

Supporting Information for

# Synthesis of Poly(*N*-vinylpyrrolidone)-based Polymer Bottlebrushes by ATRPA and RAFT Polymerization: Toward Drug Delivery Application

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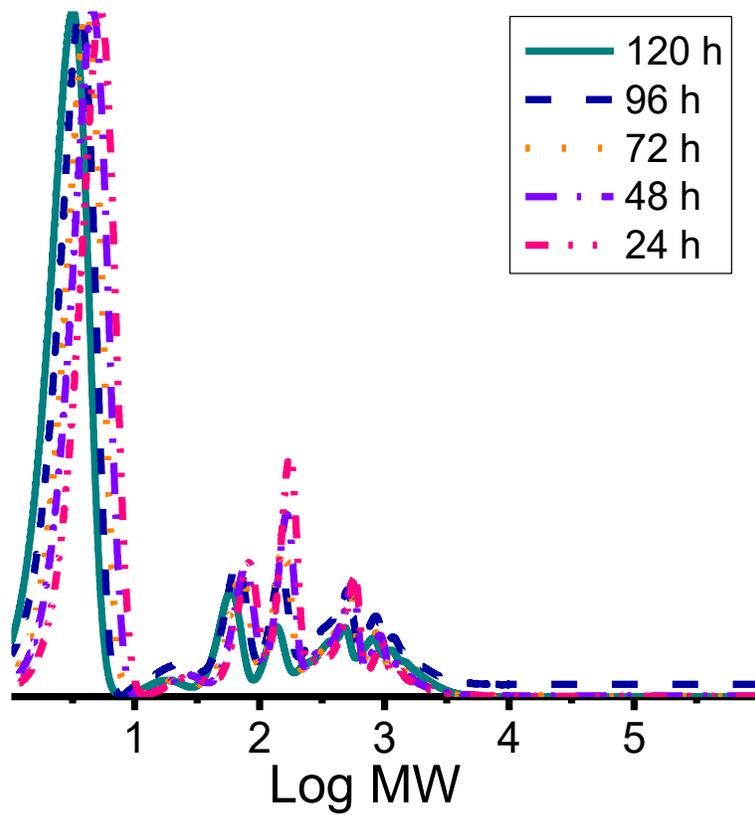
## Captions.

**Figure S1.** GPC traces for ATRPA of VBBPA (VBBPA/CuBr<sub>2</sub>/Cu/PMDETA = 50/2/1/6 at 40 °C; [VBBPA]<sub>0</sub> = 1.8 M in anisole).

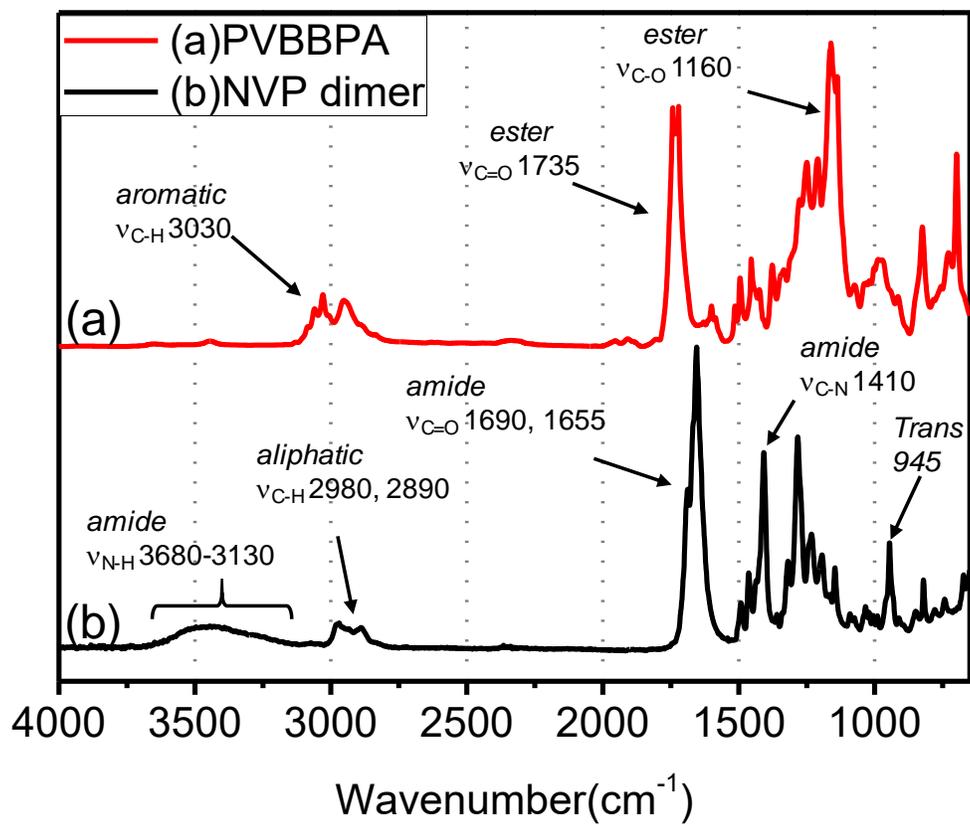
**Figure S2.** FT-IR spectra of (a) PVBBPA and (b) purified NVP dimer obtained after ATRP (NVP/PVBBPA/CuBr/PMDETA = 200/1/1/1 in anisole; PVBBPA: *M<sub>n</sub>* = 11200 and PDI = 1.58; [NVP]<sub>0</sub> = 4.0 M).

**Figure S3.** GPC traces for ATRP of PVBBPA with NVP at various reaction times (NVP/PVBBPA/CuBr/PMDETA = 200/1/1/1 in anisole at 80 °C).

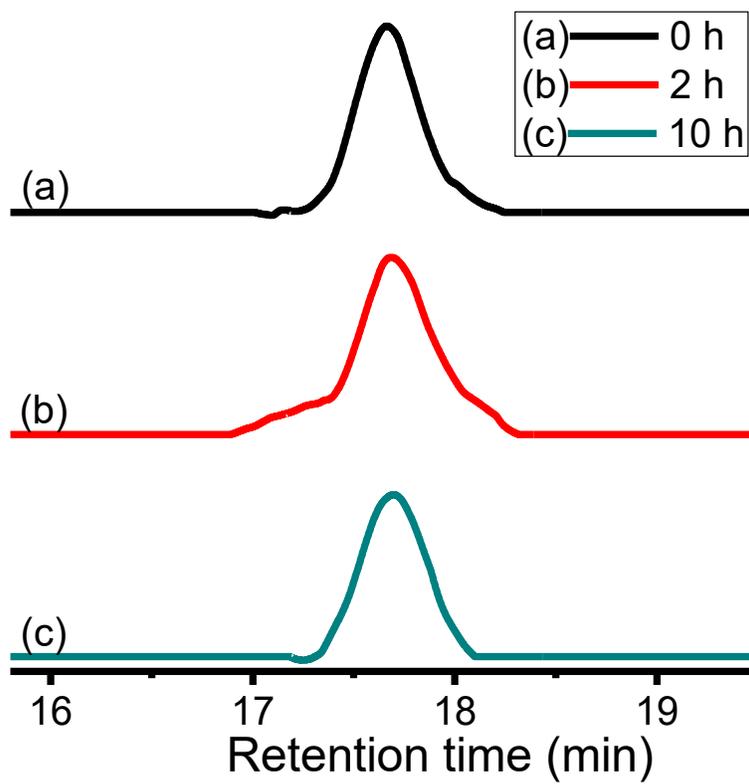
**Figure S4.** FT-IR spectra of (a) PVBXPA and (b) PVBPA-*g*-PNVP (co)polymers.



**Figure S1.** GPC traces for ATRPA of VBBPA (VBBPA/CuBr<sub>2</sub>/Cu/PMDETA = 50/2/1/6 at 40 °C; [VBBPA]<sub>0</sub> = 1.8 M in anisole).



**Figure S2.** FT-IR spectra of (a) PVBBPA and (b) purified NVP dimer obtained after ATRP (NVP/PVBBPA/CuBr/PMDETA = 200/1/1/1 in anisole; PVBBPA:  $M_n = 11200$  and PDI = 1.58;  $[\text{NVP}]_0 = 4.0 \text{ M}$ ).



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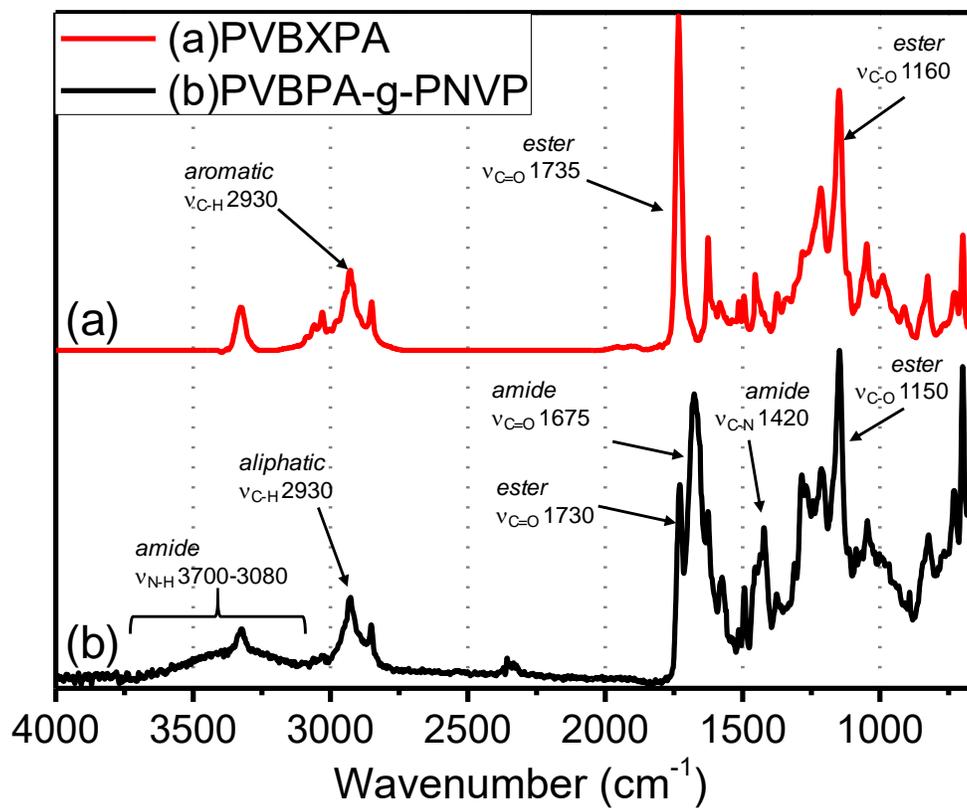


Figure S4. FT-IR spectra of (a) PVBXPA and (b) PVBPA-g-PNVP (co)polymers.