

Claims

1. Use of a non-depleting anti-CD6 antibody that specifically binds to domain 1 of CD6 for the treatment of infectious disease that leads to a cytokine storm or a cytokine release syndrome wherein the non-depleting anti-CD6 antibody comprising of amino acids in SEQ ID Nos: 1 and 2 or a non-depleting anti-CD6 antibody that specifically binds to domain 1 of CD6 having 98% identity to SEQ ID Nos: 1 and 2.
2. The use of a non-depleting anti-CD6 monoclonal antibody according to claim 1 wherein the infectious diseases are caused by the pathogens selected from the group comprising of: - cytomegalovirus, coronavirus, Epstein-Barr virus, group A streptococci, avian influenza virus, influenza virus, smallpox virus, dengue virus, pneumococci.
3. Use of a non-depleting anti-CD6 antibody according to claim 1 that specifically binds to domain 1 of CD6 for the treatment of infectious disease caused by the coronavirus that lead to a cytokine storm or a cytokine release syndrome.
4. The use according to claim 3, wherein the coronavirus is SARS, MERS-CoV or COVID-19 coronavirus and variants thereof.
5. Use of a non-depleting anti-CD6 antibody according to claim 1 that specifically binds to domain 1 of CD6 for the treatment of the infectious diseases caused by the bacterial agent selected from group A streptococci and pneumococci.
6. The use according to claim 1, where the non-depleting anti-CD6 antibody that specifically binds to domain 1 of CD6 and having 98% identity to SEQ ID Nos: 1 and 2 comprises of SEQ ID NO: 1 and SEQ ID NO: 3.
7. Use of an anti-CD6 antibody that specifically binds to domain 1 of CD6 for the treatment of COVID-19 and variants thereof wherein the anti-CD6 antibody reduces expression of cytokines and comprises amino acids in SEQ ID Nos: 4 and 5 or an anti-CD6 antibody that specifically binds to domain 1 of CD6 having 98% identity to SEQ ID Nos: 4 and 5.

8. The use according to claim 7, where the anti-CD6 antibody that specifically binds to domain 1 of CD6 and having 98% identity to SEQ ID Nos: 4 and 5 comprises of SEQ ID NO: 4 and SEQ ID NO: 6.
9. The use according to prior claims wherein the anti-CD6 antibody is in an effective amount of between 0.5 mg/kg of body weight and 10 mg/kg of body weight.
10. A method of treating a coronavirus-infected subject comprising treatment with a therapeutically effective amount of an anti-CD6 antibody comprising amino acid sequences as set forth in SEQ ID NOs: 4 and 5 or an amino acid sequence having at least 98% identity thereto comprising SEQ ID Nos: 4 and 6, wherein the anti-CD6 antibody reduces high expression levels of cytokines formed during a cytokine storm.
11. The method according to claim 10, wherein the coronavirus is SARS, MERS-CoV or COVID-19 coronavirus.
12. A method of treating a bacteria-infected subject comprising treatment with a therapeutically effective amount of an anti-CD6 antibody comprising amino acid sequences as set forth in SEQ ID NOs: 4 and 5 or an amino acid sequence having at least 98% identity thereto comprising SEQ ID Nos: 4 and 6, wherein the anti-CD6 antibody reduces high expression levels of cytokines formed during a cytokine storm.
13. The method of treating bacterial-infection according to claim 12 wherein the infectious diseases are caused by the pathogens selected from the group comprising of: group A streptococci and pneumococci.
14. . The method of claim 10-13, wherein the therapeutically effective amount of an anti-CD6 antibody is between 0.5 mg/kg of body weight and 10 mg/kg of body weight.
15. . The method of claim 14, wherein the anti-CD6 antibody is administered at least twice to the subject, with time elapsed between two consecutive administrations is between 24 and 96 hours.

16. A composition for alleviating the cytopathic destructive effects of COVID-19 infection in a human patient comprising a therapeutically effective amount of an anti-CD6 antibody comprising SEQ ID NO: 4 and SEQ ID NO: 5 or SEQ ID NO: 6 further comprising one or more one active agent selected from Reverse transcriptase (RT) inhibitors, Protease inhibitors, Fusion inhibitors, Cytosorp, IL6 receptor antagonists or JAK inhibitors.
17. The composition of claim 16, wherein the therapeutically effective amount of an anti-CD6 antibody is between 0.5 mg/kg of body weight and 10 mg/kg of body weight.
18. The composition of claim 16, wherein the anti-CD6 antibody is administered at least twice to the subject, with time elapsed between two consecutive administrations is between 24 and 96 hours.
19. A kit for treating a subject against COVID-19 and variants thereof wherein the kit comprises a therapeutically effective amount of an anti-CD6 antibody consisting of an amino acid sequence of SEQ ID NOs 4 and 5 or an amino acid sequence having 98% identity thereto consisting of SEQ ID Nos: 4 and 6.
20. Use of an anti-CD6 antibody in the manufacture of a medicament for the treatment or prevention of cytokine storm exhibited by infection of a coronavirus or bacterial agent such as group A streptococci and pneumococci in a mammal, the anti-CD6 antibody comprising an amino acid sequence of SEQ ID NO: 4 and SEQ ID NO: 5 or 6.
21. The use of claim 20, wherein the coronavirus is SARS, MERS-CoV or COVID-19 coronavirus.
22. A method of treating a coronavirus-infected subject comprising treatment with a therapeutically effective amount of an anti-CD6 antibody comprising amino acid sequences as set forth in SEQ ID NOs: 4 and 6, wherein the concentrations of C-reactive protein and ferritin are reduced within 48 hours after initial treatment.
23. The use or method according to any one of claims 1-22, wherein the anti-CD6 antibody is a humanized IgG1 monoclonal antibody.

24. The use or method according to claim 23, wherein the anti-CD6 antibody is Itolizumab.