

Supporting Information

Rapid *In Situ* MRI Traceable Gel-forming Dual-drug Delivery for Synergistic Therapy of Brain Tumor

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	20 °C	23 °C	25 °C	28 °C	30 °C	32 °C	35 °C	37 °C	40 °C
Hydrogel	X	X	X	X	X	X	O (22 s)	O (16 s)	O (12 s)
Hydrogel_{Gd}	X	O (20 s)	O (12 s)	O (4 s)	O (3 s)	O (3 s)	O (3 s)	O (3 s)	O (2 s)

Table S1. The state and time requirement of phase transition for hydrogel and hydrogel_{Gd} incubated at various temperature. (x means the sol phase could not be transformed to gel phase; o means the sol phase could be transformed to gel phase at the temperature).

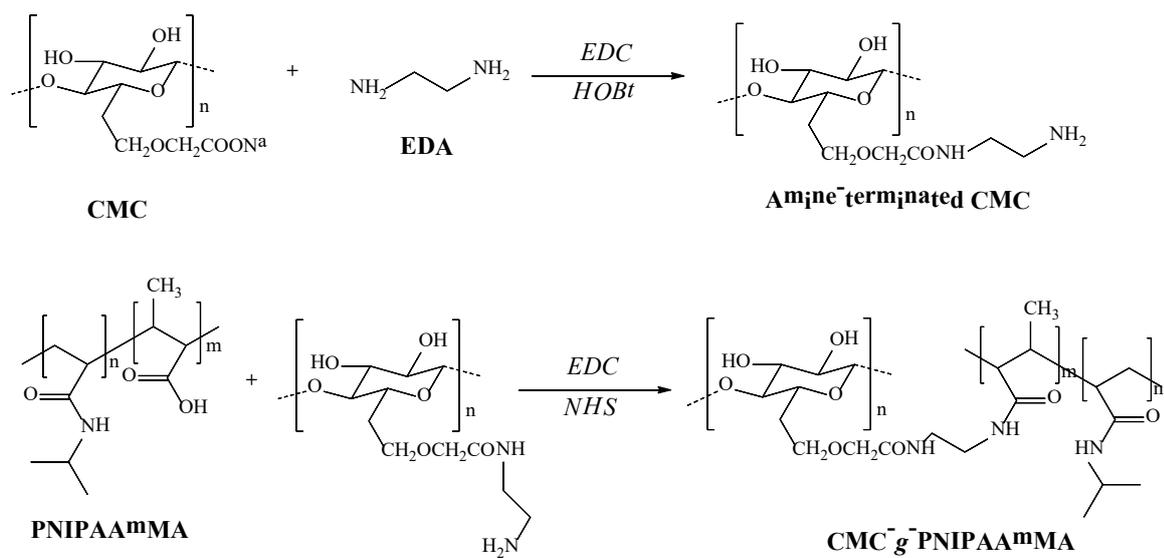


Figure S1. Reaction scheme for synthesis of amine-terminated CMC, and CMC-grafted PNIPAAmMA.

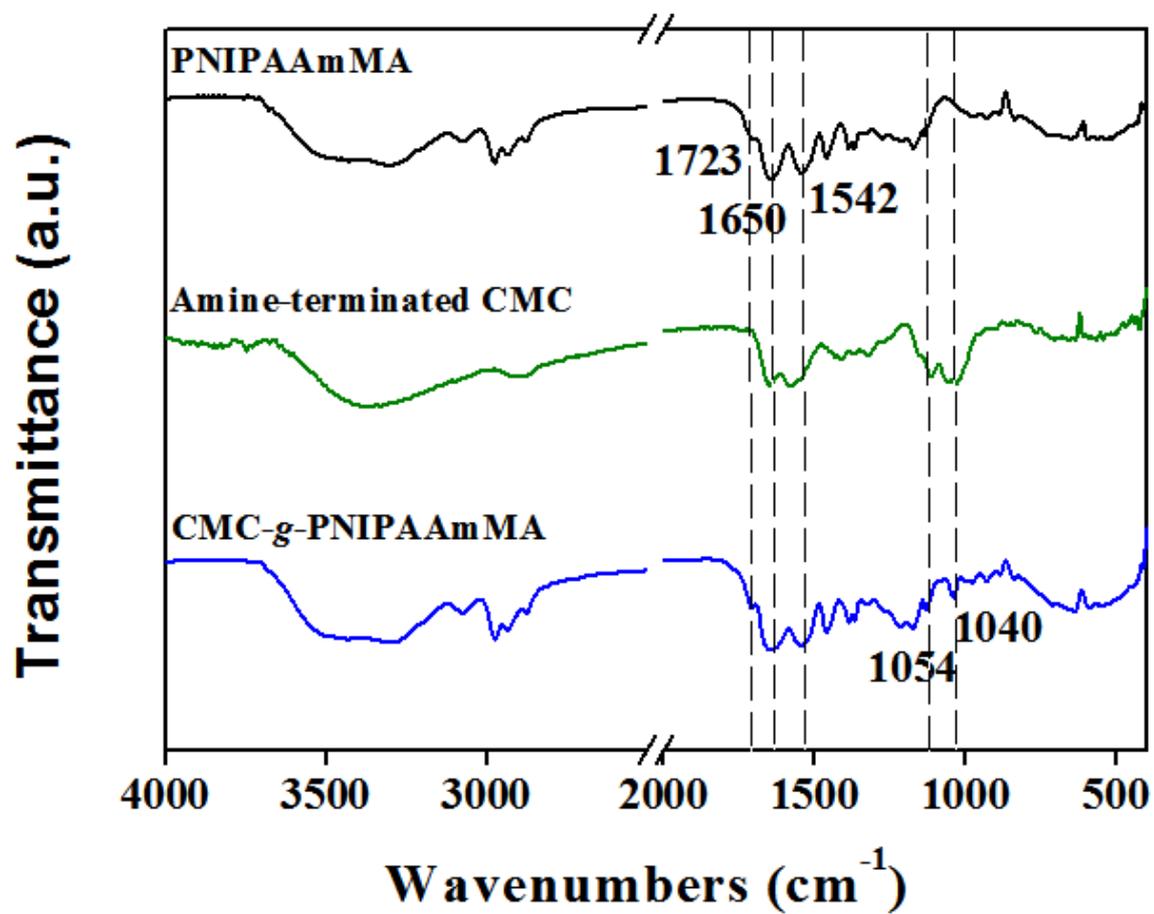


Figure S2. FTIR spectra of PNIPAAmMA, amine-terminated CMC, and CMC-g-PNIPAAmMA.

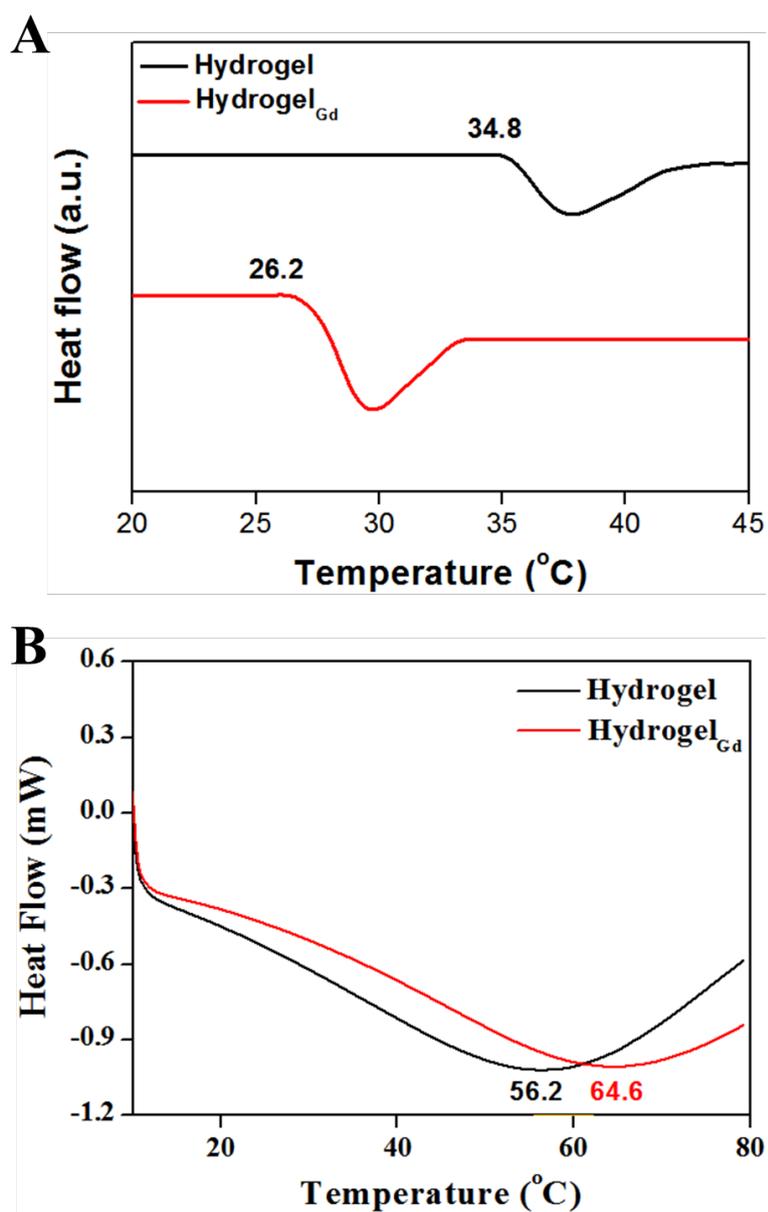


Figure S3. (A) DSC thermograms of hydrogel and hydrogel_{Gd} in H₂O (20 wt%). (B) DSC thermograms of hydrogel and hydrogel_{Gd} powders (containing 20 wt% of CMC-g-PNIPAAmMA).

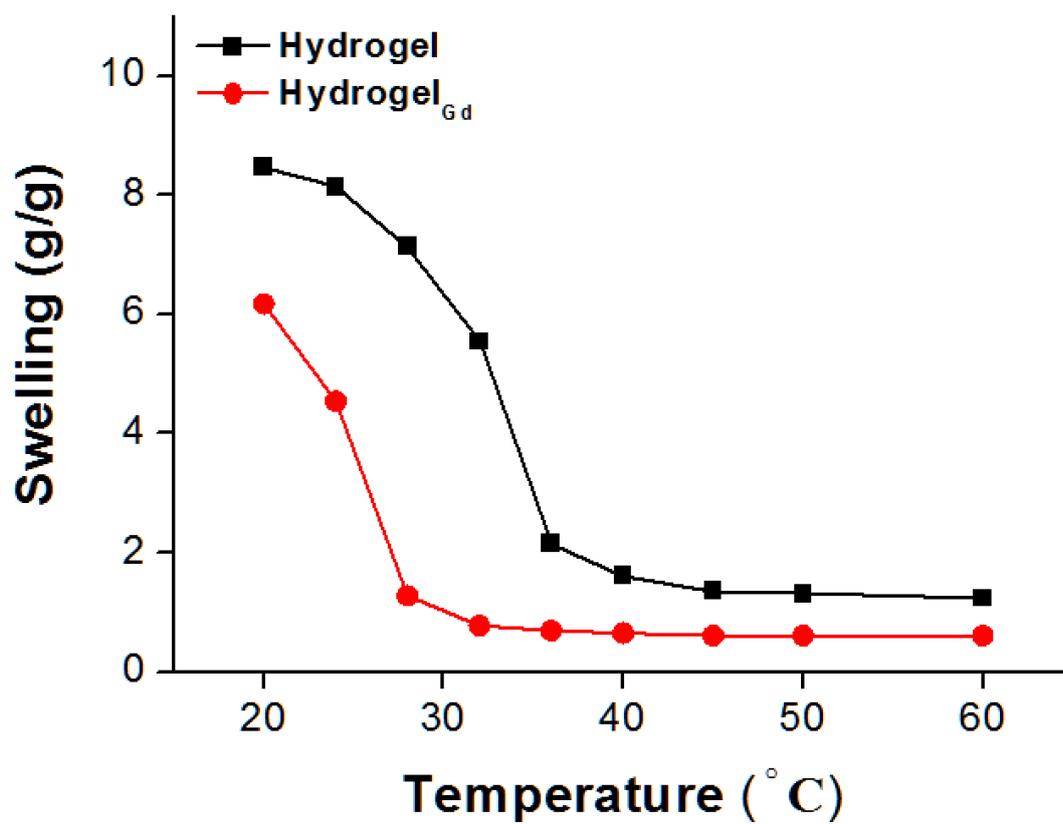


Figure S4. Influence of temperature on the swelling of hydrogel and hydrogel_{Gd}.

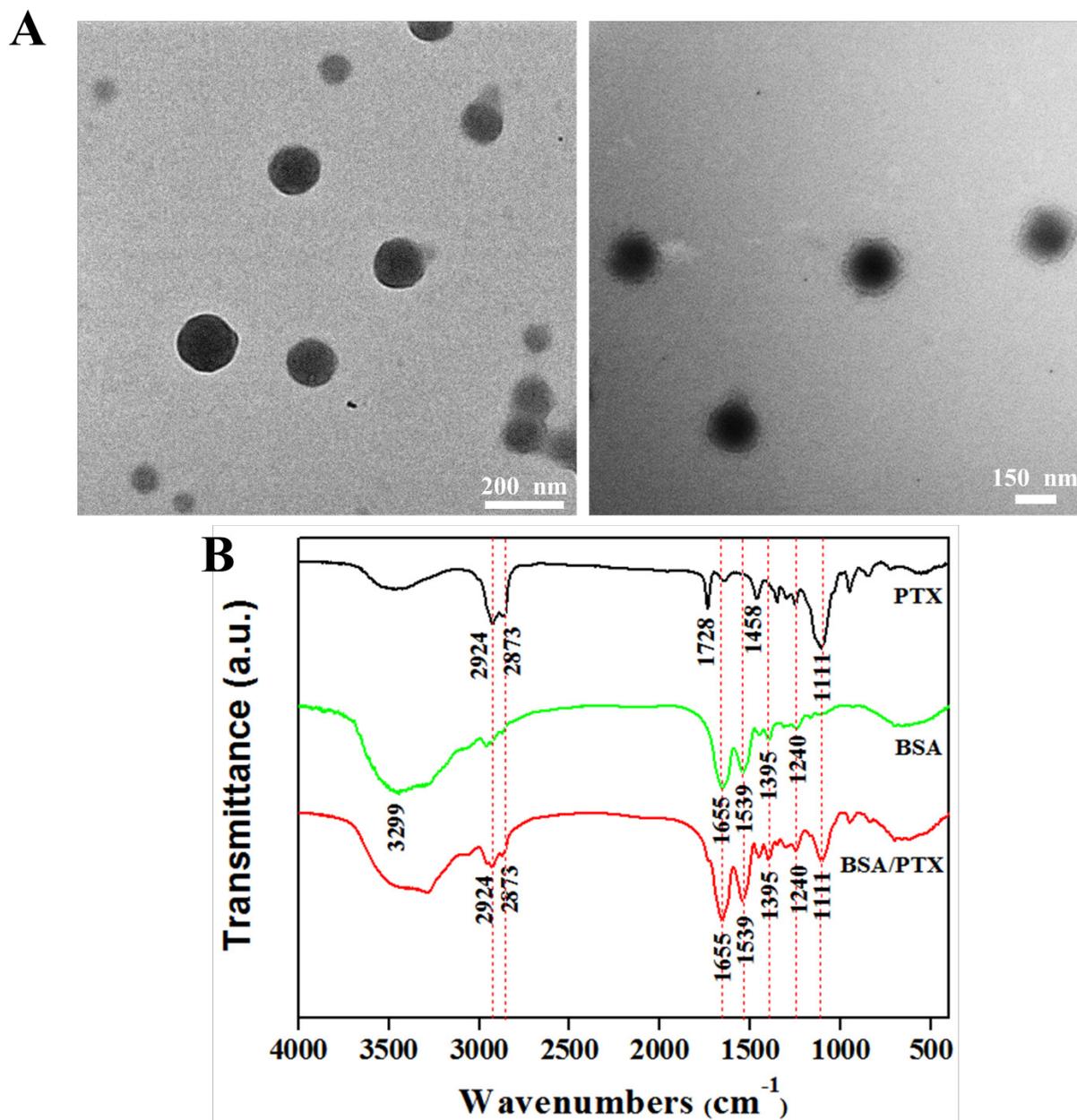


Figure S5. (A) TEM images of BSA NPs (*left*) and BSA/PTX NPs (*right*). (B) FTIR spectra of PTX, BSA NPs, and BSA/PTX NPs.

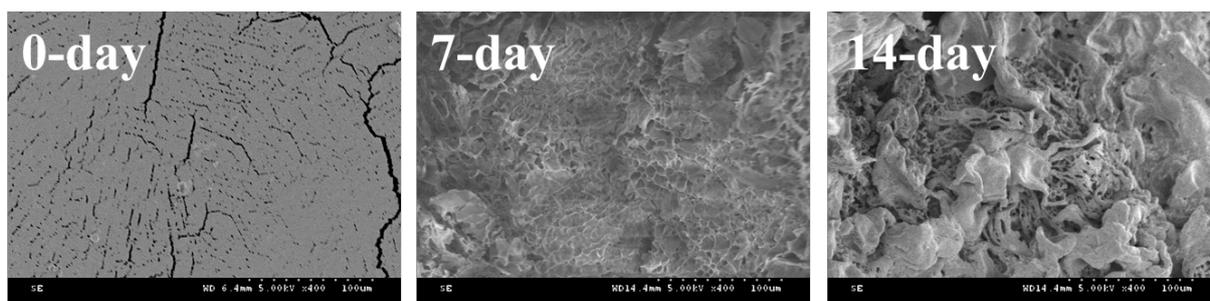
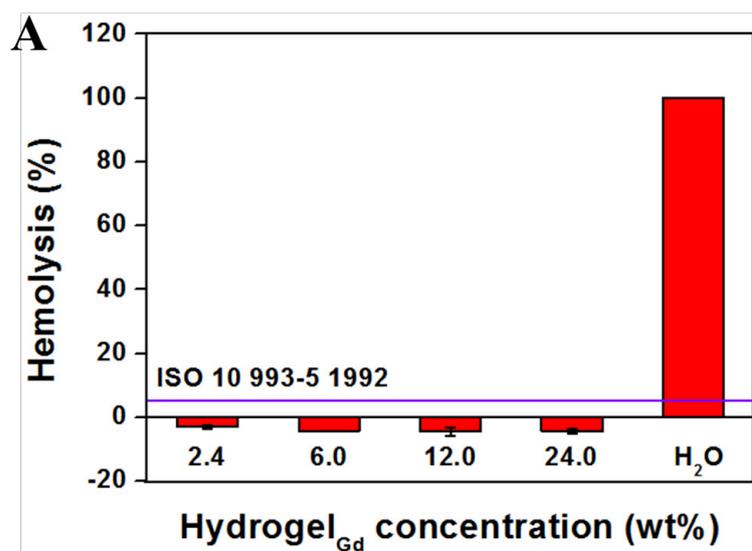


Figure S6. SEM of hydrogel_{Gd} before and after 7- and 14-day of incubation in PBS (pH 5.6) at 37°C.



B

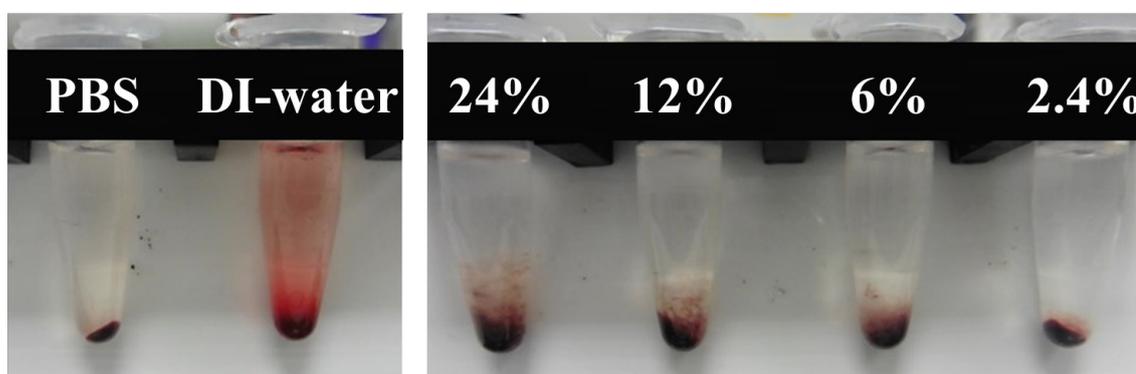


Figure S7. (A) Hemolytic test of DI-water and hydrogel_{Gd} at different concentrations (2.4, 6.0, 12.0, and 24.0 wt% of CMC-g-PNIPAAmMA). Values are means \pm SD (n = 3). (B) Photographs of haemolytic test while blood mixed with PBS, DI-water, and hydrogel_{Gd} at different concentrations.

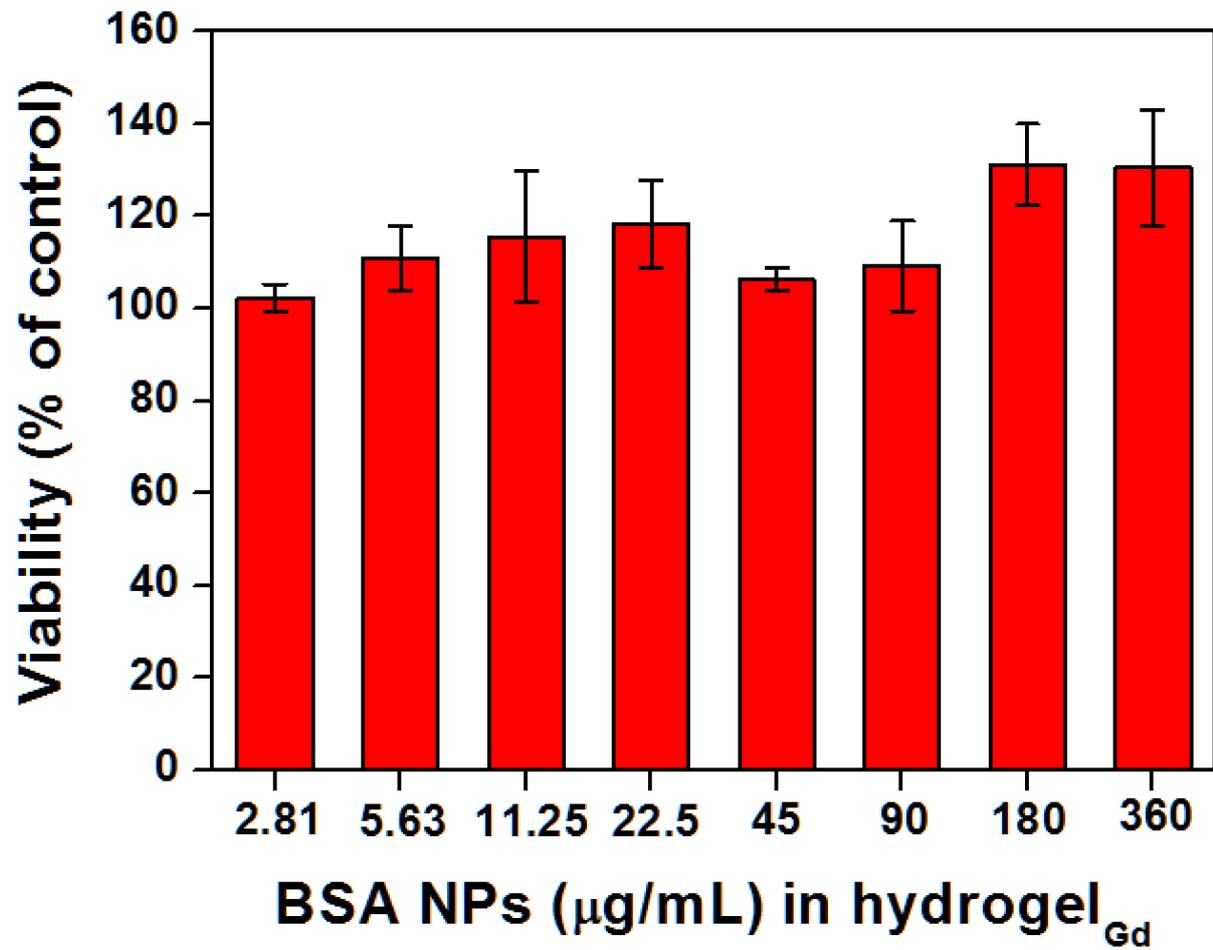


Figure S8. Cytotoxicity of BSA NPs at different concentrations towards to MBR 614 tumor cells. Values are means \pm SD (n = 8).

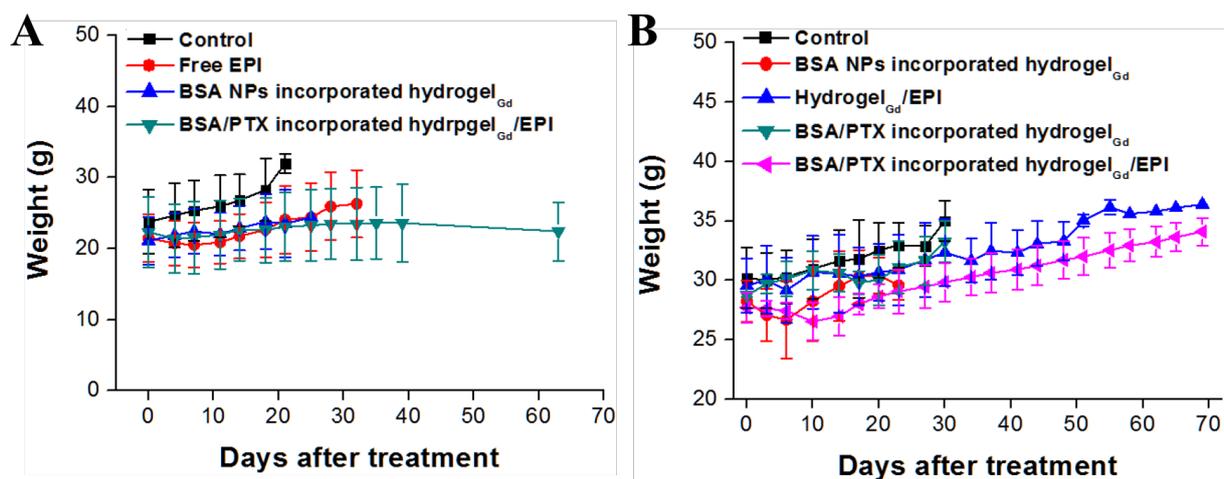


Figure S9. (A) Body weight curves of mice bearing MBR 641-2 tumors after various treatments. Values are the means \pm S.D. (n = 6). (B) Body weight curves of mice bearing U87 tumors after various treatments. Values are the means \pm S.D. (n = 6).

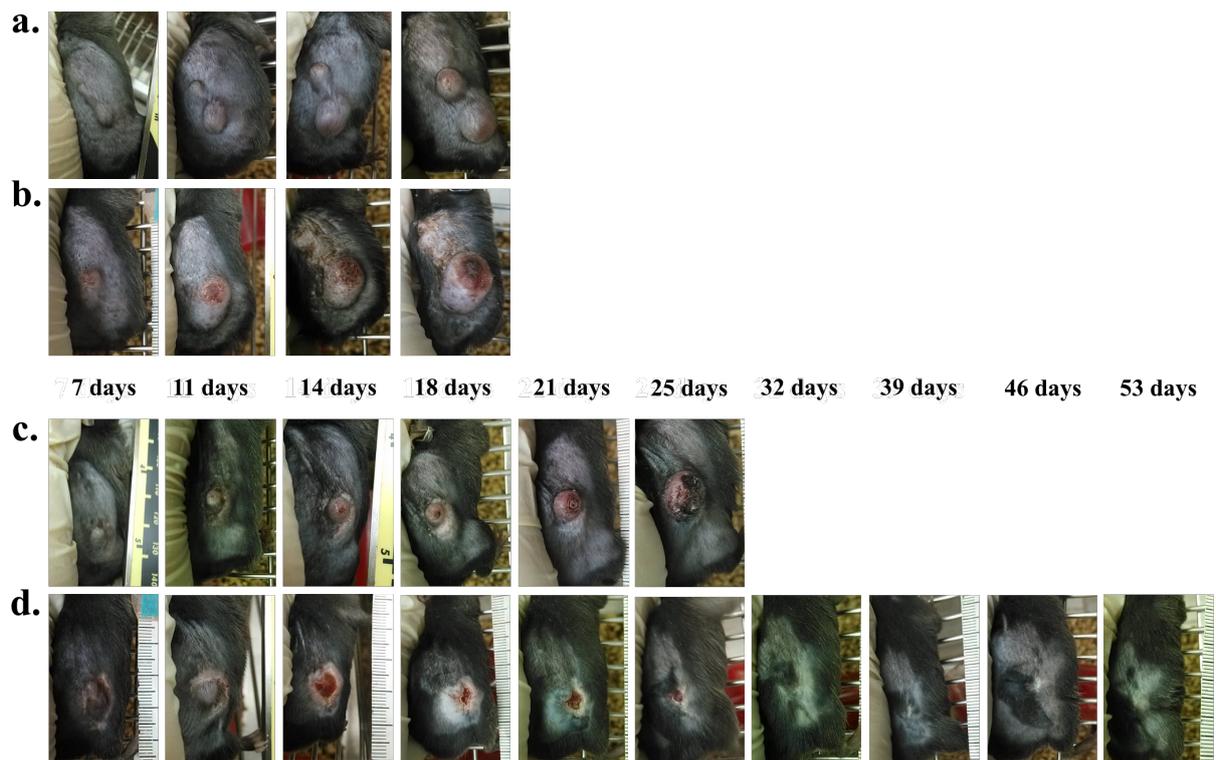


Figure S10. Photographs of representative mice bearing MBR 614 tumors at the initial point (before treatment) to the end point (tumor volume $> 3000 \text{ mm}^3$) for (a) control, (b) free EPI, (c) BSA NPs-incorporated hydrogel_{Gd} implantation, (d) BSA/PTX NPs incorporated hydrogel_{Gd}/EPI implantation groups.