

Supplementary Material

Characteristics of PM_{2.5}-Bound PAHs at an Urban Site and a Suburban Site in Jinan in North China Plain

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22 Table S1. Comparison of benzo[a]pyrene (BaP) equivalent concentration (BaP_{eq}) of PAHs in gas
 23 and particle phase. (Cg: concentration in gas phase; Cp: concentration in particle; BaP_{eqp}%; the
 24 BaP_{eq} ratios of particulate-bound PAHs to the sum of particulate and gaseous phase PAHs)

		Site ^a		Site ^b		Site ^c		Site ^d	
Type	TEF	Cg	Cp	Cg	Cp	Cg	Cp	Cg	Cp
ACY	0.001							32.3	0.300
ACE	0.001	1.69	ND	0.420	ND	0.150	0.0100	7.63	0.0750
FLU	0.001	2.14	0.0130	0.900	0.0120	0.960	0.0200	47.9	0.325
PHE	0.001	5.76	0.130	2.27	0.0500	6.21	0.190	64.1	4.70
ANT	0.01	0.0560	0.0200	0.160	0.00600	0.440	0.0200	3.45	0.925
FLT	0.001	1.05	0.280	0.510	0.0900	1.61	0.300	6.38	19.0
PYR	0.001	0.530	0.230	0.310	0.0670	1.20	0.300	2.70	15.8
BaA	0.1	0.0100	0.100	0.0300	0.0600	0.120	0.230	0.0500	7.60
CHY	0.01	0.0400	0.160	0.0400	0.100	0.110	0.460	0.0500	6.95
BbF	0.1	0.0100	0.160	0.0100	0.0900	0.0100	0.580	ND	8.73
BkF	0.1	0.00600	0.0800	ND	0.0400	0	0.220	ND	2.53
BaP	1	ND	0.0900	ND	0.0500	0	0.4200	ND	3.43
IcdP	0.1	ND	0.100	ND	0.0500	0	0.520	ND	4.40
DahA	1	ND	0.0200	ND	0.0100	0	0.0900	ND	0.625
BghiP	0.01	ND	0.150	ND	0.0600	0	0.440	ND	2.55
TEQ		0.0147	0.158	0.0104	0.0859	0.0286	0.675	0.201	6.52
TEQ _p %		91.5%		89.2%		95.9%		97.0%	
		Site ^e		Site ^f		Site ^g		Site ^h	
PAH	TEF	Cg	Cp	Cg	Cp	Cg	Cp	Cg	Cp
ACY	0.001	38.0	0.200	34.4	0.165				
ACE	0.001	29.6	0.0750	9.28	0.492				
FLU	0.001	151	0.35	50.7	2.19	23.6	2.10	12.3	3.20
PHE	0.001	87.7	4.48	66.9	4.32	76.5	2.20	37.0	1.70
ANT	0.01	8.98	0.425	71.0	0.249	7.60	1.70	1.70	0.700
FLT	0.001	9.00	12.5	21.3	11.9	25.0	3.20	10.2	4.00
PYR	0.001	4.58	10.1	8.28	4.70	20.0	3.20	8.20	3.80
BaA	0.1	0.275	6.63	0.240	4.35	1.40	6.10	0.800	3.70
CHY	0.01	0.325	8.43	0.428	6.90	2.10	9.20	1.30	4.90
BbF	0.1	ND	12.9	0.161	10.9	0.700	10.0	0.500	10.0
BkF	0.1	ND	4.05	0.133	4.08	0.700	9.90	0.500	9.30
BaP	1	ND	4.15	0.0810	5.29	0.600	8.20	0.500	9.20
IcdP	0.1	ND	6.90	0.102	6.78	0.700	6.90	0.600	6.40
DahA	1	ND	1.08	0.0340	1.88	0.800	2.80	0.70	2.80
BghiP	0.01	ND	4.38	0.0830	6.06	0.700	6.90	0.500	5.10
TEQ		0.403	8.43	1.08	9.94	2.00	14.5	1.54	15.1
TEQ _p %		95.4%		90.2%		87.9%		90.7%	

26 Note: Site^a: Hans Christian Andersen School (Minnesota, America) (Pratt *et al.*, 2018)); Site^b:
27 Ojibwe Government Center (Minnesota, America) (Pratt *et al.*, 2018); Site^c: Grenoble (France)
28 (Tomaz *et al.*, 2016); Site^d: Gubeikou (Hebei, China) (Wang *et al.*, 2011); Site^e: Beijing (China)
29 (Wang *et al.*, 2011); Site^f: Jinan (China) (Zhang *et al.*, 2018); Site^g: Mid-Anatolian Region of
30 Turkey, urban site, Eskişehir (Gaga and Arı, 2019); Site^h: Mid-Anatolian Region of Turkey,
31 suburban site, Eskişehir (Gaga and Arı, 2019).

32 Table S2. Meteorological parameters (mean \pm SD) at JN and QXT during the sampling periods.

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Site	Season	Pressure (hPa)	Temperature (°C)	Humidity (%)	Wind speed (m s ⁻¹)
QXT	Spring	1003 \pm 4.92	6.88 \pm 3.36	36.5 \pm 8.00	2.73 \pm 0.932
	Summer	987 \pm 3.40	24.5 \pm 2.30	57.3 \pm 12.6	2.14 \pm 0.871
	Autumn	997 \pm 3.53	21.8 \pm 3.00	54.7 \pm 8.32	2.78 \pm 1.07
	Winter	1003 \pm 4.20	6.33 \pm 2.43	51.4 \pm 10.5	2.67 \pm 0.894
JN	Spring	1015 \pm 5.41	8.47 \pm 4.15	29.5 \pm 8.21	1.76 \pm 0.852
	Summer	999 \pm 3.52	25.6 \pm 2.97	49.5 \pm 13.6	1.64 \pm 0.631

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36 **Table S3.** Pearson correlation coefficients of PAH congeners with meteorological parameters in
 37 two seasons (spring and summer) at JN (N=40) and QXT (N=79).
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PAHs	JN					QXT				
	P	T	RH	WS	H	P	T	RH	WS	H
BYL	0.493**	-0.499**	-0.250	-0.136	-0.205	-0.182	0.089	0.147	-0.076	-0.014
ACY	0.552**	-0.673**	-0.327*	-0.140	-0.275	0.133	-0.211	-0.0180	0.023	-0.00900
ACE	0.179	-0.241	0.0680	-0.211	-0.281	0.056	-0.101	-0.0380	-0.021	0.0230
FLU	0.271	-0.310	-0.065	0.00600	-0.162	0.089	-0.161	-0.146	0.0400	0.0550
PHE	0.586**	-0.604**	-0.336*	-0.0320	-0.197	0.162	-0.259*	-0.237*	0.0800	0.0690
ANT	0.606**	-0.658**	-0.228	-0.128	-0.334*	0.211	-0.305**	-0.270*	0.113	0.0560
LMW	0.486**	-0.516**	-0.234	-0.049	-0.208	0.117	-0.206	-0.178	0.0540	0.0570
FLT	0.877**	-0.900**	-0.577**	-0.00800	-0.202	0.431**	-0.575**	-0.188	0.165	-0.0120
PYR	0.855**	-0.878**	-0.533**	-0.056	-0.235	0.445**	-0.583**	-0.203	0.201	0.00200
BaA	0.745**	-0.822**	-0.426**	-0.191	-0.351*	0.404**	-0.564**	-0.076	0.225*	-0.105
CHY	0.789**	-0.851**	-0.513**	-0.106	-0.266	0.392**	-0.550**	-0.084	0.177	-0.0520
MMW	0.835**	-0.884**	-0.527**	-0.092	-0.268	0.424**	-0.577**	-0.142	0.188	-0.0380
BbF	0.802**	-0.839**	-0.501**	0.0290	-0.222	0.436**	-0.584**	-0.124	0.219	-0.0290
BkF	0.742**	-0.773**	-0.407**	0.0160	-0.210	0.439**	-0.603**	-0.152	0.224*	-0.0370
BeP	0.815**	-0.860**	-0.486**	0.0480	-0.200	0.413**	-0.550**	-0.0600	0.150	-0.0660
BaP	0.746**	-0.799**	-0.457**	-0.0260	-0.220	0.367**	-0.503**	-0.0890	0.109	-0.0850
IcdP	0.710**	-0.776**	-0.473**	-0.0650	-0.222	0.382**	-0.534**	-0.0850	0.164	-0.0460
DahA	0.754**	-0.808**	-0.456**	-0.103	-0.254	0.469**	-0.627**	-0.0360	0.081	-0.142
BghiP	0.753**	-0.813**	-0.490**	-0.0310	-0.249	0.420**	-0.586**	-0.0870	0.140	-0.091
COR	0.756**	-0.800**	-0.506**	-0.0790	-0.226	0.410**	-0.561**	-0.102	0.0660	-0.085
HMW	0.798**	-0.847**	-0.493**	-0.00100	-0.229	0.423**	-0.576**	-0.101	0.171	-0.061

*Statistically significant correlations at $p < 0.05$ level.

**Statistically significant correlations at $p < 0.01$ level.

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