

**Proteo-genomics analysis of SARS-CoV-2 to understand Covid-19 disease biology**

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A novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been rapidly spreading around the globe and has become a public health emergency. In the present scenario, specific treatment as well as vaccine against SARS-CoV-2 infection are lacking. Therefore, to curb this pandemic, it is essential to study the biology of the virus as well as host-virus pathogenesis. We have adopted Proteo-genomics analysis using oro-nasopharyngeal swab samples to examine genome as well as proteome of Covid-19. We performed next-generation sequencing, using cDNA obtained from swab RNA and high-resolution mass spectrometry, which shed light on the clinical proteome of COVID-19 consisting of the proteins elaborated by the virus during infection. Our initial study confirms similarity to Indian variants reported previously. In addition, we also identified the several key host proteins found to be uniquely expressed in COVID-19 patients. Our integrated Omics approach promises to unravel the viral pathobiology and open ways for future diagnostic markers and therapeutic strategies.