

Supplementary Material

Atmospheric Distribution of PAHs and Quinones in the Gas and PM₁ Phases in the Guadalajara Metropolitan Area, Mexico: Sources and Health Risk

Table S1. Sampling schedule.

Date (M/D/Y)	Sites	
	Centro	Tlaquepaque
4/28/2015	yes	yes
4/30/2015	yes	yes
5/2/2015	yes	yes
5/4/2015	yes	yes
5/6/2015	yes	yes
5/8/2015	yes	yes
5/10/2015	yes	yes
5/15/2015	NA	yes
5/17/2015	yes	yes
5/19/2015	yes	yes
5/21/2015	yes	yes
5/25/2015	yes	yes
5/27/2015	yes	yes
5/29/2015	NA	yes
6/3/2015	yes	yes
6/11/2015	yes	yes

NA — sample not available

Table S2. SIM ions used in the analysis of PAHs by Gas Chromatography-Mass Spectrometry (GC-MS).

PAHs	Monitored Ions	
	Quantitation ion <i>m/z</i>	Confirmation ions <i>m/z</i>
Naphthalene	128	129,127
Acenaphthylene	152	151,150
Acenaphthene	153	154,152
Fluorene	166	165,163
Phenanthrene	178	176,179
Anthracene	178	179,176
Fluoranthene	202	203,200
Pyrene	202	203,200
Benzo[<i>a</i>]anthracene	228	226,229
Chrysene	228	226,229
Benzo[<i>b</i>]fluoranthene	252	253,250
Benzo[<i>k</i>]fluoranthene	252	253,250
Benzo[<i>a</i>]pyrene	252	253,250
Indeno[1,2,3- <i>cd</i>]pyrene	276	277,274
Dibenz[<i>a,h</i>]anthracene	278	279,276
Benzo[<i>ghi</i>]perylene	276	277,138

Table S3. Linearity, precision, detection and quantification limits, and sensitivity from PAHs standard solutions.

PAHs	Linearity * R^2	VC/%	Limits (ng/m ³)		Slope
			LOD	LOQ	
Naphthalene	0.993	0.73	0.0005	0.0016	0.00049
Acenaphthylene	0.997	1.76	0.0003	0.0008	0.00091
Acenaphthene	0.993	1.62	0.0005	0.0014	0.00044
Fluorene	0.997	2.34	0.0003	0.0009	0.00060
Phenanthrene	0.998	1.31	0.0003	0.0008	0.00061
Anthracene	0.998	1.76	0.0002	0.0007	0.00045
Fluoranthene	0.996	1.81	0.0003	0.0010	0.00152
Pyrene	0.997	1.85	0.0003	0.0010	0.00153
Benzo[a]anthracene	0.999	2.47	0.0002	0.0007	0.00038
Chrysene	0.993	2.58	0.0005	0.0015	0.00050
Benzo[b]fluoranthene	1.000	1.47	0.0001	0.0004	0.00064
Benzo[k]fluoranthene	1.000	2.55	0.0002	0.0005	0.00059
Benzo[a]pyrene	0.998	2.20	0.0003	0.0010	0.00041
Indeno[1,2,3- <i>cd</i>]pyrene	0.998	2.23	0.0003	0.0008	0.00025
Dibenz[<i>a,h</i>]anthracene	0.998	3.32	0.0003	0.0009	0.00021
Benzo[<i>ghi</i>]perylene	1.000	1.69	0.0001	0.0004	0.00043

* Calibration curves were constructed from 10 to 1000 ng/mL with five internal standards.

Table S4. SIM ions used in the analysis of quinones by Gas Chromatography-Mass Spectrometry (GC-MS).

Quinones	Monitored ions	
	Quantitation	Confirmation
	ion <i>m/z</i>	ions <i>m/z</i>
1,4-Naphthoquinone	158	102,104
1,4-Phenanthrenequinone	208	152,126
9,10-Phenanthrenequinone	180	152,208
1,4-Anthraquinone	208	152,126
9,10-Anthraquinone	180	208,152
1,2-Benzoanthraquinone	258	202,230
5,12-Naphthacenequinone	258	202,230
1,4-Chrysenequinone	258	176,202

Table S5. Linearity, precision, detection and quantification limits, and sensitivity from quinones standard solutions.

Quinones	Linearity * R^2	VC/%	Limits (ng/m ³)		Slope
			LOD	LOQ	
1,4-Naphthoquinone	0.996	2.13	0.0005	0.0015	0.00010
1,4-Phenanthrenequinone	1.000	1.56	0.0001	0.0004	0.00011
9,10-Phenanthrenequinone	0.999	4.07	0.0001	0.0004	0.00002
1,4-Anthraquinone	0.998	4.38	0.0004	0.0012	0.00001
9,10-Anthraquinone	0.989	3.64	0.0007	0.0022	0.00001
1,2-Benzoanthraquinone	1.000	3.55	0.0001	0.0003	0.00004
5,12-Naphthacenequinone	0.991	4.14	0.0007	0.0020	0.00002
1,4-Chrysenequinone	0.993	6.87	0.0005	0.0016	0.00001

* Calibration curves were constructed from 10 to 1000 ng/mL with five internal standards.