Supplementary information

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Results and discussion

Fig. S1 The typical $^1$H-NMR spectrum of MN and MSe in CDCl$_3$

Fig. S2 The typical $^{13}$C-NMR spectrum of MN and MSe in CDCl$_3$
Fig. S3 The CMC determination of the mPEG-\textit{b}-poly(MN-co-MSe) copolymers using the fluorescence method with pyrene as a probe.

Fig. S4 Turbidity measurements of mPEG-\textit{b}-poly(MN-co-TMC) and mPEG-\textit{b}-PTMC copolymers at the presence of 50 mM H$_2$O$_2$ in aqueous solution for 24 h.
Fig. S5 DLS results of the mPEG-b-poly(MSe-co-TMC) (left) and mPEG-b-PTMC (right) copolymers with different pH or 50 mM H$_2$O$_2$ at 37 °C for 12 h.

Fig. S6 The FT-IR spectra of mPEG-b-poly(MN$_9$-co-MSe$_9$) and mPEG-b-poly(MN$_9$-co-OSe$_9$)
Fig. S7 The water contact angle of mPEG-\textit{b}-poly(MN_{9-co-MSe}_{9}) at different environments.

(A) water (B) pH 5.0 (C) pH 7.4 + H\textsubscript{2}O\textsubscript{2} (D) pH 5.0 + H\textsubscript{2}O\textsubscript{2}

Fig. S8 DLS curve of DOX-loaded mPEG-\textit{b}-poly(MN_{9-co-MSe}_{9}) micelles in aqueous solution

(Size intensity = 110.4 nm, PDI = 0.159)
Fig. S9 SEC curves of mPEG-\(b\)-poly(\(\text{MN}_9\)-co-MSe\(_9\)) in 0.02 M PBS at 37 °C at marked degradation time. (A) pH 7.4 (B) pH 5.0 (c) pH 7.4 + 50 mM \(\text{H}_2\text{O}_2\) (D) pH 5.0 + 50 mM \(\text{H}_2\text{O}_2\).

Fig. S10 Cell viability of (A&B) HEK293 cells and (C&D) A549 cells cultured with mPEG\(_{45}\)-\(b\)-poly(\(\text{MN}_9\)-co-MSe\(_9\)) and mPEG\(_{45}\)-\(b\)-poly(\(\text{MN}_9\)-co-OSe\(_9\)) in 48 h and 72 h, respectively.