Supporting Information for

Facile synthesis of histidine functional Poly(N-isopropylacrylamide):
Zwitterionic and temperature responsive materials


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Fig. S1 The GPC traces in DMF of the aldehyde functional PNiPAm copolymers with MWs ≈ 50000 and ø 1.5-1.6.
Synthesis of poly(N-isopropylacrylamide)

Into a schlenk tube, NiPAm (1.0 g, 8.84 mmol), CDP (0.024 g, 0.059 mmol), and AIBN (0.0029 g, 0.018 mmol) were dissolved in THF ca. 40% wt/wt. After three freeze pump thaw iterations, the polymerization was heated to 65°C and proceeded for 16 hours. The polymer was precipitated twice into diethyl ether and dried in a vacuum desiccator overnight, yielding a white powder (0.6903 g, 69%).

\(^1H\) NMR (400 MHz, CDCl₃): \(\delta = 8.10-7.40\) (broad, 0.96 H), 4.05-3.84 (broad, 1 H), 2.29-0.89 (broad, 9.34 H).

Fig. S2 The GPC (in DMF) trace of PNiPAm homopolymer synthesized by RAFT polymerization using CDP as the RAFT agent. The polydispersity is 1.43.
**Fig. S3** The full FTIR spectra of PNiPAm$_{73}$-co-His$_{23}$ (a), PNiPAm$_{73}$-co-PFBMA$_{26}$ (b), PNiPAm (c) and PFBMA. In spectra (b) and (d) the aldehyde peak is clearly visible at 1700cm$^{-1}$. After reductive amination, this peak disappears as can be seen in the FTIR spectra of PNiPAm$_{73}$-co-His$_{23}$ (a).