# Electronic Supplementary Information

## Efficient enzyme-activated therapy based on the different location of protein and prodrug in nanoMOFs

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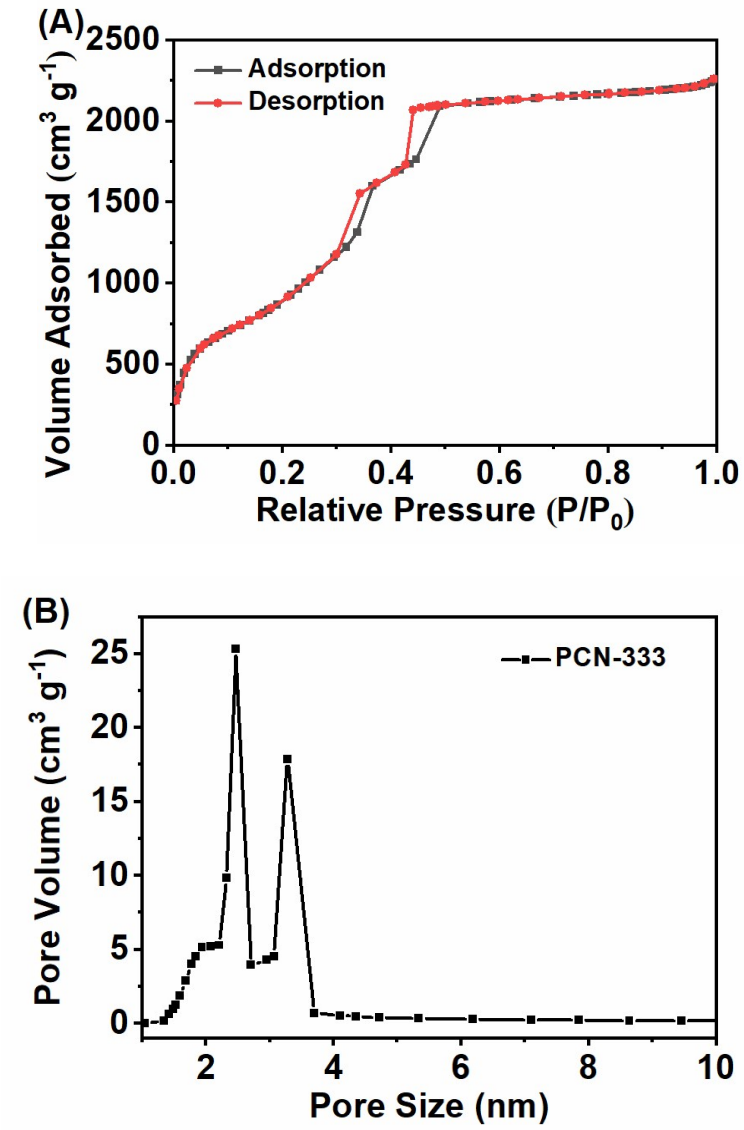


**Fig. S1** (A) Nitrogen adsorption–desorption isotherm and (B) the corresponding BJH pore size distribution profile of the PCN-333 prepared with TFA to $AlCl_3 \cdot 6H_2O$ feed ratios of 10.5 equiv.

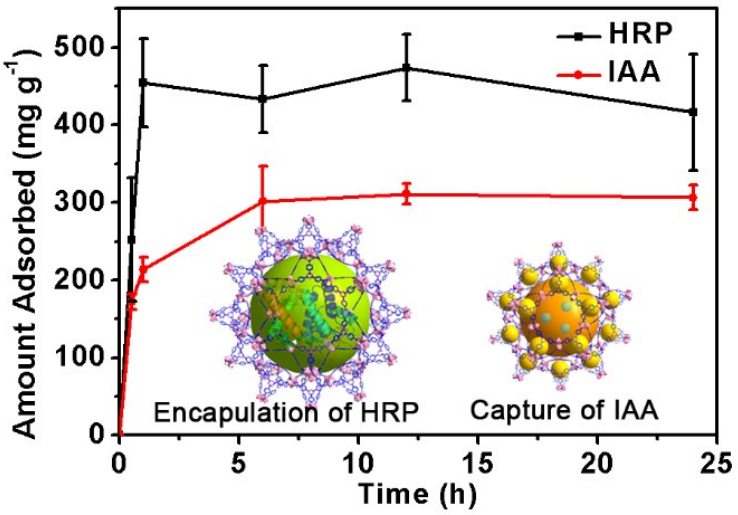


**Fig. S2** Adsorption profiles of PCN-333 for the loading of HRP (black line) and IAA (red line) in aqueous phase over various adsorption time.

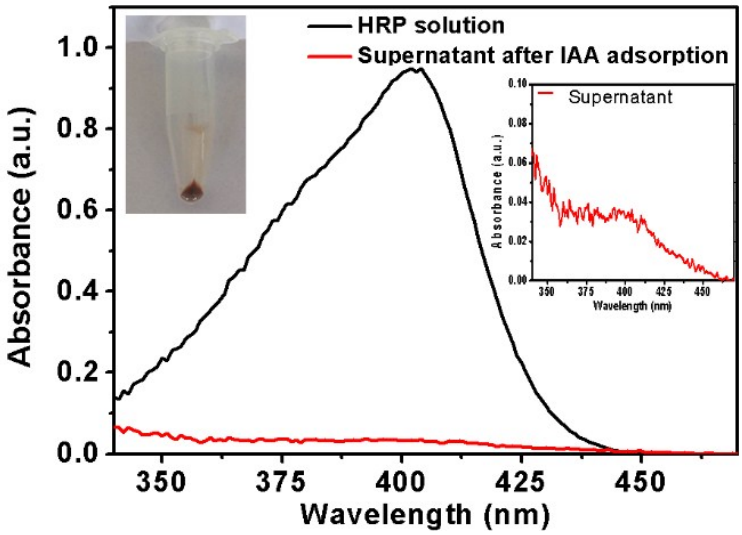


**Fig. S3** The UV–vis spectra of the HRP solution (Black line) and the supernatants after the adsorption of IAA by HRP@PCN-333 (Red line, concentrated in 5 times). The inset photographs illustrating the visible red color of IAA@HRP@PCN-333.

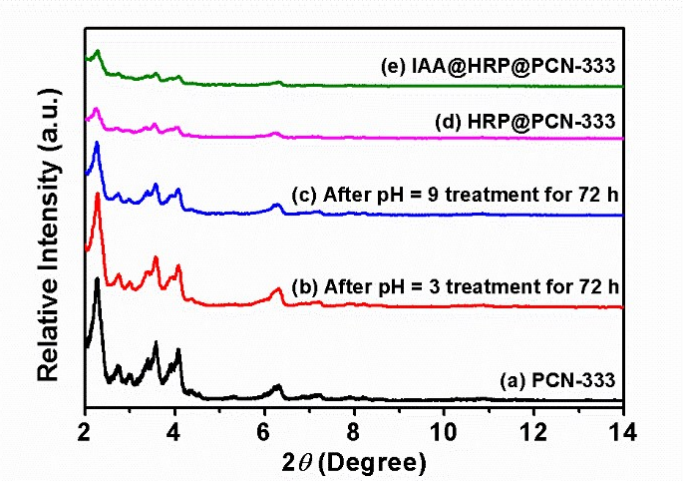


**Fig. S4** Powder XRD patterns of (a) the as-synthesized PCN-333 sample, PCN-333 upon the treatments in (b) acidic and (c) basic solutions, (d) HRP@PCN-333 as well as (e) IAA@HRP@PCN-333.

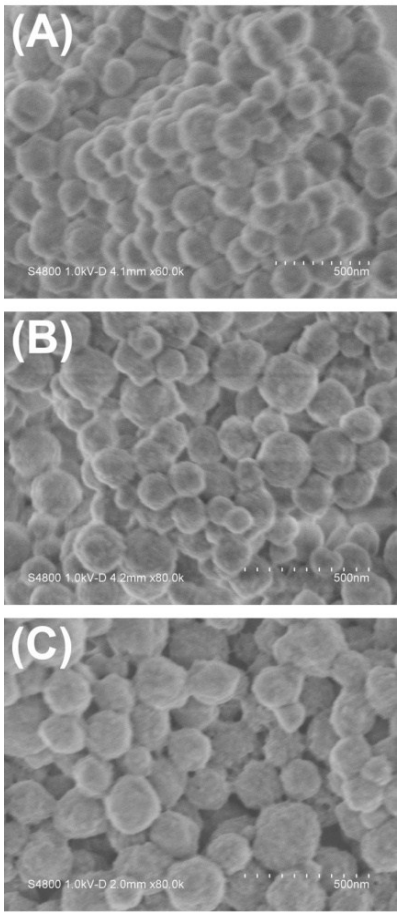


**Fig. S5** Magnified SEM images of (A) PCN-333, (B) HRP@PCN-333, and (C) IAA@HRP@PCN-333.

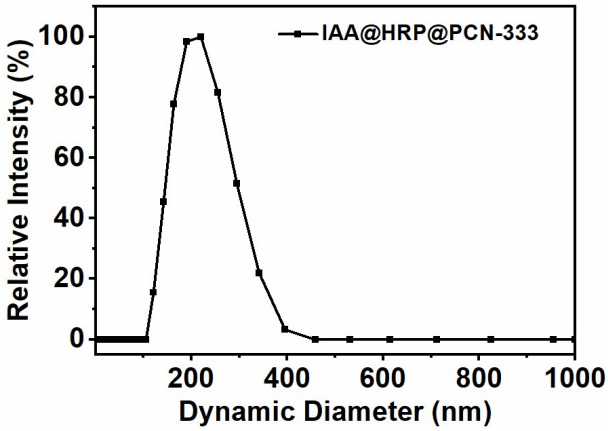


**Fig. S6** DLS profile of the IAA@HRP@PCN-333 in HEPES buffer solution (pH = 7.4, 20 mM).

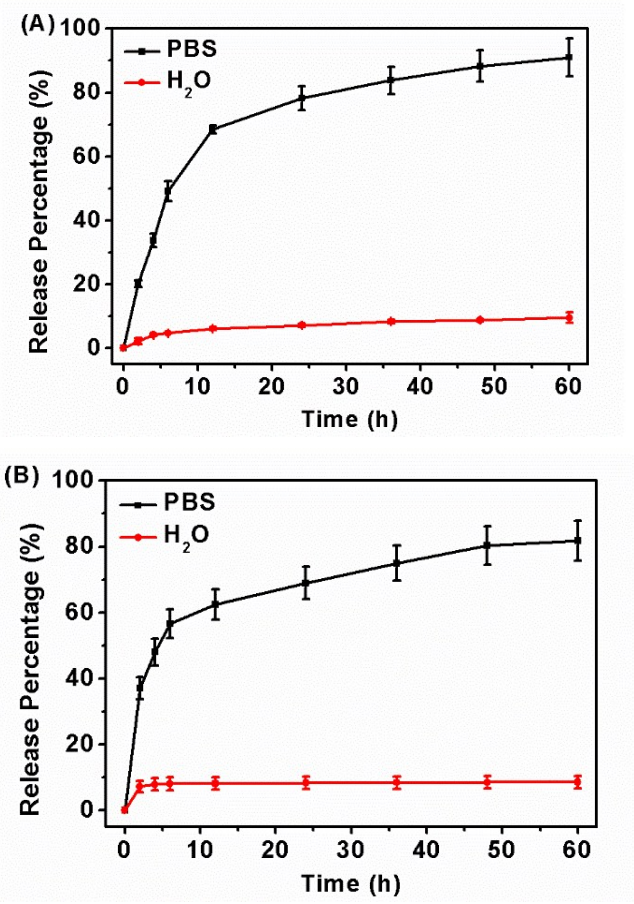


**Fig. S7** (A) HRP release profiles from PCN-333 nanocarriers at 37 °C in a PBS buffer (Black line, 10 mM, pH = 7.4) and water (Red line, pH = 7.4). (B) IAA release profiles from PCN-333 nanocarriers at 37 °C in a PBS buffer (Black line, 10 mM, pH = 7.4) and water (Red line, pH = 7.4).

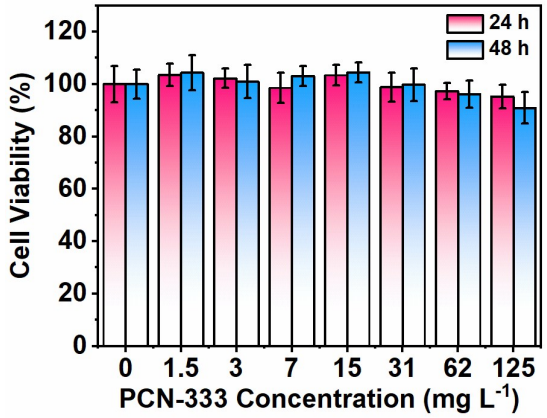


**Fig. S8** Cell viabilities of PCN-333 nanocarriers against SMMC-7721 cells at different concentrations with incubation time of 24 (Red) and 48 h (Blue).

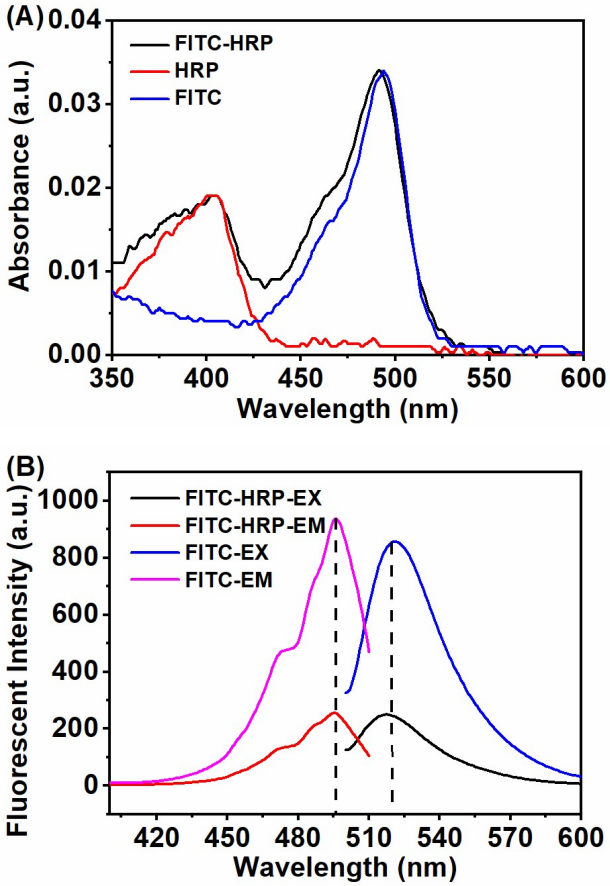


**Fig. S9** (A) UV-vis absorption spectra of FITC-HRP (15 mg $L^{-1}$) , HRP (15 mg $L^{-1}$) and FITC (0.29 mg $L^{-1}$) in HEPES buffer solution (pH = 7.4, 20 mM); (B) Fluorescence spectra and their corresponding excitation spectra of FITC-HRP (15mg $L^{-1}$) and FITC (0.29 mg $L^{-1}$) in HEPES buffer solution under excitation at 492 nm.

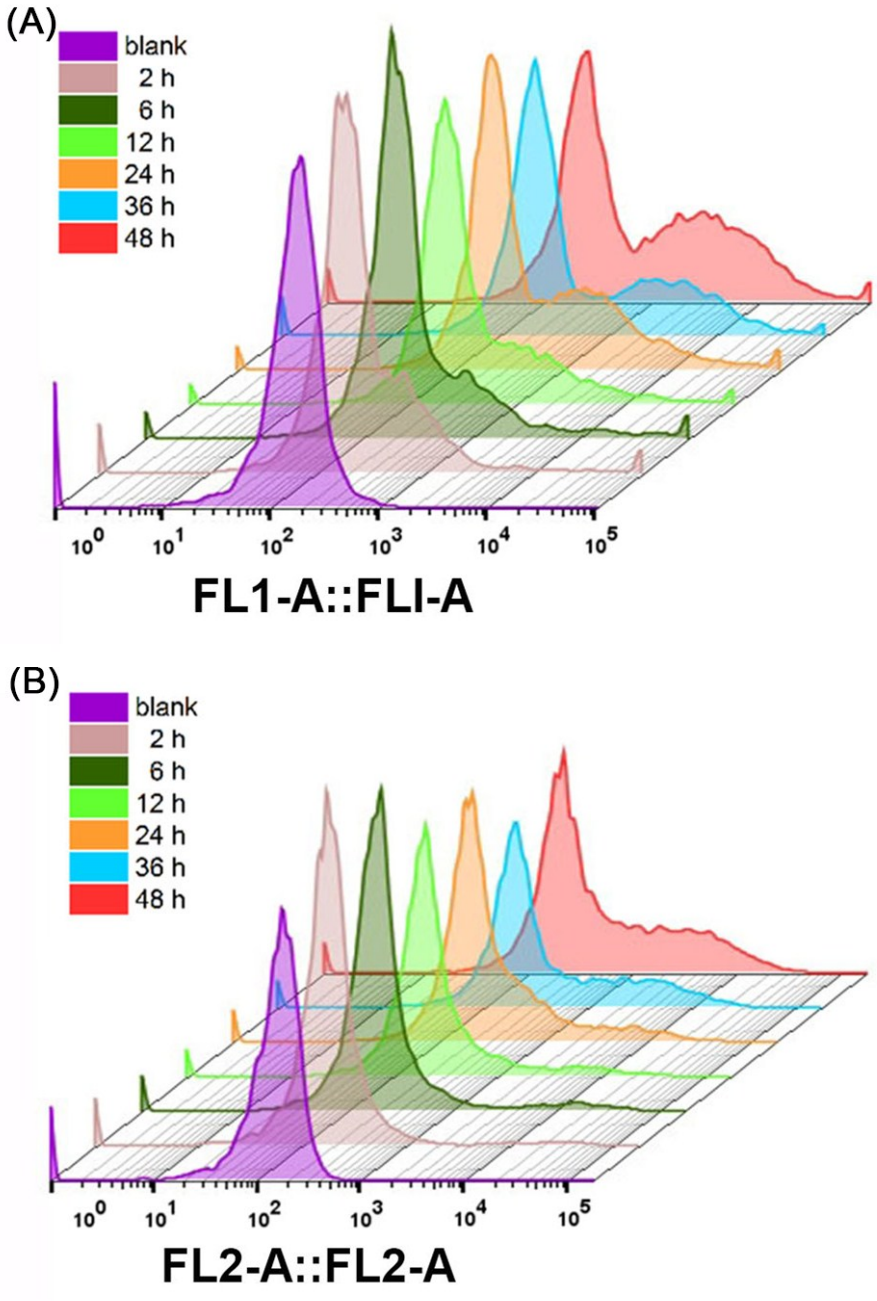


**Fig. S10** Flow cytometric analysis of (A) FITC-HRP and (B) RhB for SMMC-7721 cells after their incubation with RhB@FITC-HRP@PCN-333 NPs for 2, 6, 12, 24, 36 and 48 h at 37 °C.