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## Letter to the Editor

### COVID-19 and angiotensin-converting enzyme inhibitors from plant origin



We read with great interest the recently published review paper concerning angiotensin-converting enzyme (ACE) inhibitors from plants entitled “Angiotensin-Converting Enzyme Inhibitors from Plants: A Review of Their Diversity, Modes of Action, Prospects, and Concerns in the Management of Diabetes-Centric Complications” [1].

ACE inhibitors from plant origin have been shown to possess promising antioxidant, antidiabetic, antihyperlipidemic and anti-inflammatory activities in regulating hypertension and other anomalies related to diabetes [1]. Along with this broad-spectrum therapeutic effect, earlier in the coronavirus disease 2019 (COVID-19) pandemic, since ACE2 receptor acts as an entry receptor for the virus, we published a paper in March 2020 about the effectiveness of herbal products with ACE-inhibiting mechanism that could be considered as an alternative treatment of the COVID-19 pandemic, which may requires verification with the further studies [2].

A year later, Abubakar et al. [3], in a comprehensive review article, supported the possible suitability of natural products as ACE2 modulators to block the severe acute respiratory syndrome coronavirus (SARS-CoV) spike protein from binding to ACE2. Later on, Xia et al. [4] by employing the association rule approach have examined the distribution and combination compatibility of traditional Chinese medicine suggested by experts for COVID-19 treatment: *Amygdalus Communis* Vas (ACV) and *Ephedra sinica* Stapf (ESS) as the most important herbal pair against COVID-19. Using the molecular docking authors found that the main active ingredients of this pair revealed good affinity with SARS-CoV-2 3C-like proteinase and ACE2. Therefore, they concluded that ACV and ESS could have a therapeutic effect against COVID-19 by affecting molecular and cellular pathological processes with their multiple components, targets, and pathways.

Molecular docking method revealed that a phytocompound named tinocordiside from *Tinospora cordifolia*, an Indian medicinal herb, could weaken interactions between the SARS-CoV-2 spike protein receptor-binding domain and the host ACE2 receptor [5].

Although robust conclusions need strong *in vitro* and *in vivo* evidence, yet the above-highlighted results could pave the way for future experimental studies and clinical trials directed to exploring the therapeutic effect of ACE inhibitors from plant origin in COVID-19. Further studies are required to shed the light on the subject.

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### Authors' contribution

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### Declaration of competing interest

The authors report no conflicts of interest.

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