

**Supplementary Material for Observed Daily Profiles of Polyaromatic
Hydrocarbons and Quinones in the Gas and PM₁ Phases: Sources
and Secondary Production in a Metropolitan Area of Mexico.**

**Valeria Ojeda-Castillo, Iván Y. Hernández-Paniagua, Leonel Hernández-Mena,
Alberto López-López, José de Jesús Díaz-Torres, Sergio Alonso-Romero and
Jorge del Real-Olvera.**

9
10

Table S1. Retention times and SIM ions used in the analysis of PAHs and quinones by Gas Chromatography-Mass Spectrometry (GC-MS).

Standards	Retention time (min)	Quantitation ion <i>m/z</i>	Confirmation ions <i>m/z</i>
Naphthalene-d8 (IS)	6.70	136	137, 134, 108
Naphthalene	6.74	128	129, 127, 102
1,4-Naphthoquinone-d6 (SS1)	10.72	108	164, 80, 136
1,4-Naphthoquinone	10.79	158	102, 104, 76
Acenaphthylene	11.55	152	151, 150, 153
Acenaphthene-d10 (IS)	12.16	164	162, 160, 80
Acenaphthene	12.26	153	154, 152, 151
Fluorene-d10 (SS2)	14.22	176	177, 87
Fluorene	14.30	166	165, 163, 164
Phenanthrene-d10 (IS)	18.31	188	189, 184, 94
Phenanthrene	18.39	178	176, 179, 89
Anthracene	18.62	178	179, 176, 89
Anthraquinone-d8 (SS3)	22.08	216	188, 160
1,4-Phenanthrenequinone	22.16	208	152, 126, 180
9,10-Anthraquinone	23.71	180	208, 152, 151
Fluoranthene-d10 (SS4)	23.74	212	213, 106
Fluoranthene	23.80	202	200, 203, 201
1,4-Anthraquinone	24.68	208	152, 126, 180
Pyrene-d10 (SS5)	24.69	212	106, 213
Pyrene	24.75	202	200, 203, 101
9,10-Phenanthrenequinone	26.17	180	152, 151, 208
Benzo[<i>a</i>]anthracene	30.45	228	226, 229, 114
Chrysene-d12 (IS)	30.50	240	236, 241, 120
Chrysene	30.60	228	226, 229, 113
1,2-Benzoanthraquinone	32.77	258	202, 230, 200
1,4-Chrysenequinone	33.99	258	176, 202, 88
5,12-Naphthacenequinone	34.03	258	202, 230, 200
Benzo[<i>b</i>]fluoranthene	35.18	252	253, 250, 126
Benzo[<i>k</i>]fluoranthene	35.26	252	253, 250, 126
Benzo[<i>a</i>]pyrene-d12 (SS6)	36.32	264	265, 260
Benzo[<i>a</i>]pyrene	36.37	252	253, 250, 126
Perylene-d12 (IS)	36.65	264	265, 132, 260
Indeno[1,2,3- <i>cd</i>]pyrene	40.62	276	277, 274, 138
Dibenz[<i>a,h</i>]anthracene	40.79	278	279, 276, 139
Benzo[<i>ghi</i>]perylene	41.44	276	277, 138, 137

(IS): Internal standard, (SS): surrogate standard.

11
12

Table S2. Linearity, limits of detection and sensitivity from PAHs and quinones standard solutions.

Standards	Linearity* R ²	LOD (ng/μl)	Slope
Naphthalene	1.000	0.0028	0.0006
1,4-Naphthoquinone	0.997	0.0061	0.0001
Acenaphthylene	0.999	0.0004	0.0001
Acenaphthene	0.995	0.0102	0.0002
Fluorene	0.999	0.0032	0.0007
Phenanthrene	1.000	0.0159	0.0006
Anthracene	0.999	0.0012	0.0004
1,4-Phenanthrenequinone	0.995	0.0227	0.0001
9,10-Anthraquinone	0.998	0.0004	0.0003
Fluoranthene	0.998	0.0010	0.0007
1,4-Anthraquinone	0.996	0.7709	0.0000
Pyrene	0.999	0.0007	0.0007
9,10-Phenanthrenequinone	0.998	0.0011	0.0005
Benzo[<i>a</i>]anthracene	0.997	0.0009	0.0005
Chrysene	1.000	0.0006	0.00004
1,2-Benzoanthraquinone	0.993	0.0037	0.00002
1,4-Chrysenequinone	0.997	0.0015	0.0006
5,12-Naphthacenequinone	0.996	0.0124	0.0006
Benzo[<i>b</i>]fluoranthene	0.993	0.0054	0.0005
Benzo[<i>k</i>]fluoranthene	0.990	0.0006	0.0003
Benzo[<i>a</i>]pyrene	0.999	0.0018	0.0003
Indeno[1,2,3- <i>cd</i>]pyrene	0.997	0.0022	0.0004
Dibenz[<i>a,h</i>]anthracene	0.997	0.0066	0.0006
Benzo[<i>ghi</i>]perylene	0.999	0.0021	0.0001

15
16

Table S3. Surrogate (SS) and target compounds grouped under the internal standard (IS) compounds.

Standards
1,4-Naphthoquinone-d6/Naphthalene-d8
Naphthalene
1,4-Naphthoquinone
Fluorene-d10/Acenaphthene-d10
Acenaphthylene
Acenaphthene
Fluorene
Anthraquinone-d8/Phenanthrene-d10
Phenanthrene
Anthracene
1,4-Phenanthrenequinone
9,10-Anthraquinone
Fluoranthene
1,4-Anthraquinone
Pyrene
Fluoranthene-d10/Chrysene-d12
9,10-Phenanthrenequinone
Benzo[a]anthracene
Chrysene
Pyrene-d10/Chrysene-d12
1,2-Benzoanthraquinone
1,4-Chrysenequinone
5,12-Naphthacenequinone
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[a]pyrene-d12/Perylene-d12
Benzo[a]pyrene
Indeno[1,2,3- <i>cd</i>]pyrene
Dibenz[a,h]anthracene
Benzo[ghi]perylene

17

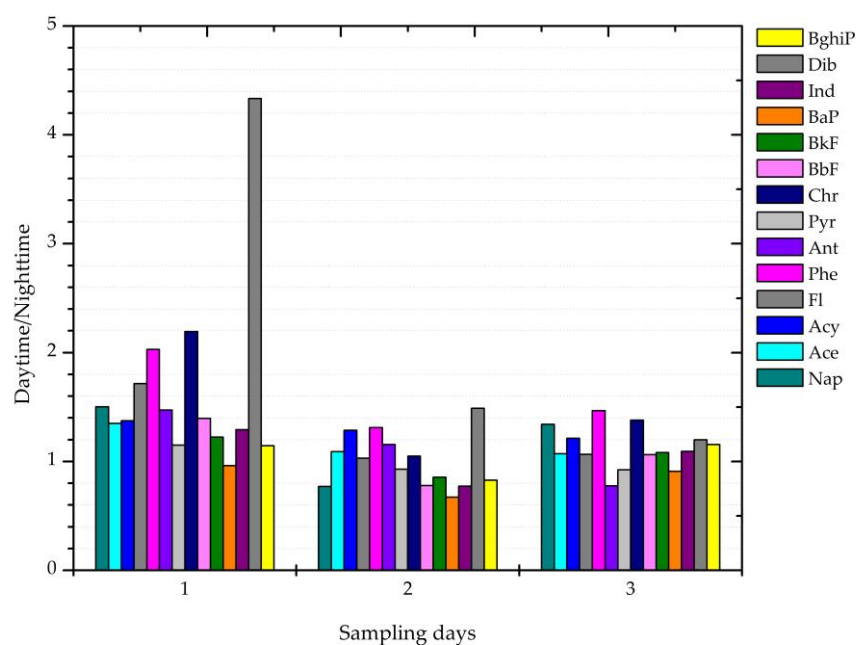


Figure S1. Daytime to nighttime ratios for ambient levels of PAHs during the three days of sampling observed at the TLA site.

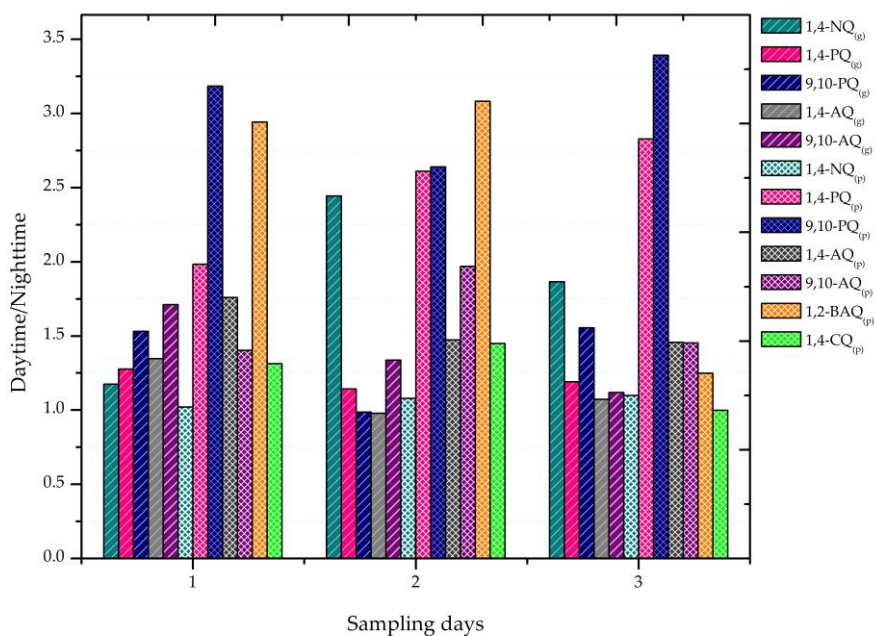


Figure S2. Daytime to nighttime ratios for ambient levels of quinones during the three days of sampling observed at the TLA site. .