Supporting Information

ROS-responsive multifunctional DCS-based micelle-hydrogel for simultaneously inhibiting post-melanoma-resection recurrence and promoting wound healing

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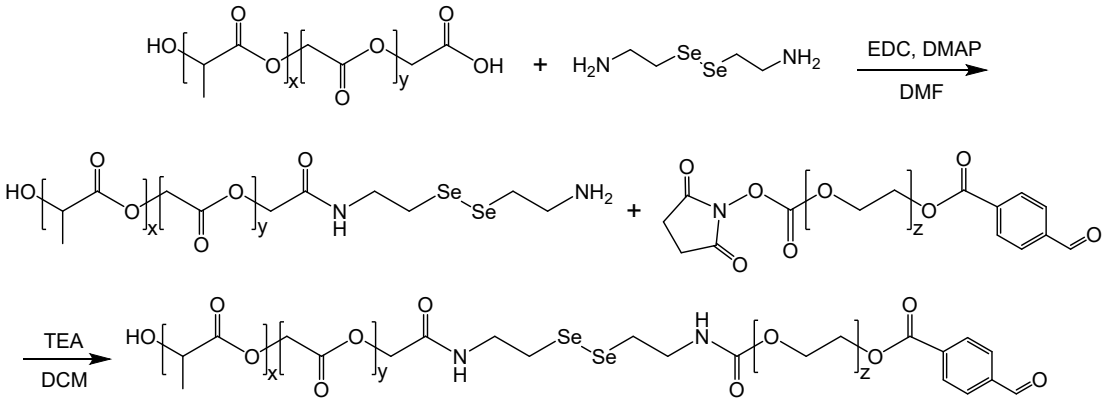

Fig. S1 Synthesis route of PLGA-Se-Se-PEG-CHO.

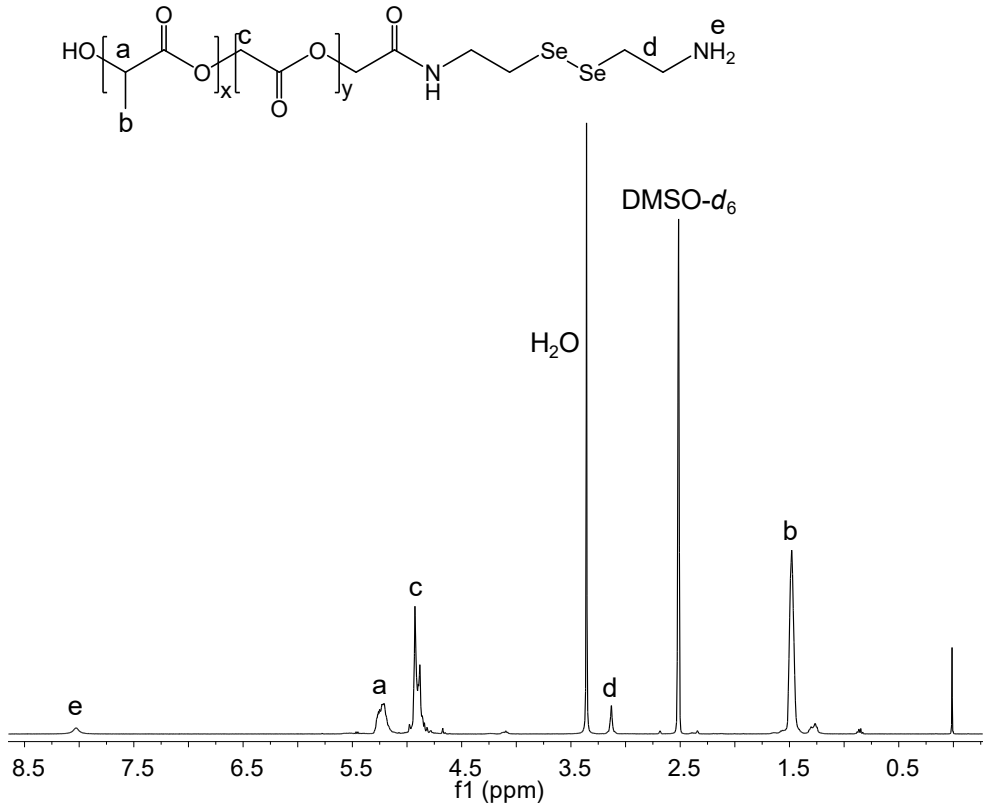

Fig. S2 ^{1}H NMR spectra of PLGA-Se-Se-NH_2 in DMSO-d_6. 8.20 (e, NH_2), 5.24 (a, CH), 4.93 (c, CH_2), 3.15 (d, CH_2CH_2), 1.49 (b, CH_3).

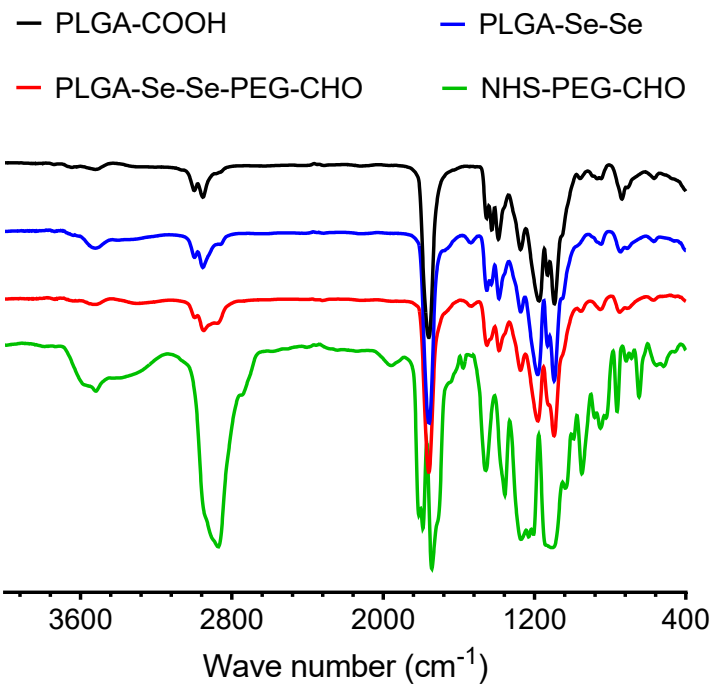

Fig. S3 FTIR spectra of PLGA-COOH, PLGA-Se-Se, NHS-PEG-CHO and PLGA-Se-Se-PEG-CHO.

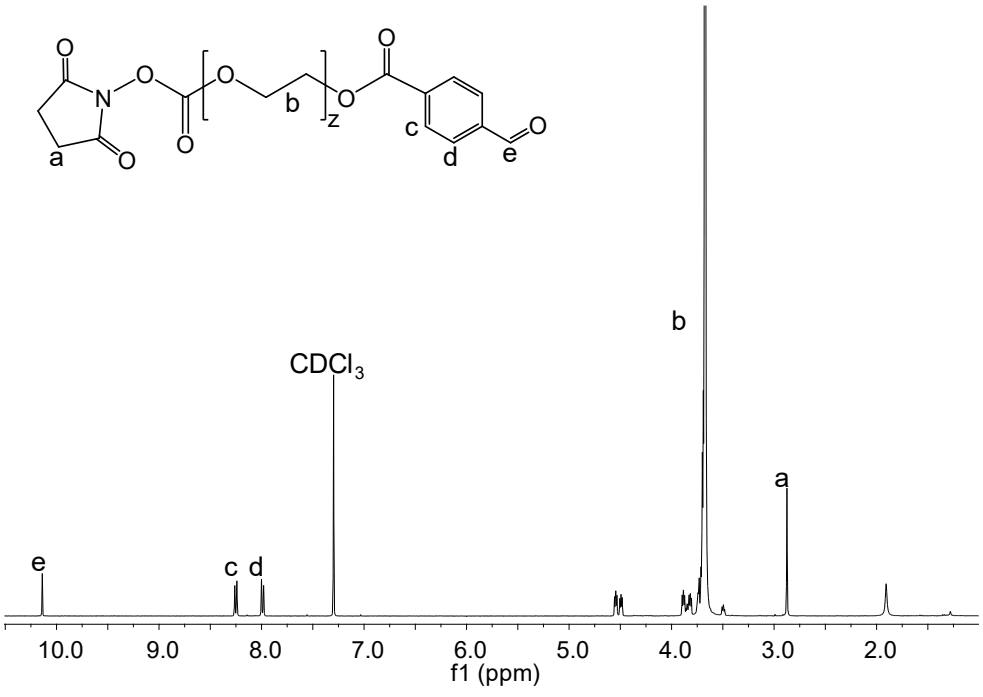

Fig. S4 ^{1}H NMR spectra of NHS-PEG-CHO in $CDCl_3$. 10.14 (e, CHO), 8.26(c, CH), 8.00 (d, CH), 3.66 (b, CH_2CH_2), 2.87 (a, CH_2).

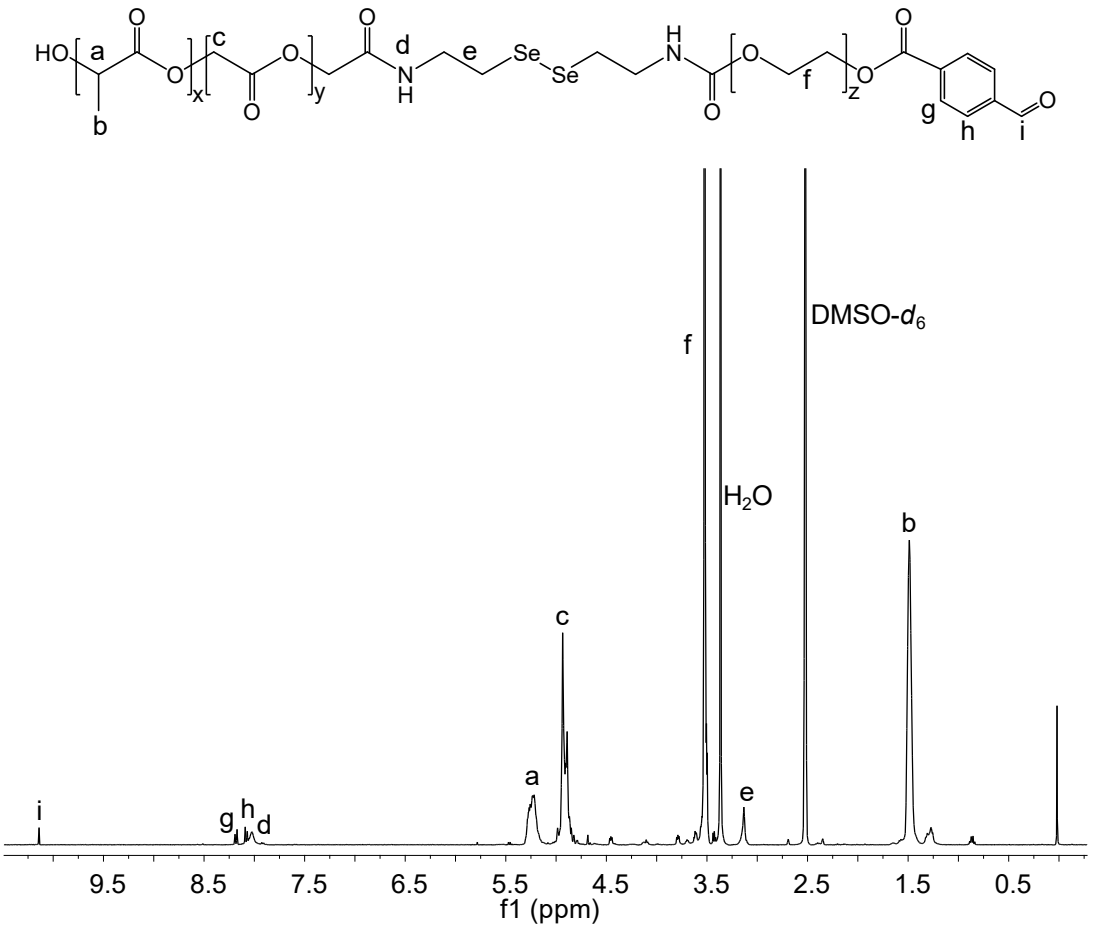

Fig. S5 ^{1}H NMR spectra of PLGA-Se-Se-PEG-CHO in DMSO-d_6. 10.14 (i, CHO), 8.20(g, CH), 8.09 (h, CH), 8.03 (d, NH), 5.24 (a, CH), 4.93 (c, CH_2), 3.52 (f, CH_2CH_2), 3.13 (e, CH_2CH_2), 1.49 (b, CH_3).

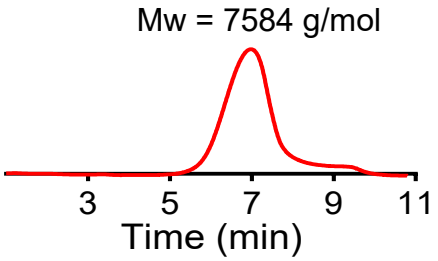

Fig. S6 GPC profiles of PLGA-Se-Se-PEG-CHO.

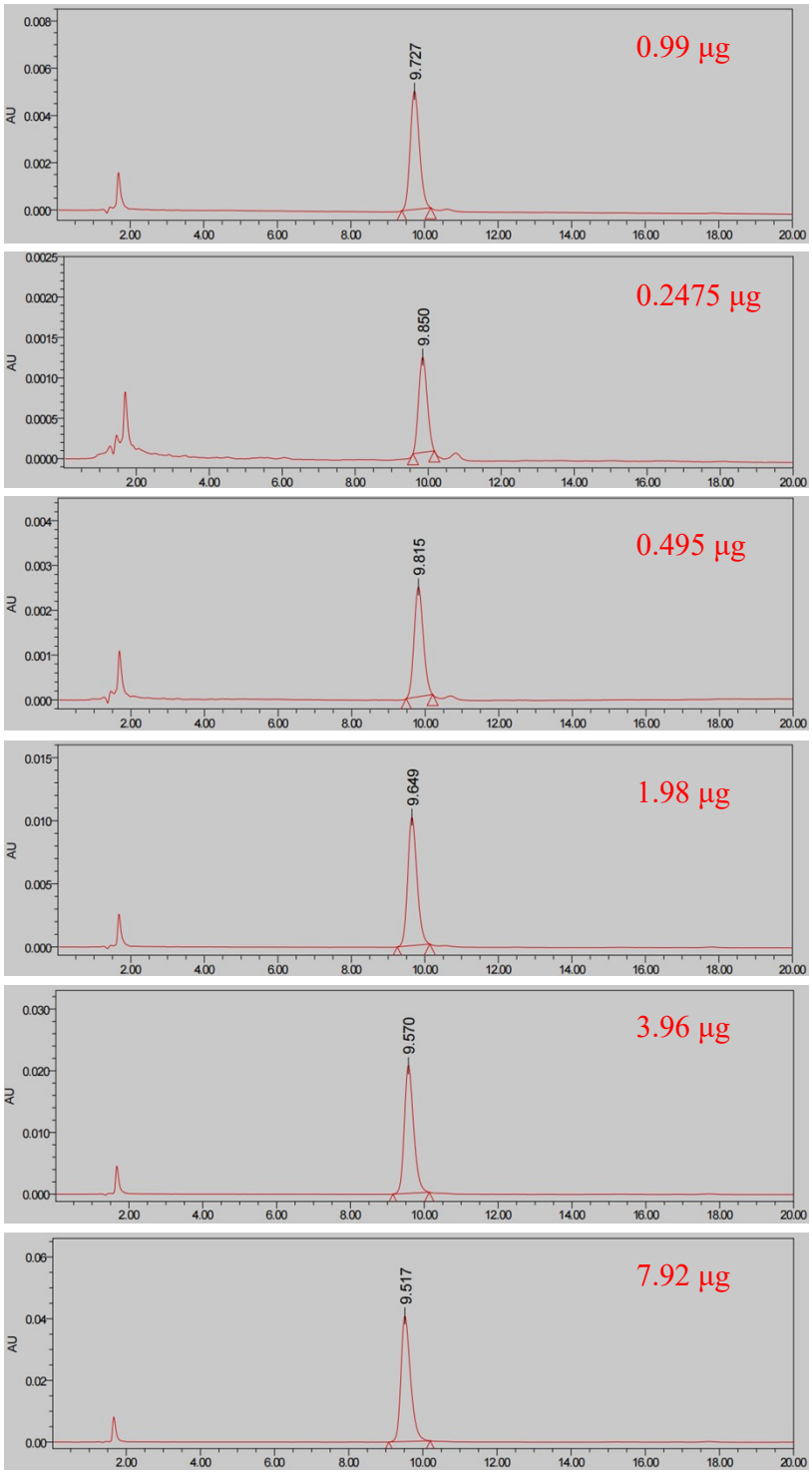

Fig. S7 The HPLC curve of different contents of BMS-202.

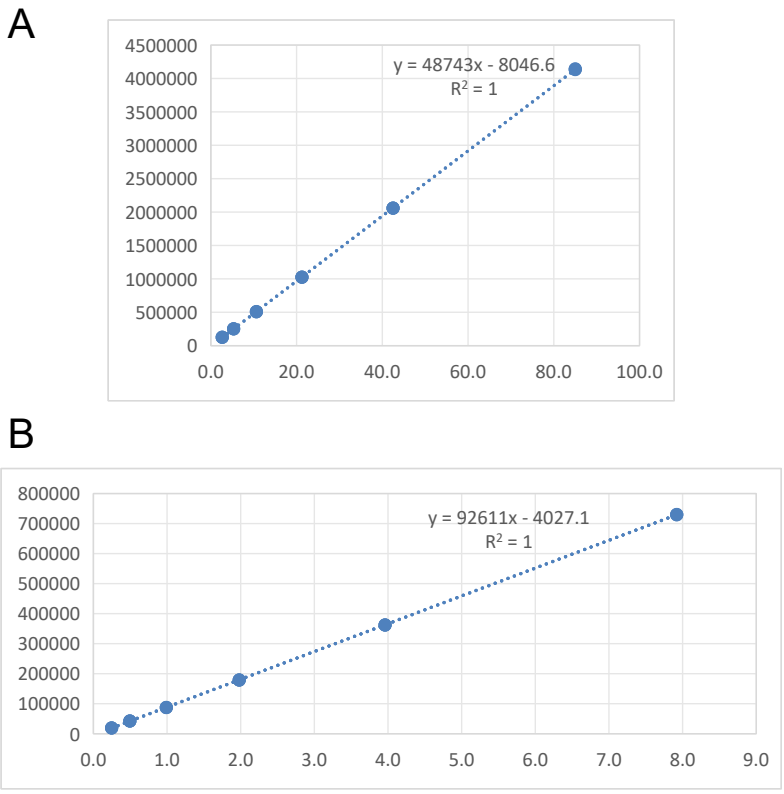

Fig. S8 (A) The standard curve of apigenin concentration. (B) The standard curve of BMS-202 concentration.

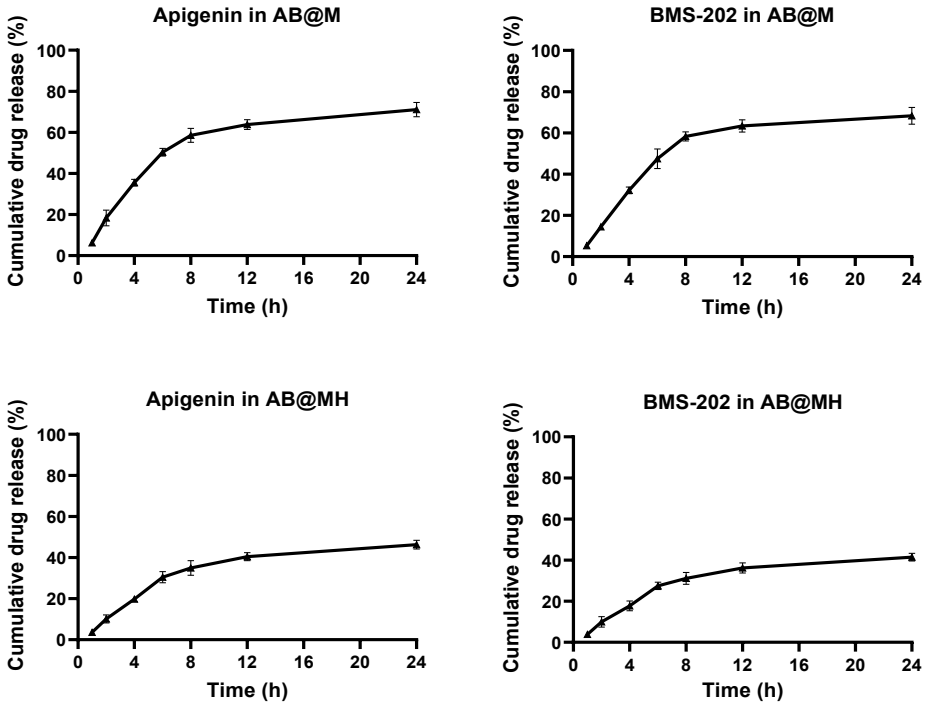

Fig. S9 Release profiles of apigenin or BMS-202 from AB@M or AB@MH in 1 mM H_2O_2.

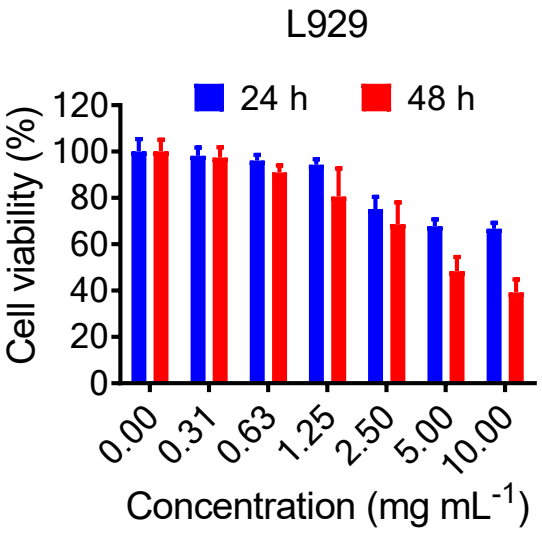

Fig. S10 L929 cell viability after treating with different concentrations of AB@M for 24 h and 48 h, respectively.

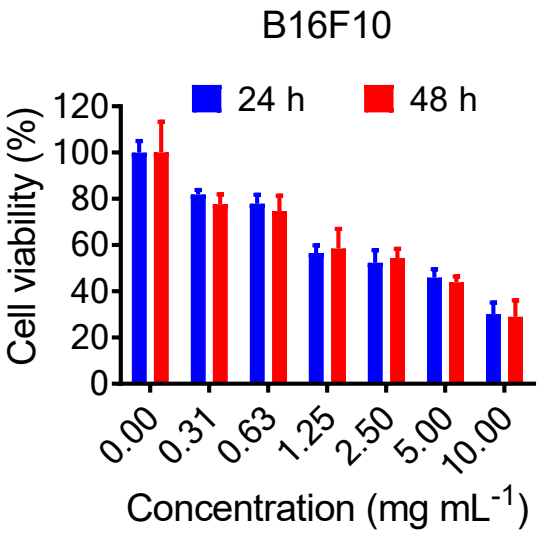

Fig. S11 B16F10 cell viability after treating with different concentrations of AB@M for 24 h and 48 h, respectively.

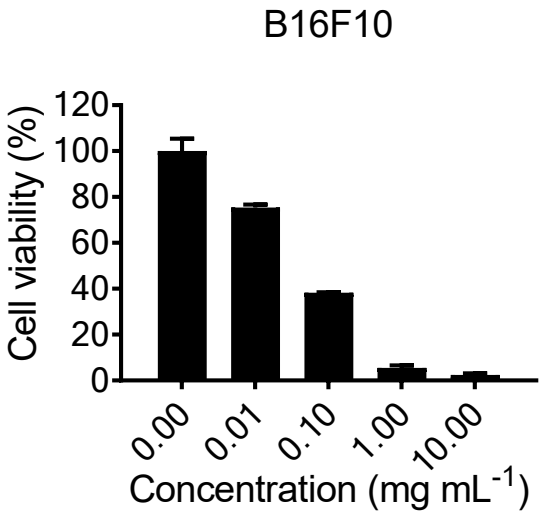

Fig. S12 B16F10 cell viability after treating with different concentrations of Triton X-100 for 24 h.

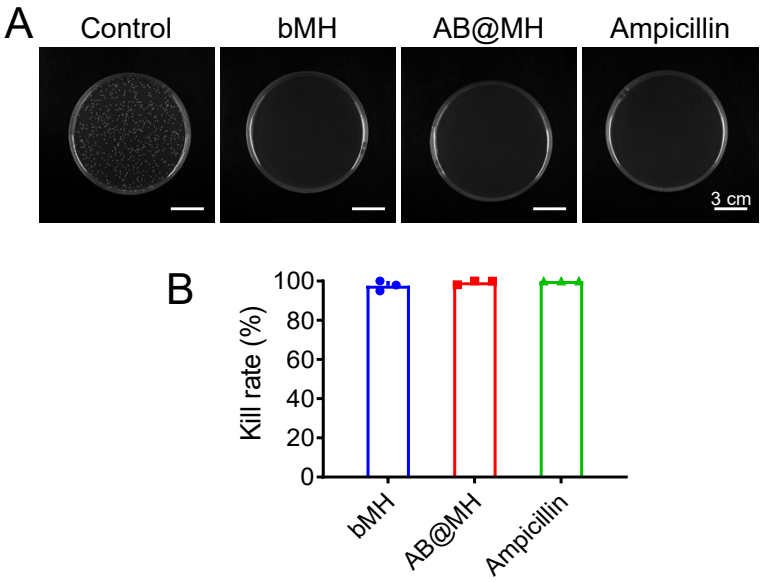

Fig. S13 (A) The photographs of bacterial colony counts of *E. coli* with 10000x dilution after culturing with different micelle-hydrogels. Ampicillin (100 μg mL^{-1}) treatment was as a positive control. (B) The kill rate of bMH, AB@MH and Ampicillin for *E. coli*.

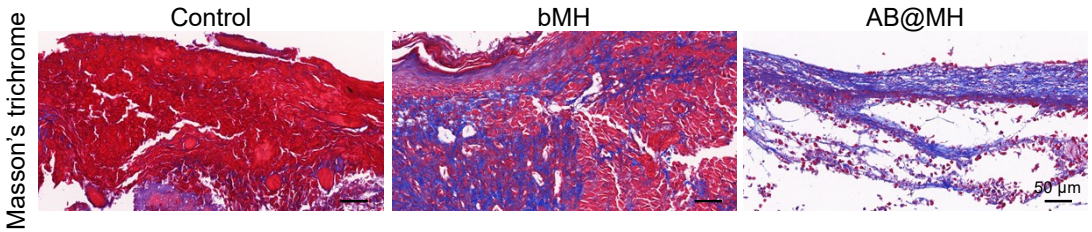

Fig. S14 Representative images of wound tissues stained with Masson's trichrome staining after different treatment at day 15 on tumor resection model.

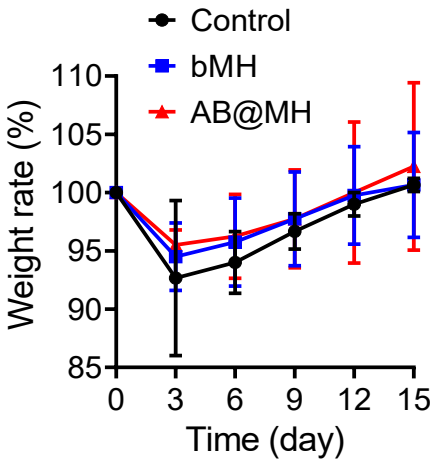

Fig. S15 Quantitative analysis of weight area at the indicated days in comparison with the original weight.

Table S1. The encapsulation efficiency (EE%) and loading capacity (LC%) of apigenin and BMS-202 in AB@M.

AB@M	EE%	LC%
apigenin	92.7 ± 0.6	2.25 ± 0.02
BMS-202	82.6 ± 1.6	0.201 ± 0.004