

CLAIMS

WHAT IS CLAIMED IS:

1. A immunogenic composition comprising:

a recombinant protein including a sequence selected from ~~the group consisting~~

5 ~~of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, and any~~

~~polypeptide encoded by a polynucleotide which is at least 80% homologous with~~

~~SEQ ID NO: 1-4~~, wherein the recombinant protein contains an IgG1 Fc protein

fragment having a length of at least 6 amino acids; or

a nucleic acid molecule encoding the recombinant protein.

10 2. The immunogenic composition of claim 1, wherein the IgG1 Fc protein fragment

has a length of between 12-18 amino acids.

3. The immunogenic composition of claim 1, wherein the recombinant protein fuses

with a secreted signal peptide.

4. The immunogenic composition of claim 1, further comprising immunogenic

15 compounds, adjuvants, pharmaceutically acceptable carriers, stabilisers or

preservatives.

5. A SARS-CoV-2 vaccine comprising:

a recombinant protein including a sequence selected from ~~the group consisting~~
of SEQ ID NO: 1, ~~SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, and any~~
~~polypeptide encoded by a polynucleotide which is at least 80% homologous with~~
~~SEQ ID NO: 1-4~~, wherein the recombinant protein contains an IgG1 Fc protein

5 fragment having a length of at least 6 amino acids; or

a nucleic acid molecule encoding the recombinant protein.

6. The vaccine of claim 5, wherein the IgG1 Fc protein fragment has a length of
between 12-18 amino acids.

7. The vaccine of claim 5, wherein the recombinant protein fuses with nucleocapsid
10 phosphoprotein protein of SARS-CoV-2, envelope protein of SARS-CoV-2 or
membrane protein of SARS-CoV-2.

8. The vaccine of claim 5, wherein the recombinant protein encoded by the nucleic
acid molecule fuses with nucleocapsid phosphoprotein protein of SARS-CoV-2,
envelope protein of SARS-CoV-2 or membrane protein of SARS-CoV-2.

15 9. The vaccine of claim 5, further comprising immunogenic compounds, adjuvants,
pharmaceutically acceptable carriers, stabilisers or preservatives.

10.A vector comprising a nucleic acid molecule encoding a recombinant protein
including a sequence selected from ~~the group consisting of~~ SEQ ID NO: 1, ~~SEQ~~

~~ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, and any polypeptide encoded by the polynucleotide which is at least 80% homologous with SEQ ID NO: 1-4, wherein the recombinant protein contains an IgG1 Fc protein fragment having a length of at least 6 amino acids.~~

5 11. The vector of claim 10, wherein the recombinant protein encoded by the nucleic acid molecule fuses with nucleocapsid phosphoprotein protein of SARS-CoV-2, envelope protein of SARS-CoV-2 or membrane protein of SARS-CoV-2.

12. The vector of claim 10, wherein the vector is selected from the group consisting of baculovirus, vaccinia virus, avipoxvirus, adenovirus, alphavirus, rhabdovirus,
10 and herpesvirus.

13. The vector of claim 12, wherein the vector is baculovirus.

14. A immunogenic composition comprising:

a nucleic acid molecule including a sequence selected from ~~the group consisting of~~ SEQ ID NO: 6, ~~SEQ ID NO: 7, SEQ ID NO: 8 and SEQ ID NO: 9.~~

15