Epidemiology: Open Access
ISSN: 2161-1165
2020
Vol.10 No.6

Exploring potential therapeutics targeting coronavirus Spike glycoproteins, and how they might be utilized for treatment of SARS-CoV-2

Zhen Zong Lim*, Alexkumar Rajanayagam, Elif Tuncay *and* Michael Fu

Imperial College, UK

Abstract

The recent outbreak of the novel SARS-CoV-2 has resulted in a worldwide pandemic and left healthcare systems scrambling to cope with the sheer magnitude of the disease outbreak. Taxonomic analysis of SARS-CoV-2 showed it to be a successor of SARS-CoV which caused the 2003 SARS pandemic. SARS-CoV-2 viral entry into host cells is similar to related coronaviruses SARS-CoV and HCoV-NL63, with all three viruses utilizing Spike (S) glycoprotein to interact with ACE2 receptor. SARS-CoV-2 and SARS-CoV S glycoprotein also shares 77-80% primary amino acid sequence identity. Several therapeutics have been developed and shown to be effective against SARS-CoV and HCOV-NL63 viral entry. As such, we investigated the therapeutics targeting SARS-CoV and HCOV-NL63 coronavirus S glycoproteins for possible usage against SARS-CoV-2.

Our research has identified several therapeutics used in the treatment of SARS-CoV and HCOV-NL63 which have shown efficacy against SARS-CoV-2. These treatments can be broadly categorized by their methods of action, namely by targeting S glycoprotein production, targeting S glycoprotein priming proteases, inhibiting RBD-ACE2 interactions, S glycoprotein S2-subunit targeting therapies, cross-reactive antibodies, as well as repurposing clinically approved drugs.

Biography:

Zhen Zong Lim is a 2nd year medical students from Imperial College London, UK with an interest in infectious disease, particularly in treatment and prevention.

11th International Conference on Emerging Infectious Diseases; Webinar- November 23-24, 2020.

Abstract Citation:

Zhen Zong Lim, Exploring potential therapeutics targeting coronavirus Spike glycoproteins, and how they might be utilized for treatment of SARS-CoV-2, Emerging Diseases 2020, 11th International Conference on Emerging Infectious Diseases; Webinar- November 23-24, 2020 (https://emerging-diseases.infectiousconferences.com/abstract/2020/exploring-potential-therapeutics-targeting-coronavirus-spike-glycoproteins-and-how-they-might-be-utilized-for-treatment-of-sars-cov-2)