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Commentary

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Application of natural plant extracts for COVID-19 deactivation

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DESCRIPTION

The Middle East Respiratory Syndrome Coronavirus (MERS-CoV), the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), and a 2019 novel coronavirus have all been identified as three separate dangerous human coronaviruses (CoVs) (COVID-19). The COVID-19 has presented the world's population with some of its toughest health-related concerns recently. Global transmission of this COVID-19 has increased dramatically. Coronaviruses have a single-stranded positive-sense RNA genome that is encased in a membrane envelope, making them rather vast in size. The Spike (S), Envelope (E), as a Membrane (M), and Nucleocapsid (N) proteins make up this coronavirus's four structural proteins. Spike (S) protein can be used to create antibodies, entrance inhibitors, and vaccinations. Spike (S) protein is particularly important in conjunction with viral attachment, fusion, and entry. Angiotensin-Converting Enzyme-2 (ACE-2), which is recognised by epithelial cells of the lung, intestine, kidney, and blood vessels, allows human pathogenic coronaviruses (including SARS-CoV and SARS-CoV-2) to bind to their target cells. Following the negative effects of a pandemic, scientists have been attempting to understand the nature of this new virus and its pathophysiology in order to find the most likely course of treatment and suitable therapeutic drugs and vaccinations.

Despite the lack of SARS-CoV-2-specific antiviral medicines, numerous attempts have been made to identify the recovery system. Even in the present era, the use of medicinal plants for primary healthcare continues to include the healing of wounds and burn injuries as well as antifungal, antiviral, and antibacterial applications against skin infections.

Due to their innate biomedicinal qualities, natural herbs including licorice, neem, turmeric, honey, and nigella among other alternatives have substantial effects. Because of this, the creation of electrospun nanofibrous membrane using the electrospinning technology from natural polymers is regarded as a revolutionary strategy in biomedical applications like wound dressing, tissue engineering, and drug delivery, which gives rise to a current study area.

CONCLUSION

The study demonstrates that the esterification method used to destroy the virus's active components causes the extracted components of natural plants, particularly hydroxyl (-OH) groups, to react chemically. Using licorice as an example, which has the components glycyrrhizin, glycyrrhetic acid, liquiritin, and isoliquiritin that can be utilized to neutralize the activeness of COVID-19 and be employed as an antiviral medication.

By electro spinning, the extracted licorice is further treated with PVA solution to create antiviral Nano-membranes that could be used as materials for wound dressing, musk, gloves, and protection against skin infection. Using a Scanning Electron Microscope (SEM), the morphology of the membrane is described. According to the findings, other plants with virus-deactivating components may be used to address the global human health crisis.