Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B


**Supporting Information**

# Hyaluronic Acid - Conjugated Graphene Oxide / Photosensitizer Nanohybrids for Cancer Targeted Photodynamic Therapy

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**Figures**

**Figure S1.** AFM images and DLS histograms of GO sheets.

**Figure S2.** The comparation of $^{1}$H-NMR spectra of HA-GO conjugates and HA-ADH/GO mixture.

**Figure S3.** FTIR spectra of HA-GO conjugates and GO pristine sheets.

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**Figure S5.** Cell viability of HA-GO conjugates with different concentrations was treated with HeLa cells for 48 hr with (black) or without (white) the light exposure.

**Figure S6.** Fluorescence spectrum of HA-GO/Ce6 nanohybrids in DI water showed the same peak shape with free Ce6 under 400 nm excitation.

**Figure S7.** LCSM images in lower magnification of HeLa cells incubated with HA-GO/Ce6 nanohybrids and free Ce6.

**Figure S8.** Fluorescence images of GO/Ce6 and HA-GO/Ce6 nanohybrids after incubation with HeLa cells at 37 °C for 30 min: it was clearly shown that the fluorescence level of HA-GO/Ce6 was higher than that of GO/Ce6, indicating that HA-GO/Ce6 could target HeLa cells more quickly.

**Figure S9.** Fluorescence microscopy analysis that HA-GO/Ce6 nanohybrids were incubated in HeLa cells or NIH3T3 cells at 37 °C for 1 hr, respectively: the internalization of HA-GO/Ce6 into HeLa cells (cervical cancer cells that overexpresses HA receptors) was more effective than that into NIH3T3 cells (fibroblast cells as negative control), suggesting the specific targeting effect of HA-GO/Ce6 to cancer cells with overexpressed HA receptors.

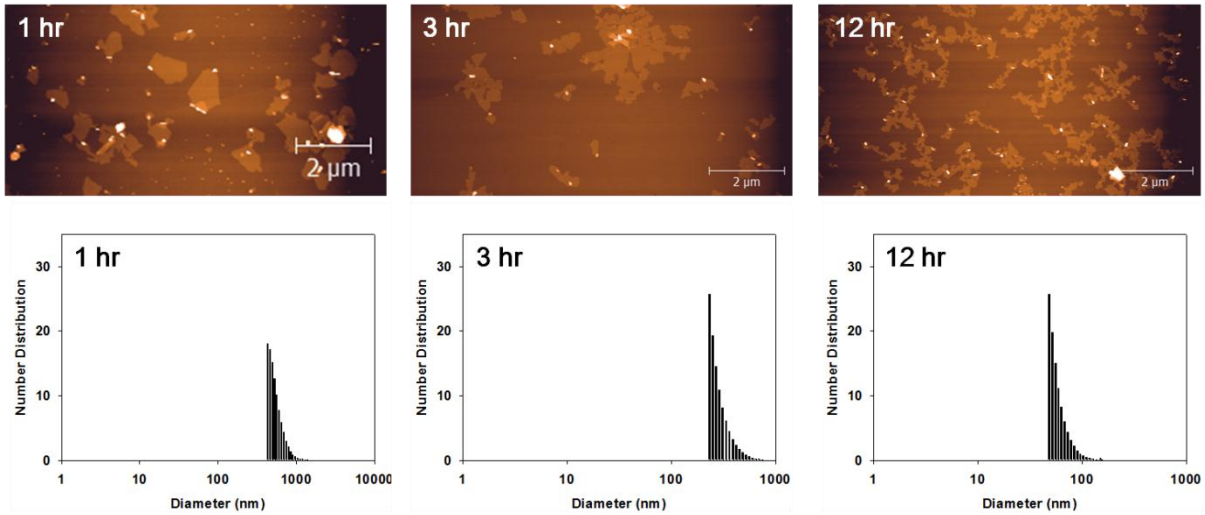



**Figure S1.** AFM images and DLS histograms of GO sheets: GO sheets in different lateral size (545.5 nm, 292.0 nm, and 59.3 nm) were obtained with the variation of sonication periods (1 hr, 3 hr, and 12 hr).

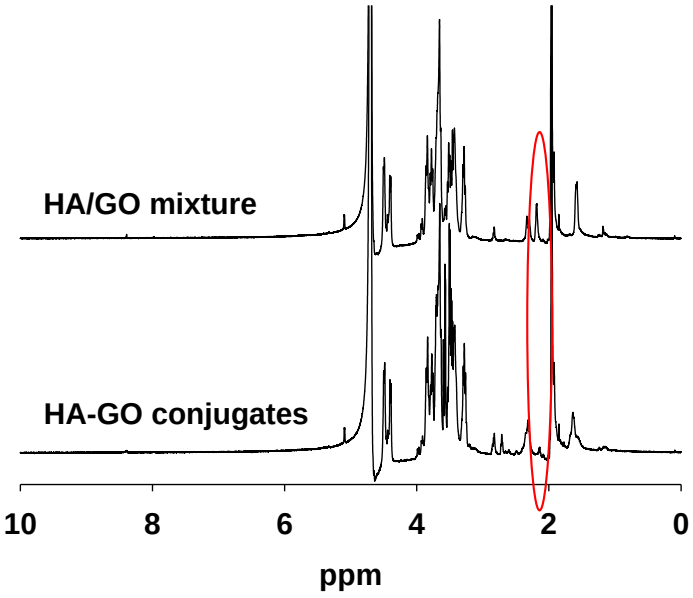



**Figure S2.** The comparation of $^{1}$H-NMR spectra of HA-GO conjugates and HA-ADH/GO mixture: the peak assigned H-4 methylene protons close to the conjugation site that almost disappears in HA-GO conjugates, while the peak still clearly existed in HA-ADH/GO mixture.

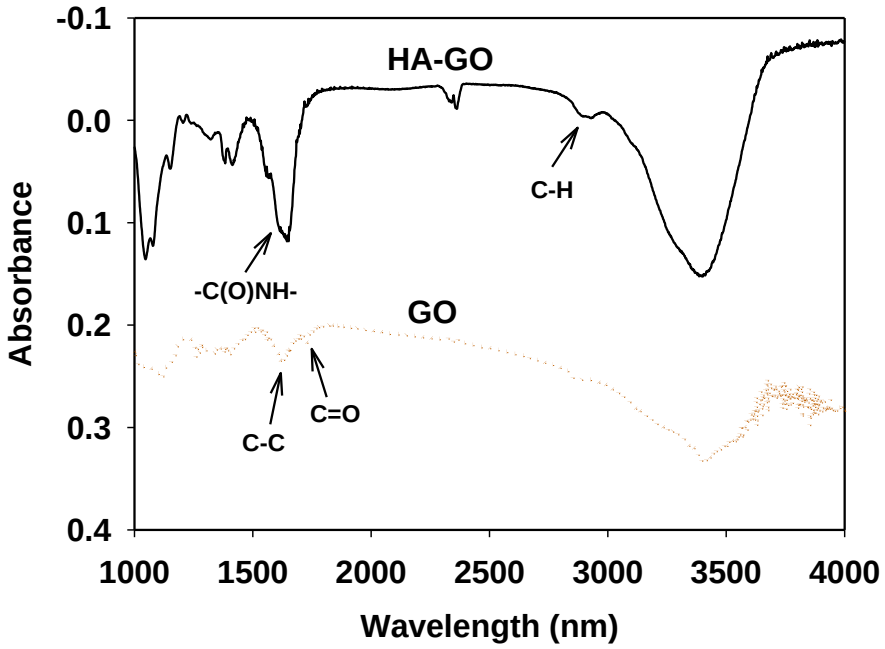
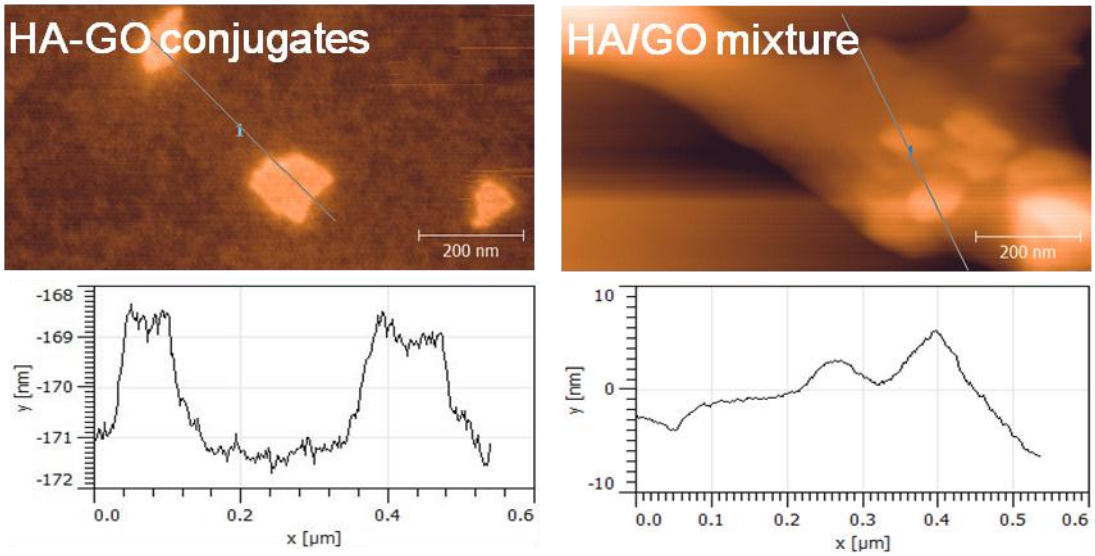



**Figure S3.** FTIR spectra of HA-GO conjugates and GO pristine sheets.

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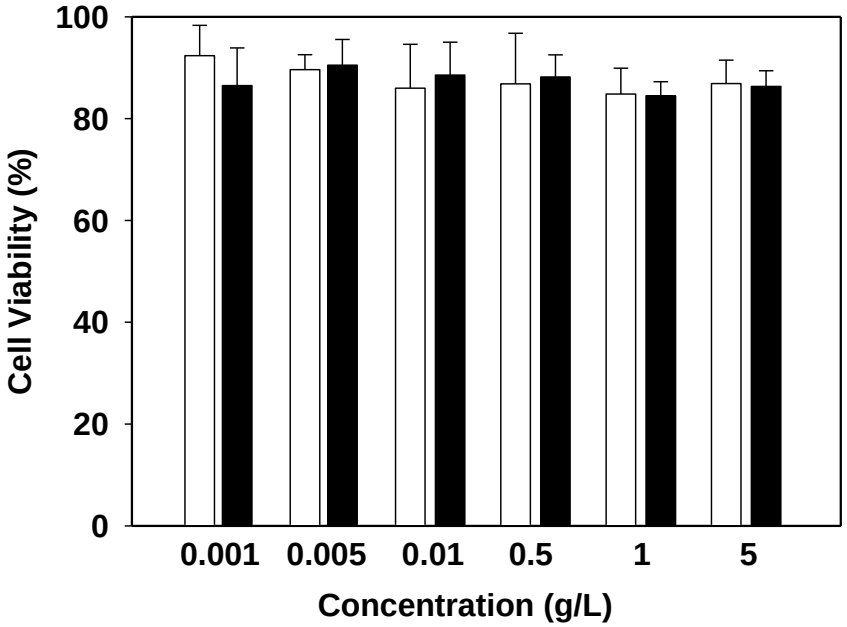


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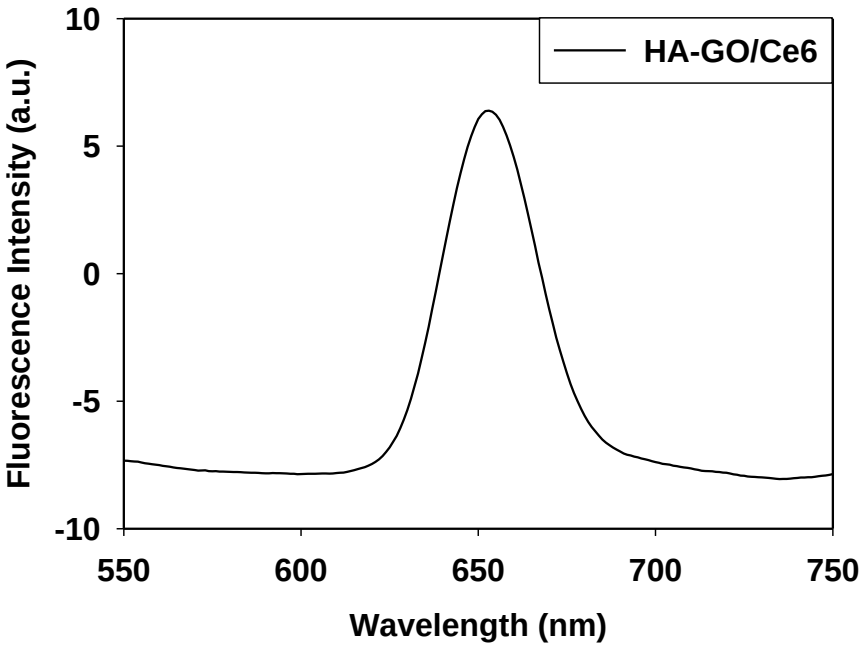


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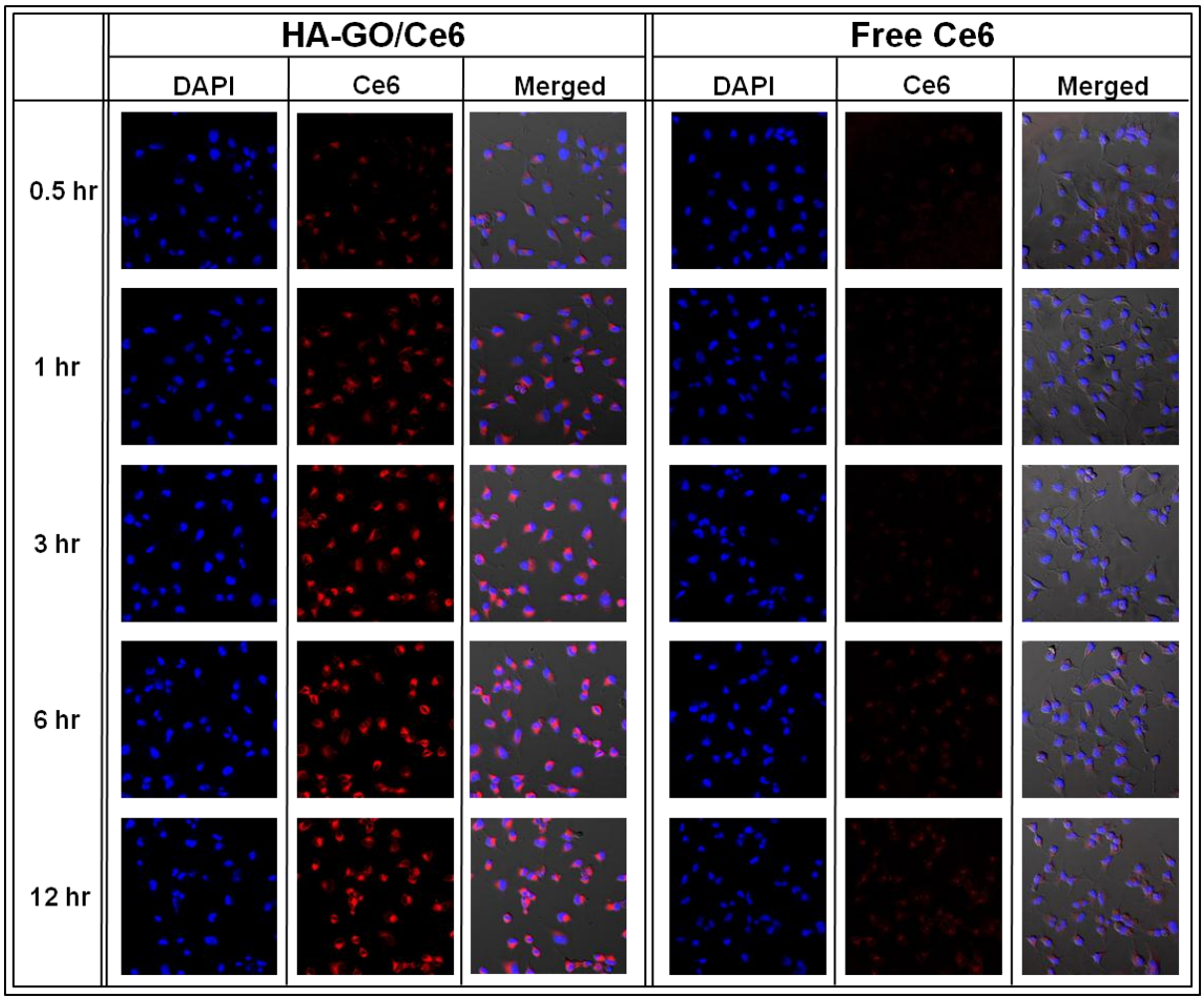


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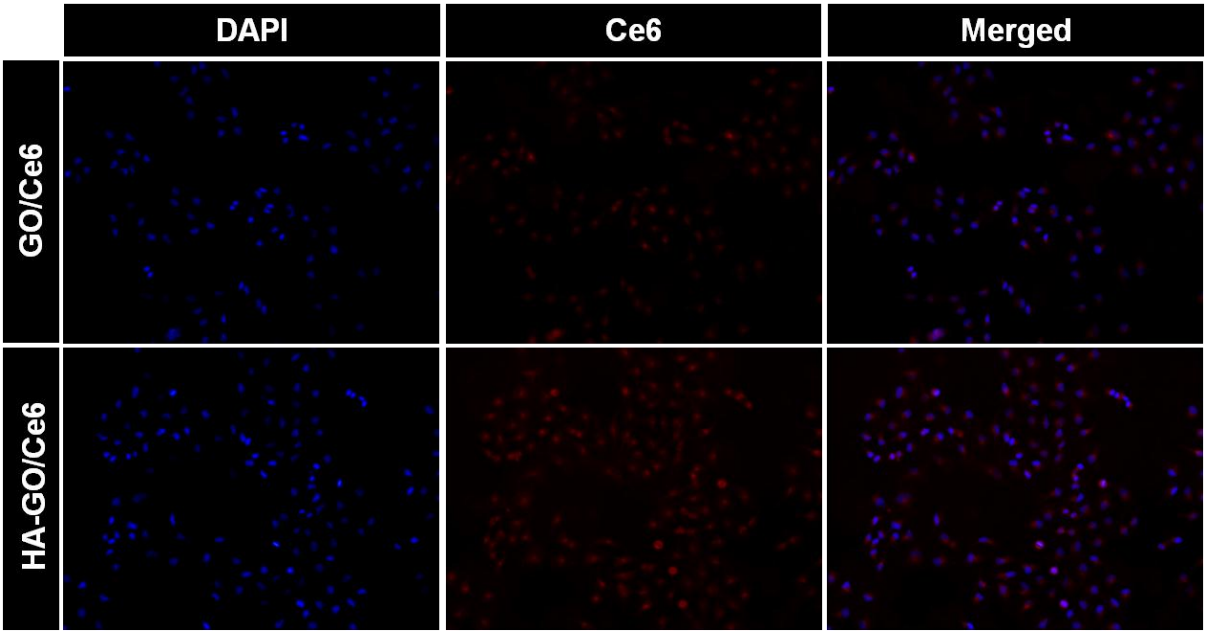


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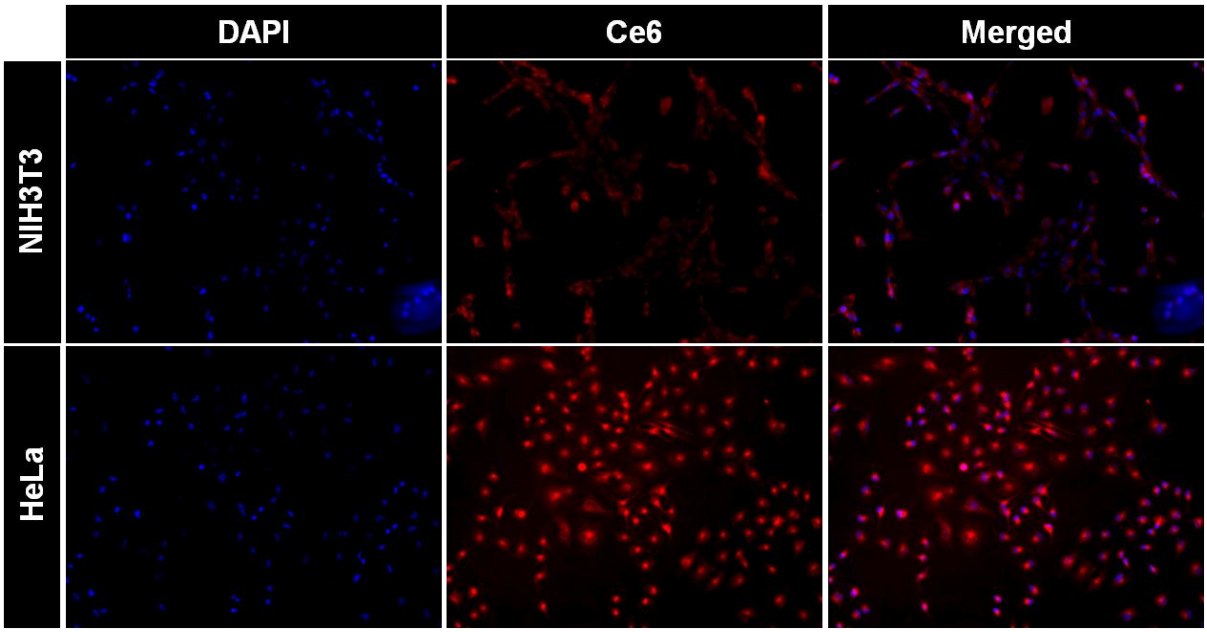


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