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Utility of Some Plants as Immunity Booster Agent in Relation to COVID-19

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Abstract: *The emergence of Coronavirus Disease 2019 (COVID-19), caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), has precipitated an unprecedented global health crisis, necessitating the urgent exploration of both conventional and complementary therapeutic modalities. Among the various strategies proposed to mitigate disease severity, the reinforcement of host immune defenses has garnered substantial scientific attention. This review examines the immunomodulatory potential of four prominent medicinal plants—Ocimum sanctum (Tulsi), Withania somnifera (Ashwagandha), Tinospora cordifolia (Giloy), and Curcuma longa (Turmeric)—in the context of COVID-19 management and prevention. Drawing upon a synthesis of peer-reviewed literature, ethnopharmacological records, and recent clinical and in vitro investigations, the article elucidates the active phytochemical constituents responsible for immune enhancement, antiviral activity, anti-inflammatory action, and cytoprotective effects. The review further situates these findings within the broader framework of COVID-19 pathophysiology, particularly the cytokine storm syndrome, which represents a principal driver of severe morbidity and mortality. Evidence suggests that phytochemicals such as eugenol, withanolides, berberine, tinocordifolin, and curcumin possess meaningful immunostimulatory and anti-SARS-CoV-2 properties, potentially through modulation of ACE2 receptor binding, NF-κB signaling inhibition, and T-lymphocyte activation. Despite promising preclinical data, the authors acknowledge significant gaps in large-scale randomized clinical trial evidence and advocate for rigorous, standardized research to validate these agents as adjunctive therapeutic tools. The integration of evidence-based traditional phytomedicine with modern biomedical practice may offer a valuable complementary approach to pandemic preparedness and immune resilience*

Keywords: *COVID-19, SARS-CoV-2, immunomodulation, phytotherapy, Ocimum sanctum, Withania somnifera, Tinospora cordifolia, Curcuma longa, natural immunity*