SARS-CoV-2, short for Severe Acute Respiratory Syndrome Coronavirus 2, is the virus responsible for the COVID-19 pandemic. It is a single-stranded RNA virus belonging to the family Coronaviridae and the genus Betacoronavirus. This enveloped virus is characterized by spike proteins protruding from its surface, which facilitate its binding to host cells, particularly those in the respiratory tract. Upon entry, the virus replicates within host cells, leading to a range of symptoms that can vary from mild respiratory illness to severe pneumonia and multi-organ failure. SARS-CoV-2 is primarily transmitted through respiratory droplets and close contact with infected individuals. Efforts to control the spread of the virus have included public health measures such as vaccination, masking, physical distancing, and quarantine protocols.