**Virologica Sinica**

**Supplementary Material**

**Mast cell degranulation-triggered by SARS-CoV-2 induces tracheal-bronchial epithelial inflammation and injury**

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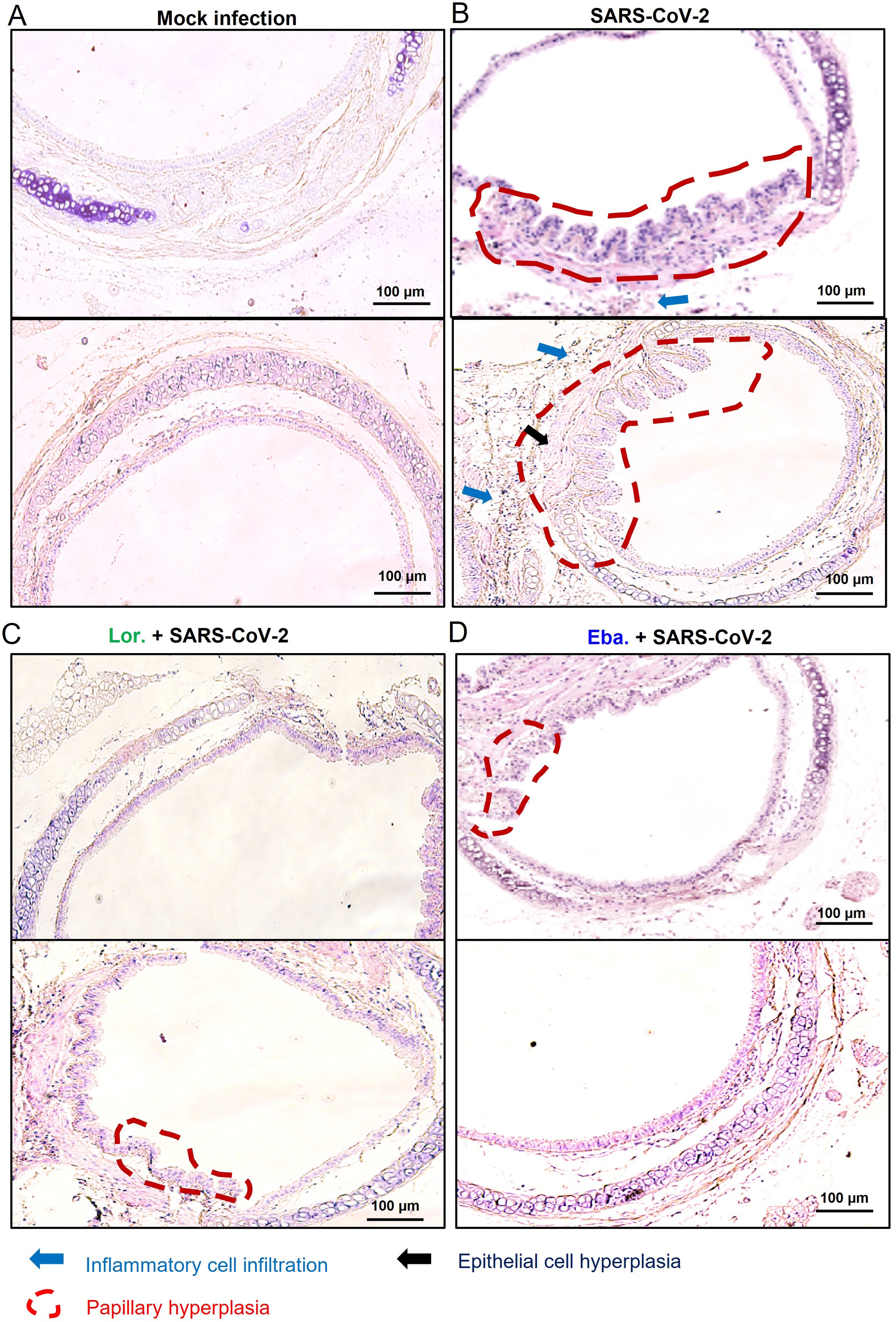
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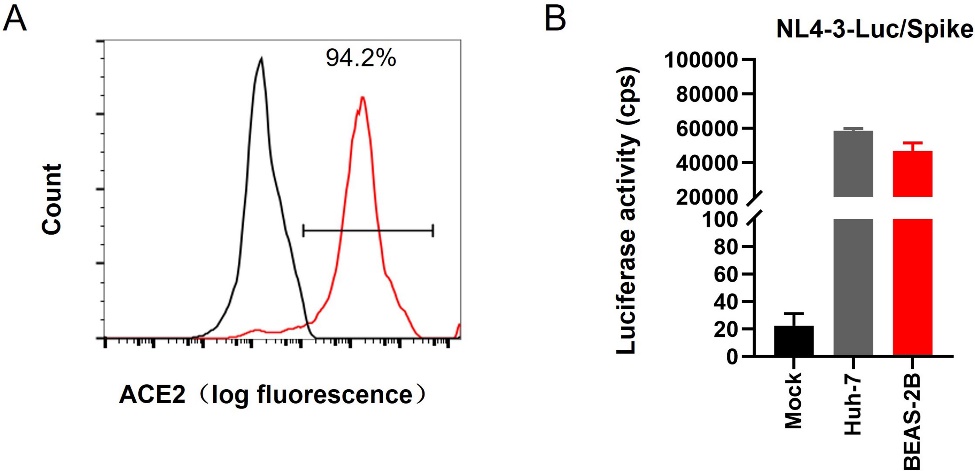
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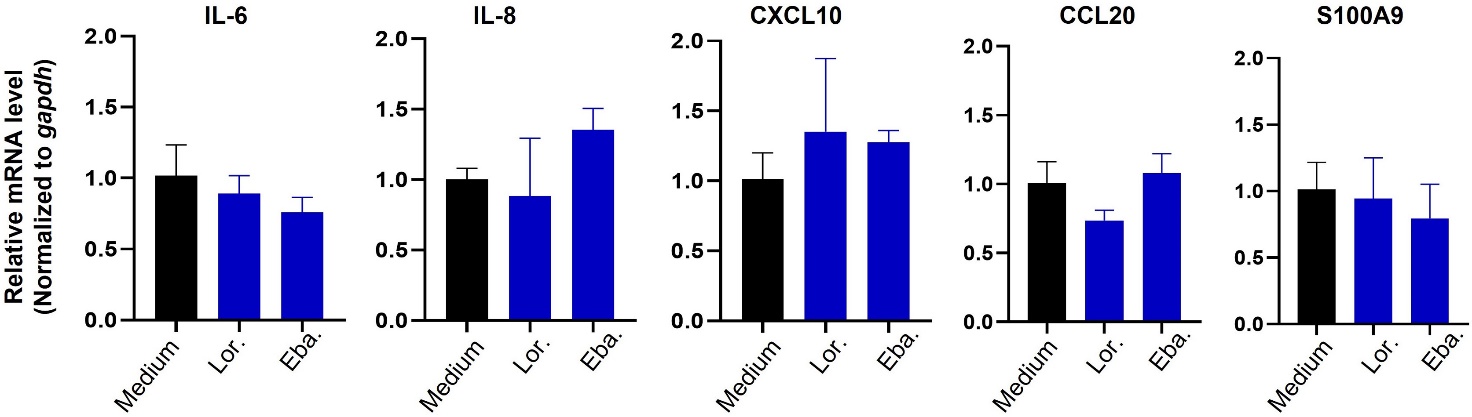
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**Supplementary Fig S1.** The prior-treatment with loratadine and ebastine reduces SARS-CoV-2-mediated tracheal lesions in mice. **A, B** C57BL/6N-ACE2em2(hACE2-WPRE, pgk-puro)/CCLA mice were infected intranasally with SARS-CoV-2 (strain 107) at a dose of 5×106 TCID50 (**B**). Mock infection was established with the same amount of PBS. The loratadine (Lor., 10 mg/kg) (**C**) or ebastine (Eba., 5 mg/kg) (**D**) was administered one day before infection, and the treatments were continued daily throughout the infection. Mice were euthanized at day 5 post-infection and trachea were harvested for pathological analysis with Hematoxylin and Eosin staining to observe the trachea injury. Scale bar: 100 μm.



**Supplementary Fig S2.** The infection of BEAS-2B cells by pseudotyped virus. **A** ACE2 expression in BEAS-2B cells detected by flow cytometry with immunostaining. **B** BEAS-2B cell or Huh-7 cells (1×105) were infected with SARS-CoV-2 spike-pseudotyped lentivirus (NL4-3-Luc/spike) (5 ng p24gag) for 48 h, and viral infection was determined by measuring the luciferase activity. One representative data from 3 independent repeats are shown. Data are presented as mean ± SD.



**Supplementary Fig S3.** The effect of treatment with loratadine and ebastine on cytokine expression in BEAS-2B cells.BEAS-2B cells (2×105) were stimulated with loratadine (Lor., 5 μg/mL) or ebastine (Eba., 3 μg/mL) for 12 h, The mRNA levels of cytokines were detected with real time qRT-PCR, and normalized to *gapdh* mRNA. One representative data from 3 independent repeats are shown, data are mean± standard deviation (SD).

**Supplementary Table S1.** The primers for (RT-) PCR. The primers used for (RT)-PCR were listed.

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| **Human IL-6** | Forward | 5′-CAG ACA GCC ACT CAC CTC TTC AG-3′ |
| Reverse | 5′-CAG CCA TCT TTG GAA GGT TCA G-3′ |
| **Human IL-8** | Forward: | 5′-CTG ATT TCT GCA GCT CTG TGT GA-3′ |
| Reverse | 5′-GGT CCA GAC AGA GCT CTC TTC CA-3′ |
| **Human CCL20** | Forward: | 5′-GCT GCT TTG ATG TCA GTG CT-3′ |
| Reverse | 5′-TGT CAC AGC CTT CAT TGG C-3′ |
| **Human CXCL10** | Forward | 5′-GTGGCATTCAAGGAGTACCTC-3′ |
| Reverse | 5′-TGATGGCCTTCGATTCTGGATT-3′ |
| **Human S1009A** | Forward | 5′-GCAGCTGGAACGCAACATAG-3′ |
| Reverse | 5′-GTCACCCTCGTGCATCTTCT-3′ |
| **Human GAPDH** | Forward | 5′-ATC CCA TCA CCA TCT TCC AGG-3′ |
| Reverse | 5′-CCT TCT CCA TGG TGG TGA AGA C-3′ |