

**Table S1** Associations between lung cancer mortality and pollutant exposure (both continuous and categorical), adjusting for sociodemographic (age, sex), clinical (cancer stage, EGFR status, ALK status, PD-L1 expression, family history of lung cancer, and smoking history), and treatment-related covariates

Variable	PM <sub>2.5</sub> , µg/m <sup>3</sup>			PM <sub>10</sub> , µg/m <sup>3</sup>			SO <sub>2</sub> , µg/m <sup>3</sup>			NO <sub>2</sub> , µg/m <sup>3</sup>			O <sub>3</sub> , µg/m <sup>3</sup>			CO, µg/m <sup>3</sup>		
	HR	95% CI	P value	HR	95% CI	P value	HR	95% CI	P value	HR	95% CI	P value	HR	95% CI	P value	HR	95% CI	P value
Particle	1.72	1.04–2.84	0.04	1.14	0.89–1.44	0.28	1.69	1.07–2.68	0.03	1.18	0.91–1.54	0.21	1.26	0.85–1.85	0.25	1.002	0.99–1.02	0.79
Sex	1.37	0.88–2.13	0.17	1.36	0.87–2.13	0.17	1.44	0.92–2.26	0.11	1.35	0.87–2.10	0.18	1.35	0.87–2.10	0.19	1.38	0.89–2.15	0.14
Stage of cancer																		
II	0.67	0.20–2.19	0.51	0.62	0.19–2.03	0.43	0.64	0.20–2.10	0.46	0.66	0.20–2.17	0.50	0.60	0.18–1.95	0.39	0.63	0.19–2.10	0.45
III	2.21	0.98–5.02	0.05	2.12	0.94–4.80	0.07	2.18	0.96–4.93	0.06	2.18	0.96–4.94	0.06	2.12	0.93–4.79	0.07	2.11	0.93–4.80	0.07
IV	4.69	2.30–9.57	<0.001	4.48	2.19–9.12	<0.001	4.39	2.16–8.93	<0.001	4.57	2.24–9.32	<0.001	4.47	2.20–9.10	<0.001	4.38	2.15–8.90	<0.001
Smoker	1.72	1.08–2.73	0.02	1.68	1.06–2.67	0.02	1.71	1.08–2.71	0.02	1.68	1.06–2.67	0.03	1.58	1.00–2.49	0.05	1.62	1.03–2.57	0.03
ALK	0.43	0.22–0.83	0.01	0.40	0.21–0.77	0.01	0.43	0.22–0.83	0.01	0.44	0.23–0.87	0.02	0.40	0.20–0.76	0.01	0.42	0.21–0.82	0.01
EGFR	0.41	0.24–0.70	<0.001	0.43	0.25–0.74	<0.001	0.42	0.25–0.73	<0.001	0.46	0.27–0.78	<0.001	0.43	0.25–0.74	<0.001	0.45	0.26–0.76	<0.001
PD-L1 TPS ≥1%	1.18	0.77–1.81	0.44	1.21	0.79–1.85	0.37	1.25	0.82–1.92	0.29	1.16	0.75–1.79	0.51	1.22	0.80–1.86	0.36	1.26	0.85–1.92	0.28
PD-L1 TPS ≥50%	1.99	0.89–4.46	0.09	2.10	0.94–4.72	0.06	2.22	0.99–4.95	0.05	1.98	0.87–4.49	0.10	2.19	0.98–4.89	0.06	2.18	0.97–4.90	0.05