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RNA-based genetic vaccines against COVID-19 do not contain natural mRNA, but modified mRNA (modRNA) instead

The COVID-19 vaccines manufactured by Pfizer/BioNTech and Moderna contain modified mRNA, or modRNA for short, packaged in lipid nanoparticles. These units function like Trojan horses, smuggling foreign genetic information into body cells, forcing these to produce viral spike proteins. The Paul Ehrlich Institute defines this new class of vaccines as «genetic vaccines» (1). Nevertheless, the political narrative continues to cling to the term «mRNA vaccine», intentionally creating a false impression of safety within the public. This article uses known scientific facts to show that natural mRNA and synthetic modRNA functionally behave like two different molecules. By the end of this article, it should be clear to every reader: «If you cannot tell the difference between modRNA and mRNA, you cannot tell the difference between a tiger and a domestic cat either.»

Prof. Dr. Klaus Steger

mRNA is a natural component of human cells

Natural mRNA is a copy of ONE gene in our genetic material (DNA), which contains the blueprint for ONE specific protein in encrypted form. Specific cell organelles (ribosomes) use this information to produce the corresponding protein. Despite its central importance for our cellular metabolism, mRNA was not discovered until 1961 (2). It quickly became clear that mRNA is extremely unstable and consequently has a short lifespan. However, this property is an important prerequisite for the flexible and efficient adaptation of our cell metabolism to constantly changing living conditions, such as sleeping, eating, exercising, etc. Once the mRNA has transmitted its message and the protein required for cell metabolism has been produced, the mRNA has fulfilled its task and is broken down by special enzymes (RNases).

After the idea of using mRNA for the treatment of diseases arose in medical research, natural mRNA was injected into the skeletal muscles of mice for the first time in 1990. The animals then produced a protein that they would never have produced ordinarily (3). The technique worked in principle, but was so inefficient that therapeutic application was out of the question. An important finding from this experiment was that natural mRNA is unusable in medical therapy due to its instability and the resulting short lifespan.

Natural mRNA is converted to synthetic modRNA through modifications in the laboratory

In order to make mRNA usable for medical therapy, it first had to be modified in the laboratory to increase its stability, extend its lifespan, and increase the efficiency of protein production. The result was ***modified mRNA***, or ***modRNA*** for short.

The modifications made in the laboratory comprise a whole series of changes (4) that cannot be discussed in detail within the scope of this article. Ultimately however, all of the changes made are aimed at making synthetic modRNA more stable and thus more functional for longer periods of time, enabling cells to produce significantly more of the desired protein than with a comparable amount of natural mRNA. In addition, synthetic modRNA has lower immunogenicity, which means that it stimulates the innate immune system less than

introduced natural mRNA. This discovery was one of the reasons for awarding the 2023 Nobel Prize in Medicine to Katalin Kariko and Drew Weissman, which represented the preliminary culmination of RNA research (5). Undoubtedly, there was a powerful political motivation to grant them this award, as modRNA was used as the basis for RNA-based genetic vaccines against COVID-19. However, in light of the numerous serious adverse events caused by these vaccines, it must be pointed out that the functional principle of synthetic modRNA was already well known at the time, as the original underlying research had been published as early as 2005 (6).

modRNA works completely differently compared to mRNA

IThe following section lists and explains the key differences between natural mRNA and synthetic modRNA, as shown in the table below.

As a result of the globally orchestrated COVID-19 mass vaccination campaign, modRNA was administered to billions of people - which soon turned out to be a disastrous mistake. Unlike natural mRNA, which is always read from the DNA stored in the cell nucleus, foreign modRNA can only be introduced into our body cells with the aid of a vehicle. This is accomplished by the use of lipid nanoparticles, bringing with it its own host of issues, as the use of these particles in humans has never been formally approved. In fact, they are so toxic that they can be used to kill animals (7). It is also known that they can activate the chain reaction of the complement system, which could well be an explanation for the strong inflammatory reactions observed among recipients after the injections (8,9).

The intended aim of the introduced modRNA is to force healthy (!) body cells to produce a foreign protein. In the case of COVID-19, this is a viral spike protein. Since the lipid nanoparticles cannot target specific cell types, the production of the foreign protein can occur completely unspecific in all cells of our body – due to the increased lifetime of modRNA, lasting weeks or even months. However, what has been presented to the public as an advantage turns out to be a great danger upon closer inspection: since our immune system is unable to distinguish between vaccine spike and virus spike, it «recognizes» cells that express the foreign vaccine spike as virus-infected, consequently destroying them. This can create a wide range of problems in almost all of the body´s organs.

Another highly problematic issue is that the introduced modRNA does not have a «stop button». While the reading of natural mRNA is stopped by the binding of microRNAs and mRNA that is no longer required is broken down by RNases, such cell-specific regulatory mechanisms fail to work, or only function improperly, with introduced foreign modRNA. As a result, modRNA remains active for much longer than mRNA. The published studies on persistence did not measure the injected modRNA, but rather the spike protein produced from it. Vaccine spike could be detected in the bloodstream up to 187 days after the last vaccination (10). In the Inmodia laboratory (11), specializing in the detection of vaccine spike, vaccine spike was found in tissue up to 2.5 years after the last injection (personal communication).

As previously mentioned, a whole series of changes are made during the production of modRNA in the laboratory (4). One very significant modification is the replacement of the natural mRNA building block uracil with the artificial modRNA building block methyl-pseudouridine. This following information is freely and readily available to anybody on the website of the manufacturer BioNTech: «We use nucleoside-modified mRNA (modRNA) (...) for improved stability and reduced immunogenicity (...) to minimize unwanted immune reactions and extend the duration of protein production» (12). An important undesirable consequence of this approach was published in the renowned journal Nature (13). The authors were able to show that ribosomes make mistakes when translating the building instructions for the spike protein mediated by modRNA, caused by the synthetic methyl-pseudouridine. The ribosomes «skip» the methyl-pseudouridine because it is unknown to them, ultimately leading to a shift in the reading frame and resulting

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in the production of nonsense proteins. Any potential associated and significant risks to humans remain unpredictable so far.

In 2023, American scientist Kevin McKernan finally uncovered another serious problem: all of the vaccine batches he examined by him were found to contain large amounts of bacterial DNA (14). These are not contaminants, but it is instead residual DNA from the manufacturing process. Since a DNA template (matrix) that is biochemically very similar to RNA is required for RNA production, complete industrial separation is virtually impossible, meaning that all future «RNA vaccines» will also contain DNA residues. The severity of this issue is additionally increased by the fact that a large proportion of the bacterial DNA is packaged in lipid nanoparticles and introduced into the cells together with the modRNA (15,16). In contrast to modRNA, which remains in the cell plasma, DNA is transported into the cell nucleus, significantly increasing the likelihood of integration into the genetic material, resulting in the degeneration of this cell into a cancer cell (17,18).

Table: Comparative overview of natural mRNA and synthetic modRNA.

Natural mRNA	**Synthetic modRNA**
Blueprint for a protein produced by the body	Blueprint for a foreign protein (e.g., spike protein)
Occurrence	
cell-specific, as it is only produced where needed	non-specific in all cells, as it is introduced via lipid nanoparticles
Lifetime	
minutes – hours	weeks – months
Efficiency of protein production	
adapted to metabolic requirements	maximum, i.e., no specific dose can be planned
Stopping protein production / RNA degradation	
by microRNAs / RNases	no stop possible / degradation greatly delayed
Production	
by transcription of cell's own DNA	in the laboratory; DNA is required as a template Step 1: Amplification of DNA by PCR (laboratory scale) or bacterial culture (industrial scale) Step 2: Transcription of DNA and incorporation of modifications: modRNA Step 3: Packaging in lipid nanoparticles **Problem:** Residual bacterial DNA is also packaged in lipid nanoparticles!

Conclusion

Anyone who still refers to «mRNA vaccines» in the context of the RNA-based genetic vaccines introduced in response to COVID-19 obscures scientific facts and promotes a political narrative that deliberately misleads people into believing that these vaccines are safe and harmless. Why is this important? This article has clearly demonstrated that synthetic modRNA produced in the laboratory differs from natural mRNA in a number of ways, resulting in the two molecules functioning completely differently (see **Table**). The very basic idea behind RNA-based vaccine technology - to get the body's cells to produce as much of a foreign protein as possible for

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as long as possible by introducing modRNA - inevitably leads to these previously healthy cells being destroyed by the immune system, violating basic principles of cell biology and immunology. Since modRNA is distributed throughout the body by lipid nanoparticles with the ability to overcome biological barriers, permanent damage is inevitable, particularly in non-regenerative tissues such as that of the heart and the brain. Since a DNA template is required for the production of modRNA, which cannot be completely removed for technical reasons, «RNA vaccines» will continue to contain residual DNA in the future, which, after being introduced into the cell plasma, can be transported to the cell nucleus and integrated into the genetic material. The use of novel and insufficiently researched RNA-based genetic vaccines in healthy (!) humans is associated with considerable and, in some cases, life-threatening risks, as this article has attempted to highlight. It is therefore essential that RNA technology is suspended with immediate effect until its safety has been proven beyond doubt.

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About the author

Prof. Dr. Klaus Steger is professor emeritus of Molecular Andrology at the University of Giessen. His research focused on male fertility and regulation of gene expression during spermatogenesis. In the MWGFD association, he works together with personalities such as Prof. Sucharit Bhakdi and Dr. Ronald Weikl. His main topics there are gene expression research, PCR diagnostics, and new RNA and gene therapy technologies.

An RNA moratorium was recently launched, which was already the subject of a German and international press conference (see: https://www.mwm-proof.com).

The author was one of 30 scientists and doctors who made a statement at the international press conference «World Journey of Truth» calling for an immediate halt to RNA technology (see: https://youtu.be/nNy9_u5bBno?si=sm4btA7xwLck8uar).

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