Editorial

iMedPub Journals
www.imedpub.com

Der Chemica Sinica
ISSN 0976-8505

2021
Vol.12 No.4:4

Editorial Note on Chemistry of the COVID-19 Vaccine

Sirisha Ineni*

MNR Degree and PG College, Hyderabad, Telangana, India

Received: April 20, 2021; **Accepted:** April 25, 2021; **Published:** April 30, 2021

***Corresponding author:** Sirisha Ineni

inenisirisha28@gmail.com

MNR Degree and PG College, Hyderabad, Telangana

Citation: Ineni S (2021) Editorial Note on Chemistry of the COVID-19 Vaccine. Der Chemica Sinica Vol.12 No.4:4

Editorial Note

The picture of coronavirus is one that we've all seen before. The spikey blob can be found on news pages, lurking behind reporters during newscasts, and constantly interrupting your Twitter doom-scrolling. The news surrounding this picture has recently turned positive, with encouraging results from the COVID-19 vaccine trials. The coronavirus spikey blob's classic spikes are an important part of how these vaccines function.

Let's take a step back to look at the bigger picture of the COVID-19 vaccine. Thirteen vaccines have completed the final stage of research and are being given to thousands of people to see whether they protect against the SARS-CoV-2 virus as of December 1, 2020. Though the end result is the same, the ways in which these vaccines try to get our immune system to recognise the virus differ. Except for RNA vaccines, both of these methods have previously been used in approved vaccines for other diseases.

RNA vaccines developed by Moderna and Pfizer & BioNTech are two vaccines that have recently published results. CureVac, Imperial College London, and Arcturus are among the companies developing RNA vaccines. So far, the results have been overwhelmingly positive. Pfizer's vaccine was the first RNA vaccine to be approved for widespread use in the UK at the beginning of December.

Other vaccines also use inactive or weakened virus strains to elicit an immune response. RNA vaccines, on the other hand, use the virus's own genetic code against it. RNA stands for ribonucleic acid; you're probably more familiar with DNA, which is the molecule that makes up the genetic code in humans. The genetic code of a virus is made up of RNA, which includes instructions for the virus's protein production. Chinese scientists were able to isolate samples of the SARS-CoV-2 virus early in the pandemic and establish its genetic code. This compiled all of the instructions used by the virus to produce its different proteins. The spikes of the coronavirus' spikey blob': its spike proteins are among them. The spike proteins are the structures that enable the virus to enter cells and initiate infection. Spike proteins are also important in the functioning of RNA vaccines. In the lab, scientists will create synthetic RNA that codes for the virus spike protein. We can use this synthetic RNA to control the processes that produce proteins in our own cells.

DNA is the genetic material that makes up our bodies. An enzyme in the nucleus of our cells divides the two strands of DNA into single-stranded messenger RNA. The mRNA leaves the nucleus and travels to the cytoplasm of our cells. Ribosomes are molecules that translate the RNA code into proteins. In a nutshell, the ribosome functions as a protein factory, and the mRNA derived from our DNA serves as the template for the proteins it produces.

Our ribosome factory doesn't care where a model comes from, so RNA vaccines take advantage of that. So, if we can smuggle a new virus spike protein blueprint into this factory, the ribosome can unquestionably assemble the protein.