Supplementary Information for

Nitrogen and Phosphorus co-doped Graphene Quantum Dots: Synthesis from Adenosine triphosphate, Optical Properties, and Cellular Imaging

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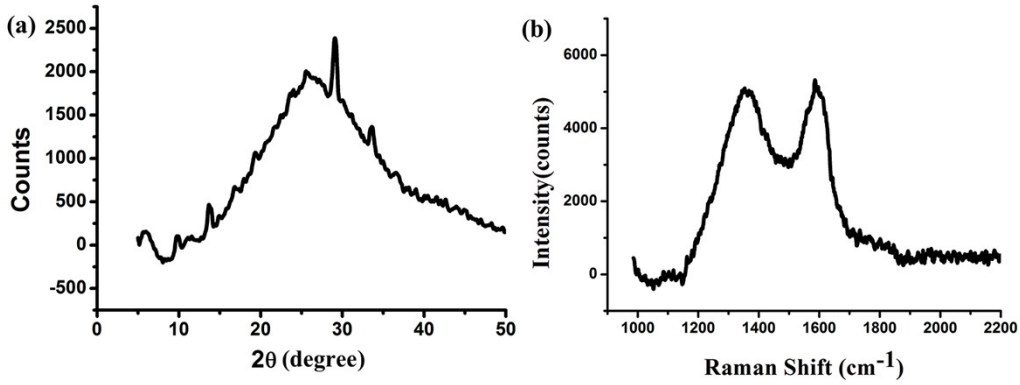

Figure S1 (a) XRD and (b) Raman spectrum of ATP-GQDs.

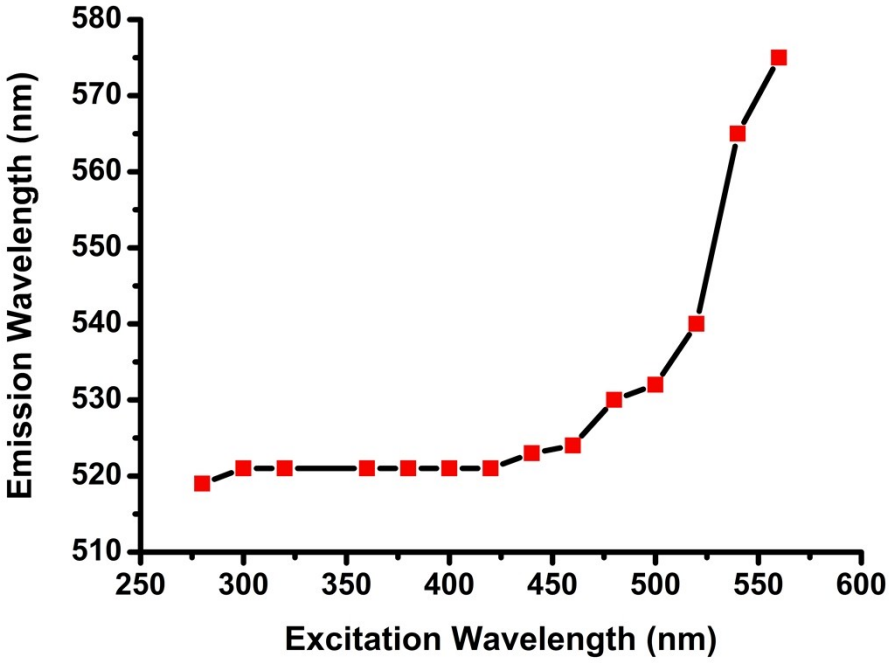

Figure S2 Excitation wavelength *vs.* emission peak position

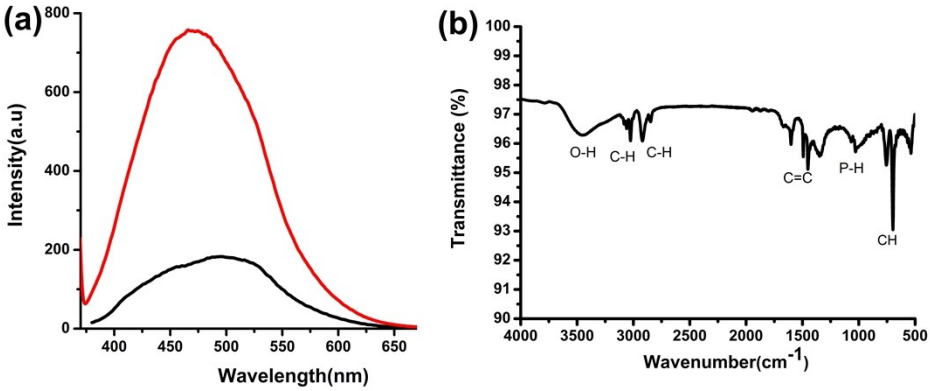

Figure S3. (a) PL spectra of ATP-GQDs before (black) and after (red) chemical reduction. (b) FTIR spectrum of ATP-GQDs after reduction with $NaBH_4$.

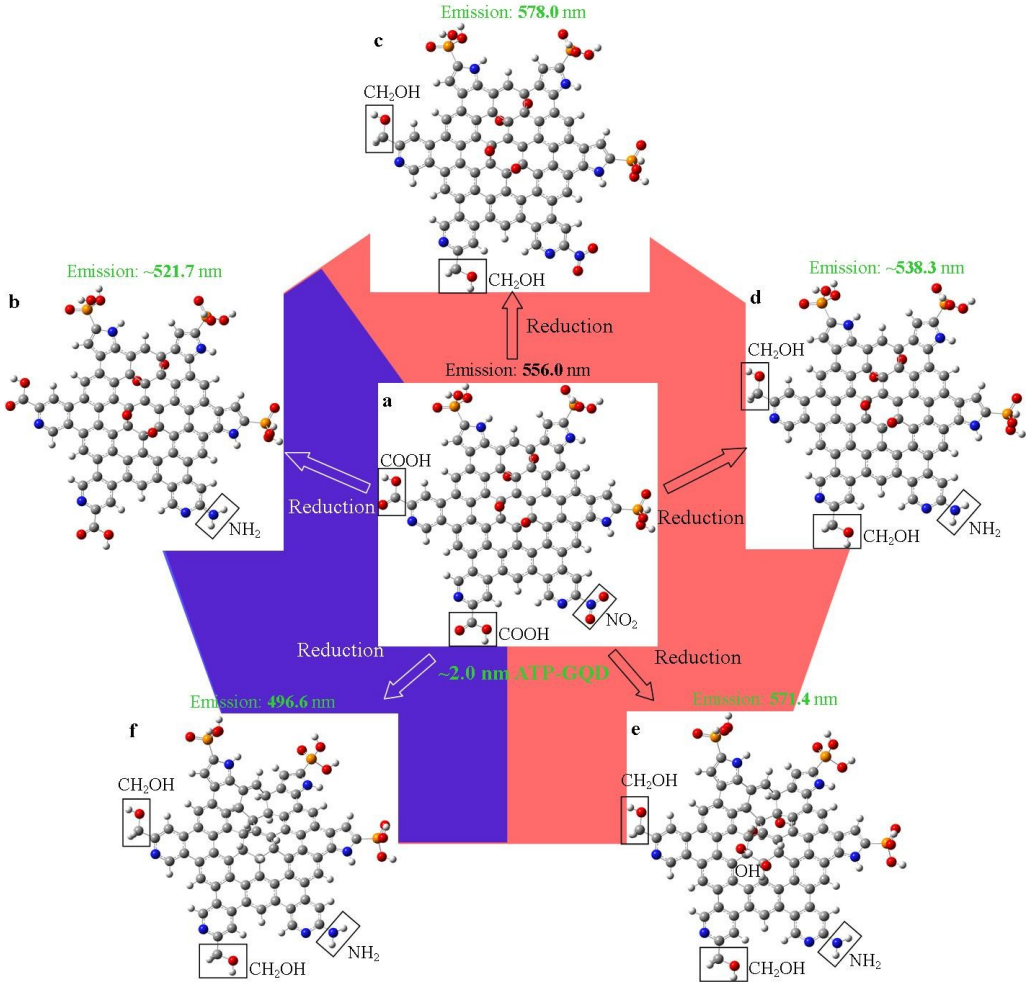

Figure S4. Hypothetical model of (a) ATP-GQD and (b-e) its different reduced forms.

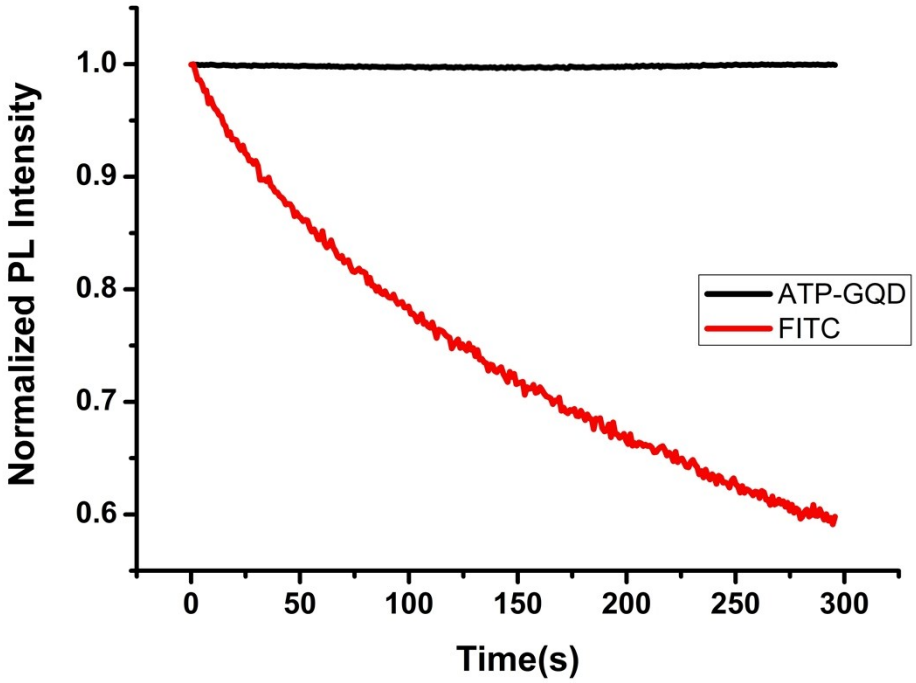

Figure S5. Normalized PL intensity *vs.* time of ATP-GQDs (black) and FITC molecules (red) under confocal laser scanning microscope (excitation at 488 nm).

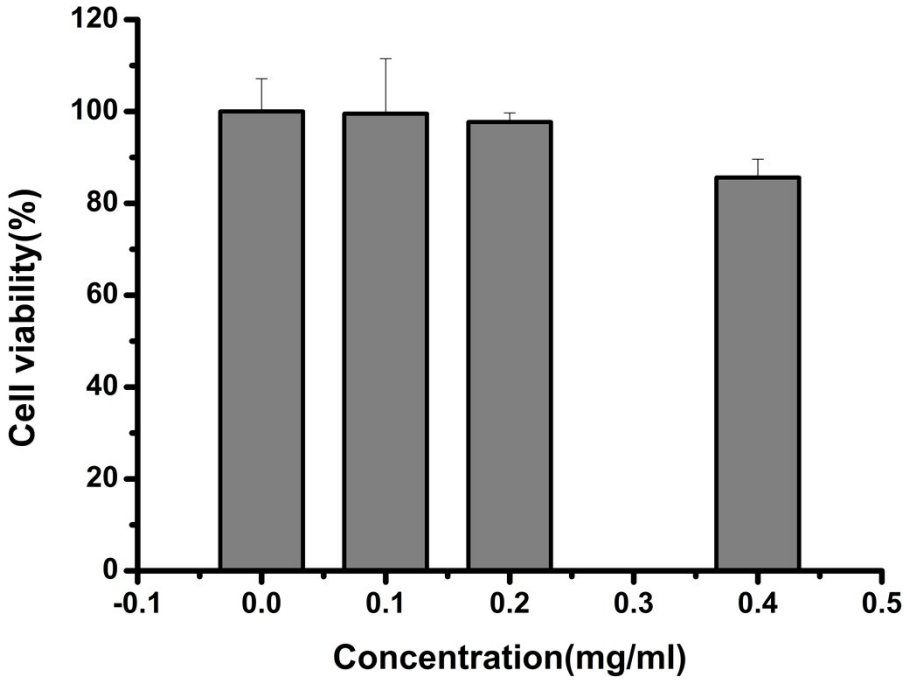

Figure S6. Effect of addition of ATP-GQDs with different concentrations on the viability of HeLa cells. Error bars indicate the standard deviation from 3 independent experiments.

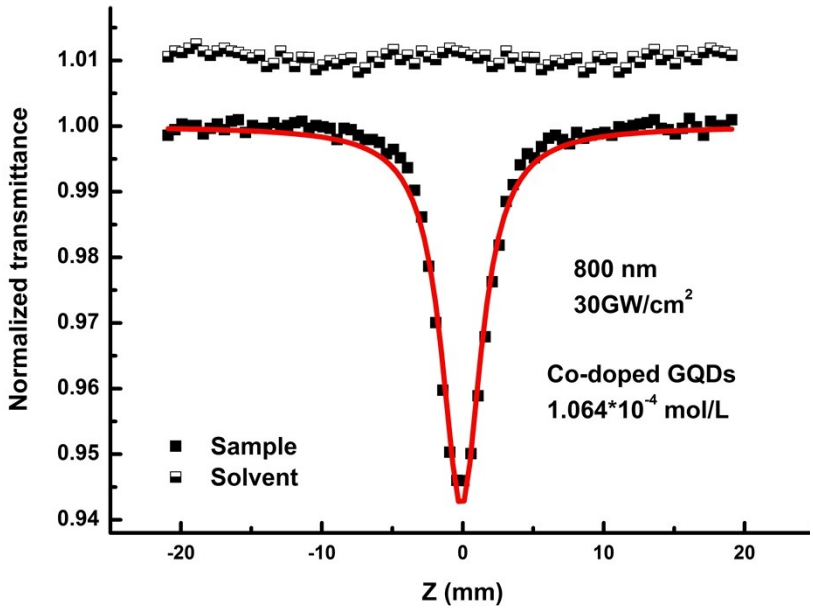

Figure S7. Z-scan of ATP-GQDs and water (solvent control).

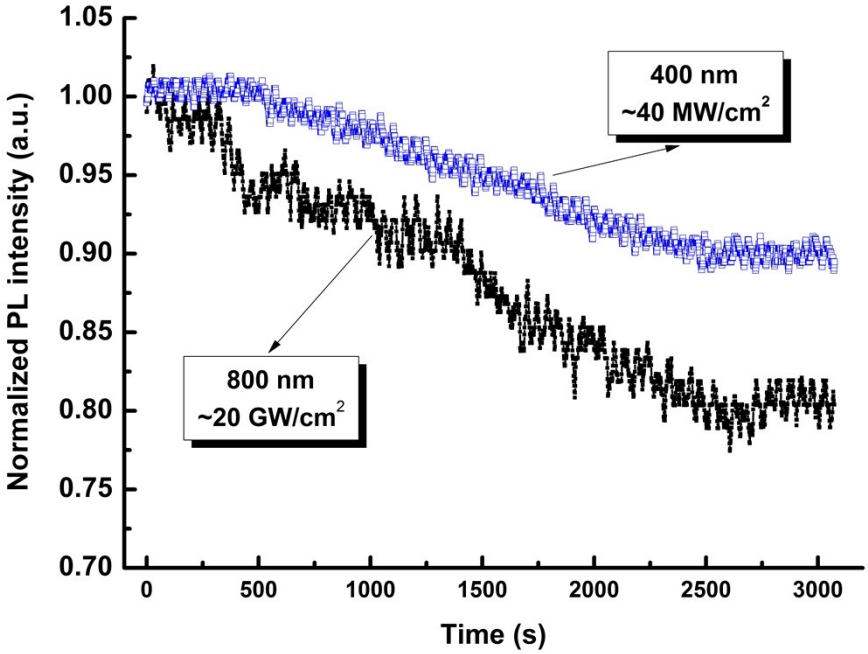

Figure S8. Normalized PL intensity *vs.* time of ATP-GQDs under one (blue) or two-photon (black) excitation.

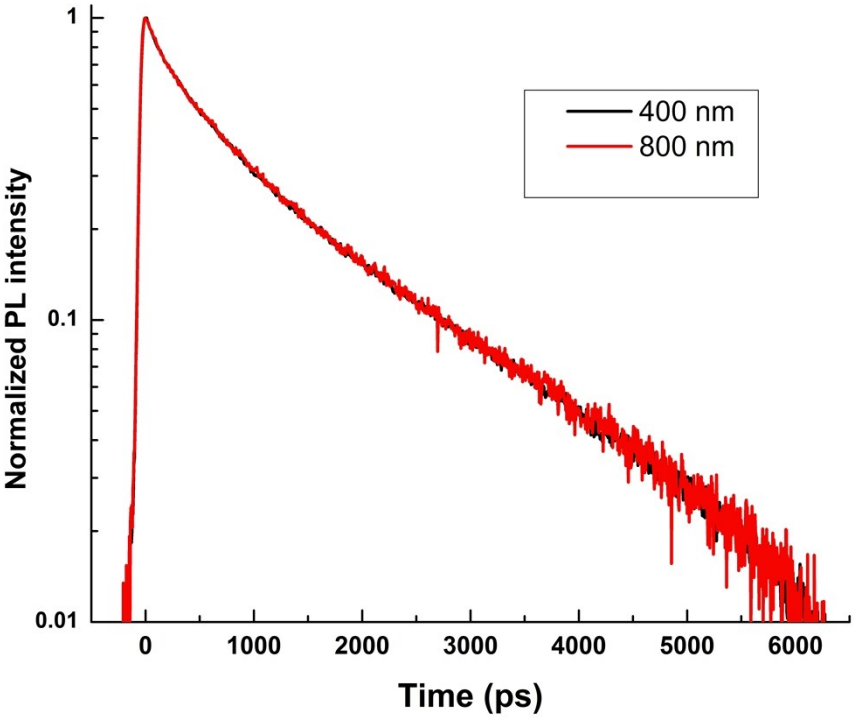

Figure S9. Fluorescence decay of ATP-GQDs under one- (400 nm) or two-photon (800 nm) excitation.

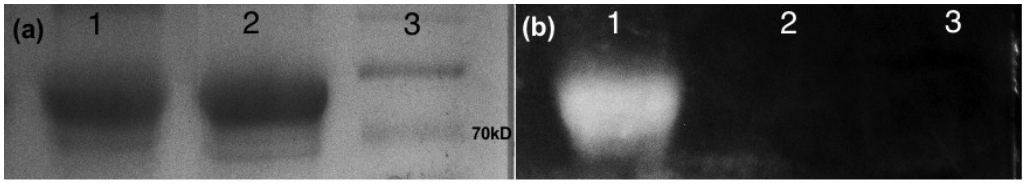

Fig S10. Gel electrophoresis images of Tr-GQDs (lane 1), transferrin (lane 2) and protein marker (lane 3) under white light (a) and 488 nm excitation (b).