Chemical and Biological Characterization of Particulate Matter (PM 2.5) and Volatile Organic Compounds Collected at Different Sites in the Los Angeles Basin

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1. Chemical Properties of Samples

The prooxidant content is based on the rates of DTT consumption under conditions described in Methods. The observed data are analyzed by linear regression to obtain slopes whose units are DTT nmol consumed per minute per m^3, with 95% confidence intervals. The electrophile content is determined from the inhibition of the rate of GAPDH catalyzed NADH formation from glyceraldehyde-3-phosphate oxidation. This assay is run in triplicate with N-ethylmaleimide as a standard. The units are the equivalents of NEM per m^3, presented as the mean of the three values with its standard error.

Table S1. Prooxidant and electrophile content of PM2.5 and VOC.

Basin	**CM**		**LB**		**SB**	
DTT	**mean**	**95% CI**	**mean**	**95% CI**	**mean**	**95% CI**
PM	0.60	0.68-0.43	0.371	0.45 -0.2	0.65	0.75-0.55
VOC	0.07	0.08-0.05	0.083	0.10-0.07	0.15	0.19-0.10

Basin GAPDH	**mean**	**SEM**	**N**	**mean**	**SEM**	**N**	**mean n**	**SEM**	**N**
PM	0.03	0.03	3	0			0.11	0.10	3
VOC	0.44	0.01	3	0.56	0.0	3	1.44	0.15	3

Table. Values of the CIs.

CM	**CM1**		**CM2**	
DTT	**mean**	**95% CI**	**mean**	**95% CI**
PM	0.61	0.67-0.54	0.50	0.55-0.45
VOC	0.04	0.04-0.01	0.10	0.12-0.08

GAPDH	**Mean**	**SEM**	**N**	**Mean**	**SEM**	**N**
PM	0.12	0.01	3.00	0.12	0.01	3.00
VOC	0.56	0.01	3.00	1.18	0.02	3.00

Table. Values of the CIs.

CM	**CM3**		**CM4**	
DTT	**mean**	**95% CI**	**mean**	**95% CI**
PM	0.43	0.47-0.40	0.08	0.10-0.07
VOC	0.04	0.05-0.03	0.02	0.10-0.02

GAPDH	**mean**	**SEM**	**N**	**mean**	**SEM**	**N**
PM	0.04	0.01	3.00	0.00		
VOC	0.28	0.12	3.00	0.12	0.01	3.00

2. Biological Properties of Samples

The concentration dependent actions of the samples on cell expression of TNFα, (Table 3) and HO-1 (Table 4) are shown as linear expressions relating concentration (pg TNFα,/mg cell protein and ng HO-1/mg cell protein) per sample concentration (m3/mL), respectively. The slopes were determined by linear regression analysis of data generated from at least 3 concentrations between 0.1 amd 1 m^3/mL under the conditions described in Methods. The equations are shown as the means with slopes (coefficients of X) as measures of the potency of the samples, 95% confidence intervals for the slopes and the p values for slope deviation from zero. NS indicates that the response was not concentration-dependent.

Table S4. RAW cell TN-α response to PM2.5.

Site	Equation (obsvd)	Slope: 95% CI	Slope: Deviation from Zero? p value
LB	Y = 11.10*X - 0.33	10.33-11.90	<0.0001
CM	Y = 18.68*X + 0.073	17.23-20.29	<0.0001
SB	Y = 413.90*X - 16.66	319.9-507.9	<0.0001
CM1	Y = 28.98*X - 3.41	24.28-33.67	<0.0001
CM 2	Y = 29.88*X - 0.34	22.58-37.18	<0.0001
CM 3	Y = 1.98*X - 0.33	0.48-3.48	<0.001
CM4	Y = 1.79*X - 1.29	0.06-3.52	NS

Table S5. RAW cell HO-1 responses to PM2.5 and VOC.

Site	Equation	Slope: 95% CI	Slope: Deviation from Zero? p value
	PM2.5		
LB	Y = 3.06*X-1.65	2.92-9.03	NS
CM	Y = 5.25X-3.72	1.23-9.27	<0.01
SB	Y = 80.3*X -2.07	38.8-121.8	0.0015
CM1	Y = 4.826*X - 0.87	1.78-7.87	0.005
CM2	Y = -1.46*X + 0.87	-3.94-0.83	NS
CM3	Y = 9.50*X - 0.51	1.86-17.25	0.019
CM4	Y = -0.34*X - 1.07	-4.76-4.08	NS
	VOC		
LB	Y = 34.49*X - 10.98	27.22-41.76	<0.0001
CM	Y = 43.23*X - 12.14	33.26-53.16	<0.0001
SB	Y = 185.24*X – 37.80	158.5-242.9	<0.0001
CM1	Y = 21.05*X + 1.61	14.31-27.7	<0.0001
CM2	Y = 42.74*X + 4.49	27.26-58.22	0.0001
CM3	Y = 12.19*X + 5.09	5.03-19.34	0.0035
CM4	Y = -8.91*X + 8.32	-14.0-27.78	0.0030