Supplement for manuscript

Carbonaceous components in $PM_{2.5}$ and $PM_{0.1}$ with online measurements of gaseous and particulate pollutants: implication of thermal-optical derived EC2 fraction as a component of ultrafine particles in the roadside environment

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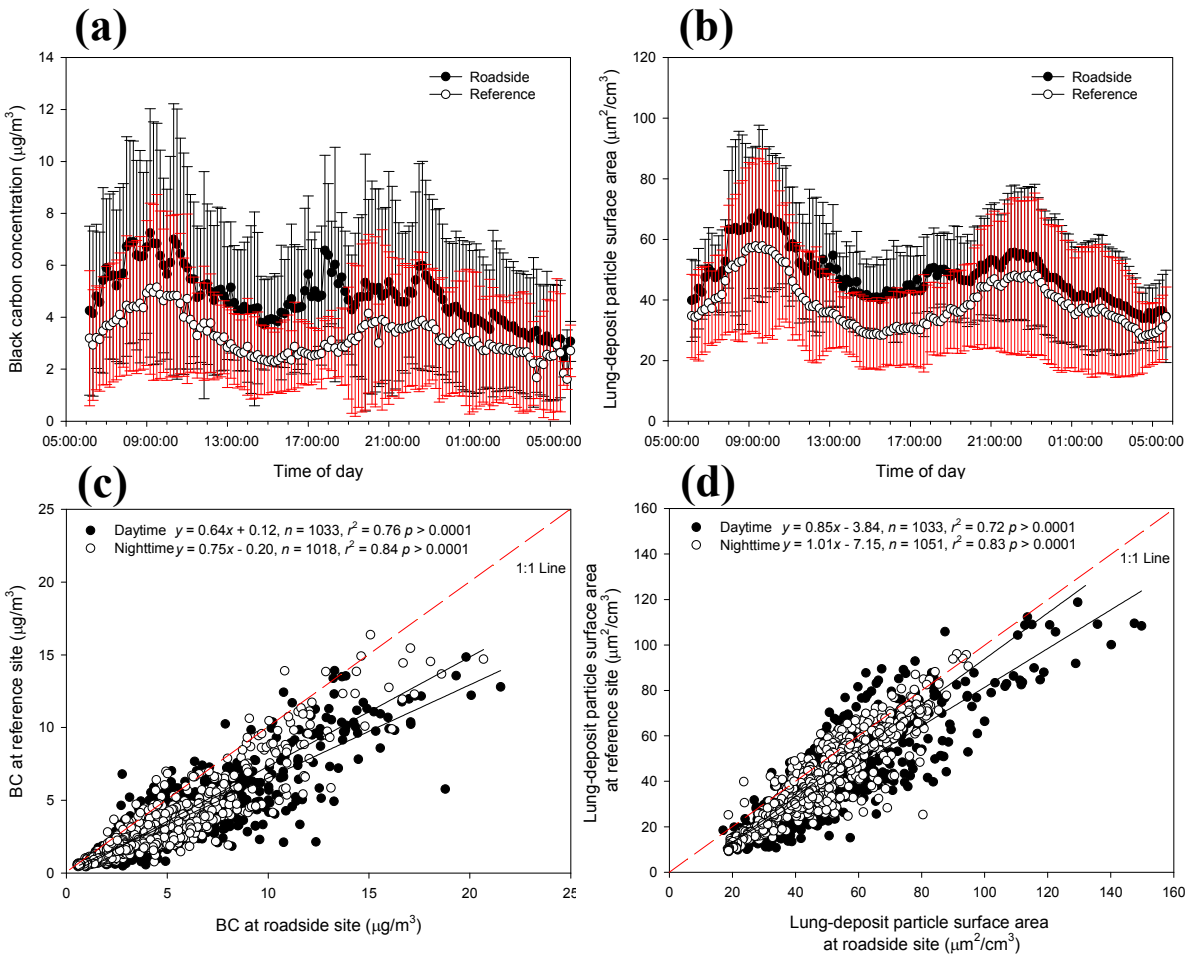

Figure S1. Relationship of BC and LDSA at the roadside and reference sites.

For quality assurance, the BC concentration was monitored at the roadside using dual- and seven-wavelength aethalometers for more than 1 h before field sampling; the results obtained were in good agreement (slope: 1.09; r^2 = 0.96; n = 108; x-axis = seven wavelengths; y-axis: dual wavelength). Thus, BC concentrations for the seven-wavelength aethalometer were corrected based on these results.

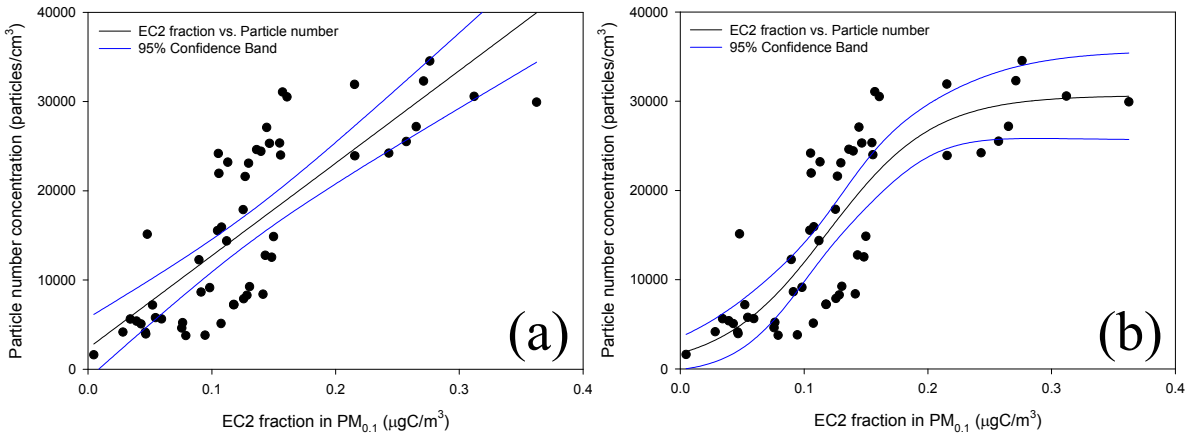

Figure S2. Relationship of total particle number concentrations with EC2 fraction measured at roadside sites in Seoul, Korea (2012) and Saitama, Japan (2011) for a linear fit (a) and a sigmoid curve fit.

The relationship between the EC2 fraction and particle number concentrations indicates that EC2 could be the primary chemical component of ultrafine particles in terms of particle number concentration. A sigmoid curve fit provides a better fit than a linear fit, possibly due to the coagulation and aggregation of ultrafine particles following the emission of a high number of small soot particles within a limited space. Further study should be carried out to support the above observation.