Coronavirus disease 2019 (COVID-19) is a major health concern and can be devastating, especially for the elderly. COVID-19 is the disease caused by the SARS-CoV-2 virus. Although much is known about the mortality of the clinical disease, much less is known about its pathobiology. Although details of the cellular responses to this virus are not known, a probable course of events can be postulated based on past studies with SARS-CoV. A cellular biology perspective is useful for framing research questions and explaining the clinical course by focusing on the areas of the respiratory tract that are involved. Based on the cells that are likely infected, COVID-19 can be divided into three phases that correspond to different clinical stages of the disease [1].