

Fumigation for indoor sterilization against enveloped viruses such as SARS-COV-2

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Abstract

COVID-19 pandemic is a worldwide war and straining global health systems. Coronaviruses and generally the respiratory viruses are transmitted essentially in the indoor places, but not much in outdoor places which are naturally sterilized by the heat and UV rays of the sun, and this is why the virus transmission is dominant in the wintertime rather than the summer one. SARS-COV-2 is currently emerging badly in Europe and the Americas, the wintertime [1, 2].

We have invented (and filed for patenting) a pharmaceutical formula that exhibited a potential inhibition against the CORONA virus in the indoor place. Our invention is based on sterilization of the air against CORONA through spreading safe disinfectant vapors in indoor places using simple instruments such as “diffusers”. This formula has many advantages:

1. The major mode of action of this formula is through its detergent effect for the lipid bi-layer of the viral envelope such as SARS-COV-2. Thereby, this formula can be used even for the mutant strains of the corona.
2. The formula components are already present in the pharma market, which means it is safe and can be marketed within a very short time.
3. Lungs and air pathways are the target organs for the start of SARS-COV-2 infection and the virus load in the pulmonary airways promotes person-to-person contagion; advantageously, this formula can be administered by inhalation and thus producing their direct effect in the airways and lungs. This gives a good chance for this formula to distract the binding between SARS-COV-2 spike proteins and their cognate ACE2 receptors.
4. Not only killing the SARS-COV-2 virus but also alleviating the symptoms of COVID-19 such as inflammation, bronchospasm, etc (by blocking cytokines release).
5. The main advantage of inhaled drugs is the lack of first-pass metabolism bioavailability
6. The vapor generated by this formula has a greater antimicrobial effect compared with its liquid form.
7. Its components are easily extracted and synthesized and are already available in the market.

Biography

Dr. Mahmoud Elsebai has completed his PhD in 2011 from Bonn University (Germany) and postdoctoral studies from Oulu Uni (Finland) and Nice Uni (France). He has published more than 20 publications (including patent applications) in reputed journals such as J Virology, Med Chem Letters, European J Org Chem and Nat Prod Reports. He is working on chasing hepatitis C Virus using natural compounds and recently in 2016 he has discovered potent and broad spectrum compounds against HCV which published in J Virology. He is a reviewer in many international journals.