Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

An SDS-PAGE based method for quantification of carbon black in biological samples

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Materials and methods

WST-1 assay for cell viability determination

To determine the non-cytotoxic concentrations of CB to Raw 264.7, A549 and MSC cells, we used WST-1 assay to measure the cell viability. In brief, cells were seeded and allowed to attach in 96-well plates at the density of 2×10^4 cells, 1×10^4 cells, and 1×10^4 cells per well, respectively. After 24-h CB exposure, cells were washed with PBS for three times and incubated in fresh culture medium containing 10%(v/v) WST-1 (Roche, Germany). After 1 h, the absorbance of each well was recorded at 450 nm with a Thermo Varioskan Flash microplate reader (Winooski, VT, USA).

Results

Cell viability under CB exposure

The cytotoxicity of CB to the selected cell types including human and murine cells (Raw 264.7, A549, and MSC) was evaluated by using WST-1 assay. As shown in **Figure S1**, the cell viability of MSC and A549 cells was not affected at all tested concentrations of CB, the viability of RAW264.7 increased gradually but not statistically significant from the control until the concentration increased to 40 μg/mL. Thus, we used the exposure concentrations (0-20 μg/mL) for the following experiments as they are non-cytotoxic.

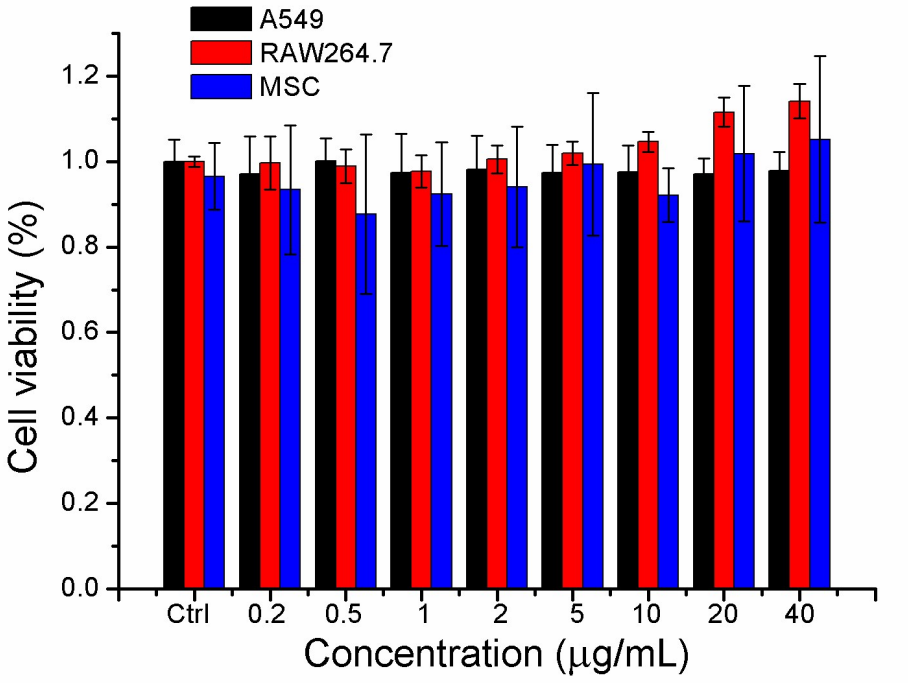

Figure S1. Viability of three types of cells (A549, Raw 264.7, and MSC) under exposure of various concentrations of CB (0-40 μg/mL) for 24 h. The cell viability was determined by WST-1 assay. Control group represents normally cultured cells.

Data are representative of three independent experiments and are expressed as mean values ± S.D.

Characterization of CB

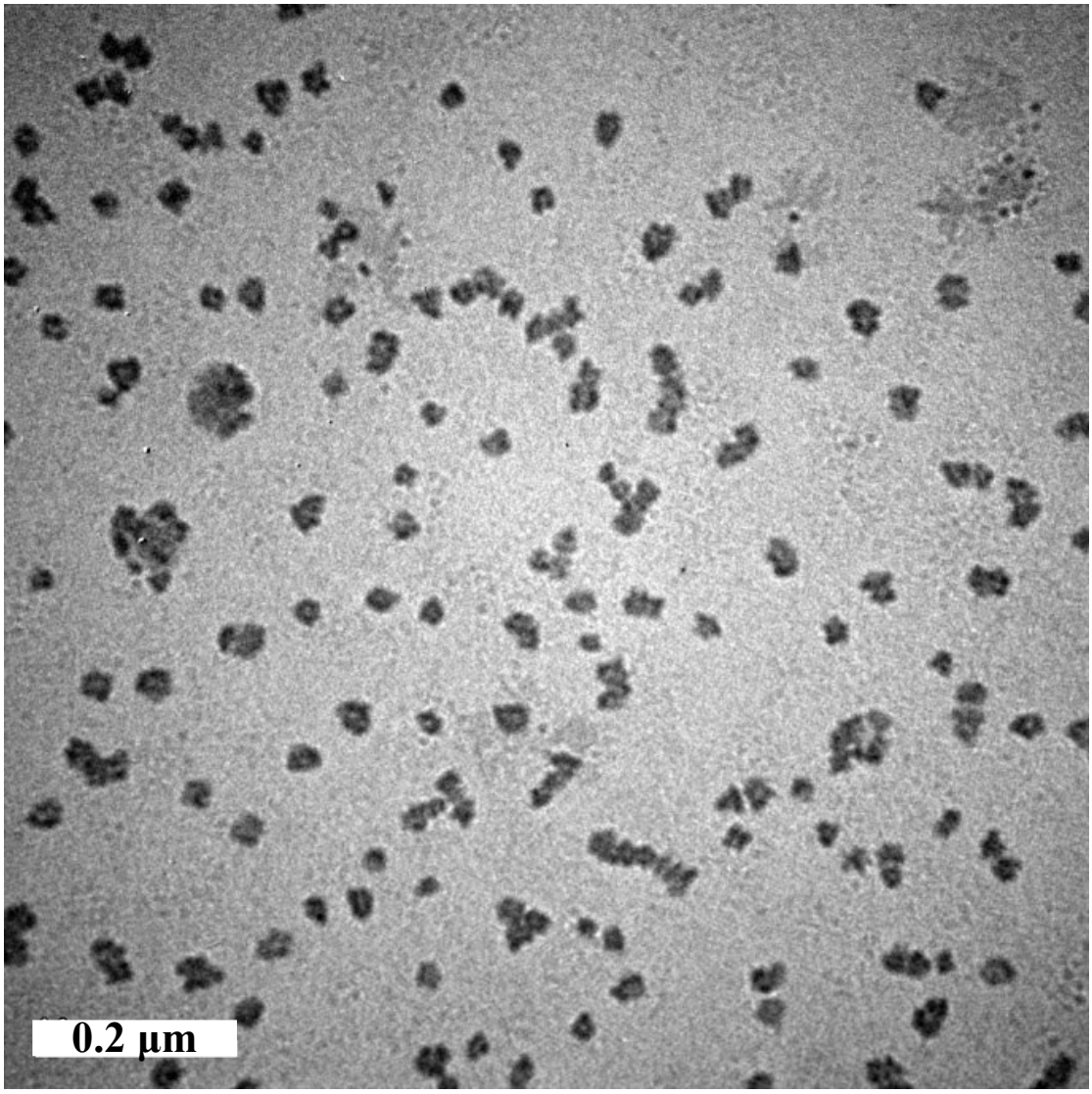

Figure S2. Typical TEM image of CB; the scale bar represents 0.2 µm for CB.