

LETTER TO THE EDITOR

COVID-19: Phylogenetic approaches may help in finding resources for natural cure

Coronavirus belongs to the family *Coronaviridae*, is one of the large family of viruses, which parasite on different animal species, including bats, camels, and cattle (Biscayart et al., 2020). A new strain named COVID-19 by the World Health Organization (WHO) on February 11, 2020 shares the same clade within the subgenus *sarbecovirus* of the subfamily *Orthocoronavirinae* (Zhu et al., 2020). COVID-19, which was formerly named 2019-nCoV (Chen, Liu, & Guo, 2020; Zhou et al., 2020) causes respiratory, digestive, hepatic, and central nervous systems diseases in humans, animals, birds, and rodents. This virus infects humans through various means and spread between humans to humans, like MERS-CoV, SARS-CoV (Sousou, 2015), and now with this new virus named (SARS-CoV-2) (Albarelo et al., 2020).

Due to the epidemic nature and high rate of deaths, it is essential to develop prevention and therapeutic approaches for the control of this virus. A team of Chinese scientists at the National Engineering Research Center for the Emergency Drug, Beijing Institute of Pharmacology and Toxicology, China, has already started work on designing an effective drug against 2019-nCoV (Khan, Ali, Siddique, & Nabi, 2020; Yuan, 2020). Another research group, Rolf Hilgenfeld (University of Lübeck, Germany), has been working on two compounds to test for their efficiency in contradiction of 2019-nCoV (The Star Times, 2020). University of Queensland, GeoVax Labs Inc, and other world-class research teams have also been joining in the research of vaccine development (Chinese Center for Disease Control and Prevention, 2020; Wang & Jin, 2020). Additionally, an investigation team in Shenzhen and Shanghai have already isolated the 2019-nCoV and established the first applicant vaccine which will be available by next month for trials (Khan et al., 2020).

Although in many cases there is a lack of good clinical evidence supporting the use of herbal extracts and preparations (Williamson, Liu, & Izzo, 2020), the mass media has stated that some individuals are seeking "alternative" medicines to avoid infection with COVID-19 (National Center for Complementary and Integrative Health [NCCIH], 2020). Among them, Traditional Chinese Medicine (TCM) is on the top (Luo et al., 2020; Wang, Li, Yan, & Yao, 2020; Xu et al., 2020). TCMs have been used for thousands of years for the ailments of different diseases (Luo, Wang, Hesse-Fong, Lin, & Yuan, 2019; Ryu, 2018). TCM consultants use several awareness and body practices (acupuncture, tai chi, Chinese herbal products) to report some health issues. The researcher reported that TCM specialists had been sent to Hubei for the treatment and research (The Economic Times, 2020). The treatment for the COVID-19 in Wuhan hospital combines TCM and western medicines. The combination of

western medicines and TCM had been given to more than half of confirmed cases in Hubei province. Eighteen people infected with COVID-19 in Wuhan (Hubei province), were cured and discharged from the local hospital, after receiving combined treatment of TCM and Western medicine (China Daily, 2020a). The patients' ages ranged from 23 to 67-year old, and one of them was observed in a severe condition, reported by Hubei Provincial Hospital of Integrated Chinese and Western Medicine. The patient was admitted to the hospital for 18 days, the longest among the 18 patients, the hospital reported. Head of the Beijing Hospital of TCM Liu Qingquan said: "Compared with the rapid development of Western medicine in recent years, research into TCM has declined. We need to put more importance on TCM and draw on the legacy of TCM treatment of acute diseases to help us fight infectious diseases today."

Another report said that the first group of 23 patients have recovered from COVID-19 pneumonia and discharged on Wednesday morning from Jiangxia Makeshift Hospital, the first Medical institute, which completely accomplished by TCM doctors (China Daily, 2020b). At the start of the operation on 14 February, Makeshift Hospital had admitted 398 patients, with nobody degrading to critical condition, rendering to the hospital. "All these TCM methods largely improve patients' immune system and help in fighting the virus. We are confident that all patients will be cured in the next month," Said Zhu Ying, vice-president of the First Hospital of Hunan University, whose team has cured more than 14 patients till now. The official report said that as of 21st February that 3,200 competent TCM medical employees partaken in treating virus patients in Hubei province, and TCM has been used to treat 60,107 infected patients, or about 85.2% of the entire infected throughout the mainland, as of 17 February (China Daily, 2020b).

As natural product research grows, such frameworks provide novel visions into how knowledge of traditional medicinal plants is working and might be used for the new COVID-19. Progressively, though, there is encouragement for including traditional data of herbal medicine in the exploration of novel medicines for the treatment of viruses. The available knowledge on the traditional plants used are suggested suitable targets for examination bio screening in related clades (Saslis-Lagoudakis et al., 2011). The results that traditional medicinal plants showed strong phylogenetic clustering specifies aiming close relatives of plants with known bioactivity or phylogenetic medicinal hotspots known as hot nodes is a good approach for focused screening (Rønsted et al., 2012; Yessoufou, Daru, & Muasya, 2015). Phylogenetic study plays an important role in the

biological screening of clades of various plant species (Halse-Gramkow, Ernst, Rønsted, Dunn, & Sasis-Lagoudakis, 2016). The traditional knowledge is useful and can help in highlighting plant species in specific clades, to increase the number of relevant assays on these plant species which may similarly help in raising the success rates (Sasis-Lagoudakis et al., 2012).

There is a lot of work that has been done on the advancement of interdisciplinary relationships about the promotion of TCM phylogenetic knowledge. This is most significant as there is an extensive step of erosion of traditional knowledge on plants used globally, and such research might lead to well thoughtful gratitude for the biological and chemical foundations of traditional medicine. Currently, there are no drugs and vaccines to treat COVID-19 approved by government agencies elsewhere. Same as Chinese scientists, it is recommended to use urgent precautions to cure infections caused by viruses all over the world. Using phylogenetic approaches may be helpful in finding herbal plants related to TCM plants in the world to find the best candidate for the treatment of COVID-19.

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CONFLICT OF INTEREST


We declare no conflict of interest for this study.

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