

Perspectives to the COVID-19 immunopathology and vaccine status

Shyamapada Mandal

University of Gour Banga, India

Abstract

The ongoing coronavirus disease 2019 (COVID-19) pandemic, since its first emergence in China in December 2019 from SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) infection, caused more than 100 million people sick with 21.66 lakhs deaths globally, as of January 28, 2021. The highly infectious Betacoronavirus, SARS-CoV-2, replicates in the upper respiratory system at the disease initial stage (causing mild or asymptomatic COVID-19 in most cases), followed by immunopathological stage of inflammatory response to SARS-CoV-2 infection causing severe/critical COVID-19 with cytokine storm (a stage with substantial elevation of serum pro-inflammatory cytokines levels) and ARDS (acute respiratory distress syndrome) and multiple organ failure (majorly lungs, as well as heart, liver and kidney). However, no specific drug or vaccine is available to effectively combat the COVID-19 pandemic that devastated the most vulnerable (people of old age, or with medical conditions). Vaccine is therefore urgently required to prevent SARS-CoV-2 transmission, and deaths due to COVID-19. This communication thus stands for analysis (based on the available published information) with an update of the vaccines (including the S glycoprotein targeted vaccines) that are in the pipeline of rapid pace of COVID-19 vaccine development.

Received: June 11, 2022; **Accepted:** June 17, 2022; **Published:** June 28, 2022

Biography

Shyamapada Mandal, Professor, Department of Zoology, University of Gour Banga, India, is interested on infectious diseases, probiotics, and genomics and bioinformatics research. He did pre-PhD, PhD, and post- PhD research under the guidance of Professor Nishith Kumar Pal at Calcutta School of Tropical Medicine, India. He has published 115 articles with 8 book chapters. He is life member of IAMM and IASR, India, and fellow member

of SASS, India. Eight national academic and research awards have been conferred to him. He has guided 52 post graduate students; supervised three MPhil and three PhD students, and supervising 6 PhD students. Professor Mandal is among the world's top 2% scientists as per the survey of the Stanford University, published in PLOS (Public Library of Science) Biology (October, 2020).