CLAIMS

1. Use of a composition comprising mesenchymal lineage precursor or stem cells (MLPSCs) in the manufacture of a medicament for treating or preventing Acute Respiratory Distress Syndrome (ARDS) in a human subject in need thereof, in which the subject with ARDS is less than 65 years old and is also taking a corticosteroid, and in which the ARDS is caused by a coronavirus infection.

2. Use according to Claim 1, in which the ARDS is moderate or severe.

3. Use according to Claim 1 or 2, in which a corticosteroid is to be administered to the subject, preferably in which the corticosteroid is dexamethasone.

4. Use according to Claim 1, 2 or 3, in which the subject is less than 60 years old, preferably in which the subject is between 18 and 65 years old or between 18 and 60 years old.

5. Use according to any preceding claim, in which the coronavirus is Severe Acute Respiratory Syndrome coronavirus (SARS-CoV), Middle East Respiratory Syndrome coronavirus (MERS-CoV) or COVID-19.

6. Use according to any preceding claim, in which the ARDS is caused by a thrombosis such as a venous thrombosis or an arterial thrombosis, preferably in which the ARDS is caused by a pulmonary embolism.

7. Use according to any preceding claim, in which a treated subject's risk of mortality is reduced after treatment.

8. Use according to any preceding claim, in which a treated subjects risk of mortality is reduced between 30 and 60%.

9. Use according to any preceding claim, in which a treated subject has improved 60 day survival.

10. Use according to any preceding claim, in which the MLPSCs have been cryopreserved and thawed, and/or in which the MLPSCs are culture expanded from an intermediate cryopreserved MLPSCs population, preferably in which the MLPSCs are culture expanded for

at least about 5 passages, optionally in which the culture expansion comprises at least 20 or 30 population doublings.

11. Use according to any preceding claim, in which the MLPSCs are mesenchymal stem cells (MSCs), preferably in which the MLPSCs are allogeneic, optionally in which the MLPSCs are modified to carry or express an anti-viral drug or thrombolytic agent.

12. Use according to any preceding claim, in which between 1 x 10^7 and 2 x 10^8 cells per dose, preferably about 1 x 10^8 cells per dose, more preferably 2 x 10^6 cells/kg of body weight are to be administered to the subject.

13. Use according to Claim 12, in which two doses are to be administered, preferably in which a second dose is to be administered within 7 days of the subject having been administered a first dose, more preferably in which the second dose is to be administered 4 days after the first dose.

14. Use according to any preceding claim, in which the composition further comprises Plasma-Lyte A (70%), DMSO (10%), HSA (25%) solution, the HSA solution comprising 5% HSA and 15% buffer, optionally in which the composition comprises greater than 6.68x10^6 viable cells/mL.

15. Use according to any preceding claim, in which the subject is on a ventilator and in which the subject is taken off the ventilator after treatment, preferably in which the subject is taken off a ventilator within 60 days of treatment.

16. Use according to any preceding claim, in which treatment decreases the level of at least one inflammatory biomarker(s) relative to baseline, wherein the at least one inflammatory biomarker(s) indicate:

(a) reduced neutrophil and macrophage influx into lungs;

(b) reduced inflammasome;

(c) reduced macrophage activation and neutrophil migration to lungs;

(d) reduced T cell influx and activation; or

(e) reduced circulating biomarkers of macrophage and neutrophil inflammation.

17. Use according to Claim 16, in which the inflammatory biomarker(s) is one or more of the following:

a CXCR3-binding chemokine, preferably CXCL10, and/or CXCL9;

CCR2-binding chemokine, preferably CCL2, CCL3, and/or CCL7;

IL-6;

IL-8;

TNF;

IL-18;

CCL19;

IL-4;

IL-13;

GM-CSF;

CRP; or

Ferritin.

18. Use according to any preceding claim, in which treatment reduces CRP and/or ferritin levels within 3 to 14 days of MLPSCs having been administered.

19. Use according to Claim 18, in which respiratory function as defined by Berlin criteria is improved at day 14 and/or day 21.