imitate a coronavirus infection which normally introduces RNA into the host cells and thus enforces the production of new viruses. However, in the case of the vaccine, only a segment of viral RNA is used, which does not enable the production of the whole (infectious) virus. Testbiotech does not believe that this results in any genetic modification in the genome of the individuals who are vaccinated.

Testbiotech is not in a position to judge the safety of the new vaccines, which come with a high level of economic, political and societal expectation. There are no virologists or vaccine experts working at Testbiotech. Scientists have, as yet, very little experience with mRNA vaccines and the risks need to be assessed very carefully. Testbiotech expects the European authorities to be aware of this challenge and of their responsibilities.

Testbiotech is however concerned that the technologies used in the synthesis of viral RNA or DNA for the purpose of research can also be used for production of biological weapons. Such technical progress facilitates intentional misuse. Testbiotech has for several years been demanding strict international regulation of laboratories capable of synthesising relevant RNA or DNA sequences.

Furthermore, RNA molecules are extremely diverse and can be used in various biotechnological applications. Testbiotech therefore concludes that even if mRNA is applied successfully as a vaccine, no general conclusions can be drawn on the safety of any other applications of RNA technologies, e.g. as applied in honeybees or transgenic plants. A recent report commissioned by the European Food Safety Agency (EFSA) shows that there are many open questions in regard to applications of so-called ‘non coding small’ (regulatory) RNA and the risks they pose for humans and the environment.

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Further information: World Health Organisation (WHO) on the development of vaccines against Sars-CoV-2 [2]
Latest from Testbiotech on the corona pandemia [3]
Testbiotech on transgenic maize MON87411 [4]
Testbiotech on genetic engineering of gut bacteria in honeybees [5]
Report of EFSA on risks of ‘non coding small’ RNA [6]

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[1] mailto:info@testbiotech.org [2] http://www.who.int/publications/m/item/draft-landscape-of-

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