

Indian herb-derived phytoconstituents based antiviral formulation: An oral rinse candidate for prevention of COVID-19 outbreaks

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Abstract

Outbreaks of emerging infectious diseases continue to challenge human health. Novel severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), has triggered a global coronavirus pandemic, namely COVID-19. Multiple variants of SARS-CoV-2 virus are circulating and raises question with respect to effectiveness of different lines of treatment such as vaccines and antiviral drugs. To find appropriate prevention/treatment, 21 plant-based ingredients were identified with antiviral properties. We pseudo typed SARS-CoV-2 on a lentiviral vector plasmid and tested the impact of five different herbal formulations in mammalian HEK293T cells. Viral inactivation assay showed that the natural extracts in herb-derived phytoconstituents based formulation, BITS-003 comprising of *Bacopa monnieri*, *Glycyerrhiza glabra*, *Asparagus racemosus-wild*, and *Nigella sativa* bear strong virucidal properties, inactivating enveloped viruses from 2log10 (or 99%) to >4log10 (or 99.99%). Moreover, bacterial and yeast cells treated with BITS-003 displayed reduced growth. Topical use of formulation as mouthwash/gargle will be effective in reducing symptoms of respiratory viral infections with a potential to decrease viral load in buccal/oral cavity. This may inhibit the coronavirus spreading to the lungs of infected person and at the same time will reduce the risk of viral transmission to other susceptible persons through micro-droplets originating from the oral cavity of the infected person.

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