Coronaviruses in Humans—SARS, MERS,

and COVID-19

Coronavirus infection in humans is commonly

associated with mild to severe respiratory diseases,

with high fever, severe inflammation, cough, and

internal organ dysfunction that can even lead to

death (92). Most of the identified coronaviruses

cause the common cold in humans. However, this

changed when SARS-CoV was identified, paving the

way for severe forms of the disease in humans (22).

Our previous experience with the outbreaks of other

coronaviruses, like SARS and MERS, suggests that

the mode of transmission in COVID-19 as mainly

human-to-human transmission via direct contact,

droplets, and fomites (25). Recent studies have

demonstrated that the virus could remain viable for

hours in aerosols and up to days on surfaces; thus,

aerosol and fomite contamination could play potent

roles in the transmission of SARS-CoV-2 (257).

The immune response against coronavirus is vital

to control and get rid of the infection. However,

maladjusted immune responses may contribute to the

immunopathology of the disease, resulting in

impairment of pulmonary gas \_ exchange.

Understanding the interaction between CoVs and

host innate immune systems could enlighten our