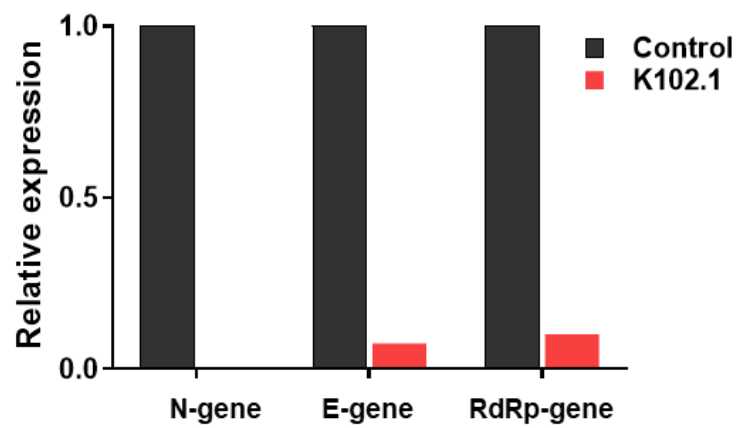


Supplementary Table S1. Histopathological evaluation and scoring of lungs from the SARS-CoV-2-infected K18-hACE2 mice model.

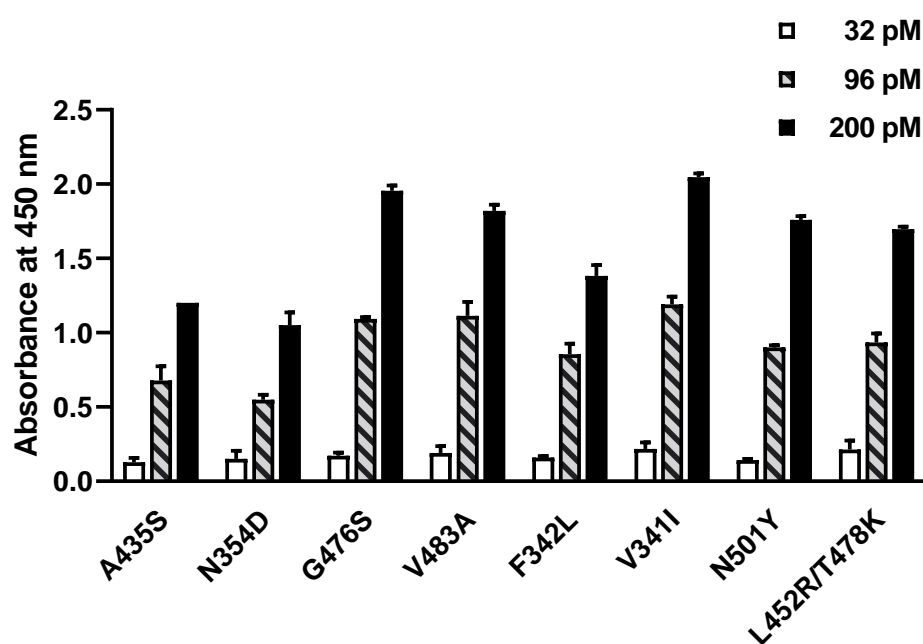
| Pathological score | Number of specimen (n = 5) | |
|--------------------|----------------------------|-------------------|
| | PBS | K102.1 (30 mg/kg) |
| 0 | 0 | 1 (20%) |
| 0.5 | 0 | 2 (40%) |
| 1 | 2 (40%) | 2 (40%) |
| 1.5 | 1(20%) | 0 |
| 2 | 2 (40%) | 0 |
| Mean* | 1.5 | 0.6 |

*Mean = (pathological score × numbers of specimen)/total numbers of specimen

Pathological score = (0, 0%; 1, ≤10%; 2, 10%-50%; 3, ≥50%; +0.5, pulmonary edema or alveolar hemorrhage)



Supplementary figure 1. Neutralizing effect of selected mAb against wild-type SARS-CoV-2 live viral infection *in vitro*. Relative expression of the N, E, and RdRp gene was individually quantified using RT-qPCR in the absence (black) or presence (red) of 5 nM K102.1 at 120 h after wild-type SARS-CoV-2 infection in Vero E6 cells.



Supplementary figure 2. Detection of multiple SARS-CoV-2 RBD antigens using developed sandwich ELISA. The detection ability of the sandwich ELISA was evaluated against the increasing concentrations of the RBDs of SARS-CoV-2 variants, including A435S, N354D, G476S, V483A, F432L, V341I, N501Y (Alpha), and L454R/T478K (Delta). All values represented as mean \pm SD of duplicate measurements and represent one out of two independent experiments.