

Letter to the Editor

The Potential Use of “Magnoliae flos” Against COVID-19**Dear Editor**

“Magnoliae flos” is the dried flower bud from *Magnolia denudata* Desr. It is primarily produced in the Chinese provinces of Anhui, Henan, Hubei and belongs to the “Magnoliaceae”. This is a mild and slightly hot taste. According to the traditional Chinese theory, its functions are to promote qi circulation for alleviating middle energizers, mental depression, and resolve dampness. It is used to manage rhinitis, sinusitis, and headache in clinical studies which possessed (i) anti-allergy, (ii) anti-inflammation, and (iii) anti-microbial activities as follows:

- (i) Hong PTL et al. reported the Magnoliae flos on store-operated calcium entry through a plasma membrane protein, which regulates the intracellular calcium signaling cascade generation for T cell activation and mast cell degranulation. It inhibited the human primary CD4⁺ T lymphocyte proliferation, as well as allergen-induced histamine release in mast cells (1)
- (ii) Ham JR et al. identified the ethanol extract of Magnoliae flos with anti-inflammation properties which inhibited LPS-induced nitric oxide production, which is mediated by down-regulating gene and protein expression of inducible nitric oxide synthase and cyclooxygenase-2. It was also down-regulated the protein expression of nuclear factor-kappa B and inflammatory factors such as interleukin-6 (IL-6) (2)
- (iii) Chan LW et al. indicated the Magnoliae flos with high antimicrobial activities against *M. smegmatis* which was an acid-fast bacterial species in the phylum actinomycetota and the genus *Mycobacterium* than streptomycin. It was a potential agent to treat infections caused by *M. smegmatis* and *Mycobacterium tuberculosis* (3)

Up to the present, the infection of COVID-19 was based on the virus particles that spread through the respiratory tract and infect the surrounding uninfected cells, initiating a cytokine storm and consequently triggering a series of severe immune responses. This process leads to immune system dysfunction particularly changes in immune cells and lymphocytes, as a result, edema in the lung.

According to the traditional Chinese medicine theory, the COVID-19 epidemic consists of external and internal factors regarding the evil of human infectious diseases and lack of the human body’s righteousness. The COVID-19 pandemic is related to the virus infection which binds to an angiotensin-converting enzyme 2 (ACE2) receptor of spike glycoprotein, first invades the human lungs and spleen. Magnoliae flos is one of the traditional Chinese herbs able to “eliminate” evil and “strengthen” the immune system. Heidary F et al also reported some potential use of Persian Herbal Medicines against COVID-19 through ACE2 (4).

In China, the Pneumonia No. 1 formula includes Magnoliae flos (Houpu, Cortex *Magnoliae Officinalis*) 15g, Thorowax Root (Chaihu, Radix *Bupleuri*) 20 g, Baical Skullcap Root (Huangqin, Radix *Scutellariae Baicalensis*) 10 g, Pinellia Rhizome (Banxia, Rhizoma *Pinelliae Tematae*) 10 g, Codonopsis Root (Dangshen, Radix *Codonopsis Pilosulae*) 15 g, Snakegourd fruit (Gualou, Fructus *Trichosanthis*) 10 g, Areca Seed (Binglang, Semen *Arecae*) 10 g, Fruit of Caoguo (Caoguo, Fructus *Tsaoko*) 15 g, Anemarrhena Rhizome (Zhimu, Rhizoma *Anemarrhenae Aspheloidis*) 10 g, White Peony Root (Baishaoyao, Radix *Albus Paeoniae Lactiflorae*) 10 g, Licorice Root (Gancao, Radix *Glycyrrhizae*) 10 g, Tangerine Peel (Chenpi, Pericarpium *Citri Reticulatae*) 10 g, and Giant Knotweed Rhizome (Huzhang, Rhizoma *Polygoni Cuspidati*) 10 g. This is effective for light and ordinary patients to improve the symptoms of fever, cough, and

shortness of breath aspect as well as increase the cure rate. Guangzhou Eighth hospital used this traditional Chinese medicine (TCM) formulation to treat 50 patients with mild COVID-19. The body temperature of patients returned to normal, cough symptoms disappeared by 50%, pharyngalgia symptoms disappeared by 52.4%, fatigue symptoms disappeared by 69.6%, and no patient turned to severe disease, after a one-week intervention (5).

The above information demonstrates that Magnoliae flos is possible for treating COVID-19. However, much more works need to be done including the dosage and safety assessment of the Magnoliae flos on the TCM formulation as well as investigating the ability of single and multiple herbs in the TCM clinical therapy to resist disease for regulating "vital, blood, essence, fluid, viscera".

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Conflicts of Interest

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