
EDITORIAL

Viral Diseases and Natural Products: Prospects in COVID-19 Treatment (Part II)

The novel coronavirus disease (COVID-19) caused by SARS-CoV-2 has become a pandemic at the beginning of 2020, and till December 25, 2020, nearly 80 million people got infected and 1.75 million people died already. This is one of the most deadly diseases in recent history, with a heavy death toll. Although many drugs have been tested to treat this, no specific drug could yet completely treat this disease. Nowadays, vaccine development probably is a major concern for COVID-19, but drug development remains equally important for treating COVID-19. Active ingredients from natural sources can be a good source of drugs against COVID-19, as it is evident that many natural products are effective against different viral diseases. Previously, we have published a special issue in Current Pharmaceutical Design (vol. 26, issue 41, 2020) on natural products against viral diseases, with a specific focus on COVID-19. With a high volume of scientific works, we have to extend the special issue, and here we are going to present part II of a special issue on natural products against viral diseases, with a specific focus on COVID-19.

As mentioned in previous studies, Wahab et al. [1] further describe the current status of certain natural compounds and their derivatives against different species of coronaviruses, as well as COVID-19, which is an updated listing of previous related works. With the rapid advancement of COVID-19 research, this updated study may provide significant information for the readers. Detail work on antiviral activities of numerous medicinal plants and their extracts as well as secondary metabolites (active ingredients) have been reported by Bibi et al. [2]. They have discussed the extraction procedure of active ingredients, their chemical information, plant source and test system type with a mechanism of action for each secondary metabolite comprehensively. These secondary metabolites could be an important resource for the development of novel and safer drugs to prevent and cure coronavirus infections worldwide. Iqubal et al. [3] indicated that cytokine storm, acute respiratory distress, hypoxia and multi-organ failure are hallmark clinical conditions of COVID-19; targeting the proteins associated with these complications might be of great interest in COVID-19 therapeutics. Several natural products possessing antioxidant, anti-apoptotic, anti-inflammatory and immunomodulatory properties are available, which might help relieve COVID-19 associated symptoms [3]. A specific focus on the drug Remdesivir, which was found to act by inhibiting the RNA dependent RNA-Polymerase activity proposed by Aziz et al. [4] as a strong candidate for the COVID-19 drug. In their article, they also discussed easier COVID-19 diagnostics, which might be helpful for disease prevention. Certain proteins have been identified in SARS-CoV-2, responsible for pathogenesis in the host cell. Quinoline medications (specifically Chloroquine and Hydroxychloroquine) have shown potential effect against SARS-CoV2 in some studies due to their ability to prevent viral entry and anti-inflammatory activities [5]. The possibility of using these natural and some synthetic quinolone compounds against SARS-CoV2 have been comprehensively discussed by Pallayal et al. [5]. With the advancement of computation biology, in silico drug designing has been popular in recent times. Anwar et al. [6] discussed the computation approach to find out targets of antibiotics, specifically macrolides in SARS-CoV-2. The proposed three-way options either by blocking S proteins or ACE2 receptor proteins or inhibiting RdRp to counter any effect of COVID-19 by macrolide for the treatment of COVID-19 [6]. As COVID-19 is thought to be originated from the zoonotic transmission of SARS-CoV-2, COVID-19 in domestic animals might be an important issue too. Kumar et al. [7] discussed the susceptibility of SARS-CoV-2 in some domestic animals like chicken, ducks, and pigs. Precautions are usually advised for preventing human to the animal transmission of the virus, and in some areas, also suggested the avoidance of animal to human spread of the virus.

This special issue will hopefully help researchers to develop natural product-derived drug development for COVID-19. We are thankful to all authors who submitted their articles in this Special Issue, and reviewers, who secured their time in providing valued feedback to improve the submitted manuscripts. Last but not least, GEs are also thankful to Prof. Alessandro Antonelli (EiC) and the management of Current Pharmaceutical Design for their cooperation throughout the processing of the manuscripts.

REFERENCES


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