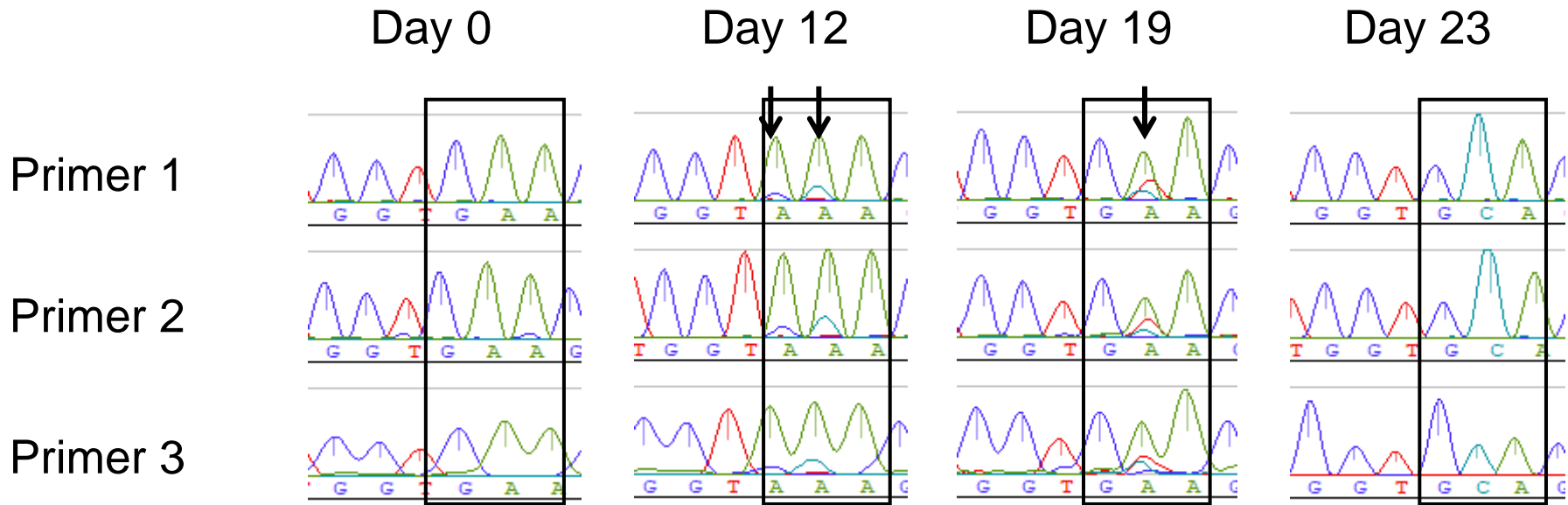


RDV : remdesivir, IPPV : invasive positive pressure ventilation.

Supplementary Figure 1 Sample collection and course of treatment.

Nasopharyngeal swabs were collected before treatment (day 0) and days 12, 19, 23, 37, 43, 48, 58, and 71 after the treatment. Sotrovimab infusion was performed at day 0. Dexamethasone and remdesivir were administered between day 6 and day 42 and between day 8 and day 17, respectively.



GAA(S:E340) → AAA(K), GAA(V), GCA(A)

Supplementary Figure 2 Nucleotides of residue 340 at S protein indicated mixed population by sanger sequencing.

The RBD region of S gene was sequenced on days 0 to 23. Three types of sequencing primers (primer 1-3) were used and three peaks at 22577-22582 (GGTGAA) were indicated. Arrows indicate mixed signals.

Supplementary Table2 Evaluation of escape ability of single amino acid substitutions at residues 340, 337, 346, and 494 of the spike gene against to sotrovimab using DMS analysis

Variants	Codon	Mutation	Type of mutation	Escape value #
E340	GAA	Wild type	-	1
E340	GAG	A to G	Transition	1
K340	AAA	G to A	Transition	1.36
G340	GGA	A to G	Transition	1.18
A340	GCA	A to C	Transversion	1.68
V340	GTA	A to T	Transversion	1.43
Q340	CAA	G to C	Transversion	1.47
D340	GAT	A to T	Transversion	0.81
D340	GAC	A to C	Transversion	0.81
*340	TAA	A to C	Transversion	0.41
P337	CCT	Wild type	-	1
S337	TCT	C to T	Transition	0.83
L337	CTT	C to T	Transition	0.95
P337	CCC	T to C	Transition	1
A337	GCT	C to G	Transversion	0.72
T337	ACT	C to A	Transversion	0.78
R337	CGT	C to G	Transversion	1.61
H337	CAT	C to A	Transversion	0.89
P337	CCG	T to G	Transversion	1
P337	CCA	T to A	Transversion	1
R346	AGA	Wild type	-	1
G346	GGA	A to G	Transition	0.87
K346	AAA	G to A	Transition	0.87
R346	AGG	A to G	Transition	1
*346	TGA	A to T	Transversion	N/A
R346	CGA	A to C	Transversion	1
I346	ATA	G to T	Transversion	0.65
T346	ACA	G to C	Transversion	1.21
S346	AGT	A to T	Transversion	1.11
S346	AGC	A to C	Transversion	1.11
S494	TCA	Wild type	-	1
P494	CCA	T to C	Transition	0.97
L494	TTA	C to T	Transition	0.82
S494	TCG	A to G	Transition	1
A494	GCA	T to G	Transversion	0.93
T494	ACA	T to A	Transversion	0.97
*494	TGA	C to G	Transversion	0.63
*494	TAA	C to A	Transversion	0.63
S494	TCT	A to T	Transversion	1
S494	TCC	A to C	Transversion	1

The escape value was calculated as previously described [11] and in the Materials and Methods.