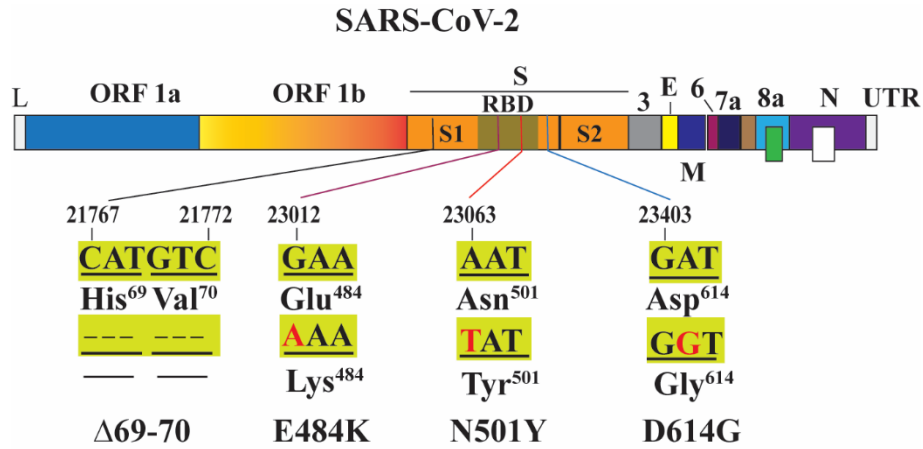
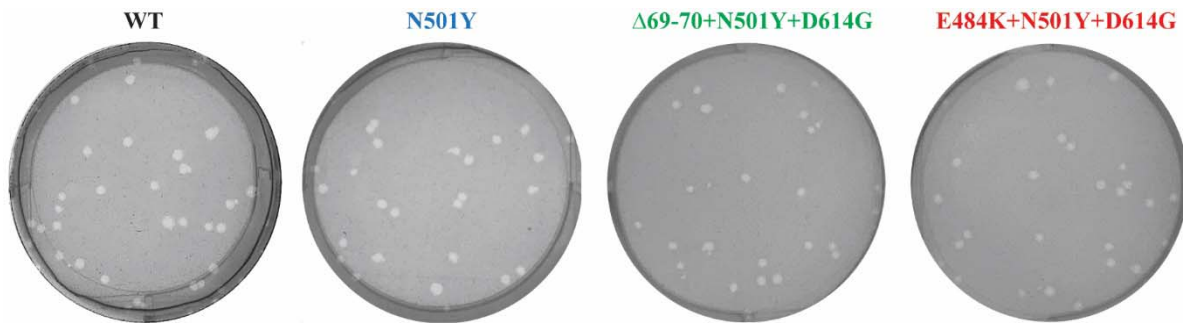


212 **Supplementary information**



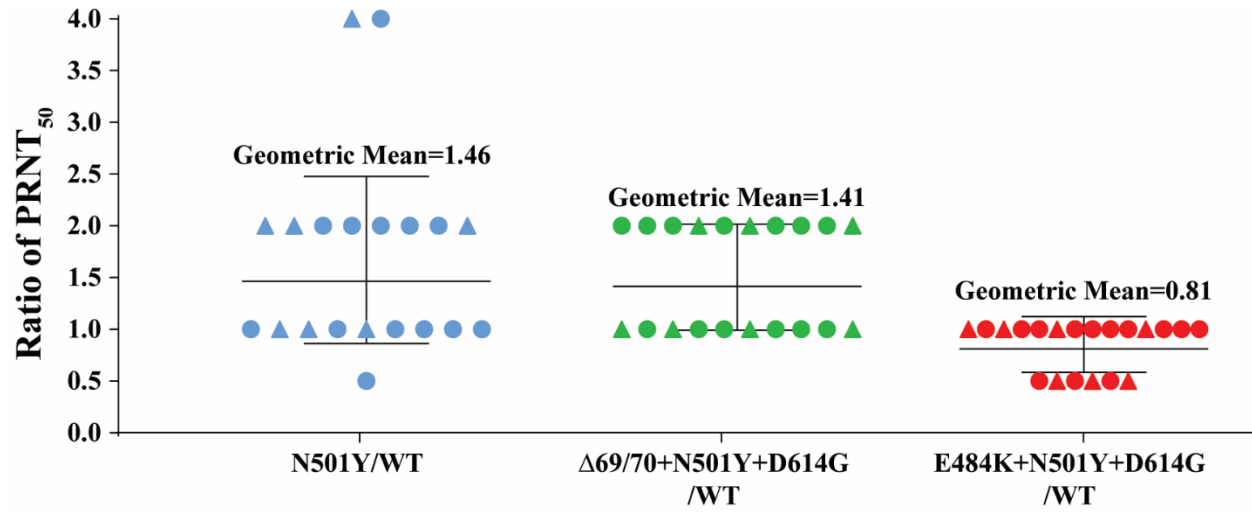
213

214 **Supplementary Figure 1. Engineered mutations.** Nucleotide and amino acid positions are
 215 indicated. Deletions are depicted by dotted lines. Mutant nucleotides are in red. L, leader
 216 sequence; ORF, open reading frame; RBD, receptor binding domain; S, spike glycoprotein; S1,
 217 N-terminal furin cleavage fragment of S; S2, C-terminal furin cleavage fragment of S; E,
 218 envelope protein; M, membrane protein; N, nucleoprotein; UTR, untranslated region.



219

220 **Supplementary Figure 2. Plaque morphologies of WT (USA-WA1/2020), mutant N501Y,**
221 **Δ69/70+N501Y+D614G, and E484K+N501Y+D614G SARS-CoV-2s on Vero E6 cells.**



224

225 **Supplementary Figure 4. Ratios of neutralization GMTs against mutant viruses to GMTs**
226 **against WT virus.** Triangles represent sera drawn two weeks after the second dose of
227 vaccination; circles represent sera drawn four weeks after the second dose of vaccination.

228 **Supplementary Table 1. PRNT₅₀s of twenty BNT162b2 post-immunization sera against**
229 **wild-type (USA-WA1/2020) and mutant N501Y SARS-CoV-2s**

Serum ID	PRNT ₅₀		PRNT ₅₀ ratio (N501Y/WT)
	WT	N501Y	
1	160	640	4
2	160	320	2
3	320	640	2
4	80	160	2
5	160	160	1
6	320	320	1
7	640	640	1
8	160	160	1
9	640	640	1
10	640	1280	2
11	160	640	4
12	320	320	1
13	640	1280	2
14	640	320	0.5
15	320	640	2
16	320	640	2
17	640	640	1
18	640	1280	2
19	640	640	1
20	640	640	1

230

231

232 **Supplementary Table 2. PRNT₅₀s of twenty BNT162b2 post-immunization sera against**
 233 **wild-type (USA-WA1/2020), Δ69/70+N501Y+D614G, and E484K+N501Y+D614G SARS-CoV-**
 234 **2s**

Serum ID	PRNT ₅₀			PRNT ₅₀ ratio	
	WT	Δ69/70+N501Y+D614G	E484K+N501Y+D614G	Δ69/70+N501Y+D614G/WT	E484K+N501Y+D614G/WT
1	320	640	320	2	1
2	160	160	80	1	0.5
3	640	1280	640	2	1
4	160	160	80	1	0.5
5	320	320	320	1	1
6	640	640	640	1	1
7	640	1280	320	2	0.5
8	320	320	160	1	0.5
9	1280	1280	1280	1	1
10	640	1280	640	2	1
11	320	320	320	1	1
12	640	1280	320	2	0.5
13	1280	2560	1280	2	1
14	320	320	320	1	1
15	320	640	320	2	1
16	640	640	640	1	1
17	640	1280	640	2	1
18	320	640	320	2	1
19	640	640	320	1	0.5
20	640	1280	640	2	1

235