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Short Communication

Next Generation of COVID-19 Vaccines and Treatments, What Look Like?

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Currently, investigators have advanced knowledge of SARS-CoV-2 (COVID-19) and effectively-proved treating medicines, whereas future-proofing the COVID-19 vaccines have still some ways to continue [1]. CureVac and Memo Therapeutics, two companies recently announced animal (rats) model data that worked on a second-generation of COVID-19 vaccine with their partner "GlaxoSmithKline (GSK)" [1]. Rats in this study were immunized with one dose of the dubbed-next-generation vaccine, "CV2CoV" [1]. This vaccine was designed with "a new mRNA backbone" that they hope to demonstrate the improvement of the immune response to the emerging SARS-CoV-2 (COVID-19) variants, at the lower doses than the current mRNA vaccine (Pfizer and Moderna vaccines) require [1]. Another novel-in-development vaccine, "GRT-R910" is biotech firm Gritstone's self-amplifying mRNA (SAM) COVID-19 vaccine that have demonstrated enhanced antibody production and antigen expression at lower doses compared with conventional mRNA vaccines (Pfizer and Moderna vaccines) [2]. Currently, GRT-R910 vaccine is ongoing in the phase 1 trials in the United Kingdom [2]. With inducing an immune response to other proteins located on the SARS-CoV-2 (COVID-19)'s surface in addition to S protein, GRT-R910 vaccine could trigger robust, wide, and sustainable immune responses against the emerging SARS-CoV-2 (COVID-19) variants [2].

In conclusion, future COVID-19 vaccines should be able to decrease the COVID-19 transmission risk from the COVID-19-vaccinated persons by initiating high levels of neutralizing antibodies with long-lasting immune response and without frequent vaccine boosters.

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