Electronic Supplementary Information (ESI) for

Metal-free click approach for facilely producing main chain poly(bile acid)s

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Scheme S1 Reaction scheme for the synthesis of main chain poly(bile acid)s 1a-1d.

Scheme S2 Reaction scheme for the synthesis of main chain poly(bile acid)s 1e-1f.
Scheme S3 Reaction scheme for the synthesis of main chain poly(bile acid)s 1g-1h and the phenyl azide and phenyl alkyne 5a-5c.
Figure S1 DSC thermalgrams of the bile acid derivatives 4a (A), 4b (B), 4c (C), 4d (D), 4g (E) and 4h (F) recorded under N₂ atmosphere at a heating rate of 1°C min⁻¹.
**Figure S2** FTIR spectra of the bile acid monomers their corresponding polymers 4a and 1a (A), 4b and 1b (B), 4c and 1c (C), 4d and 1d (D), 4g and 1g (E) and 4h and 1h (F).
Figure S3 $^1$H NMR spectra of bile acid monomers and the corresponding polymers 4a and 1a (A), 4b and 1b (B), 4c and 1c (C), 4d and 1d (D), 4g and 1g (E) and 4h and 1h (F).
Figure S4 GPC spectra of DCA-P as synthesized from amorphous (A) and crystal state (B) monomers.

Figure S5 DSC heating and cooling curves of poly(bile acid)s 1a and 1b (A), 1c and 1d (B), 1e and 1f (C), 1g and 1h (D).
Figure S6 TGA thermograms of 4a-4h recorded under nitrogen at a heating rate of 10 °C min⁻¹.