

Supplementary Files

Polymerization of Dopamine Accompanying Its Coupling to Induce Self-Assembly of Block Copolymer and Application in Drug Delivery

Yudian Qiu^a, Zongyuan Zhu^b, Yalei Miao^a, Panke Zhang^a, Xu Jia^c, Zhongyi Liu^a, Xubo Zhao^{*a}

^aCollege of Chemistry, and Institute of Green Catalysis, Zhengzhou University, Zhengzhou 450001, China.

^bEnergy and Power Department, Jiangsu University of Science and Technology, Zhenjiang 212003, China.

^cSchool of Materials and Chemical Engineering, Zhongyuan University of Technology, Zhengzhou 450007, China.

*To whom correspondence should be addressed. E-mail: xbz2016@zzu.edu.cn

This PDF file includes:

Fig. S1. Synthesis procedure for the CH₃O-PEG₄₃-*b*-PAA₈₈ (a) and PAA₇₂-*b*-PEG₄₃-*b*-PAA₇₂ (b) copolymers.

Fig. S2. ¹H NMR spectra of CH₃O-PEG₄₃-OH (A), CH₃O-PEG₄₃-Br (B), CH₃O-PEG₄₃-*b*-PtBA₈₈ (C), and CH₃O-PEG₄₃-*b*-PAA₈₈ (D), HO-PEG₄₃-OH (E), Br-PEG₄₃-Br (F), PtBA₇₂-*b*-PEG₄₃-*b*-PtBA₇₂ (G), and PAA₇₂-*b*-PEG₄₃-*b*-PAA₇₂ (H).

Fig. S3. FT-IR spectra of CH₃O-PEG₄₃-OH (a), CH₃O-PEG₄₃-Br (a), CH₃O-PEG₄₃-*b*-PtBA₈₈ (a), HO-PEG₄₃-OH (b), Br-PEG₄₃-Br (b), and PtBA₇₂-*b*-PEG₄₃-*b*-PtBA₇₂ (b).

Fig. S4. High-resolution XPS spectra of the C1s(a) , O1s(b), and N1s(c) of CH₃O-PEG₄₃-*b*-PAA₈₈, and the C1s(d) , O1s(e), and N1s(f) of CH₃O-PEG₄₃-*b*-P(DA-*co*-AA)₈₈.

Fig. S5. The interactions between DOX and P(DA-*co*-AA)₇₂-*b*-PEG₄₃-*b*-P(DA-*co*-AA)₇₂, and between BTZ and BTZ-P(DA-*co*-AA)₇₂-*b*-PEG₄₃-*b*-P(DA-*co*-AA)₇₂.

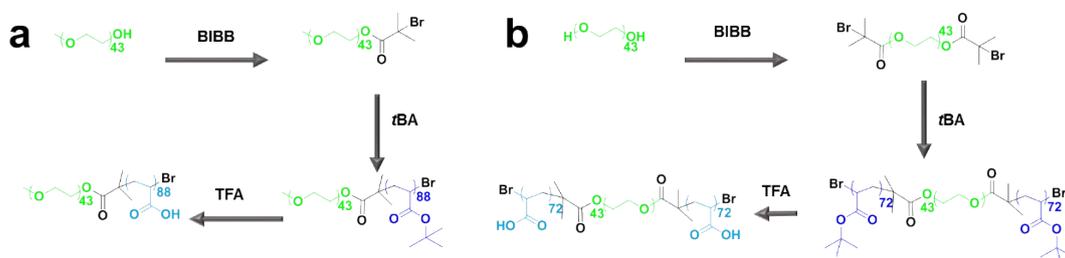


Fig. S1. Synthesis procedure for the CH₃O-PEG₄₃-*b*-PAA₈₈ (a) and PAA₇₂-*b*-PEG₄₃-*b*-PAA₇₂ (b) copolymers.

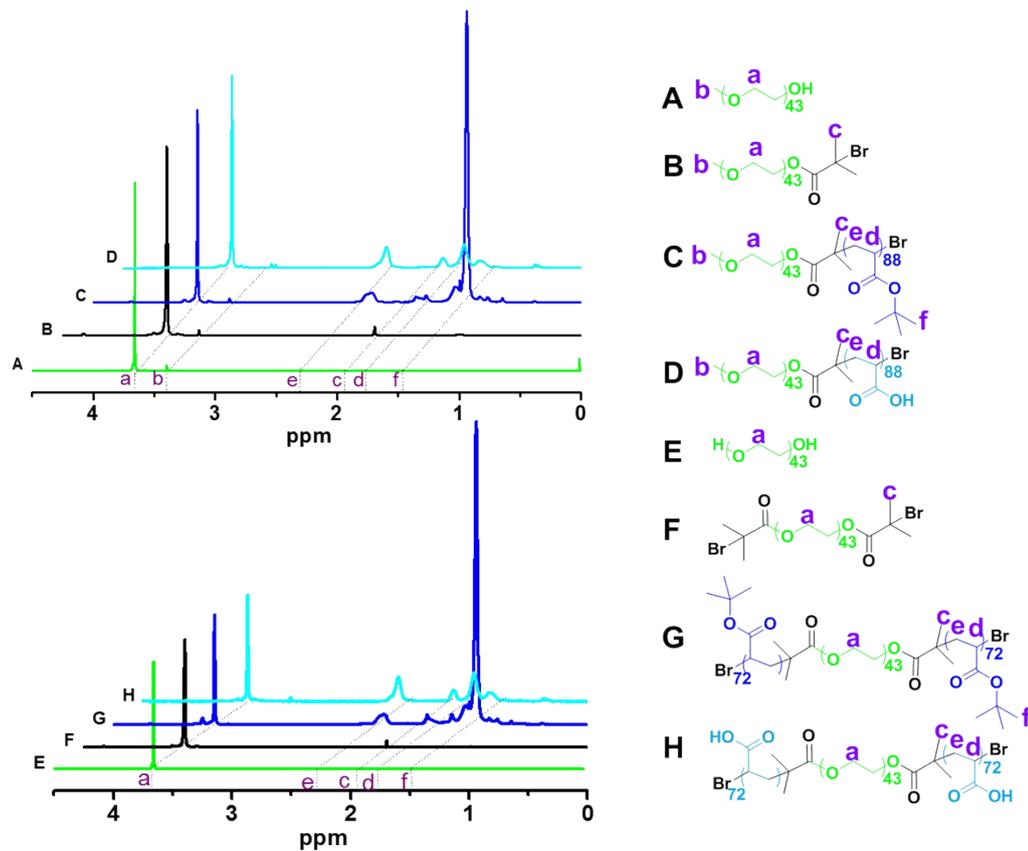


Fig. S2. ^1H NMR spectra of $\text{CH}_3\text{O}-\text{PEG}_{43}-\text{OH}$ (A), $\text{CH}_3\text{O}-\text{PEG}_{43}-\text{Br}$ (B), $\text{CH}_3\text{O}-\text{PEG}_{43}-b\text{-PtBA}_{88}$ (C), and $\text{CH}_3\text{O}-\text{PEG}_{43}-b\text{-PAA}_{88}$ (D), $\text{HO}-\text{PEG}_{43}-\text{OH}$ (E), $\text{Br}-\text{PEG}_{43}-\text{Br}$ (F), $\text{PtBA}_{72}-b\text{-PEG}_{43}-b\text{-PtBA}_{72}$ (G), and $\text{PAA}_{72}-b\text{-PEG}_{43}-b\text{-PAA}_{72}$ (H).

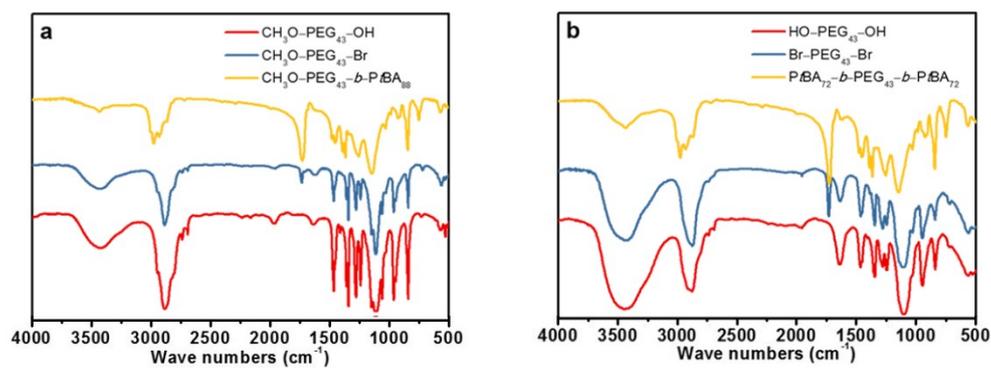


Fig. S3. FT-IR spectra of $\text{CH}_3\text{O}-\text{PEG}_{43}-\text{OH}$ (a), $\text{CH}_3\text{O}-\text{PEG}_{43}-\text{Br}$ (a), $\text{CH}_3\text{O}-\text{PEG}_{43}-b\text{-PtBA}_{88}$ (a), $\text{HO}-\text{PEG}_{43}-\text{OH}$ (b), $\text{Br}-\text{PEG}_{43}-\text{Br}$ (b), and $\text{PtBA}_{72}-b\text{-PEG}_{43}-b\text{-PtBA}_{72}$ (b).

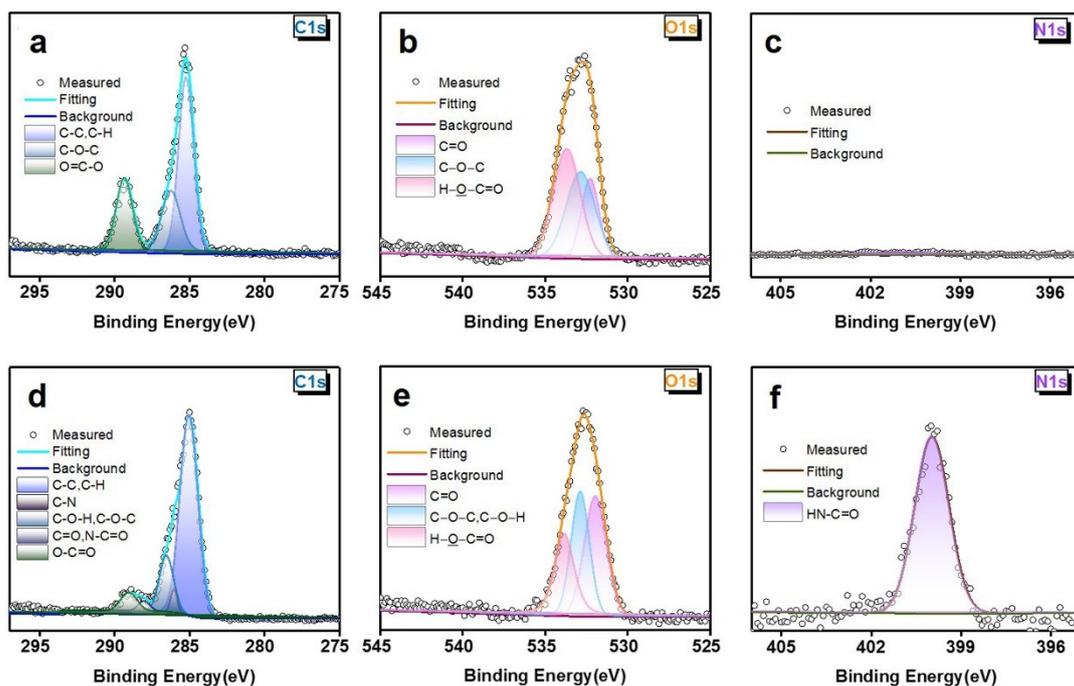


Fig. S4. High-resolution XPS spectra of the C1s (a), O1s (b), and N1s (c) of $\text{CH}_3\text{O-PEG}_{43}\text{-}b\text{-PAA}_{88}$, and the C1s (d), O1s (e), and N1s (f) of $\text{CH}_3\text{O-PEG}_{43}\text{-}b\text{-P(DA-co-AA)}_{88}$.

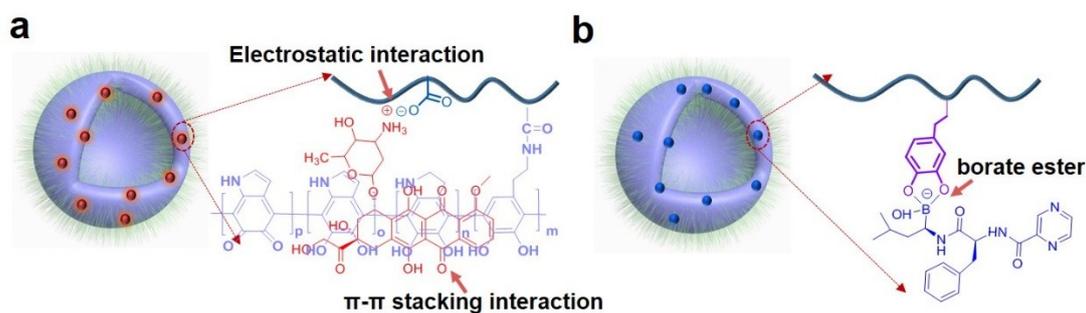


Fig. S5. The interactions between DOX and $\text{P(DA-co-AA)}_{72}\text{-}b\text{-PEG}_{43}\text{-}b\text{-P(DA-co-AA)}_{72}$, and between BTZ and $\text{BTZ-P(DA-co-AA)}_{72}\text{-}b\text{-PEG}_{43}\text{-}b\text{-P(DA-co-AA)}_{72}$.