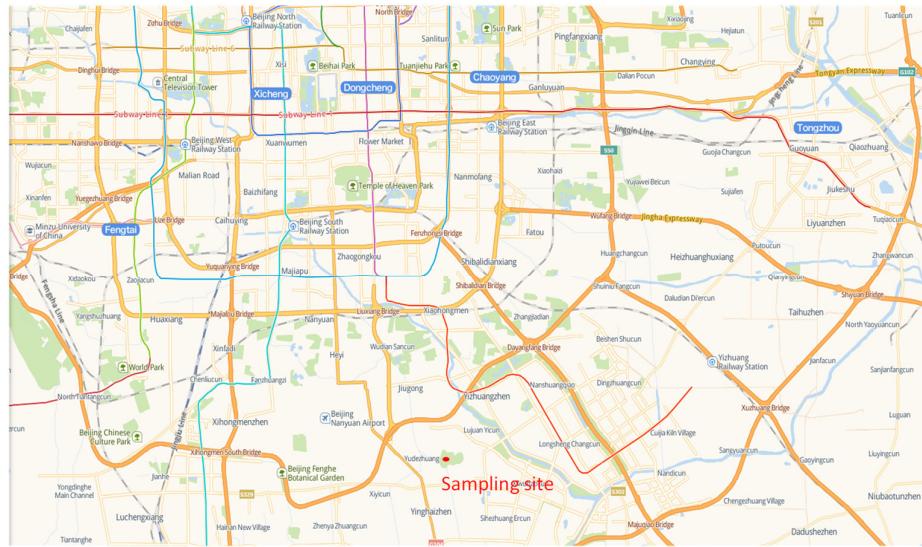




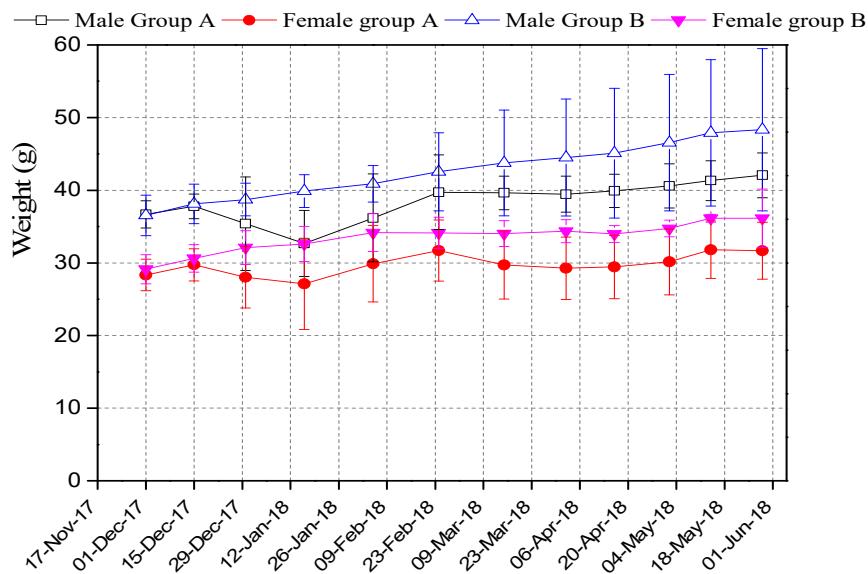
## Supplementary Materials

# The Effects of Indoor Air Filter on Reductions in PM<sub>2.5</sub> Associated Health Risks of Respiratory Function in Mouse

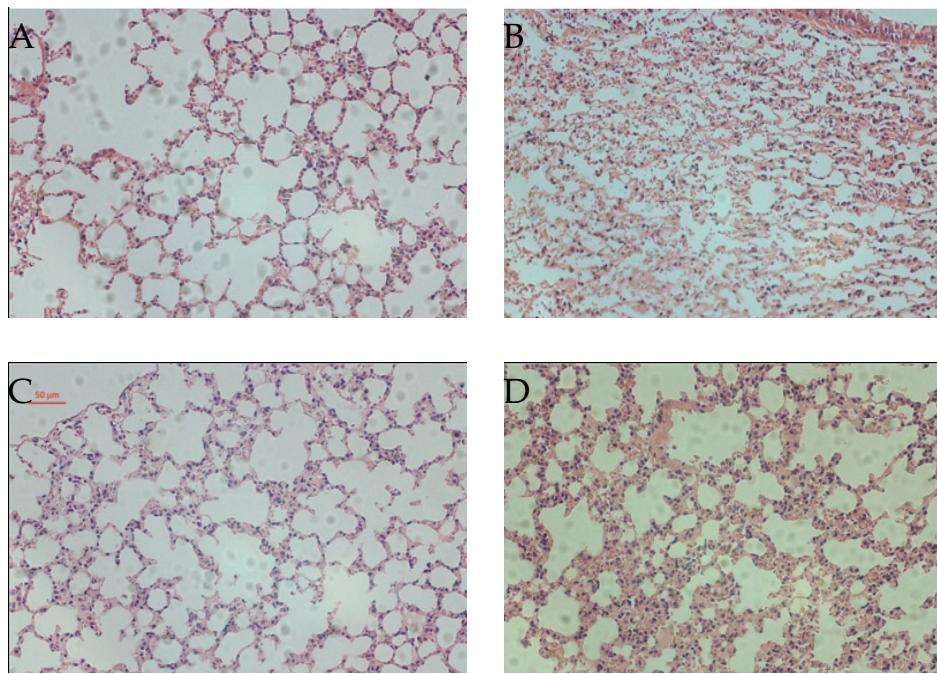
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**Figure S1.** The location of sampling site (Milu Park, 39.78N, 116.47E).



**Figure S2.** Changes in weights of mice with HEPA air filter system and without HEPA air filter system were collected from 1 December, 2017, to 31 May, 2018, respectively. The data on mice weight for each group were obtained every two weeks from 1 December to 31 May, 2018.



**Figure S3.** Pathological section of the lung for mice in different groups after 6-month exposure to ambient air. A. Male Group A, B. Male Group B, C. Female Group A, D. Female Group B.

**Table S1.** The summary data (mean±standard deviation) on indicators of respiratory function in mice exposed to ambient air with and without HEPA filter from 15–18 March, 2018 (clean period).

Indicator	Male Group A (n=5)	Male Group B (n=5)	p- value	Female Group A (n=5)	Female Group B (n=5)	p- value
Respiratory rate (BPM)	465.9±111.4	482.7±51.7	0.07	567.4±33.4	512.7±54.3	0.06
Tidal inhaled volume (mL)	0.3±0.03	0.3±0.01	0.09	0.2±0.02	0.2±0.03	0.08
Minute volume (mL min <sup>-1</sup> )	113.8±35.1	120.2±14.4	0.09	124.4±10.4	119.7±7.2	0.12
Index of constriction	0.4±0.09	0.4±0.02	0.06	0.4±0.03	0.3±0.03	0.14
Expiratory pause time (s)	0.5±0.13	0.6±0.08	0.06	0.5±0.03	0.5±0.06	0.15
Peak expiratory time (s)	0.6±0.12	0.6±0.03	0.08	0.6±0.03	0.7±0.05	0.17
Estimated peak inspiratory flow (mL s <sup>-1</sup> )	7.4±1.9	7.9±0.7	0.12	7.6±0.6	7.8±0.3	0.16
Estimated peak expiratory flow (mL s <sup>-1</sup> )	4.9±1.6	5.1±0.5	0.11	5.3±0.4	4.9±0.5	0.13
Inspiratory time (s)	0.06±0.015	0.06±0.004	0.11	0.05±0.003	0.05±0.007	0.15
Expiratory time(s)	0.09±0.03	0.09±0.02	0.08	0.07±0.003	0.07±0.01	0.17
Expiratory flow at 50% expired volume(mL s <sup>-1</sup> )	0.4±0.1	0.4±0.06	0.07	0.5±0.03	0.4±0.04	0.18
Relaxation time (s)	0.06±0.01	0.06±0.01	0.09	0.05±0.003	0.05±0.006	0.21
Duration of breaking(%)	17.4±6.1	16.9±0.2	0.12	18.2±1.3	17.5±1.5	0.08
Duration of pause	10.7±1.9	10.8±0.8	0.13	11.2±0.8	10.4±1.1	0.08

before inspiration (%)						
Rejection index (%)	69.4±11.1	75.3±4.6	0.07	76.3±6.9	75.0±6.3	0.12