TOXIC EXPOSURES

Researchers Find Residual DNA, Not Detected by Standard Tests, in mRNA COVID Vaccines

A new study partially funded by Children's Health Defense found residual DNA in Pfizer and Moderna COVID-19 mRNA vaccines. Current methods recommended by regulators and used by vaccine makers substantially underestimate DNA contamination, according to the researchers, who said better, more accurate testing methods exist and should be mandated.

by **Brenda Baletti, Ph.D.**
JANUARY 12, 2026

A new laboratory analysis of commercially available mRNA **COVID-19** vaccines found that **residual DNA fragments** — including sequences linked to the spike protein gene — remain in the final vaccine products.

According to the researchers, the DNA fragments exist in forms that standard regulatory testing methods don't typically detect.

The researchers concluded that commonly used quality-control tests can underestimate total residual DNA by more than 100-fold, because the tests fail to detect DNA bound in RNA:DNA hybrid structures.

The study, published in a **preprint** authored by **Kevin McKernan**, **Charles Rixey** and **Jessica Rose, Ph.D.**, examined unopened, "**cold-chain compliant**" Pfizer and Moderna vaccine vials using multiple analytical techniques.

Brian Hooker, Ph.D., chief scientific officer for **Children's Health Defense**, which partially funded the research, told **The Defender** that having this type of genetic code in the vaccines' lipid nanoparticles, which can easily cross cell membranes, is "dangerous indeed."

When the **vaccines** were designed, the code for the spike protein was meant to express itself in the body in a targeted location for only about two weeks, Hooker said.

"However, this exogenous DNA can more easily disperse through the body and continue to both replicate and express episomally, making humans into genetically modified spike protein production factories," Hooker said.

Hooker said the study may help explain some widespread clinical findings, "given that some vaccinated patients have been reported to continue to produce spike protein for periods as long as two years following their last COVID shot. This doesn't even include the insertional effects that this additional exogenous DNA may have, leading to many different disorders, including cancer."

Manufacturers 'must have known' residual DNA remained present

McKernan, chief scientific officer and founder of **Medicinal Genomics**, first **raised concerns over DNA contamination** in COVID-19 vaccines in 2023. That's when his **lab sequenced** Moderna and Pfizer's COVID-19 vaccines and found the presence of residual DNA that he accused Pfizer of deleting from the data the company gave regulators.

McKernan's lab tested the vaccines and found that instead of containing only mRNA, the Pfizer vaccines also contained DNA **plasmids** — small, circular, double-stranded DNA molecules distinct from a cell's chromosomal DNA.

McKernan explained that to manufacture mRNA vaccines, labs use a process called "**in vitro transcription**" to produce the necessary RNA molecules.

To produce the RNA molecules, the **scientists** design a DNA template that triggers the production of the RNA sequence they want. An enzyme that recognizes this signal then copies the DNA into RNA.

However, to function properly, the DNA in the template needs to be amplified. For the clinical trials, Pfizer amplified DNA using **PCR (polymerase chain reaction)**, a method it called "Process 1," which created a clean version of DNA to make the RNA.

However, Process 1 was expensive. So to mass-produce vaccines for the public, Pfizer used "Process 2," which used a different method to amplify the DNA. Process 2 is cheaper and easier, but runs the risk of introducing sequences that weren't present in the original DNA.

McKernan called this switch from Process 1 to Process 2 a "**bait and switch**." In a recent **Substack video**, he said the change was "a premeditated move."

"You can tell what their intentions are by what assays they built," he said. "And you can see by what they did that their plan from the start was to always use Process 2."

Manufacturers are required to digest and remove those sequences, which they did in this case using an enzyme called **deoxyribonuclease or DNase**.

However, in the preprint study, the researchers reported that in all cases they examined, the enzyme didn't completely destroy the sequences.

"We proved a theory as to why and how the DNA got into the Moderna and Pfizer vials, in this new paper," co-author Rose told The Defender. "There is DNA in every single vial tested to date. This has been reproduced in multiple labs across the world using multiple techniques. And the DNA came from hybridized RNA:DNA as a part of the Process 2 up-scaling process."

Rose added:

> "These hybrids were not degradable by the enzyme the manufacturers chose to use to clean out residual DNA as the final step in the process, and they must have known this because it is known in the space that the enzyme they selected does not degrade hybrids. It's scandalous what they did."

Regulators use wrong safety limit, wrong tool to look for DNA fragments

Regulatory guidance generally limits residual DNA to 10 nanograms per dose. However, the authors said DNase does not digest all DNA equally.

On Substack, McKernan explained the **10-nanogram limit is outdated** because it was created based on the assumption that residual DNA is "naked DNA," which degrades quickly. But the DNA in COVID-19 vaccines is encapsulated in the lipid nanoparticle, so it doesn't degrade as fast.

The safety issue with COVID-19 vaccines isn't related to the weight, but to the number of DNA fragments — more fragments present a greater risk for that DNA to be integrated into existing cells.

Some DNA sequences hybridize with their corresponding **RNA transcripts**, which carry genetic information from DNA used for building proteins. These RNA:DNA hybrids are significantly more resistant to "DNase I digestion" than typical double-stranded DNA, according to the authors.

Because the spike gene region is transcribed into mRNA in large quantities, it is particularly prone to forming such hybrids.

Even though manufacturers are aware of this issue, regulatory testing typically relies on a single lab technique that amplifies and measures a specific DNA sequence, called a "**qPCR assay**." That method is used only to target the kanamycin (KAN) resistance gene — a plasmid region that is not transcribed and is highly sensitive to DNase digestion.

According to the study, this approach creates a systematic bias: the DNA that is easiest to destroy is also the DNA that is measured, while more resistant regions go largely uncounted.

On Substack, McKernan said this was by design. "The assays they designed were designed not to find things."

CHD Senior Research Scientist Karl Jablonowski said, "Regulators leveraged 'just one assay target for **vaccine** sponsor quality control. They didn't verify quality, nor did a third party."

Because of that approach, "Those who stood to profit from the vaccines designed the test and tested the quality," Jablonowski said. "They chose a test that was least likely to yield a bad outcome. A perfectly usable and validated alternative was already in their toolbox, but the results may have halted the entire enterprise."

DNA levels vary by more than 100-fold depending on the test used

The researchers compared qPCR tests targeting different plasmid regions, rather than just the KAN region. They found discrepancies exceeding 100-fold in measured DNA concentration in the different plasmid regions.

Tests that targeted the spike protein consistently detected far more residual DNA than tests that targeted the KAN gene or other locations.

Fluorometric measurements — a different type of test that detects substances by targeting them with fluorescent light — showed DNA levels ranging from 15 to 48 times higher than the U.S. Food and Drug Administration's recommended limit across all tested vaccine lots.

The authors tested whether RNA:DNA hybrids were responsible for the discrepancy, and found evidence that they were.

They also had an independent company, **Oxford Nanopore Technologies**, confirm the presence of long DNA molecules. Longer molecules are more likely to be expressed by host cells than smaller ones, they noted.

The researchers concluded that much of the residual DNA detected in the vaccines exists in hybridized forms that resist the very enzyme specified for eliminating residual DNA in current manufacturing guidance, and that the type of test used will likely not detect residual DNA.

Authors question regulatory process, call for changes

The authors conclude that current regulatory reliance on a single, DNase-sensitive qPCR target is not adequate for identifying DNA impurities in mRNA therapeutics. Its use led regulators to "systematically underestimate the total burden of residual plasmid DNA."

Instead, they recommend regulators mandate a multi-method approach that includes RNase-controlled fluorometry, testing multiple qPCR targets in different regions, and sequencing for fragment characterization.

They also said that a different engineered enzyme for breaking down DNA or RNA, called DNase I-XT, works better to remove residual DNA at all locations.

The authors closed by raising a series of questions that they argued must be investigated.

They asked why regulators don't mandate other and better tests for DNA contamination, given that more comprehensive methods exist. They called for a "comprehensive reassessment of current DNA quantitation standards and manufacturing controls for modRNA-LNP therapeutics."

They said it was concerning that regulators required multi-target PCR testing for COVID-19 tests to avoid false negatives. But they accept single-target assays for vaccine quality control — a contrast they say warrants scrutiny.

They called for an investigation into the decision to switch from Process 1 to Process 2, "given these biological products were mandated in many jurisdictions — often liability free — and reached billions of people, the attention to quality control and GMPs must exceed the standards of pharmaceuticals targeting a subset of people. These products were administered universally to the elderly, infirm, pregnant women and infants."

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11 Comments

LinUK
2 days ago
I read articles like this 5 years ago, nothing happened then, nothing will happen now.
7 | 0 | Reply | Share ›

Alan
a day ago
I know this is too late for some, but if you have not had a covid vaccine then don't and do not take ANY vaccine. They are all poison to the human body. God gave us a immune system. Take care of your body and it will take care of you.
5 | 0 | Reply | Share ›

Guillermou
2 days ago
A recently published study has confirmed what independent laboratories and physicians have been warning: synthetic mRNA technologies are not simply transient messengers; they can cause persistent genetic instability, host-vector integration, and long-term molecular dysregulation. These are not passing side effects or isolated complications; this is evidence of a structural failure of biological integrity caused by a synthetic product once proclaimed "safe and effective." Using advanced molecular surveillance processes, the data revealed events of synthetic mRNA integration into the host, indicating catastrophic genetic corruption.

The authors demonstrate that contamination with plasmid DNA templates—used in the production of mRNA vaccines—has introduced an additional pathway of genomic corruption. While many were assured that mRNA could not alter DNA, this new evidence makes it clear that:
1) Plasmid DNA remnants can integrate into host genomes.
2) The observed somatic mutations are consistent with altered DNA stability.
3) RNA transcription chaos further compounds molecular instability, disrupting cellular programming and immune regulation.
https://www.globalresearch.ca/first-direct-molecular-evidence-mrna-vaccine-genomic-integration/5899055
(2025).--
5 | 0 | Reply | Share ›

Kim from Brooklyn → Guillermou
a day ago
Thank you for the post.

But the elephant is right there is plain site: This was a planned attempt to take down as many as possible and we have only begun to see what these killer jabs will do
4 | 0 | Reply | Share ›

Kim from Brooklyn → Guillermou
a day ago
3 | 0 | Reply | Share ›

RandyFaster
2 days ago
I've been aware of nefarious ingredients in the mRNA bioweapons since around 2021! There is patented material in those shots. If you've been injected; then you are now the "property" of the patent holder. Isn't that the way patents work?
4 | 0 | Reply | Share ›

Karen Board
2 days ago
DNA...of what?
2 | 0 | Reply | Share ›

Wojciech Langer → Karen Board
2 days ago
The article explains it, but is quite scientific and requires time to digest it + generally knowledge about genetics, that only small number of readers possess. I wonder what is the use of such findings, and who will benefit. It is too late for victims of these genetic injections and nobody is going to use it in judicial proceedings. After more than 5 years these people still keep digging into this toxic glue😳, while everybody knows it was useless, often deadly garbage. They should have done it much earlier..smart cookies🤪
2 | 0 | Reply | Share ›

Rusalka → Karen Board
2 days ago
Doesn't matter what. Not original to the organism. It's a mutation.
1 | 0 | Reply | Share ›

Diane
2 days ago edited
Yes, and from what I understand from what I read 5-6 years ago, it's the DNA from Apes. At the time, my guess was that the evil ones would later claim they could do whatever they wanted with those who took the shots since they were no longer 'human'. Glad to see THAT didn't happen -- at least yet.
0 | 0 | Reply | Share ›

Wojciech Langer → Diane
2 days ago
Read the column, instead of making guesses
0 | 1 | Reply | Share ›

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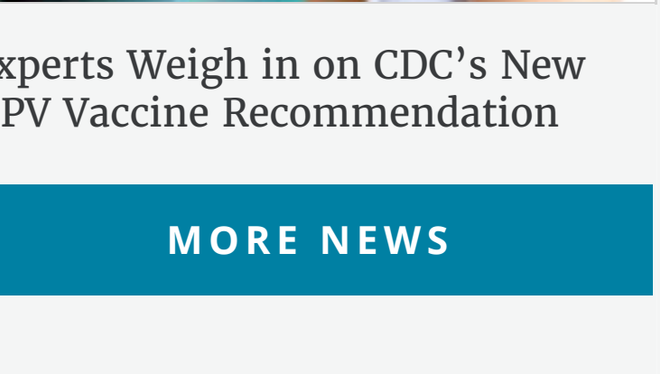

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