

# Research Diary

## Rapid, affordable, portable SARS-CoV-2 screening kit KID: 20200110

Viruses such as SARS-CoV-2 (COVID-19) continue to be a significant long-term public health concern because of their genetic mutability, rapid transmission, and ability to move from species to species. Current nucleic acid tests rely on RT-qPCR based method which required longer time (4 to 7 hours) costly machine and trained personal. In this project, we want to overcome current limitation of detection method and develop novel detection platform of SARS-CoV-2 for rapid (2 to 3 h), cost-effective (INR 400 to 500 per sample), sensitive detection in resource-limited settings (without costly RT-qPCR machine). This project is funded from CRG Short-term special call on COVID-19, Science and Engineering Research Board (SERB).

## Antiviral coating for PPE and common surface KID: 20200111

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The virus SARS-CoV-2 (COVID-19) is primarily spreading through the infected aerosol resulting from the infected person coughing or sneezing, the face mask is one of the foremost protective agents from the infection of COVID-19. 3-layer surgical mask is affordable but it has limited efficiency to protect from SARS-CoV-2 as a face mask (including N95) do not have the capacity to kill the COVID-19 virus. The respiratory virus such as COVID-19 can survive on the mask surface from 72 h or longer, leading to possible accidental infection from the mask, particularly for medical personal or front-line worker.

There is an urgent need for a novel solution to make the existing facemasks with effective antiviral (anti-COVID-19) function allowing reuse for a long duration of time. Here we have developed a novel platform to make an anti-SARS-CoV-2 surface by simply spraying our novel formulation on different PEE surface and common area. As shown in Figure -1.



Figure 1. Representation of common face mask before and after anti-viral coating



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