

CLAIMS

1. A method for treating COVID-19 in a patient in need of such treatment, comprising administering to the patient a therapeutically effective amount of CGRP inhibitor.
2. A method for reversing, alleviating, ameliorating, inhibiting, slowing down or preventing the onset, progression, development, severity or recurrence of a symptom, complication or condition, or biochemical indicia associated with pulmonary injury associated with COVID-19 in a patient, comprising administering to the patient a therapeutically effective amount of CGRP inhibitor.
3. A method for preventing pulmonary injury associated with COVID-19 in a patient, comprising administering to the patient a therapeutically effective amount of CGRP inhibitor.
4. A method for treating pulmonary edema associated with COVID-19 in a patient in need of such treatment, comprising administering to the patient a therapeutically effective amount of CGRP inhibitor.
5. A method for treating neurogenic inflammation associated with COVID-19 in a patient in need of such treatment, comprising administering to the patient a therapeutically effective amount of CGRP inhibitor.
6. A method for treating a disorder characterized by upregulation of transient receptor potential channel associated with COVID-19, comprising administering to a patient in need of such treatment a therapeutically effective amount of CGRP inhibitor.
7. A method for slowing down or preventing transmission of bacterial or viral infection from a patient to another person associated with COVID-19, comprising administering to the patient a therapeutically effective amount of CGRP inhibitor.

8. The method according to any one of Claims 1 to 7, wherein the patient has another pulmonary injury.
9. The method according to Claim 8, wherein the other pulmonary injury is caused by influenza virus, parainfluenza virus, respiratory syncytial virus, human metapneumoviruses, adenovirus, rhinovirus, enterovirus, hantavirus, coronavirus, or a combination thereof.
10. The method according to Claim 8, wherein the other pulmonary injury is caused by MERS-associated coronavirus.
11. The method according to Claim 8, wherein the patient has pulmonary inflammation.
12. The method according to Claim 11, wherein the pulmonary inflammation is associated with pulmonary inflammatory disorders, chronic cough, common cold, pandemic flu, pneumonia, acute respiratory distress syndrome, severe acute respiratory syndrome, middle east respiratory syndrome, croup, acute lung injury, idiopathic respiratory distress syndrome, or idiopathic pulmonary fibrosis pulmonary hypertension, neonatal pulmonary hypertension, neonatal bronchopulmonary dysplasia, pulmonary embolism, chronic obstructive pulmonary disease, acute bronchitis, chronic bronchitis, emphysema, bronchiolitis, bronchiectasis, radiation pneumonitis, hypersensitivity, pleural effusion, pertussis, pleurisy, pneumonitis, asbestosis, acute inflammatory asthma, acute smoke inhalation, allergic asthma, work-related asthma, iatrogenic asthma, tuberous sclerosis, cystic fibrosis, tuberculosis, lung cancer, sarcoidosis, sleep apnea, spirometry, sudden infant death syndrome, alveolar proteinosis, or alpha-L-protease deficiency.
13. The method according to any one of Claims 1 to 7, wherein the CGRP inhibitor comprises a CGRP antibody, a CGRP receptor antibody, an antigen-binding fragment from a CGRP antibody or a CGRP receptor antibody, a CGRP infusion inhibitory protein, a CGRP bio-

neutralizing agent, a CGRP receptor antagonist, a small molecule CGRP inhibitor, or a polypeptide CGRP inhibitor.

14. The method according to Claim 13, wherein the antigen-binding fragment comprises one or both of a heavy chain variable region and a light chain variable region from a CGRP antibody or a CGRP receptor antibody.

15. The method according to Claim 14, wherein the heavy chain variable region comprises HCDR1, HCDR2, and HCDR3 from the heavy chain variable region of CGRP antibody or CGRP receptor antibody and/or wherein the light chain variable region comprises LCDR1, LCDR2, and LCDR3 from the light chain variable region of CGRP antibody or CGRP receptor antibody.

16. The method according to Claim 15, wherein the heavy chain variable region and/or the light chain variable region comprises the heavy chain variable region and/or the light chain variable region of CGRP or CGRP receptor antibody.

17. The method according to Claim 13, wherein the CGRP antibody is selected from galcanezumab-gnlm, fremanezumab-vfrm, eptinezumab-jjmr, and erenumab-aooe.

18. The method according to Claim 13, wherein the CGRP receptor antagonist is selected from olcegepant, telcagepant, ubrogepant, atogepant, rimegepant, and zavegepant.

19. The method according to Claim 18, wherein the CGRP receptor antagonist is rimegepant.

20. The method according to Claim 18, wherein the CGRP receptor antagonist is zavegepant.

21. The method according to any one of Claims 1 to 7, wherein the CGRP inhibitor is administered intranasally or nose-to-brain or by delivery directly to the lungs of the patient.
22. The method according to any one of Claims 1 to 7, further comprising administering an interleukin inhibitor to the patient.
23. The method according to Claim 22, wherein the interleukin inhibitor is an IL-6 inhibitor, an IL-9 inhibitor, an IL-17 inhibitor, or a combination thereof.
24. The method according to Claim 23, wherein the IL-6 inhibitor is at least one selected from ACTEMRA® (tocilizumab) and SYLVANT® (siltuximab).
25. The method according to Claim 24, wherein the IL-6 inhibitor is ACTEMRA® (tocilizumab).
26. The method according to Claim 23, wherein the IL-6 inhibitor is at least one selected from olokizumab (CDP6038), elsilimomab, BMS-945429 (ALD518), sirukumab (CNT0136), levilimab (BCD-089), and CPSI-2364.
27. The method according to Claim 23, wherein the IL-17 inhibitor is at least one selected from COSENTYX® (secukinumab), TALTZ® (ixekizumab), and SILIQ® (brodalumab).
28. The method according to Claim 22, wherein the interleukin inhibitor is at least one selected from ARCALYST® (rilonasept), ILARIS® (canakinumab), KINERET® (anakinra), CINQAIR® (reslizumab), STELARA® (ustekinumab), FACENRA® (benralizumab), NUCALA® (mepolizumab), DUPIXENT® (dupilumab), ILUMYA® (tildrakizumab), TREMFYA® (guselkumab), KEVZARA® (sarilumab), SIMULECT® (basiliximab), SKYRIZI® (risankizumab), ZENAPAX® (daclizumab), and ZINBRYTA® (daclizumab).

29. The method according to any one of Claims 1 to 7, further comprising administering an anti-viral agent to the patient.

30. The method according to Claim 29, wherein the anti-viral agent comprises remdesivir, ritonavir, lopinavir, or a combination thereof.

31. The method according to Claim 29, wherein the anti-viral agent further comprises interferon beta.

32. The method according to Claim 30, wherein the anti-viral agent comprises remdesivir.

33. The method according to Claim 33, wherein the anti-viral agent comprises ritonavir and lopinavir.

34. The method according to Claim 30, wherein the anti-viral agent further comprises interferon beta.

35. The method according to any one of Claims 1 to 7, further comprising administering an anti-bacterial agent to the patient.

36. The method according to Claim 35, wherein the anti-bacterial agent comprises an anti-malarial agent.

37. The method according to Claim 36, wherein the anti-malarial agent comprises chloroquine, hydroxychloroquine, azithromycin, or a combination thereof.

38. The method according to Claim 36, wherein the anti-malarial agent comprises hydroxychloroquine and azithromycin.

39. A pharmaceutical composition comprising a CGRP inhibitor and at least one selected from an interleukin inhibitor, an anti-viral agent, and an anti-bacterial agent.

40. A kit for treating a condition associated with pulmonary injury in a patient, the kit comprising:

- (a) a pharmaceutical composition of Claim 39; and
- (b) instructions for administering the pharmaceutical composition.

41. The kit according to Claim 40, further comprising an apparatus for administering the pharmaceutical composition.