

Inclusion Criteria for Recipients:

1. Informed consent will be obtained.
1. Confirmed COVID-19 cases confirmed by RT-PCR laboratory tests
2. Moderate Severe or Severe COVID-19 related features

Moderate Severe or Severe COVID-19, defined by the presence of any of the following features:

- i. Shortness of breath
- ii. Respiratory rate $\geq 30/\text{min}$,
- iii. Arterial blood oxygen saturation $\leq 93\%$,
- iv. Lung infiltrates $> 50\%$ within 24 to 48 hours developed from the onset of symptoms

Exclusion Criteria for Recipients:

Critical COVID-19, defined by the presence of any of the following features:

- v. Respiratory failure,
- vi. Shock
- vii. Multiple organ dysfunction