

What Corona vaccine RNA has in common with a tumor RNA.

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Our genes are stored as DNA in every cell nucleus. For proteins to be formed, activated genes leave the nucleus in the form of mRNA. In the aqueous environment of the cell, mRNA serves as the blueprint for proteins. Ribosomes are the cell factories that produce proteins from mRNA. Ribosomes work blindly: mRNA is mRNA. RNA viruses, like RNA vaccines, are served by ribosomes just as cellular RNA is.

RNA receptors

The mRNA is very unstable by nature. Among other things, the cell regulates protein balance via this instability. Furthermore, RNA receptors of the Toll-like receptor (TLR) family are located within the cell, in this case TLR3,7,8. These receptors are part of the innate immunity and recognize foreign, viral RNA, but also the vaccine RNA and give the signal for its destruction. What is desirable for viruses would be a disaster in the case of vaccine RNA: the innate immune system destroys the vaccine RNA before it can take effect.

Pseudouridine

Karikó et al. (2005) found a solution to this problem. They replaced the building block uridine in the vaccine RNA with pseudouridine. The vaccine RNA is no longer recognizable by the internal RNA receptors and the immune response is absent. The vaccine RNA is stabilized once and for all and is untouchable.

Pseudouridine instead of uridine in an mRNA is not an invention of Karikó et al, rather solid basic research. This is because pseudouridine occurs naturally in the cell, wherever a particular RNA molecule is to be stabilized. Pseudouridine RNA was discovered as early as 1951 (Cohn, 1959).

Tumor RNA and vaccine RNA

And this is especially the case with cancer cells. A cancer cell gains survival advantages over a healthy cell in many ways. A healthy cell has a limited lifetime. A cancer cell is immortal if it did not kill its host. One survival strategy of the cancer cell is to stabilize the tumor RNA by pseudouridine.

No wonder that in recent years, cancer research has increasingly looked at tumor pseudouridine mRNA (Xue et al., 2022). Far advanced is the diagnostic development in prostate carcinoma. Pseudouridine mRNA diagnostics would be much more specific than current PSA diagnostics (Stockert et al., 2020).

Karikó et al. have created a vaccine RNA that is extremely stable, like a tumor RNA. But stability comes at a high price: innate immunity to viruses and other pathogens is virtually eliminated. (Karikó et al., 2005, 2008) Innate immunity accounts for 90% of the total immune system, only 10% is acquired immunity. A proof of how irreplaceable innate immunity is. To switch off parts artificially is fatal.

Interferon

The interferon system is particularly affected by the shutdown. Interferons are part of the immunological first strike against invading viruses and are activated via TLR3,7,8. Subsequently, interferons turn on more than 100 genes, all in the service of antiviral immunity. Among them are such prominent representatives as the Mx gene against influenza viruses. Another gene turned on by interferon produces an enzyme called OAS. OAS attacks viral RNA genes and thus also prevents the viruses from replicating. For each virus, the cell has several interferon-directed defenses at the ready.

If Mx fails, OAS gets in the way of the virus. If OAS fails, other proteins come to the rescue to stop the viral invasion. Or killer cells are deployed, which are instructed by interferon to intervene in the antiviral defense battle.

Reduced immunity

This innate defense against viruses is prevented by the Corona mRNA vaccine, because TLR3,7,8 are silenced. Karikó et al. (2008) still hail this severe side effect of their vaccine, exulting in the silencing of over essential 100 immune genes. The Corona vaccine launch with mRNA was in December 2020. The consequences:

In 2021/22, an increase in other viral infections such as parainfluenza, rhinoviruses, and Rous sarcoma virus (RSV) was reported. A dramatic increase also in RS-V (respiratory syncytial virus) in children. Influenza infections increased sharply during the 2022/23 influenza season. Physicians observed an increase in shingles (herpes zoster) after Corona mRNA vaccinations compared to unvaccinated individuals. The vaccine appears to reactivate the persistent virus (Hertel, 2022).

Vaccine RNA persists

Normally, an mRNA is degraded within a few hours. Not so the RNA modified with pseudouridine. It is detectable in the body for at least 2 months. Does this explain the long-term effects in the "post-vac syndrome" such as myocarditis, thrombosis, nerve pain, headache, muscle pain? The toxicity of the SARS-CoV-2 spike protein in the RNA vaccine has been demonstrated (Fernandes et al., 2022).

Further reading:

Introduction to Molecular Vaccinology. (Textbook) M. Giese. Springer, 2016.