

What are Pseudo HEK-293 cells? As a life coordinator I'm investigating the Covid-19 vaccines from a prolife world view. While your site provides excellent info on the current research, I'm left wondering why you have a red triangle at the Moderna and Pfizer lab tests column? Please help me understand this so that I can clearly share the info with my church body. Thank you kindly!

Monica

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Hello Monica,

The answer to your question is a bit long, so bear with me!

Thank you for your inquiry to the Charlotte Lozier Institute regarding the potential use of abortion-derived cell lines to produce vaccines to prevent infection with Covid-19. CLI opposes the use of fetal cell lines derived from induced abortions to test or produce vaccines for this or any other purpose, and we believe that alternative methodologies can be used and are being deployed to achieve this worthwhile goal.

Our analysis of the supporting literature for both the Moderna mRNA vaccine and the Pfizer-BioNTech mRNA vaccine found that neither vaccine contains spike protein, or any protein, but both are an RNA sequence that encodes for a form of the SARS-CoV-2 spike protein. There are no cells used in production of these vaccines.

The Moderna and the Pfizer-BioNTech vaccines contain mRNA that "encodes" for the spike protein, but is not the protein itself; these vaccines do not contain any protein at all, and do not use any protein or any cell in their production. Once produced in the laboratory, the mRNA is encapsulated in some lipids (similar to an oil droplet) to facilitate its delivery into cells. So the final vaccine—what is injected into the individual's arm—contains no protein, but only mRNA in lipids.

Here's an analogy that might help differentiate the role of the mRNA versus protein.

In a cell, our genome, or genetic code, is composed of DNA (the proverbial double helix). It's composed of a string of bases (letters in the code). The DNA acts as a repository for all the information of the cell. Think of it as a big recipe book or the collection of music for an entire musical production.

Let's say you want to bake a chocolate cake, or hear one song. You make a xerox copy (or print out a copy) of that single recipe or that particular composition. A cell does the same thing. The copy made is mRNA, a nucleic acid molecule chemically similar to DNA, i.e., a string of code letters. But the RNA is a copy for only one gene sequence (not all the sequences in the DNA). It might be the gene sequence for the insulin protein, or collagen protein, or an antibody protein. But it is not protein itself, it only encodes the information on how to make the protein, just as a printed recipe for a cake is not a cake.

So, you take your recipe to the kitchen, follow the printed instructions, mix ingredients together and bake a chocolate cake. Or you take your printed sheet music to the piano and play the notes in sequence to make the song. In the cell, the mRNA information molecule is translated by enzyme complexes, literally reading the sequence of nucleic acid code letters and following those instructions to string together amino acids, to make a protein. The process is called "translation" because it translates the mRNA code into a protein.

But the mRNA is not the protein, it encodes the instructions on how a cell can make the protein, in the same way the printed recipe is not a cake, but it gives the instructions to follow to make a cake. That mRNA is what Moderna, Pfizer-BioNTech, and others are making as their vaccine. The mRNA is chemically synthesized in the laboratory, without use of any cells. The mRNA is then encapsulated in a lipid droplet, similar to a drop of oil, and that is what is given in the vaccine injection. The lipid particle is chemically similar to the membrane of our cells and can merge with cell membranes (just like two oil droplets merging) and deliver the mRNA to the inside of a cell. Once inside, our own cellular machinery uses the mRNA information to make spike protein inside our own cells, and that newly made protein can be shown to our immune system to educate our immunity, to stimulate antibody production and cellular defenses.

Why encode the information for spike protein? If you've seen the drawings of the coronavirus (SARS-Cov-2), they draw it with lots of little protrusions on the outside, the spike protein. The virus uses spike to bind to proteins on specific cells, especially in the respiratory system, and that's how the virus can inject its RNA genome into our cells and infect us. But with all those spike proteins on the outside of the virus, that's also the best target against which to make an antibody. So, we give our cells the instructions to make spike protein, and thus teach our immune system what to recognize. It's a bit like putting someone's face on a "Wanted" poster; the spike protein is the face, the most recognizable feature, that the virus shows most prominently.

Put another way, the vaccine product, what is injected into me, has had no contact whatsoever with fetal cells. The recipient is ethically in the clear. There are no fetal cells, fetal cell parts or proteins left over from production that might be injected into my body; they were never present in the production flow.

However, both of these companies did do some quality-control tests, separate from production, that involved an abortion-derived cell line. We include that information in our chart (last column) because it is a conscience problem for the scientists, and we would like to see all uses of such cells replaced with licit cell lines and tests; those do exist. But these side tests do not affect the vaccine recipient.

We have created a chart

(<https://lozierinstitute.org/update-covid-19-vaccine-candidates-and-abortion-derived-cell-lines/>)

with information on these vaccine options and many of the other leading vaccine options, including several that are ethically problematic. In our chart, we link to the published scientific papers (or pre-publications) for all the vaccines as they are available, with the evidence of how the vaccine is produced. We do not use information in patents as it is very misleading and inaccurate. Patents are prospective documents, and modern biotech patents include many examples and tests of how an invention might be used (including numerous references to experiments done by others), but they provide no evidence on how a vaccine is actually produced. If a space is left blank in the chart, that indicates there is no published evidence yet for what was actually done.

An understanding of the science is essential to getting accurate information and being able to make an informed choice!

We've also put up a visual primer to explain vaccine production, especially given that with the new molecular techniques there are now FIVE ways to make a viral vaccine, rather than just the one traditional way where virus is grown in cells.

(<https://lozierinstitute.org/a-visual-aid-to-viral-infection-and-vaccine-production/>)

I hope you find this information helpful. Thank you for inquiring about this vital issue.

Please feel free to reach out with any further questions!

Sincerely,

David Prentice, Ph.D.

Vice President and Director of Research