**Supplementary Materials:** Supplementary figure 1-5

**Supplementary figure 1: Plasmid map of SARS-CoV-2-Spike expression vector**

**Diagram

Description automatically generated**

**Supplementary Fig. 2 Protein sequence of SARS-CoV-2-614G Spike-ΔC19**

**A picture containing text

Description automatically generated**

**Supplementary Fig. 3 Protein sequence of SARS-CoV-2-UK variant Spike-ΔC19**

**Text

Description automatically generated with medium confidence**

**Supplementary Fig. 4 Protein sequence of SARS-CoV-2-Delta variant Spike-ΔC19**

**Text

Description automatically generated with low confidence**

**Supplementary Fig. 5 Protein sequence of SARS-CoV-2-Brazil variant Spike-ΔC19**

**A picture containing text

Description automatically generated**