

CLAIMS

1. A composition comprising a single domain antigen binding domain (sdABD) that binds to the Spike protein having SEQ ID NO:300 or the sequence described in Figure 17A, wherein said sdABD comprises, from N- to C-terminal, FR1-vhCDR1-FR2-vhCDR2-FR3-vhCDR3-FR, wherein said vhhCDR1, vhhCDR2 and said vhhCDR3 is selected from the sets depicted in Figure 13, Figure 15 and Figure 25.
2. A composition according to claim 1 wherein said vhCDR1 has a sequence GI(I/Y/W/F/V/L)FGRNA, said vhCDR2 has a sequence TRR(G/H/Y/G/Q)SITY and said vhCDR3 has a sequence AADPA(S/V/L/I/T)PA(P/F/W/Y/L/V)GDY.
3. A composition according to claim 1 or 2 wherein said composition further comprises an half-life extension domain covalently attached to said sdABD using a domain linker.
4. A composition comprising a MASC fusion protein that binds to the Spike protein having SEQ ID NO: 300 or the sequence described in Figure 17A, wherein said MASC fusion protein comprises, from N- to C-terminal, FR1-vhCDR1-FR2-vhCDR2-FR3-vhCDR3-FR-domain linker-FR1-vhCDR1-FR2-vhCDR2-FR3-vhCDR3-FR, wherein said vhhCDR1, vhhCDR2 and said vhhCDR3 is selected from the sets depicted in Figure 13, Figure 15 and Figure 25.
5. A composition according to claim 4 wherein said vhCDR1 has a sequence GI(I/Y/W/F/V/L)FGRNA, said vhCDR2 has a sequence TRR(G/H/Y/G/Q)SITY and said vhCDR3 has a sequence AADPA(S/V/L/I/T)PA(P/F/W/Y/L/V)GDY.
6. A composition according to claim 4 or 5 wherein said composition further comprises an half-life extension domain covalently attached to said sdABD using a domain linker.
7. A composition comprising a MASC fusion protein that binds to the Spike protein having SEQ ID NO: 300 or the sequence described in Figure 17A, wherein said MASC fusion protein comprises, from N- to C-terminal, FR1-vhCDR1-FR2-vhCDR2-FR3-vhCDR3-FR-domain linker-FR1-vhCDR1-FR2-vhCDR2-FR3-vhCDR3-FR-domain linker-FR1-vhCDR1-FR2-

vhCDR2-FR3-vhCDR3-FR, wherein said vhhCDR1, vhhCDR2 and said vhhCDR3 is selected from the sets depicted in Figure 13, Figure 15 and Figure 25.

8. A composition according to claim 7 wherein said vhCDR1 has a sequence GI(I/Y/W/F/V/L)FGRNA, said vhCDR2 has a sequence TRR(G/H/Y/G/Q)SITY and said vhCDR3 has a sequence AADPA(S/V/L/I/T)PA(P/F/W/Y/L/V)GDY.

9. A composition according to claim 7 or 8 wherein said composition further comprises an half-life extension domain covalently attached to said sdABD using a domain linker.

10. A nucleic acid encoding the composition of any of claims 1 to 9.

11. An expression vector comprising the nucleic acid of claim 10.

12. A host cell comprising the expression vector of claim 11.

13. A method of making a composition according to any of claims 1 to 9 comprising culturing the host cell of claim 12 under conditions whereby said composition is expressed and recovering said composition.

14. The composition of any of claims 1 to 9 for use in therapy.

15. Use of the composition of any of claims 1 to 9 in the manufacture of a medicament for treating or preventing an infection by SARS-CoV2 virus.

16. Use of the composition of any of claims 1 to 9 in the manufacture of a medicament for neutralizing the SARS-CoV2 virus.

17. A lyophilized composition comprising a MASC protein of any of claims 1 to 9.

18. A composition comprising an antigen binding domain (ABD) that binds to the trimeric Spike protein, each monomer of the Spike protein having SEQ ID NO: 300 or the sequence described in Figure 17A, wherein said ABD binds to a first epitope of a first monomer and binds to a second epitope of a second monomer.

19. A composition according to claim 18 where said first epitope comprises residues 446, 447, 449, 453, 455, 456, 483-486, 489-490, 493-496, 498, 501, and 505 within the ACE2 binding region of the SC2 spike RBD and said second epitope comprises residues 342, 343, 367, 371-375, 404, 436-441.

20. A composition comprising an ABD that binds to the trimeric Spike protein, each monomer of the Spike protein having SEQ ID NO: 300 or the sequence described in Figure 17A, wherein said binding results in the RBD of said Spike protein being locked into the non-extended position.