**Supplemental information**

Virological features and pathogenicity

of SARS-CoV-2 Omicron BA.2

Jasper Fuk-Woo Chan, Bingjie Hu, Yue Chai, Huiping Shuai, Huan Liu, Jialu Shi, Yuanchen Liu, Chaemin Yoon, Jinjin Zhang, Jing-Chu Hu, Yuxin Hou, Xiner Huang, Terrence Tsz-Tai Yuen, Tianrenzheng Zhu, Wenjun Li, Jian-Piao Cai, Cuiting Luo, Cyril Chik-Yan Yip, Anna Jinxia Zhang, Jie Zhou, Shuofeng Yuan, Bao-Zhong Zhang, Jian-Dong Huang, Kelvin Kai-Wang To, Kwok-Yung Yuen, and Hin Chu

1   **Supplementary Figures and Figure Legends**
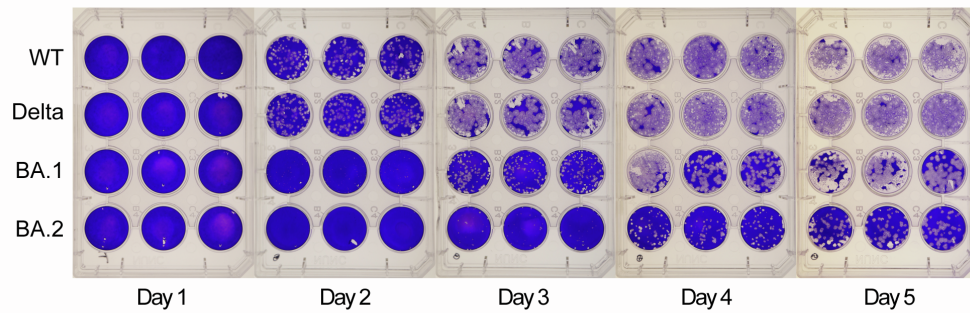
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3   **Supplementary Fig. 1. Plaque assay images of SARS-CoV-2 WT, Delta, BA.1, or BA.2**

4   **in VeroE6-TMPRSS2 cells.** Related to figure 2. VeroE6-TMPRSS2 cells were challenged

5   with SARS-CoV-2 WT, Delta, BA.1 and BA.2. The infected cells were fixed with 4%

6   paraformaldehyde at the designated time points and stained with crystal violet ($n = 3$). WT,

7   wildtype SARS-CoV-2. The experiment was repeated three times independently with similar

8   results. Each well represents one biological repeat.
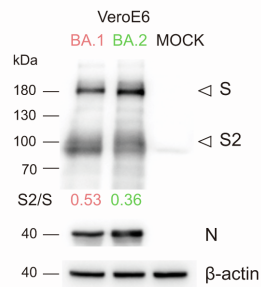
Supplementary Fig. 2. Western blot analysis of SARS-CoV-2 spike. Related to figure 2.

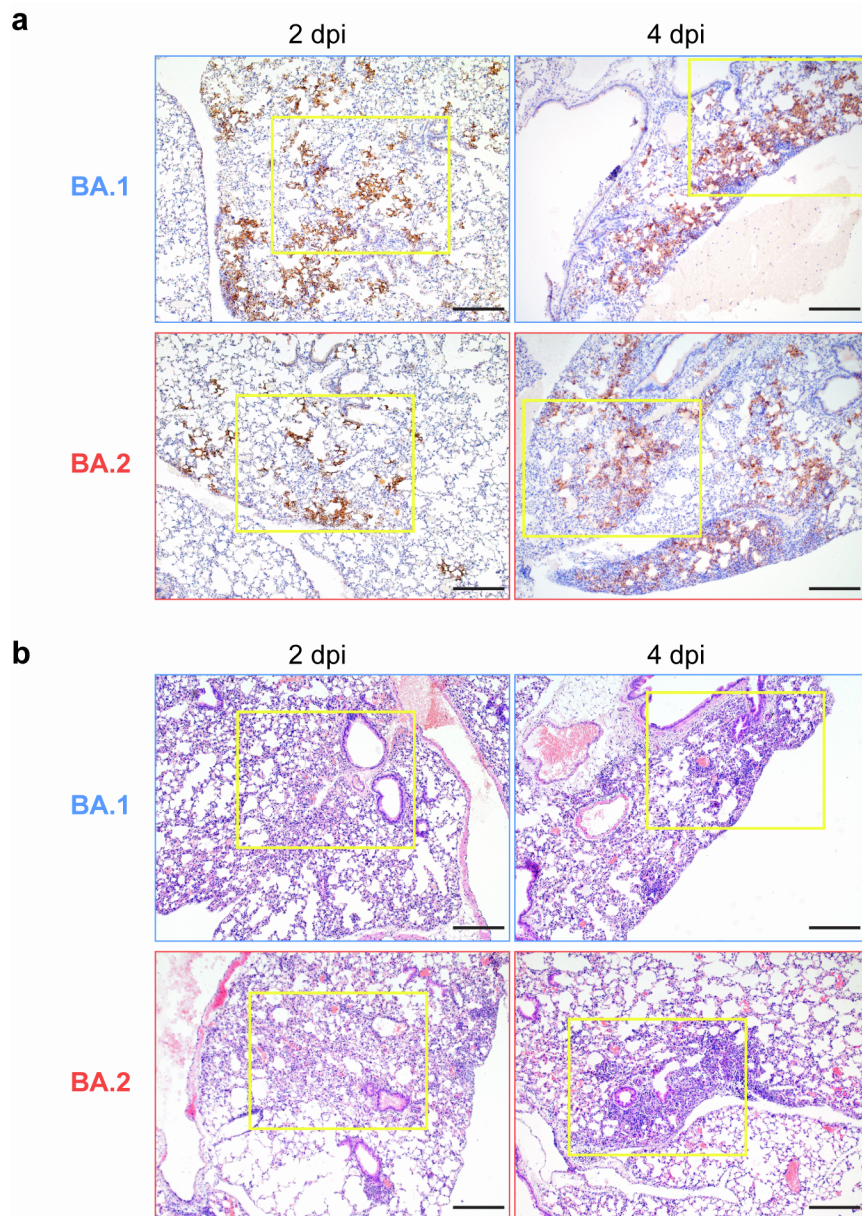VeroE6 cells were infected with SARS-CoV-2 BA.2 or BA.1 at 0.1 MOI. Cell lysates were

harvested at 48 hours post infection for detection of SARS-CoV-2 spike cleavage using an

anti-spike S2 antibody. Representative images of SARS-CoV-2 spike and nucleocapsid

Western blots were shown with β-actin added as a sample processing control. Spike,

nucleocapsid, and β-actin was run on three different gels and detected on three different

membranes. The experiment was repeated three times independently with similar results.

a

2 dpi | 4 dpi

BA.1

BA.2

b

2 dpi | 4 dpi

BA.1

BA.2

17

Supplementary Fig. 3. Histological findings of BA.2 in K18-hACE2 mice. Related to

figure 3. Male and female 6- to 8-week old K18-hACE2 mice were infected with 5 x 10^3 PFU

SARS-CoV-2 BA.2 or BA.1 ($n = 4$ for BA.2 and $n = 5$ for BA.1). Lungs of the infected

mice were collected on 2 or 4 dpi for histological analysis. **a** Representative images of

immunohistochemistry staining for the detection of nucleocapsid protein (brown) of SARS-

CoV-2 in lungs of infected mice. **b** Representative images of hematoxylin and eosin (H&E)

staining for the detection of pathological changes in the lungs of infected mice. Images in (a

and b) are representative images at lower magnification for Figure 3f and 3g. Data were

26   obtained from two independent experiments. Four to six sections were taken from each

27   mouse for histology and immunochemistry analysis. Scale bar represents 200 μm.

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