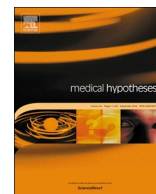




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Letter to Editors

Bioactive compounds with possible inhibitory activity of Angiotensin-Converting Enzyme-II; a gate to manage and prevent COVID-19



Letter to editors

Till now, no treatment or vaccine has been characterized for COVID-19 [1]. Angiotensin-Converting Enzyme-II (ACE-II) receptor, most likely the COVID-19 target, plays essential roles in virus transmission to the alveolar cells [2]. Accordingly, agents with potential inhibition or regulation of ACE-II receptors might be effective in COVID-19 management [3].

Bioactive compounds are valuable for drug development and adjuvant therapy of such infection. These compounds can act either as preventive agents or treatment accelerators. Naringin (a flavanone-7-O-glycoside with potential inhibition of COVID-19 binding to ACE-II receptors), Naringenin and Hesperetin (flavanone), Hesperidin (flavanone glycoside), Baicalin and Neohesperidin (flavone glycoside), Nobiletin (O-methylated flavone), Scutellarin (a flavone), Nicotinamine (non-proteinogenic amino acid), Glycyrrhizin (saponin) and Emodin (6-methyl-1,3, 8-trihydroxyanthraquinone) are of most considerable natural ACE-II inhibitors [4–6].

The averting impact of Naringin on pro-inflammatory cytokines (increased in COVID-19 infection) including Cyclooxygenase-II, Interleukin-6 and -1β , and Nitric oxide synthase is considerable [5]. Glycyrrhizin can inhibit COVID-19 S-protein binding to ACE-II receptors [7]. Emodin, a bioactive antiviral agent may prevent S-protein binding to ACE-II receptors. Thus, Emodin and probably Aloe-emodin can stave off the COVID-19 infection via competing with S-protein in binding to ACE-II [7]. *Rheum palmatum* L. and *Aloe vera* (L.) Burm.f. are rich sources of these compounds [8].

Based on this opinion (Fig. 1), concerned compounds could be applied in prevention and management of COVID-19 solely or combination with conventional interventions.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

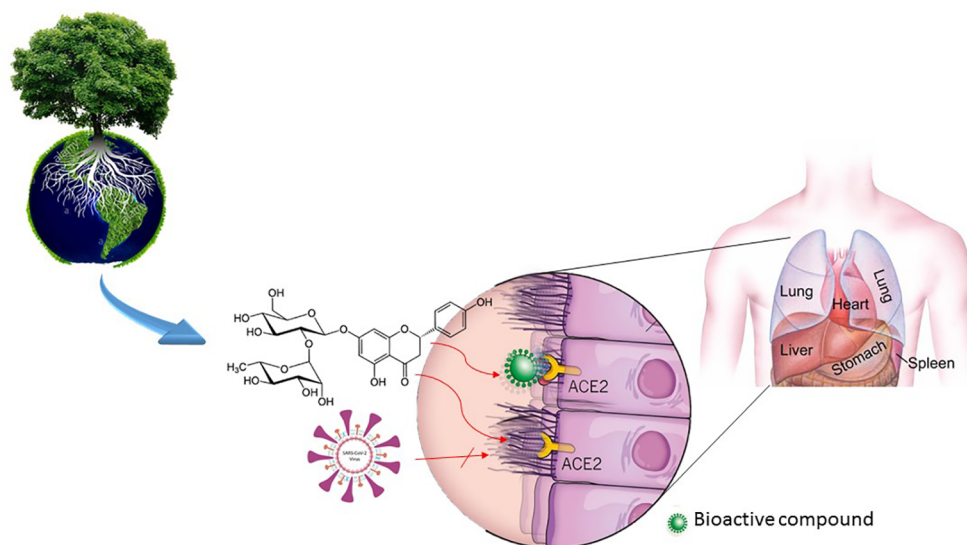


Fig. 1. Schematic view of bioactive compounds with ACE-II inhibitory activities.

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Farid Dabaghian^{a,b}, Mahnaz Khanavi^{a,c}, Mohammad M. Zarshenas^{b,d,e,*}

^a *Department of Pharmacognosy, School of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran*

^b *Medicinal Plants Processing Research Center, Shiraz University of Medical Sciences, Shiraz, Iran*

^c *Faculty of Land and Food Systems, University of British Columbia, B.C., Canada*

^d *Epilepsy Research Center, Shiraz University of Medical Sciences, Shiraz, Iran*

^e *Department of Phytopharmaceuticals (Traditional Pharmacy), School of Pharmacy, Shiraz University of Medical Sciences, Shiraz, Iran*

E-mail address: zarm@sums.ac.ir (M.M. Zarshenas).

* Corresponding author at: Department of Phytopharmaceuticals (Traditional Pharmacy), School of Pharmacy, Shiraz University of Medical Sciences, Shiraz, Iran.