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Supplementary Material

Z-Scheme Heterostructures for Glucose Oxidase-Sensitized Radiocatalysis and Starvation Therapy of Tumors

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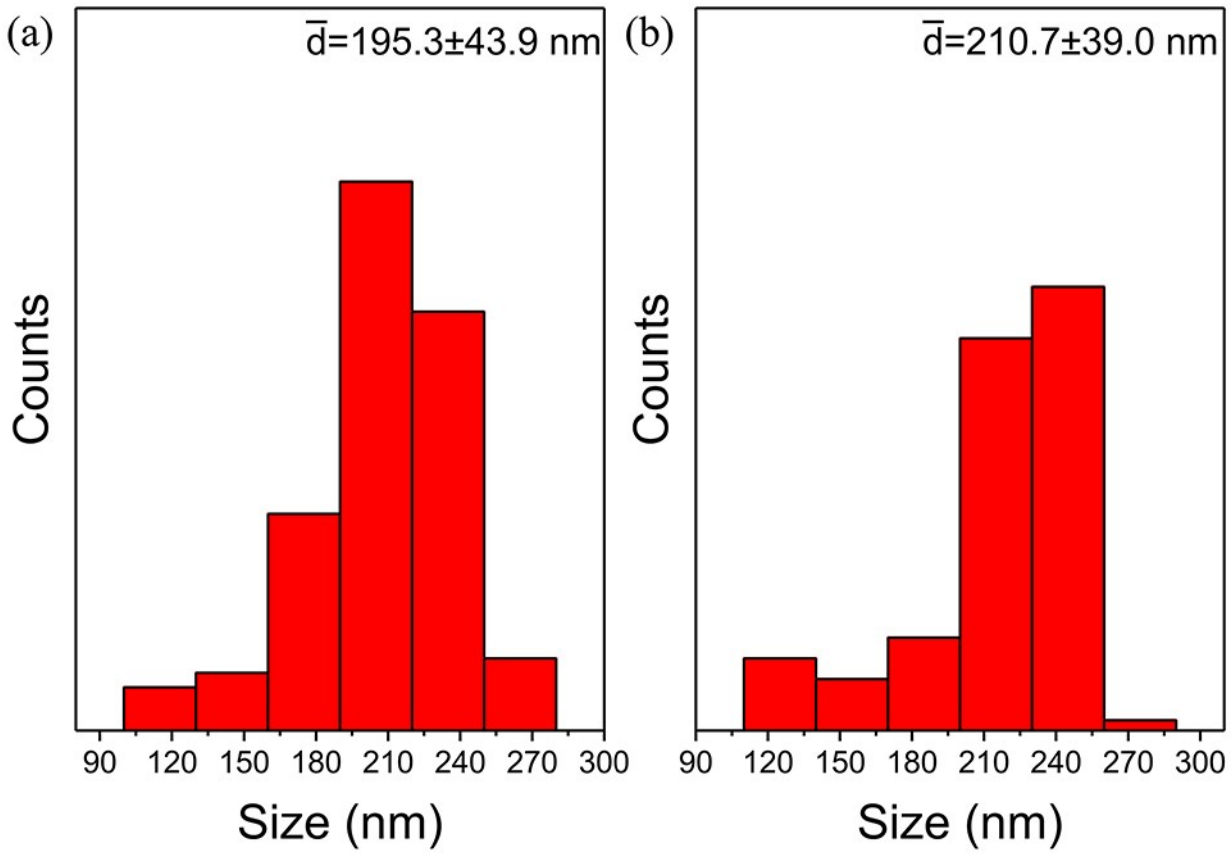

Figure S1. Size distribution of BiOI NSs (a) and BiOI/Bi_2S_3 NSs (b).

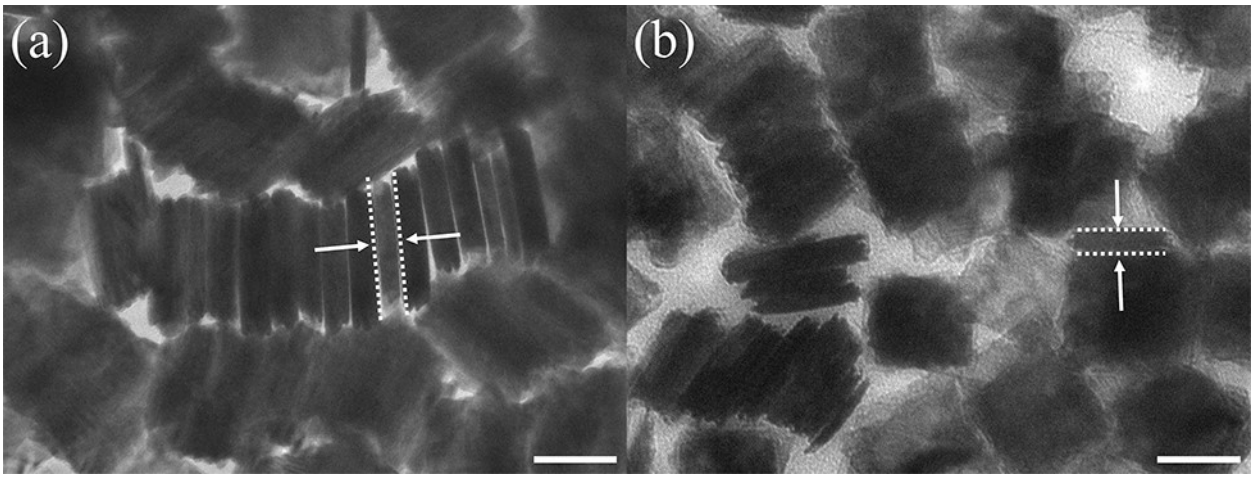

Figure S2. TEM image of BiOI (a) and BiOI/Bi_2S_3 (b) NSs. The scale bars are 100 nm.

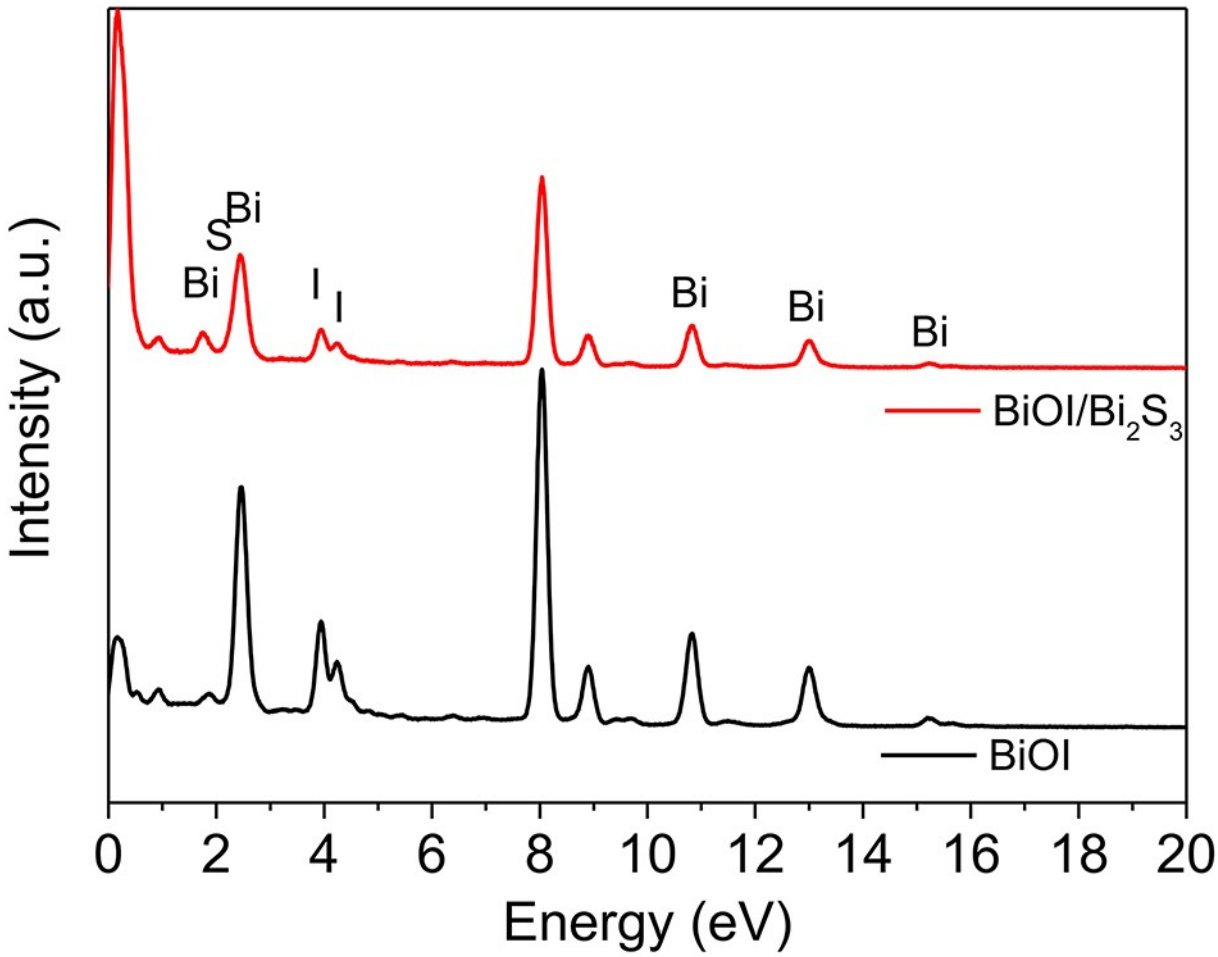

Figure S3. EDS spectra of BiOI and BiOI/Bi_2S_3 NSs.

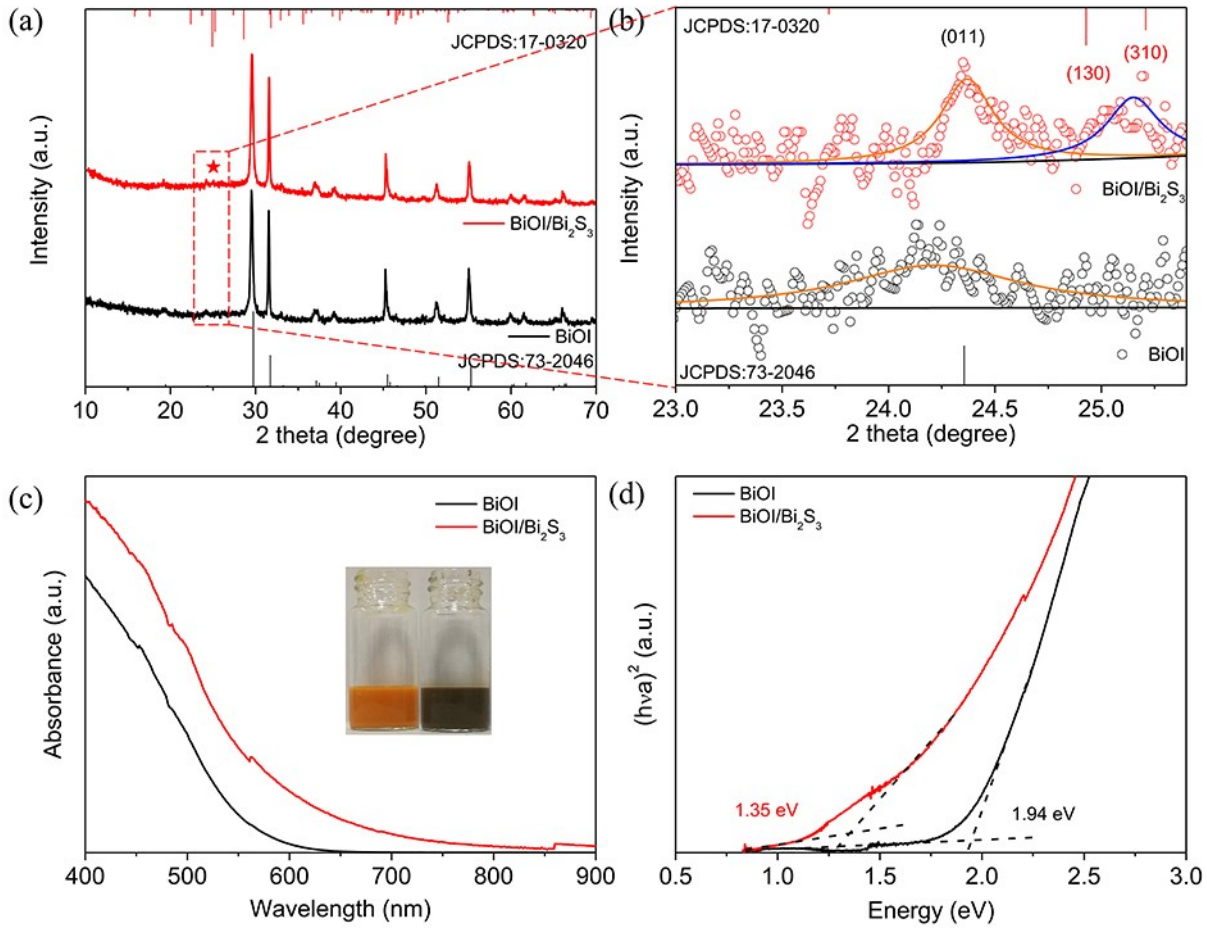

Figure S4. (a) XRD patterns of BiOI and BiOI/Bi_2S_3 NSs (The diffraction peaks marked by the red star are related to Bi_2S_3). (b) Enlarged XRD pattern of BiOI and BiOI/Bi_2S_3 NSs. (c) UV-vis absorption spectra of BiOI and BiOI/Bi_2S_3 NSs. Inset: photos of the NSs chloroform solutions. (d) Plot of $(\alpha h\nu)^2$ versus the energy calculated by (c).

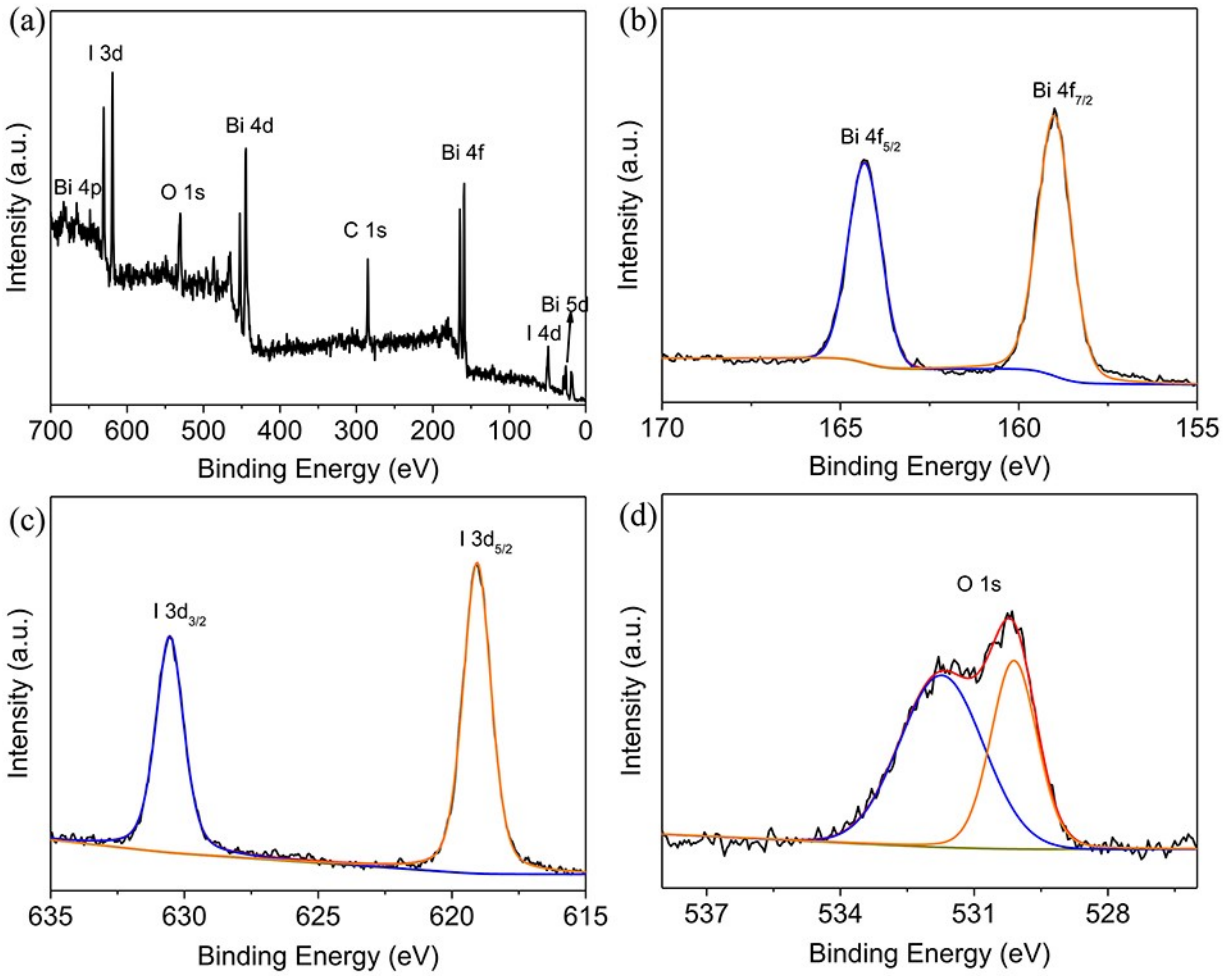

Figure S5. (a) Full XPS spectra of BiOI NSs. (b-d) XPS spectra of Bi 4f, I 3d and O 1s in BiOI NSs.

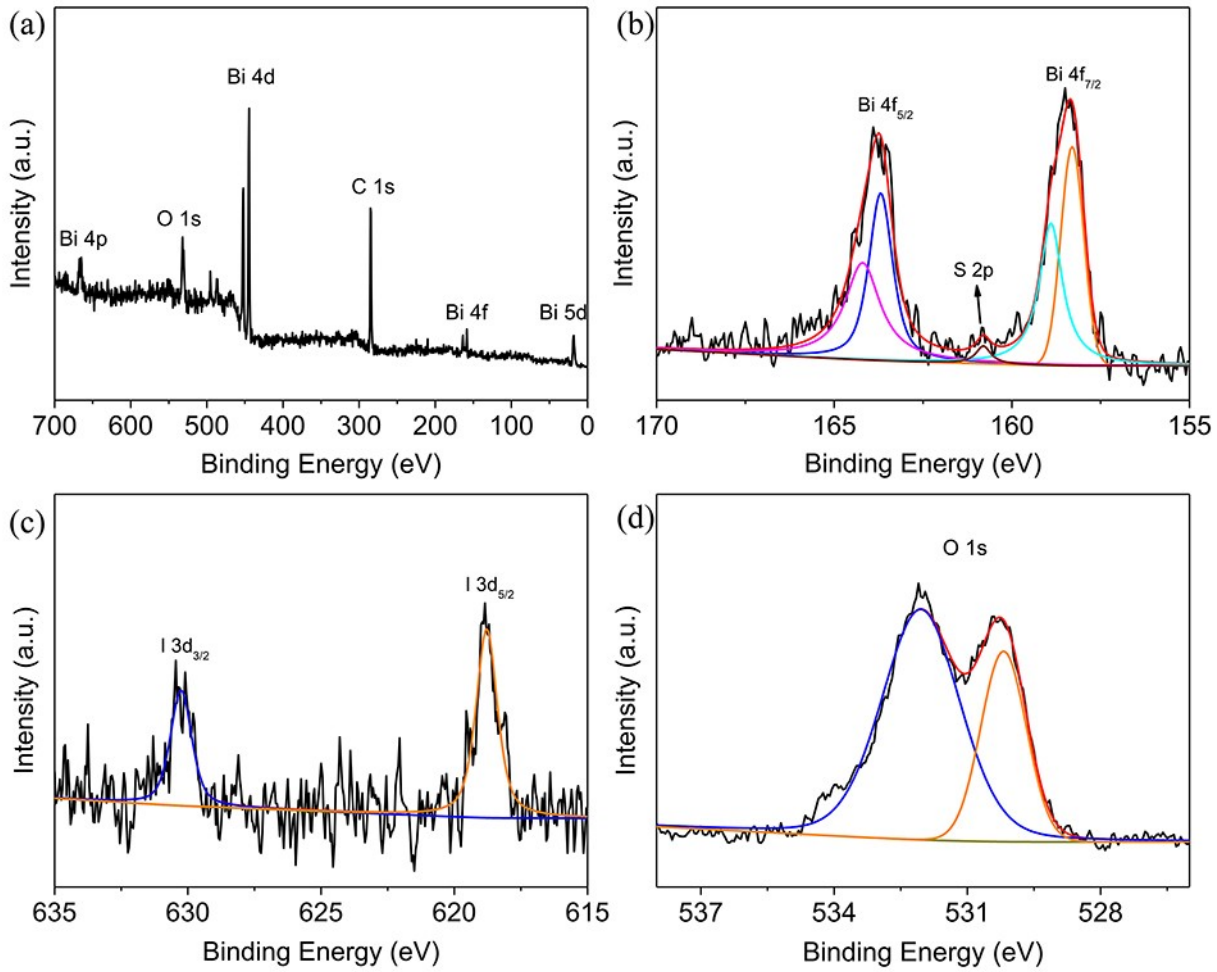

Figure S6. (a) Full XPS spectra of BiOI/Bi_2S_3 NSs. (b-d) XPS spectra of Bi 4f, S 2p, I 3d and O 1s in BiOI/Bi_2S_3 NSs.

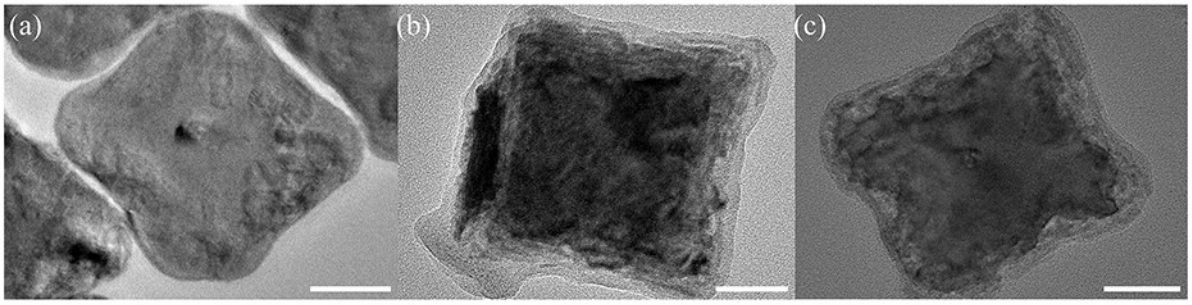

Figure S7. TEM images of $BiOI/Bi_2S_3$ NSs (a), $BiOI/Bi_2S_3$@polydopamine NSs (b), and BBFG NSs (c). The scale bars are 50 nm.

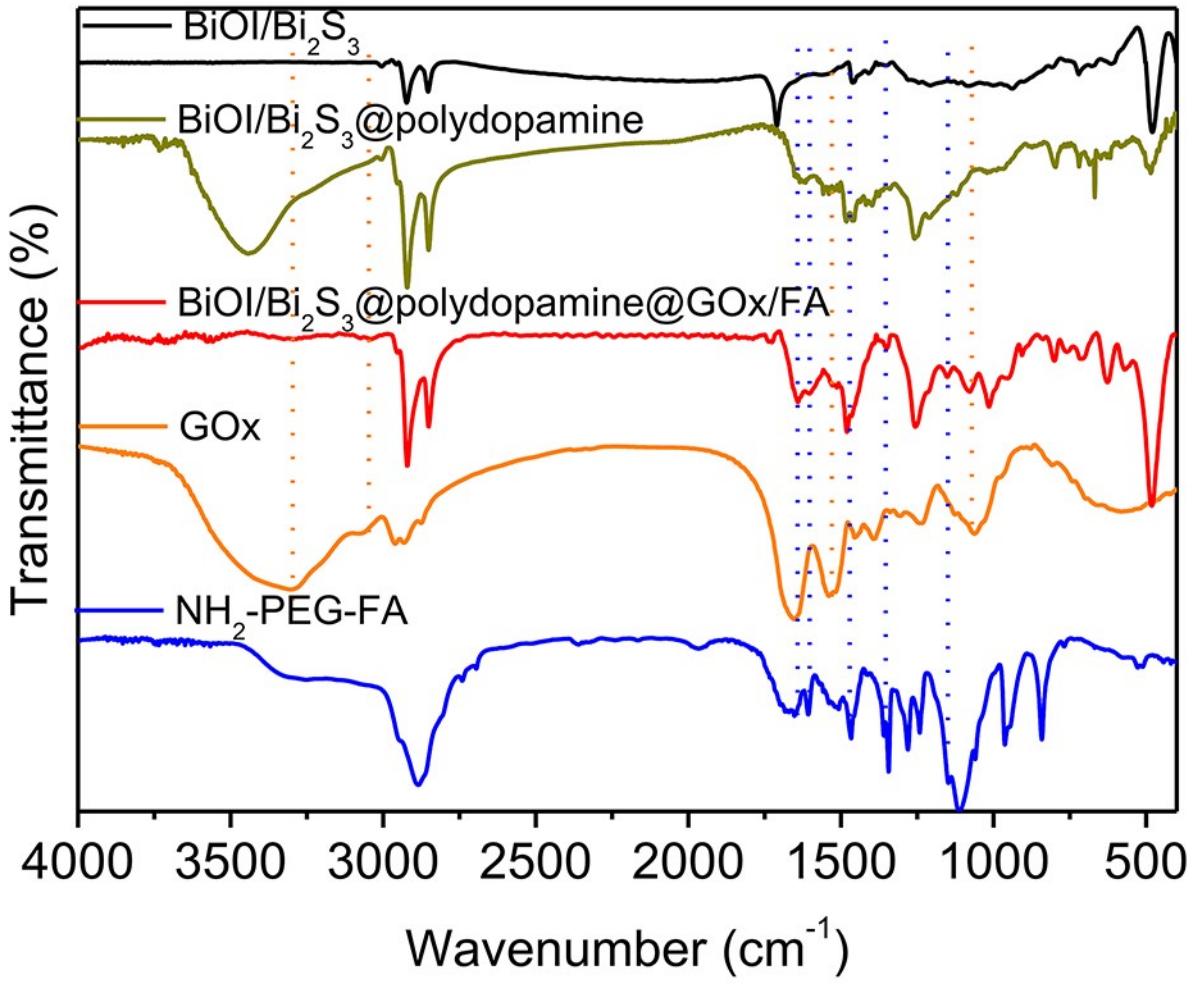

Figure S8. FTIR spectra of $BiOI/Bi_2S_3$, $BiOI/Bi_2S_3$@polydopamine, BBFG NSs, GOx and NH_2-PEG-FA.

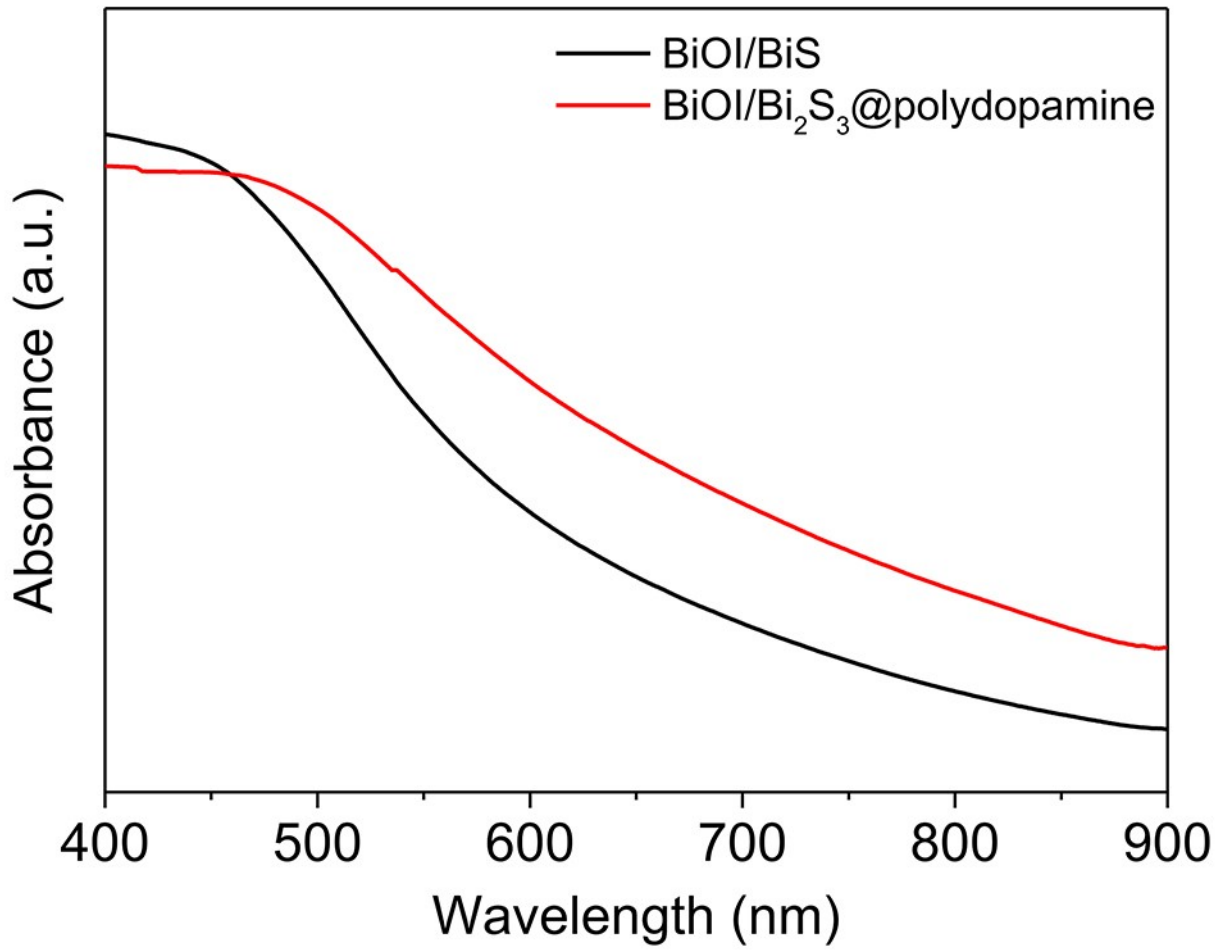

Figure S9. UV-vis absorption spectra of $BiOI/Bi_2S_3$ and $BiOI/Bi_2S_3$@polydopamine NSs.

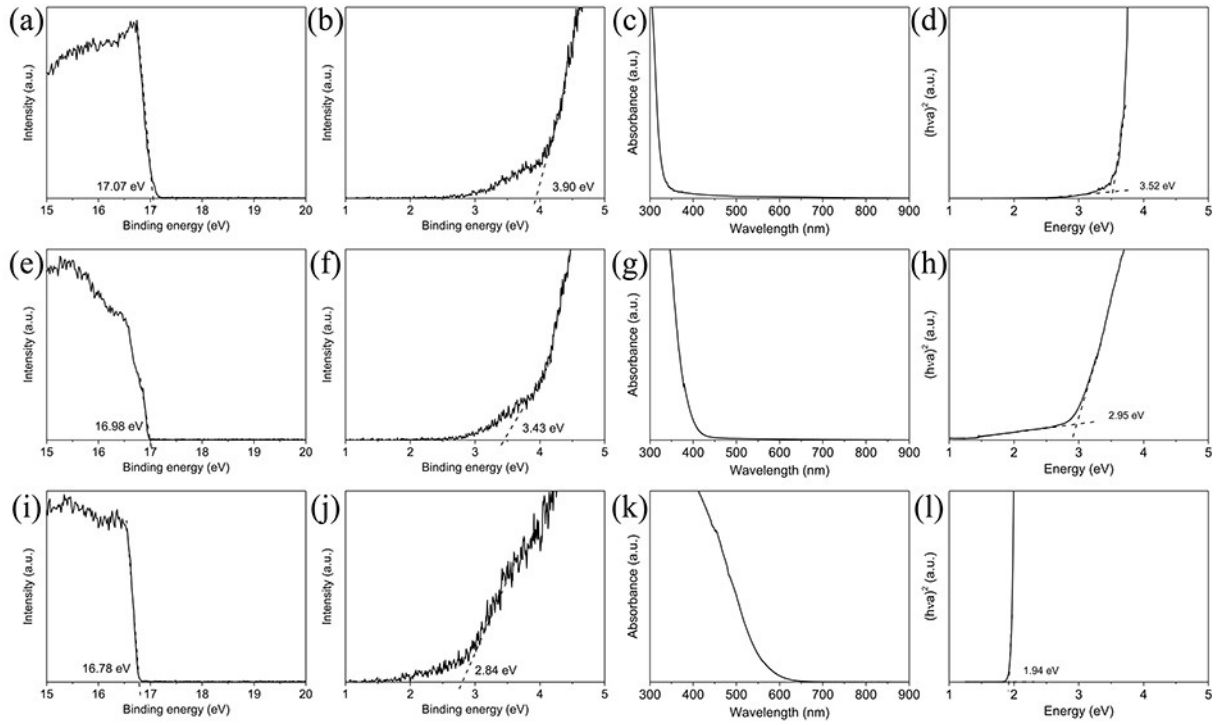

Figure S10. UPS, UV-vis absorption spectra and plot of $(\alpha h\nu)^2$ versus the energy of BiOCl (a-d), BiOBr (e-h), and BiOI (i-l).

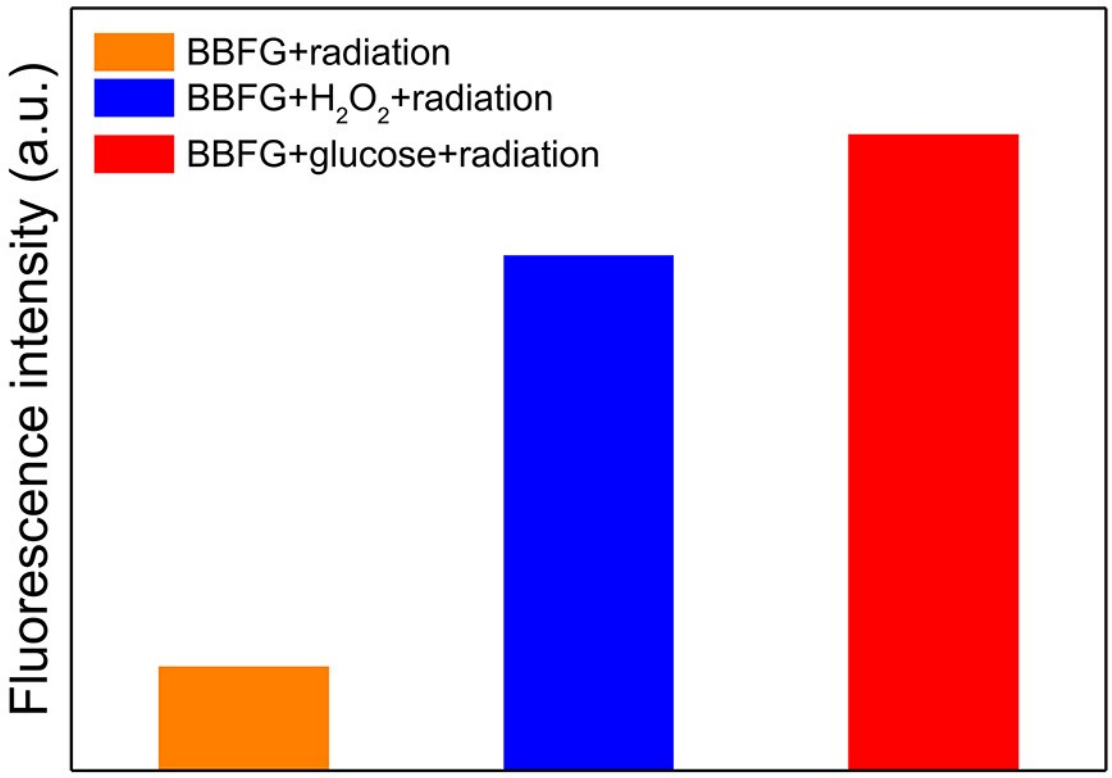

Figure S11. Fluorescence intensity of disodium terephthalate for ·OH detection under different treatments (radiation: 300 W Xenon lamp).

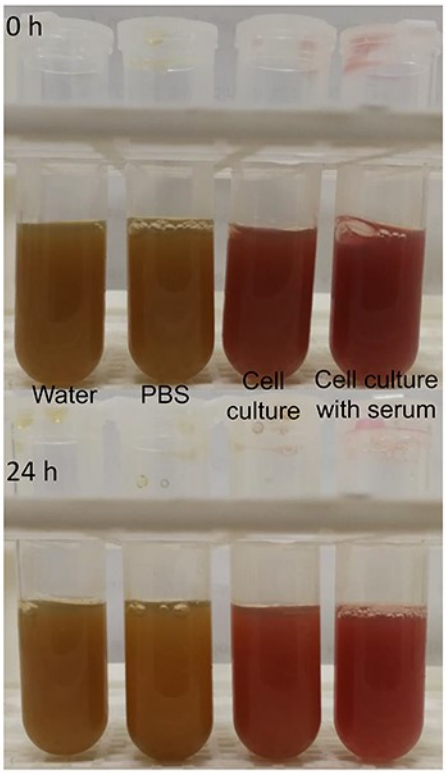

Figure S12. Photographs of BBFG NSs dissolved in different solutions at 0 and 24 h.

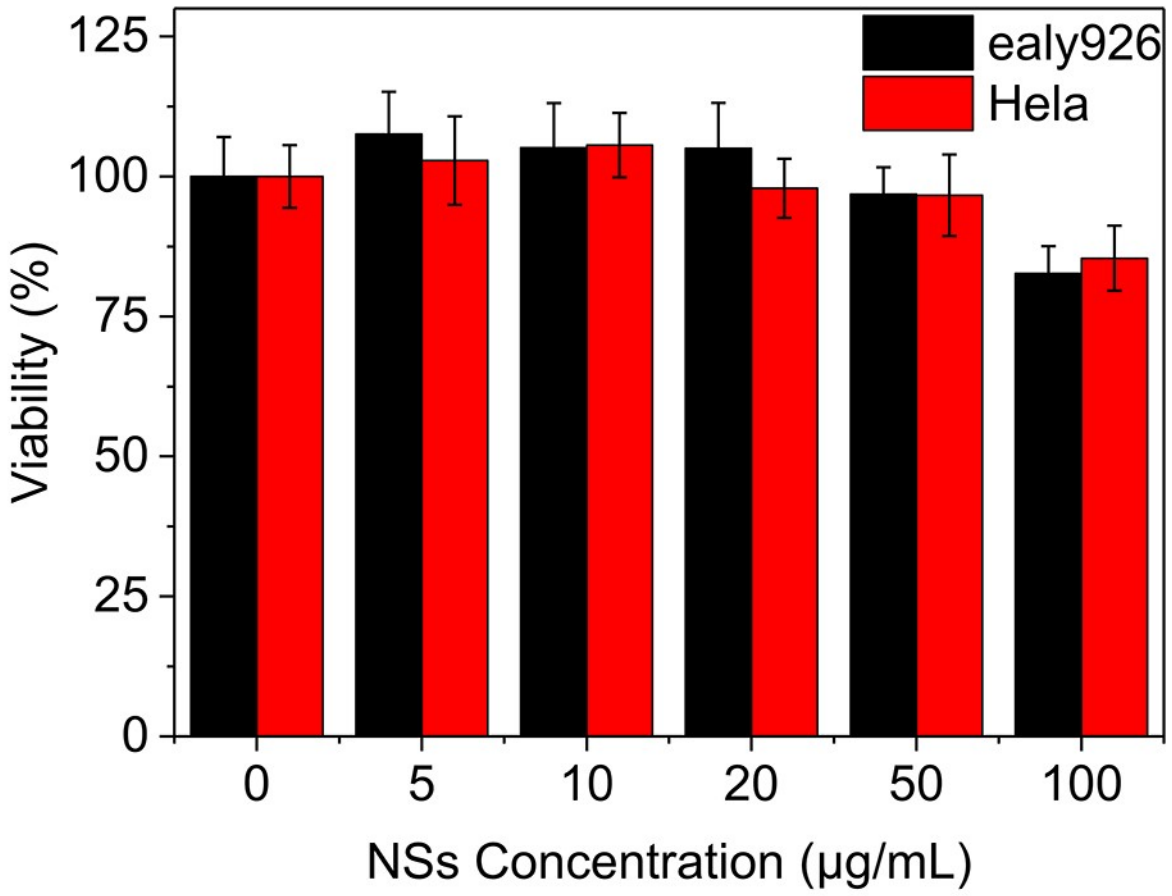

Figure S13. Cell viability of Ealy 926 and Hela cells co-cultured with BBF NSs at different concentrations for 24 h (n=5).

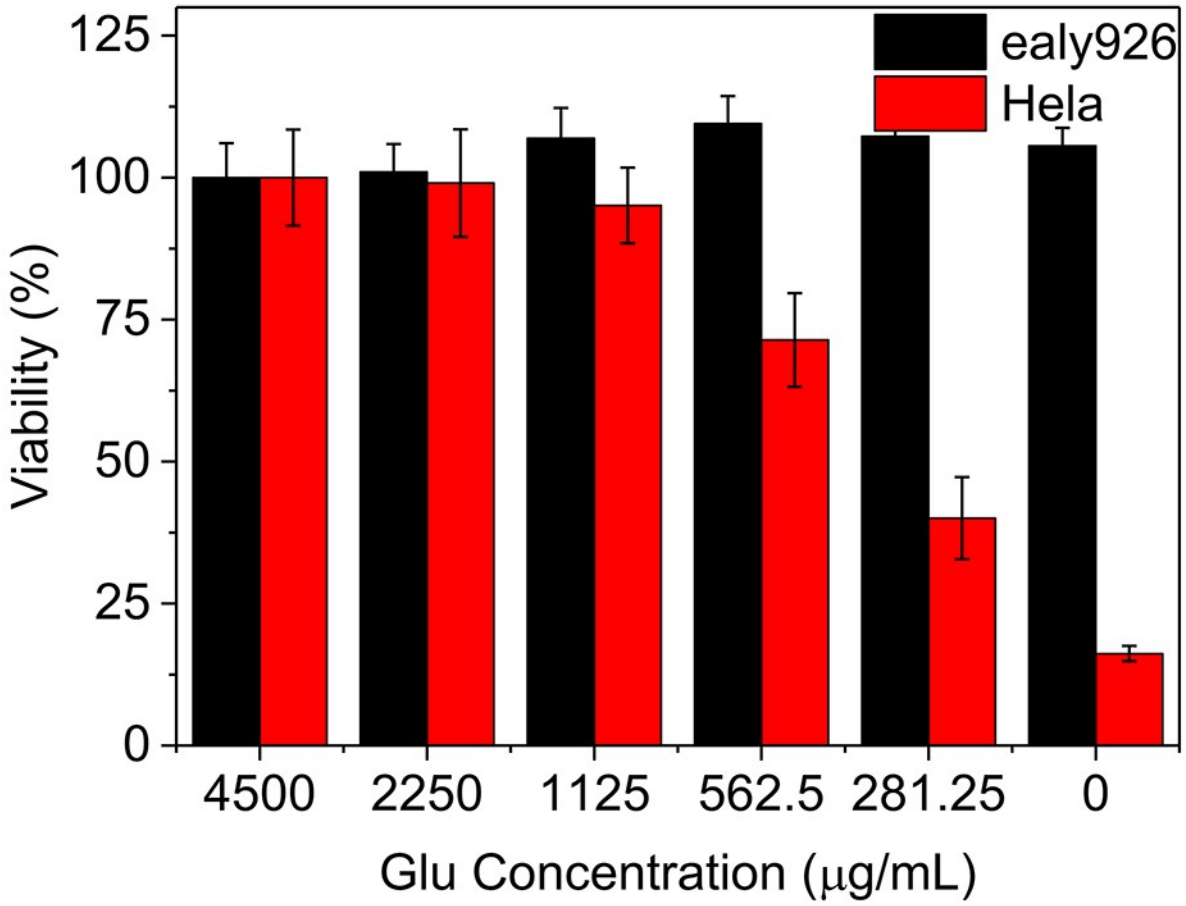

Figure S14. Cell viability of Ealy 926 and Hela cells under different glucose concentration for 24 h (n=5).

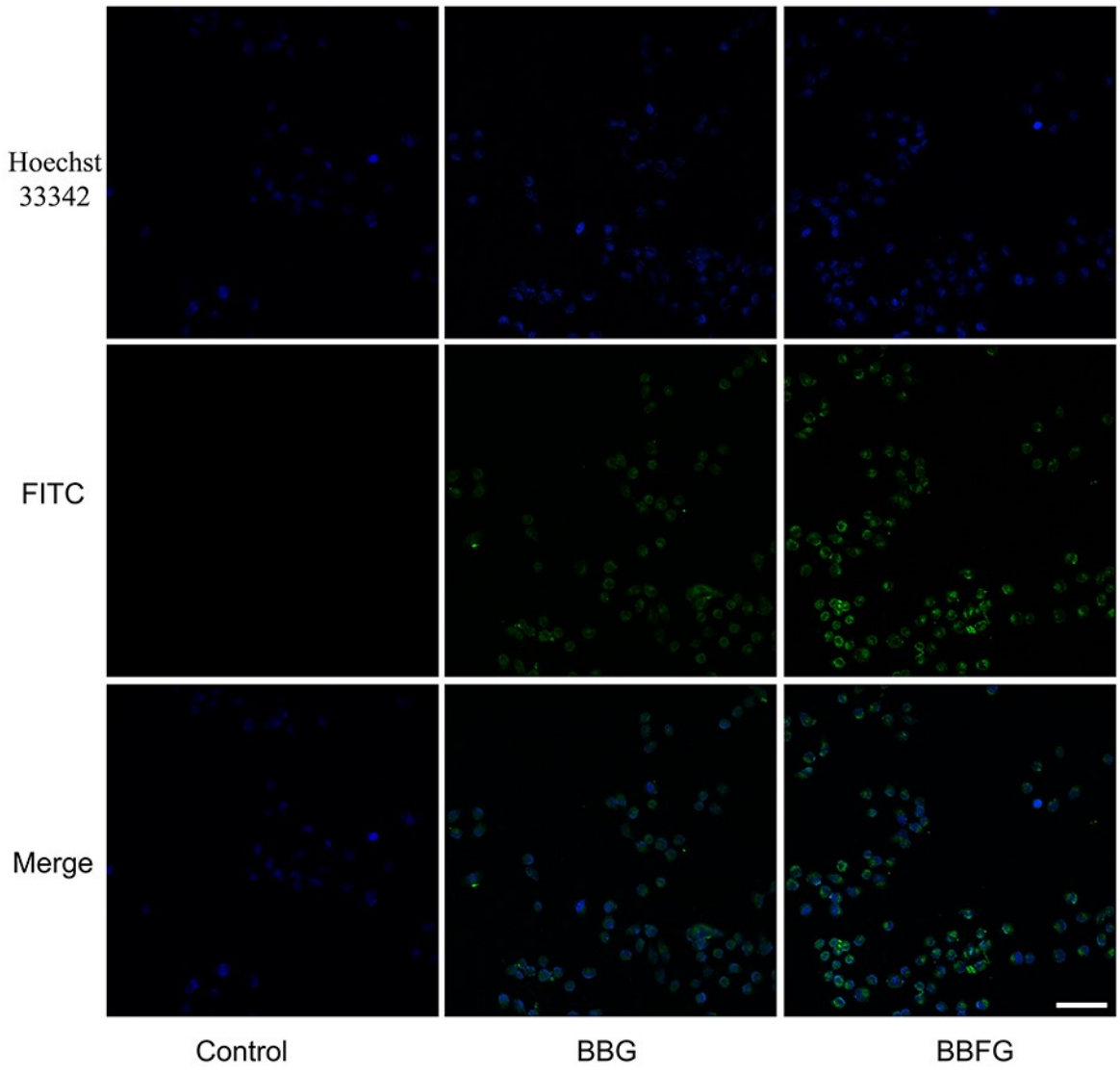

Figure S15. Photographs of Hela cells taken by FV1000 laser scanning confocal microscopy after co-cultured with FITC-labeled BBFG NSs for 24 h (scale bar is 60 μm).

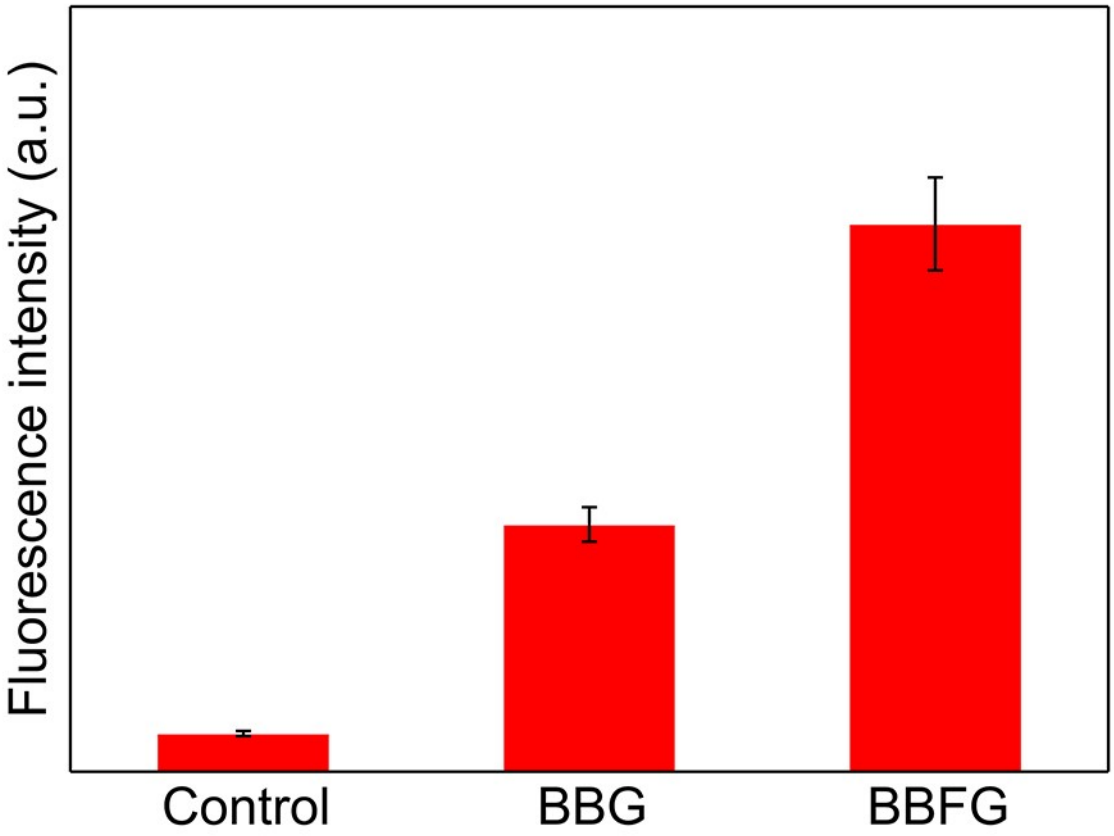

Figure S16. FITC fluorescence intensity in Figure S15.

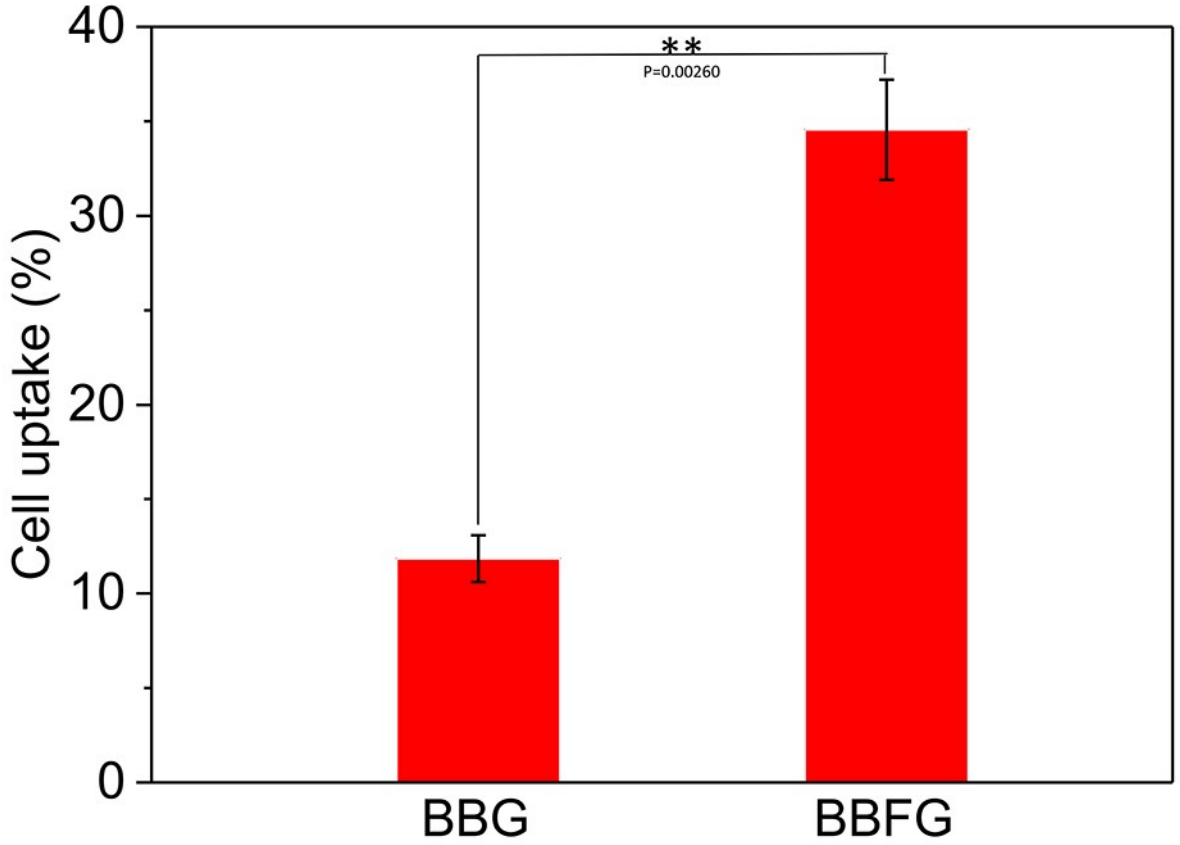

Figure S17. Cell uptake of BBG and BBFG NSs after co-cultured with Hela cells for 24 h (n=3).

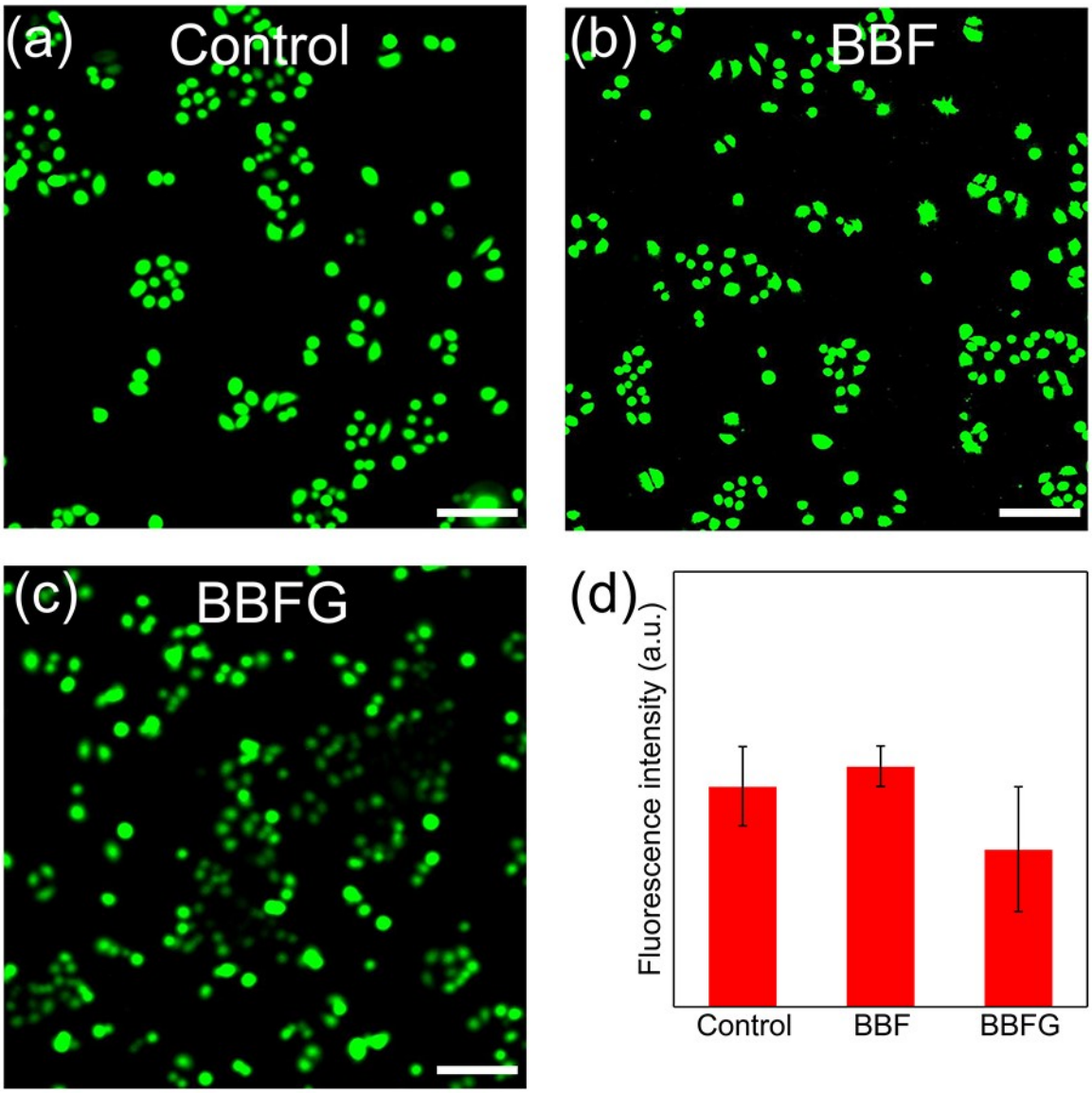

Figure S18. Photographs of Hela cells under pH staining after co-cultured with BBFG NSs for 24 h (a-c) and the corresponding fluorescence intensities (d) (scale bar is 200 μm).

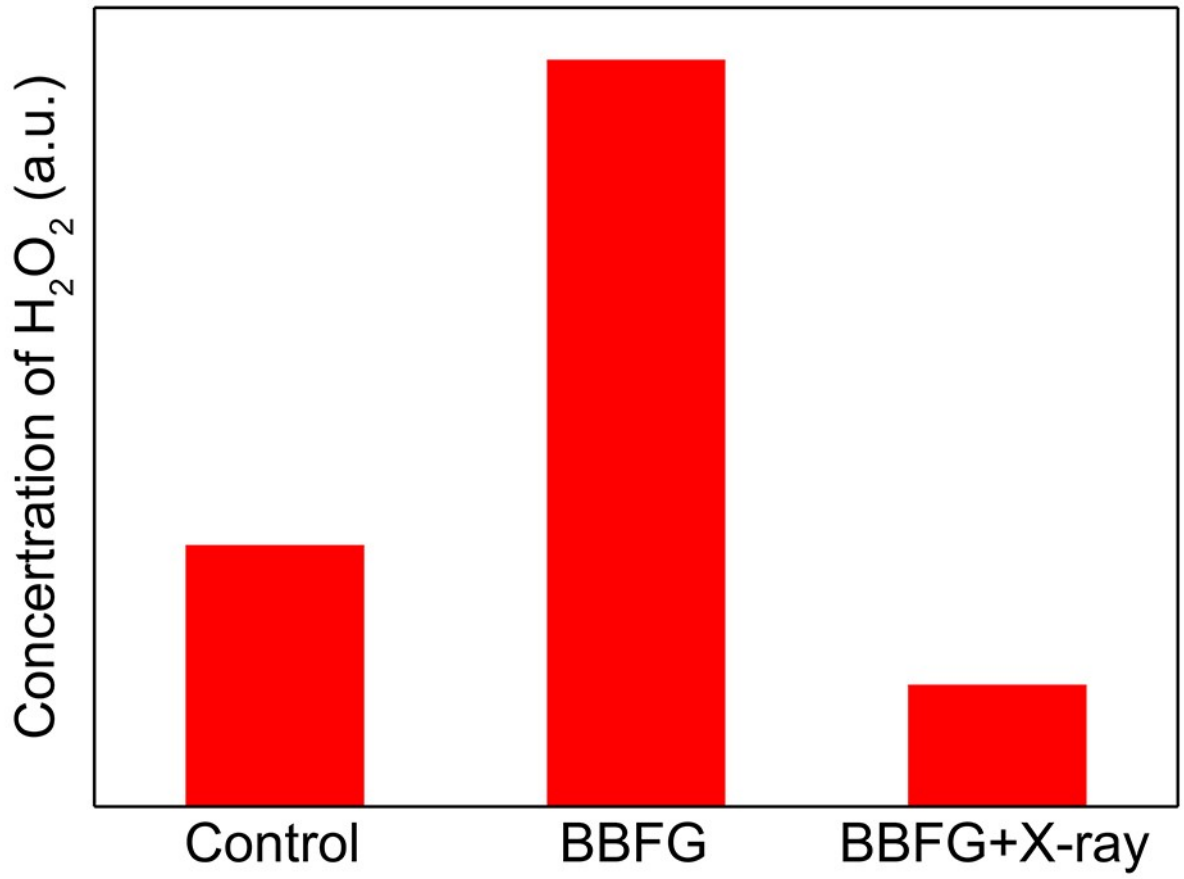

Figure S19. H_2O_2 concentration of Hela cells after different treatments.

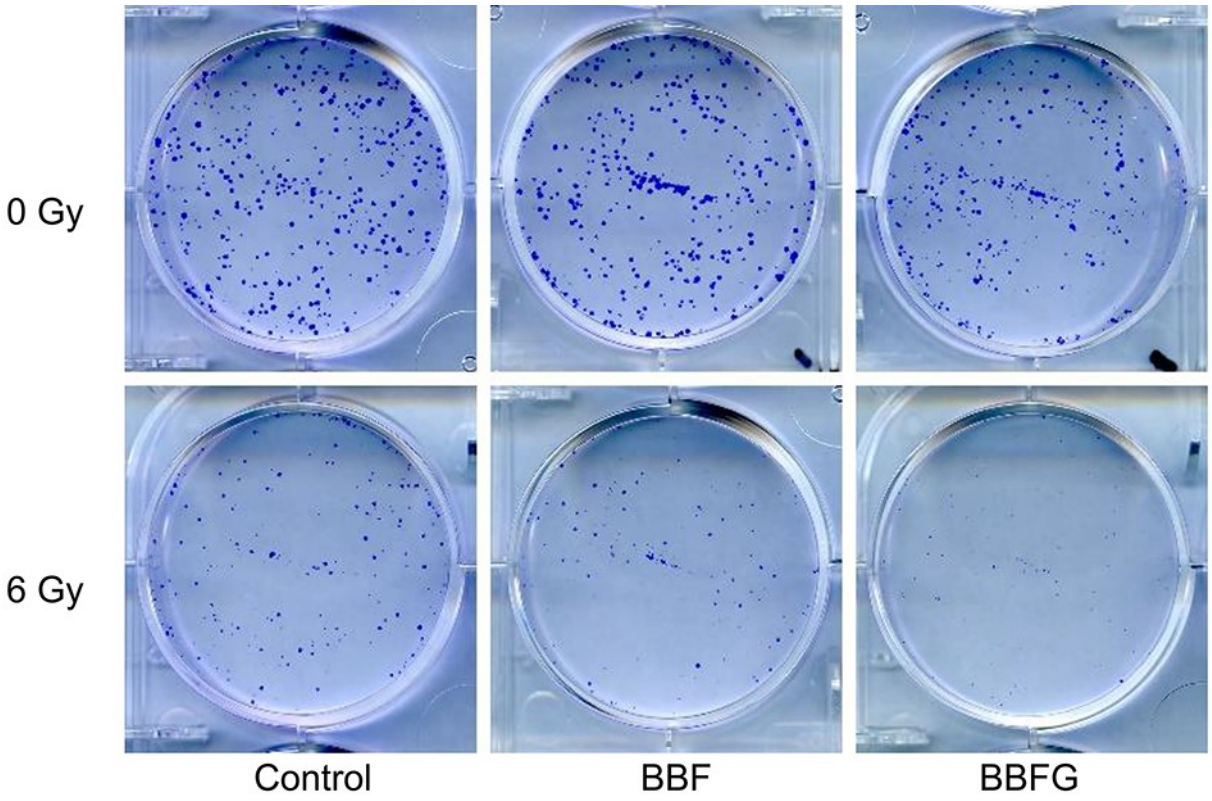

Figure S20. Clonogenic assay of Hela cells under different treatments.

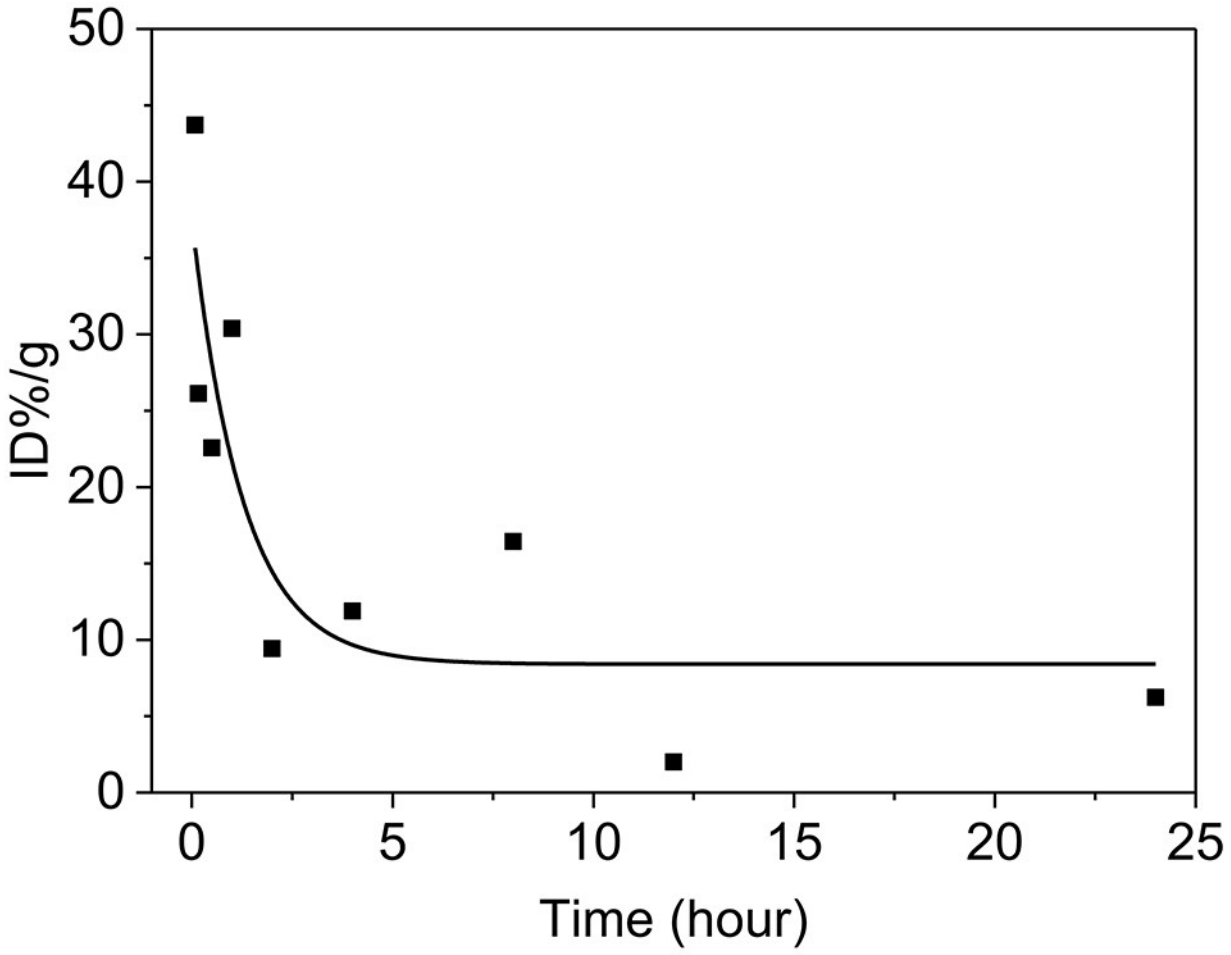

Figure S21. Hemodynamic analysis of BBFG NSs determined by calculating Bi concentration upon ICP measurement after intravenous injection.

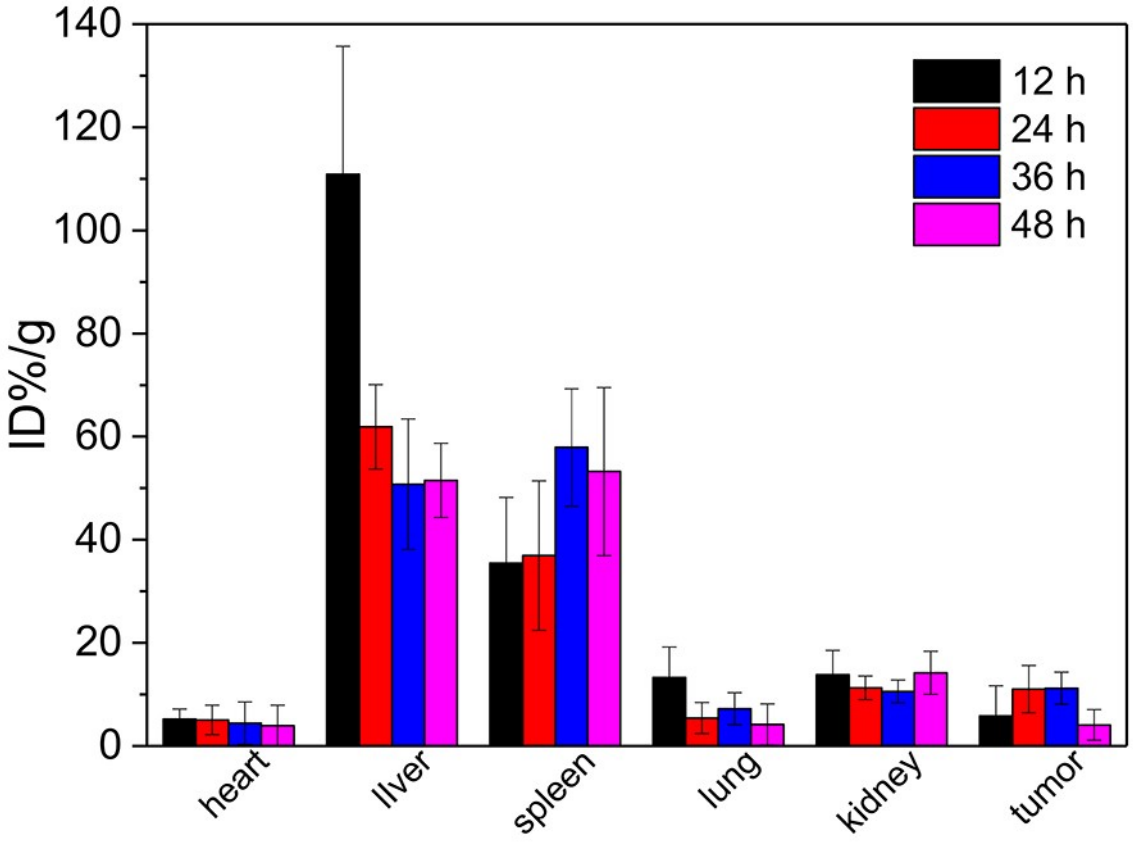

Figure S22. Biodistribution of BBFG NSs determined by calculating Bi concentration upon ICP measurement after intravenous injection (n=3).

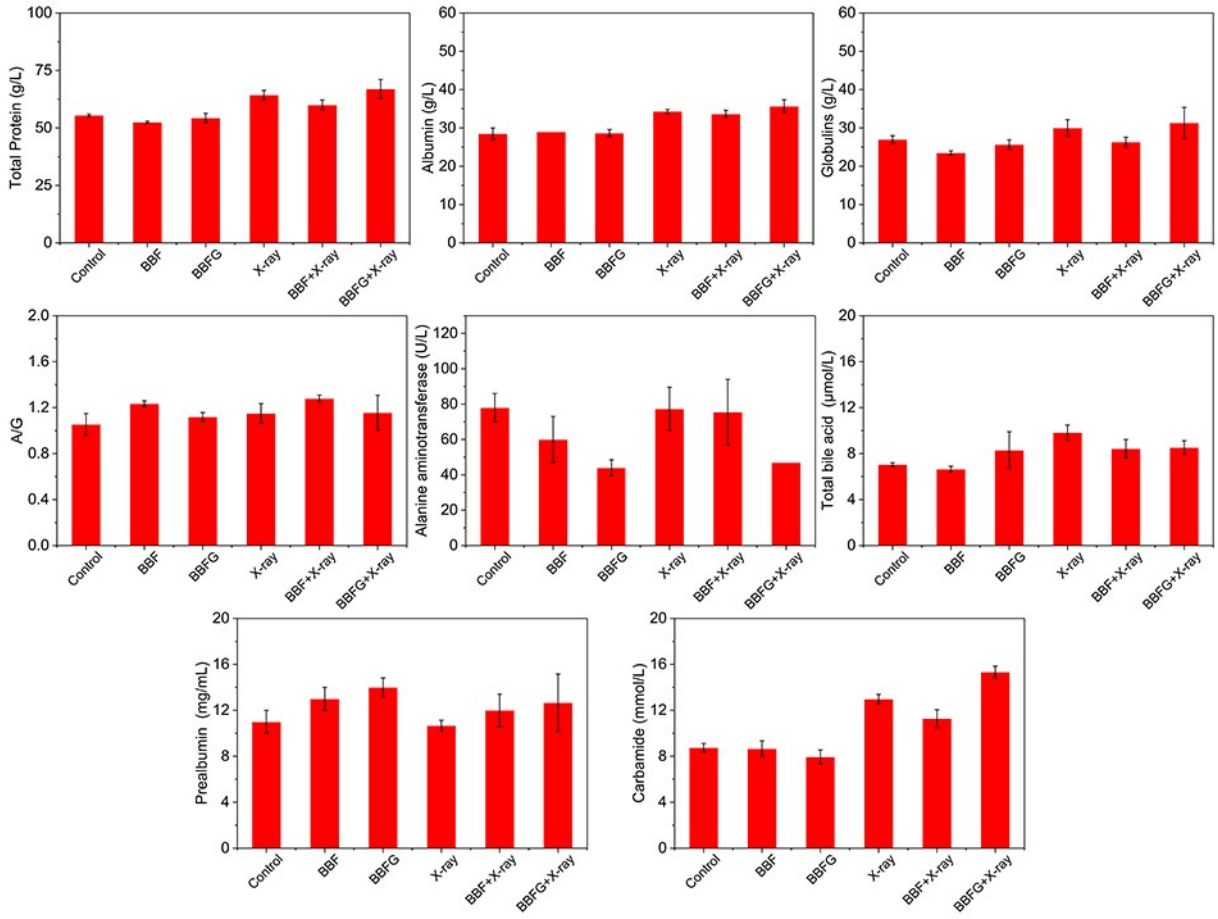

Figure S23. Blood hematology analyses of mice in each group (n=3).

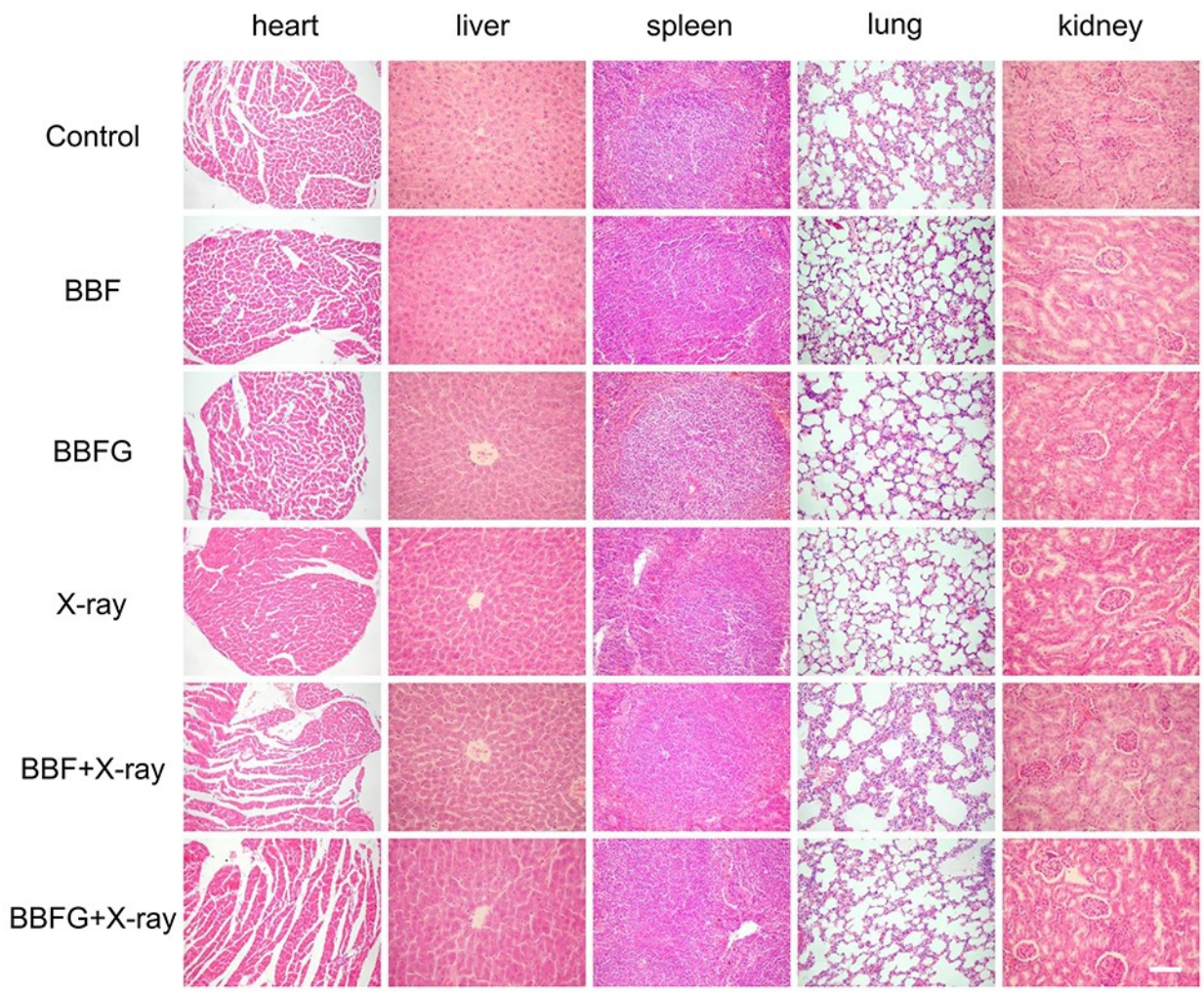

Figure S24. H&E stained photographs of organs (heart, liver, spleen, lung, kidney) of mice in each group after treatments (scale bar is 100 μm).

	Bi	I	S
BiOI	1	0.88	0
$BiOI/Bi_2S_3$	1	0.65	0.48

Table S1. Elemental composition of BiOI and $BiOI/Bi_2S_3$ NSs by EDS measurement.