Superbase catalyzed regioselective polyhydroalkoxylation of alkynes: A facile route towards functional poly(vinyl ether)s

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Figure S26. PL spectra of P1a2a (A), P1a2c (B) and P1c2a (C) in THF/water mixture with different water fraction ($f_w$, in volume percentage, vol%). Excitation concentration: 10 µM; $\lambda_{ex}$ (P1a2a, P1a2c): 345 nm, $\lambda_{ex}$ (P1c2a): 325 nm.

Figure S27. (A) UV absorption spectra of P1a2a, P1a2b, P1a2c and P1c2a in THF solution and rhodamine B in water solution. Concentration: 10 µM.

Reference.
Experimental section

Synthesis of 1,2-bis(4-ethynylphenyl)-1,2-diphenylethene (1a).

\[
\begin{align*}
6 & \xrightarrow{\text{CuI, Pd(PPh}_3)_2\text{Cl}_2, N_2, \text{Et}_3\text{N, THF, 80 }^\circ\text{C}} \rightarrow 8 \\
8 & \xrightarrow{\text{Zn, TiCl}_4, 0^\circ\text{C, reflux}} \rightarrow 1a
\end{align*}
\]

1a was synthesized according to our previously published procedures.1

Synthesis of bis(4-ethynylphenyl)methanone (1b).

\[
\begin{align*}
10 & \xrightarrow{\text{CuI, Pd(PPh}_3)_2\text{Cl}_2, N_2, \text{Et}_3\text{N, THF, 80 }^\circ\text{C}} \rightarrow 11 \\
11 & \xrightarrow{\text{KOH, THF/MeOH}} \rightarrow 1b
\end{align*}
\]

1b was synthesized according to our previously published procedures.1 \textsuperscript{1}H NMR (CDCl\textsubscript{3}, 500 MHz), \(\delta\) (TMS, ppm): 7.77–7.73 (m, 4H), 7.62–7.58 (m, 4H), 3.26 (s, 2H). \textsuperscript{13}C NMR (CDCl\textsubscript{3}, 125 MHz), \(\delta\) (TMS, ppm): 195.02, 137.32, 132.39, 130.22, 126.81, 83.05, 80.27. FT-IR (KBr disk), \(\nu\) (cm\textsuperscript{-1}): 3304, 3283, 2105, 1938, 1645, 1600, 1551, 1404, 1309, 1289, 1176, 1140, 1116, 1018, 971, 932, 863, 839, 766, 680, 658, 643, 628, 551, 520, 493.

Synthesis of 4-ethynl-N-(4-ethynylphenyl)-N-phenylaniline (1c)

\[
\begin{align*}
12 & \xrightarrow{\text{CuI, Pd(PPh}_3)_2\text{Cl}_2, N_2, \text{Et}_3\text{N, THF, 80 }^\circ\text{C}} \rightarrow 13 \\
13 & \xrightarrow{\text{KOH, THF/MeOH}} \rightarrow 1c
\end{align*}
\]

1c was synthesized according to our previously published procedures.2
Drug loading and release.

50 mg of P1a2b and 5 mg of rhodamine B were dissolved in 10 mL of DCM. Then, the solution was added into 200 mL of hexane dropwise under vigorous stirring. After standing for 1 h, the precipitates were filtered and washed with methanol to remove rhodamine B on the precipitates surface. The P1a2b loaded rhodamine B was obtained after drying in vacuum at 40 °C to a constant weight.

5 mg of P1a2b/rhodamine B complex was added into 300 mL of hydrochloric acid buffer solution and water at 37±0.5 °C, respectively and incubate for 2 h. Afterwards, 3 mL of supernate was analyzed by photoluminescence spectra.

Figure S1. (A) TGA thermograms and (B) DSC thermograms of polymers P1a2a–P1c2c. Td and Tg represent the temperature of 5% weights loss and the glass transition temperature, respectively.
Figure S2. FT-IR spectra of 1a (A), 2a (B) and P1a2a (C).

Figure S3. FT-IR spectra of 1a (A), 2c (B) and P1a2c (C).
Figure S4. FT-IR spectra of 1b (A), 2a (B) and P1b2a (C).

Figure S5. FT-IR spectra of 1b (A), 2b (B) and P1b2b (C).
Figure S6. FT-IR spectra of 1b (A), 2c (B) and P1b2c (C).

Figure S7. FT-IR spectra of 1c (A), 2a (B) and P1c2a (C).
**Figure S8.** FT-IR spectra of 1c (A), 2b (B) and P1c2b (C).

**Figure S9.** FT-IR spectra of 1c (A), 2c (B) and P1c2c (C).
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Reference
