CLAIMS

1. A primer set for a nucleic acid amplification analysis to detect a SARS-CoV-2 virus, the primer set comprising:

(a) Set 12: SEQ ID No. 1, SEQ ID NO. 2, SEQ ID No. 7 attached to SEQ ID No. 8 by a first linker, and SEQ ID No. 9 attached to SEQ ID No. 10 by a second linker, wherein the first linker and second linker each independently has 1 to 100 nucleotides, wherein the first linker does not consist of a first sequence complementary to a first nucleotide sequence between the two binding regions in the SARS-CoV-2 virus that binds to SEQ ID No. 7 and SEQ ID No. 8, wherein the second linker does not consist of a second sequence complementary to a second nucleotide sequence between the two binding regions in the SARS-CoV-2 virus that binds to SEQ ID No. 9 and SEQ ID No. 10; and

(b) Set 20: SEQ ID No. 21, SEQ ID NO. 22, SEQ ID No. 27 attached to SEQ ID No. 28 by a fifth linker, and SEQ ID No. 29 attached to SEQ ID No. 30 by a sixth linker, wherein the fifth linker and sixth linker each independently has 1 to 100 nucleotides, wherein the fifth linker does not consist of a fifth sequence complementary to a fifth nucleotide sequence between the two binding regions in the SARS-CoV-2 virus that binds to SEQ ID No. 27 and SEQ ID No. 28, wherein the sixth linker does not consist of a sixth sequence complementary to a sixth nucleotide sequence between the two binding regions in the SARS-CoV-2 virus that binds to SEQ ID No. 29 and SEQ ID No. 30.

2. The primer set according to claim 1 further comprising Set 10: SEQ ID No. 11, SEQ ID NO. 12, SEQ ID No. 17 attached to SEQ ID No. 18 by a third linker, and SEQ ID No. 19 attached to SEQ ID No. 20 by a fourth linker, wherein the third linker and fourth linker each independently has 1 to 100 nucleotides, wherein the third linker does not consist of a third sequence complementary to a third nucleotide sequence between the two binding regions in the SARS-CoV-2 virus that binds to SEQ ID No. 17 and SEQ ID No. 18,

wherein the fourth linker does not consist of a fourth sequence complementary to a fourth nucleotide sequence between the two binding regions in the SARS-CoV-2 virus that binds to SEQ ID No. 19 and SEQ ID No. 20.

3. The primer set according to claim 1 wherein Set 12 further comprises SEQ ID No. 3 and/or SEQ ID No. 4; and Set 20 further comprises SEQ ID No. 23 and/or SEQ ID No. 24, and the primer set according to claim 2 wherein Set 10 further comprises SEQ ID No. 13 and/or SEQ ID No. 14.

4. The primer set according to claim 1 wherein a sequence of any one of the first linker, the second linker, the fifth linker and the sixth linker, and the third linker and fourth linker of claim 2, has minimal complimentary to the SEQ ID Nos. in the respective set.

5. The primer set according to claim 4 wherein a sequence of any one of the first linker, the second linker, the third linker, the fourth linker, the fifth linker and the sixth linker is TTTT.

6. The primer set according to any one of claims 1 to 5, wherein the nucleic amplification analysis is LAMP or RT-LAMP.

7. The primer set according to any one of claims 1 to 6, wherein one or more primers of the SEQ ID in each primer set is or are labelled with a detectable moiety.

8. A method to detect a SARS-CoV-2 virus in a sample, the method comprising:

(a) providing a primer set according to any one of claims 1 to 7;

(b) carrying out a nucleic acid amplification reaction using the sample and the primer set to produce a reaction product mixture; and

(c) analysing the reaction product mixture to determine the presence of the SARS-CoV-2 virus in the sample.

9. The method according to claim 8, wherein the nucleic acid amplification reaction is LAMP or RT-LAMP.

10. The method according to any one of claims 8 or 9, wherein the sample is any one selected from the group consisting of whole blood, plasma, serum, lymph, urine, saliva, tears, faeces, sewage, and nasopharyngeal secretions.

11. The method according to any one of claims 8 to 10, wherein the step of analysing the reaction product mixture is by measuring one or more of the following: colour change, pH, ionic concentrations, fluorescence, nucleotide sequences, amplification products, or turbidity of the reactants.

12. A composition for detecting a SARS-CoV-2 virus, comprising a primer set according to any one of claims 1 to 7; a DNA polymerase; and a reverse transcriptase.

13. A kit for detecting a SARS-CoV-2 virus, comprising a primer set according to any one of claims 1 to 7; a DNA polymerase; a reverse transcriptase; and a positive control.