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Opinion

Vaccines Developed against COVID-19 should be based on Nucleocapsid Rather than Spike

Mostafa Norizadeh[1,2]*, Orkideh Hajipour[3]

[1]*Department of Biotechnology, Faulty of Advanced Sciences and Technology, Islamic Azad University, Iran*

[2]*Applied Biotechnology Research Center, Tehran Medical Sciences, Islamic Azad University, Iran*

[3]*Department of Biology, Faculty of Science and Arts, Pamukkale University, Turkey*

***Corresponding author:** Mostafa Norizadeh, Department of Biotechnology, Faulty of Advanced Sciences and Technology, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

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Opinion

Coronavirus disease (COVID-19) is an infectious illness affected by the SARS-CoV-2 virus. A SARS-CoV-2 vaccine is a vaccine produced to provide developed immunity against COVID-19. The vaccine is available on different platforms. There are many variants of SARS-CoV-2 that contribute to the perpetuation of the COVID-19 pandemic. The most significant of these variants are alpha, beta, gamma, delta, and omicron. Omicron (B.1.1.529) is a variant of COVID-19 that was first detected in Botswana. Behind the original Omicron variant, many subvariants of Omicron have appeared including BA.1, BA.2, BA.3, BA.4, and BA.5, BQ.1, and BQ.1.1, XBBç 1.5 and XBB1.16 have emerged [1-3]. The used vaccines are either inactivated vaccines or made according to Spike protein, although they are produced on different platforms. Currently, some vaccines are monovalent and some are bivalent, and some have been updated. For instance, Pfizer and Moderna are bivalent vaccines to protect against the COVID-19 wild type and the Omicron variant. Although the vaccines used are updated, the Omicron variant is constantly mutating and many of the mutations are in the Spike gene. As a consequence, the effect of the used vaccines decreases every day and the pandemic does not end. The Nucleocapsid is one of the covid-19 structural proteins. The Nucleocapsid protein has not undergone many mutations, but many mutations of the spike protein have been reported from different variants. The antigenicity of the Nucleocapsid protein was tested by VaxiJen. The vixen score of Nucleocapsid is 0.5522. Since this score is above the 0.4 thresholds, it indicates that Nucleocapsid can stimulate the immune system [4-5]. Therefore, the protein can be targeted in the production of new vaccines. If vaccines are made from non-mutated or slightly mutated proteins, they may cause the end of the pandemic. In our opinion, Nucleocapsid would be that protein.

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