Supporting Information

Graphene Oxide-Induced Perturbation to Plasma Membrane and Cytoskeletal Meshwork Sensitize Cancer Cells to Chemotherapeutic Agents

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SUPPLEMENTARY FIGURE AND FIGURE LEGEND

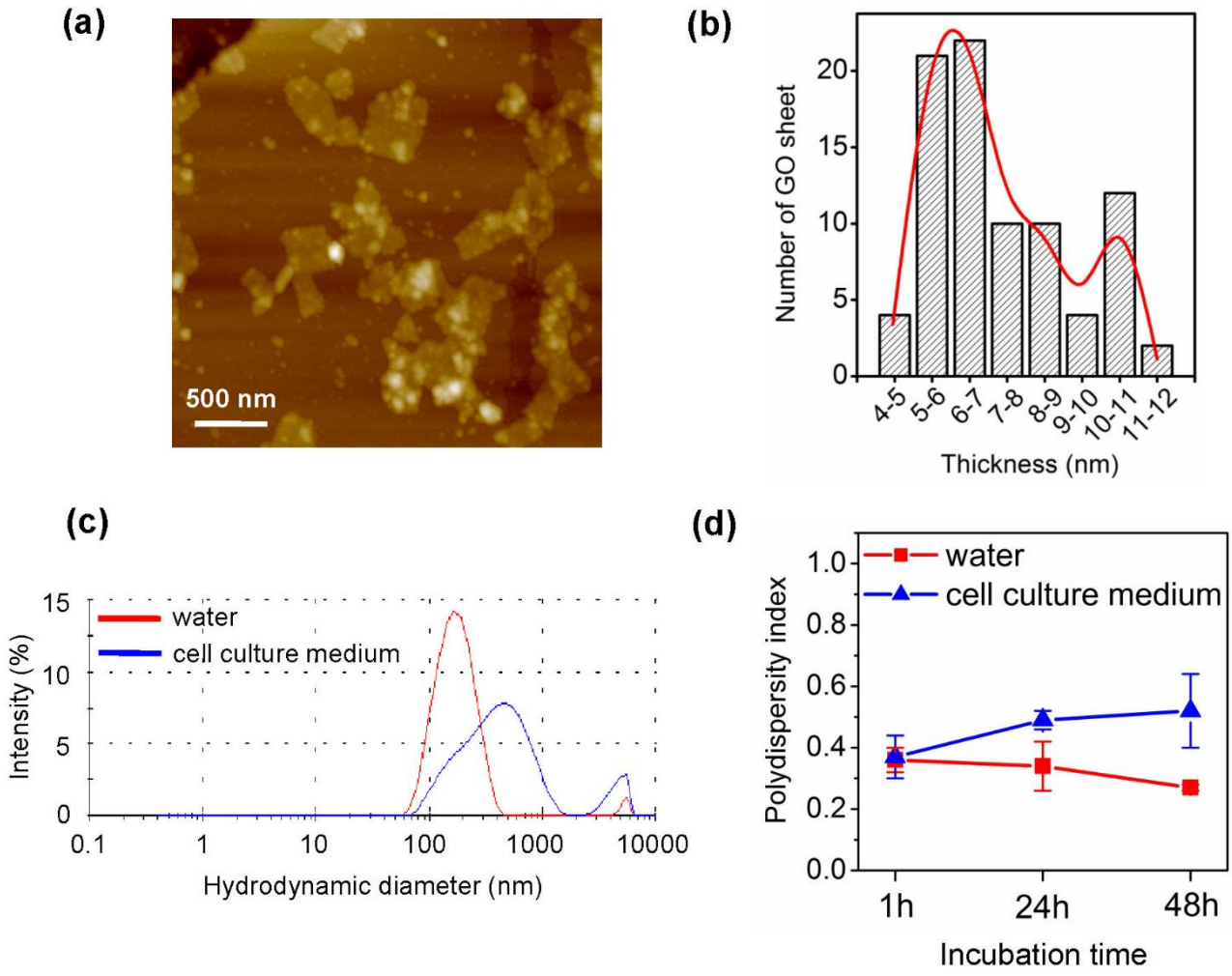

Figure S1. Characterization of GO materials in deionized water and cell culture medium. (a) A representative AFM image illustrating GO sheets after 24 h incubation in culture medium. (b) Thickness of GO sheets after 24 h incubation in culture medium (the number of total GO sheets = 85). (c) Hydrodynamic diameter of GO sheets in deionized water and culture medium post 24 h incubation. (d) Polydispersity index of GO sheets in deionized water and culture medium after 1, 24 and 48 h incubation (n=3).

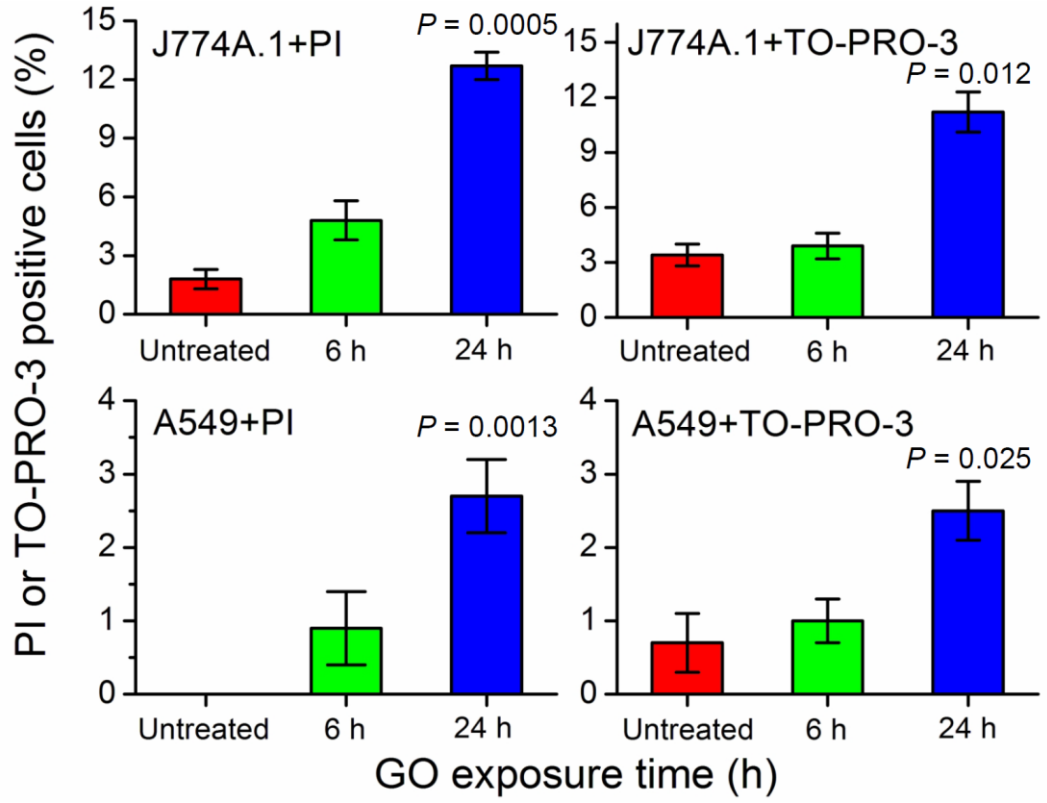

Figure S2. Percentage of PI or TO-PRO-3 positive cells for J774A.1 or A549 after 6 and 24 h GO treatment at 4 or 10 μg/mL, respectively.

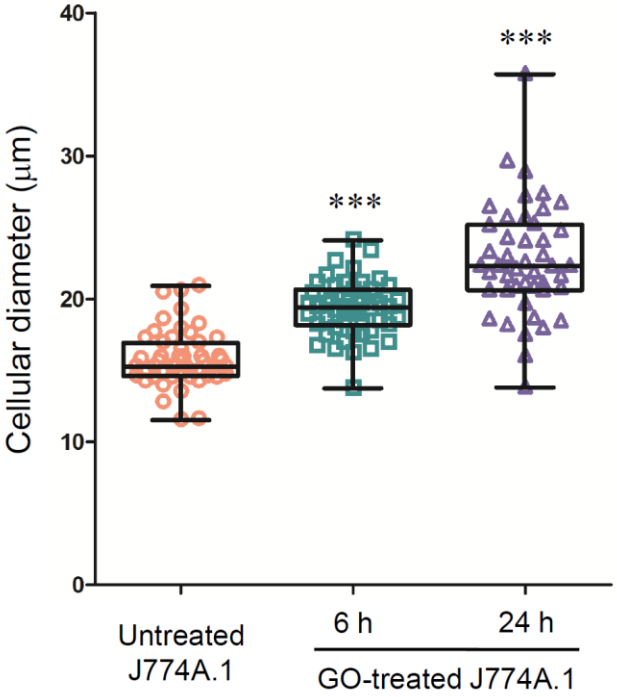

Figure S3. Changes of the cellular size for J774A.1 cells after 6 and 24 h GO treatment. The cellular diameter was measured through CLSM analysis (n = 45).

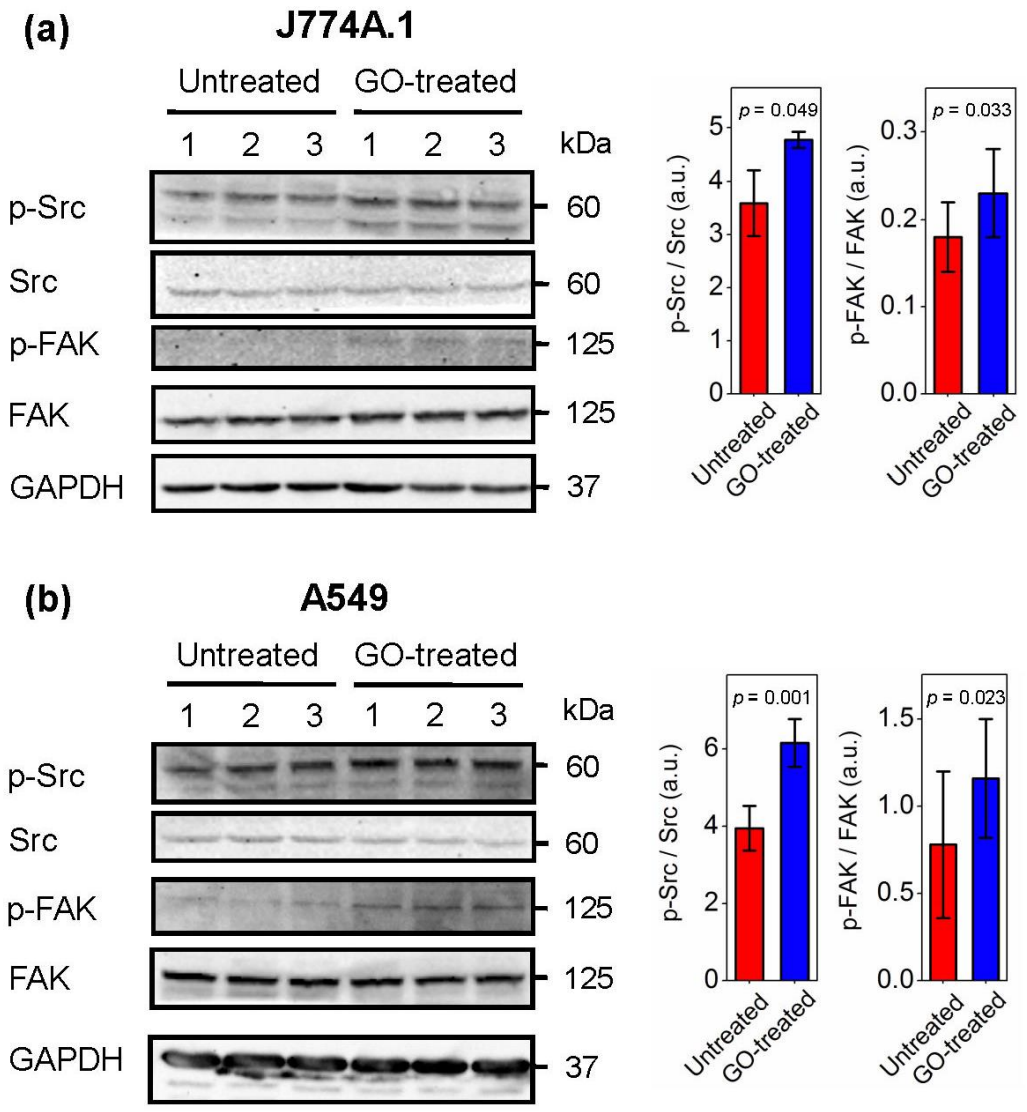

Figure S4. The activation of the integrin-associated FAK/Src complex by GO. Western blot analysis of p-Src, Src, p-FAK and FAK in untreated and GO-treated (a) J774A.1 and (b) A549 cells. J774A.1 and A549 cells were treated with GO at 4 and 10 μg/mL for 6 h, respectively. There are 3 biological replicates in each group (n = 3). Quantified data were shown in the left panels (n = 3), compared to untreated cells.

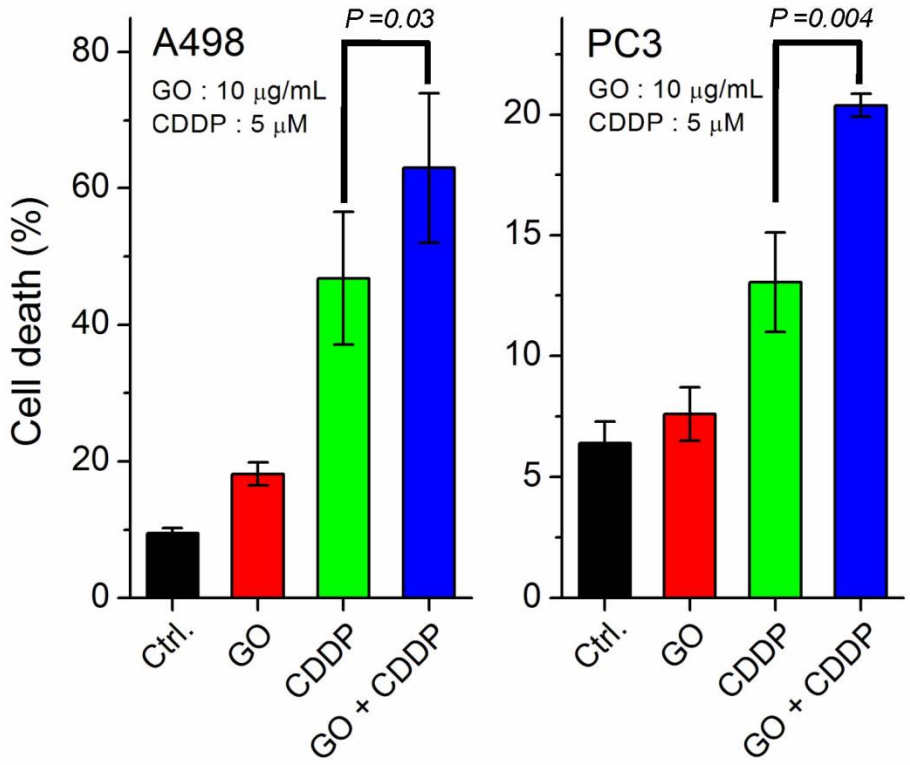

Figure S5. Cell death assay through FACS analysis with FITC-Annexin V and PI staining. A498 and PC3 cells were pretreated with GO at 10 μg/mL for 24 h, followed by PBS washing, and were then exposed to CDDP at 5 μM for 24 h (n = 4), respectively. For comparison, cells were also individually treated with GO at the same concentrations (n = 4).

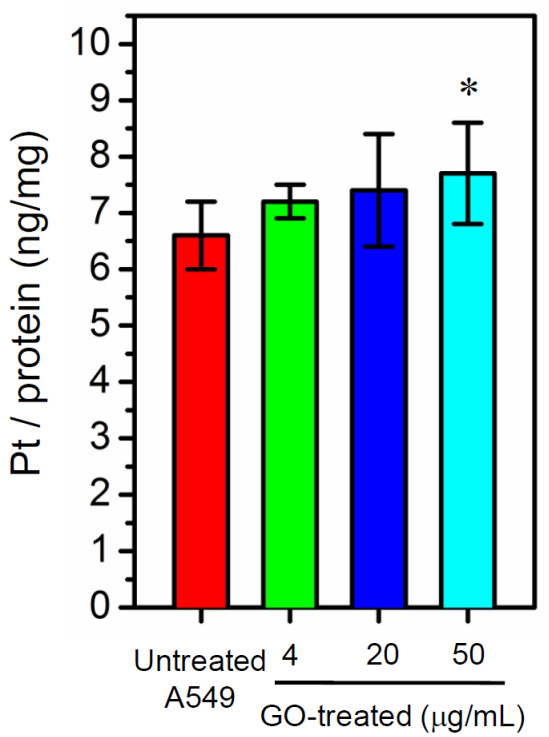

Figure S6. Intracellular mass of CDDP, as characterized by the intracellular concentration of Pt. A549 cells were pretreated with GO at 4, 20 and 50 μg/mL for 24 h, and were then exposed to CDDP at 5 μM for 24 h. The intracellular concentration of Pt was determined by ICP-MS (n = 3). Asterisk (*) denotes $P < 0.05$, compared to untreated cells.