Supplementary Material

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Figure S1. Maximum 'OH generation in the presence of 50 μ M ascorbate. Panel (A) shows airvolume-normalized maximum levels of 'OH formation, while (B) shows PM-mass-normalized maxima. Values are means \pm SD, n = 3 to 4. Letters above bars indicate statistically different maxima: a > b > c for fine PM, while a' > b' > c' for coarse PM.





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Figure S2. Maximum 'OH generation in the absence of ascorbate. Panel (A) shows air-volumenormalized maximum levels of 'OH formation, while (B) shows PM-mass-normalized maxima. Values are means \pm SD, n = 3. Letters above bars indicate statistically different maxima: a > b. An asterisk "*" indicates a value that is not statistically different from zero.



Figure S3. Ratios of the maximum 'OH formation in SLF with ascorbate over the maximum 'OH formation in SLF without ascorbate. Since the maximum 'OH formation without ascorbate in all samples except the Fresno winter 2009 fine PM, the Fresno winter 2007, summer 2008, and winter 2009 coarse PM was not statistically different from zero (Fig. S2), we are likely underestimating the effect of ascorbate in amplifying 'OH generation for the majority of the PM samples.



Figure S4. Inhibitory effect of the transition metal chelator DSF on the maximum 'OH generation in SLF with ascorbate for the positive control and the SJV PM. Values are means \pm SD. n = 4 for extractions without added DSF, and n = 2 to 3 for extractions with added DSF.



Figure S5. Correlation between the air-volume-normalized maximum level of 'OH generation in SLF with Asc and the the accompanying SLF-soluble Cu concentration. Values are means \pm SD. n = 6 except for a few of the Cu concentrations where n = 4. The maximum levels of 'OH formation by Fresno fine and coarse PM were strongly correlated with the SLF-soluble Cu concentrations in corresponding PM extracts: y = 23.45x/(1+2.49x), R² = 0.95. No correlation was observed between the SLF-soluble Cu concentrations and the maximum levels of 'OH formation from the Westside PM (R² = 0.17).





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Figure S6. Contributions of SLF-soluble Cu (blue bars) and Fe (yellow bars) to the maximum 'OH generation in SLF with Asc in fine (panel A) and coarse (panel B) particles. Values are means \pm SD, n = 3. There are three samples whose error bars extend beyond the range of the y-axis (mean \pm 1 SD): Fresno summer 2006 fine PM, 2.1 \pm 0.9; Westside winter 2008 fine PM, 2.2 \pm 1.1; Westside summer 2007 coarse PM, 2.6 \pm 9.1.