Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supplementary Information

Synthesis of block copolymers using end-functionalized polyacetylenes as macroinitiators

Masashi Shiotsuki,[a] Kei Takahashi,[b] Jesus Rodriguez Castanon,[b] Fumio Sanda*[c]

[a] *Department of Chemistry and Energy Engineering, Faculty of Engineering, Tokyo City University, 1-28-1 Tamazutsumi, Setagaya-ku, Tokyo 158-8557, Japan*

[b] *Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, Katsura Campus, Nishikyo-ku, Kyoto 615-8510, Japan*

[c] *Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University, 3-3-35 Yamate-cho, Suita, Osaka 564-8680, Japan*

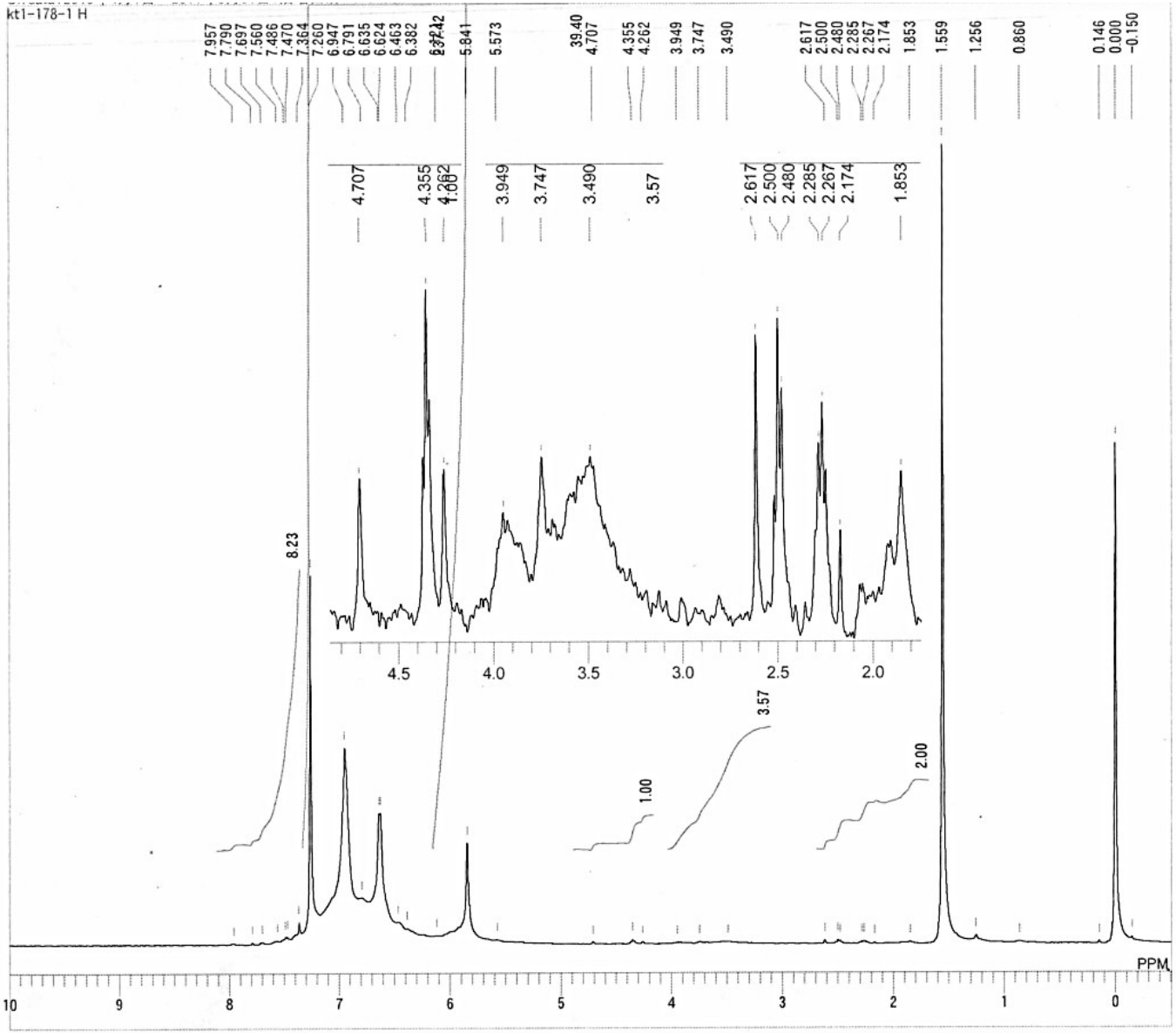

Fig. S1 ^{1}H NMR (400 MHz) spectrum of poly(**1a**) measured in $CDCl_3$.

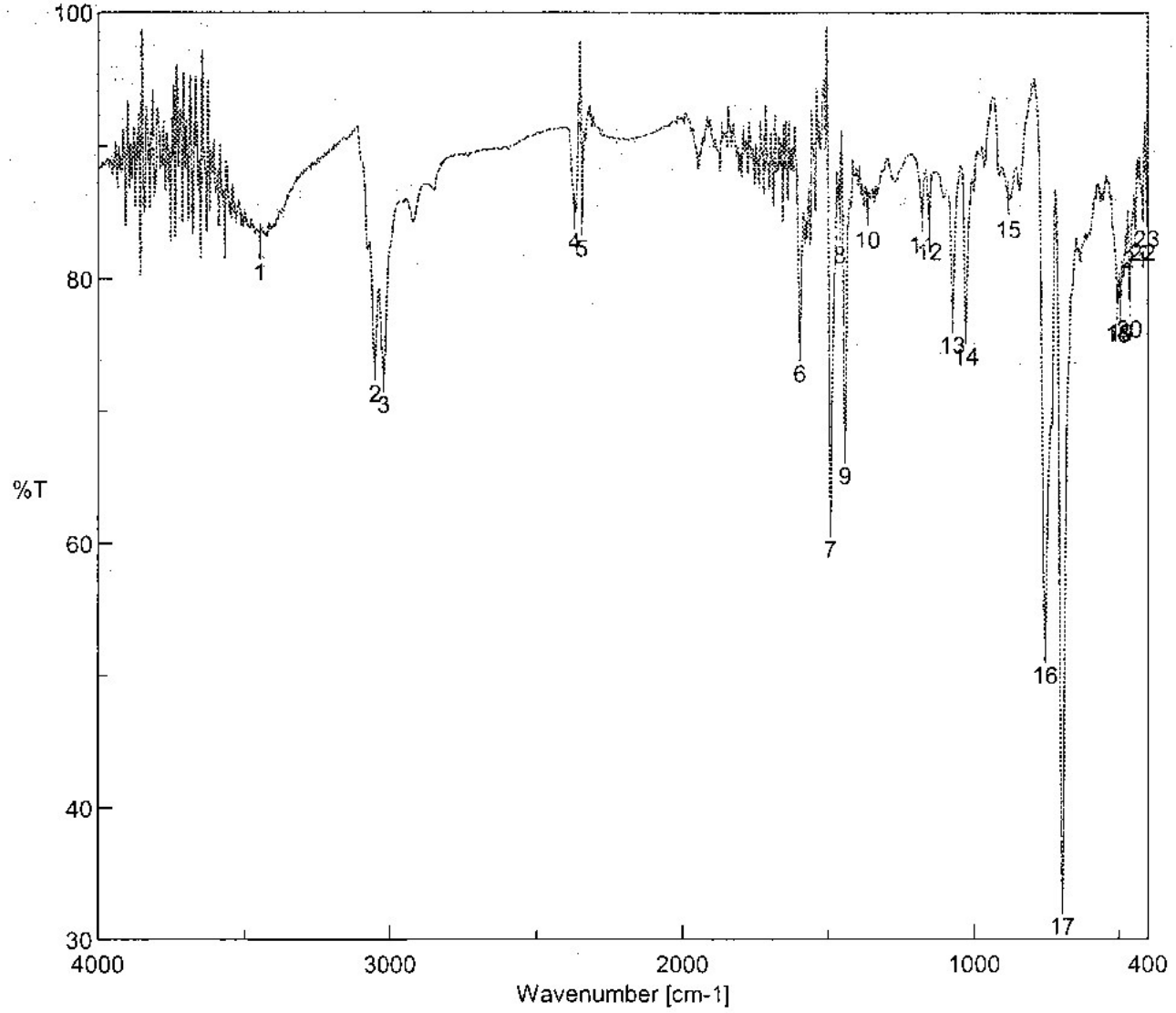

Fig. S2 IR spectrum of poly(**1a**).

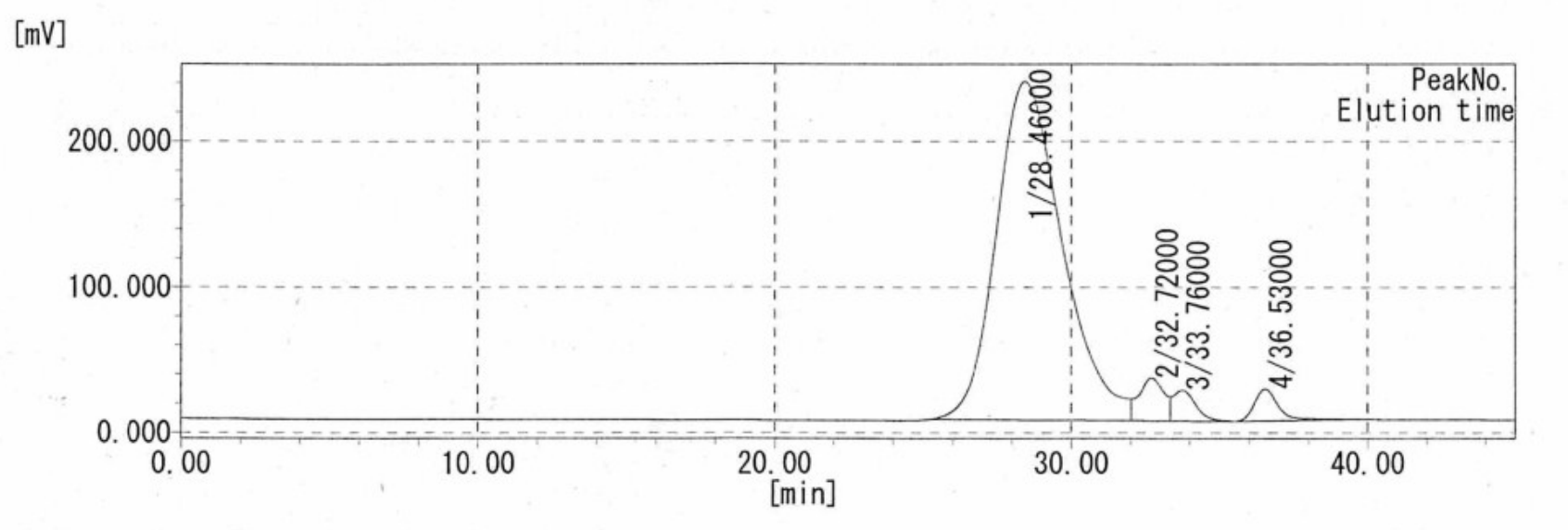

Fig. S3 SEC curve of poly(**1a**) (Sample: Table 1, run 1).

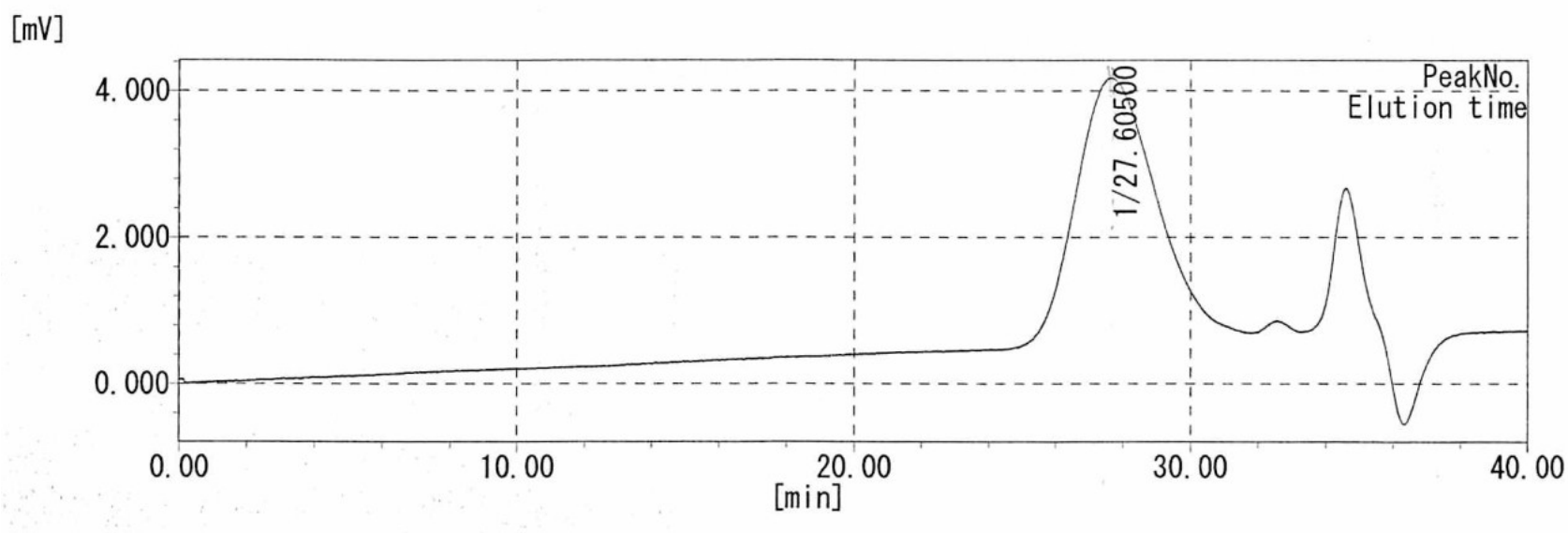

Fig. S4 SEC curve of poly(**1a**) (Sample: Table 1, run 2).

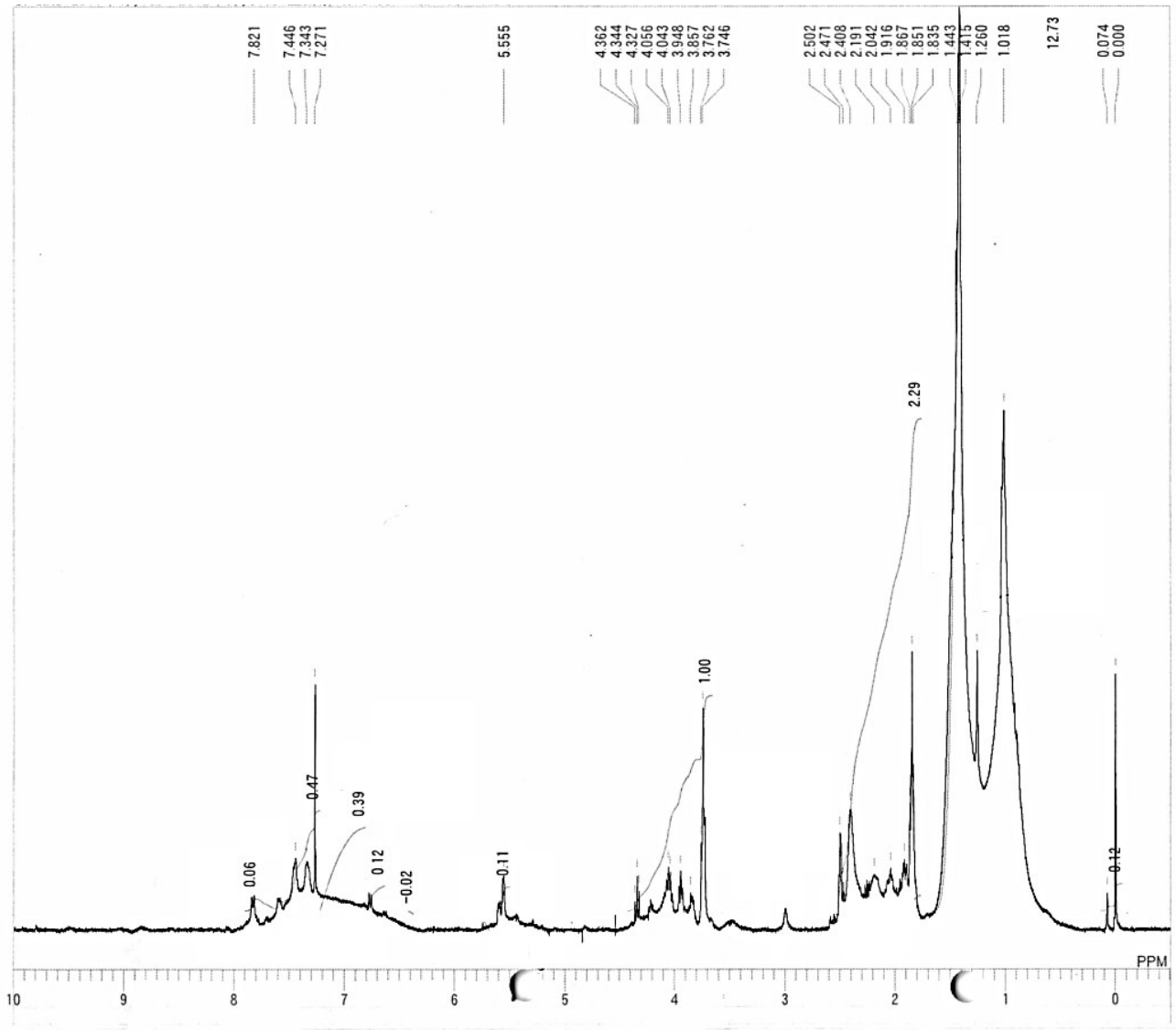

Fig. S5 ^{1}H NMR (400 MHz) spectrum of poly(**1b**) measured in $CDCl_3$.

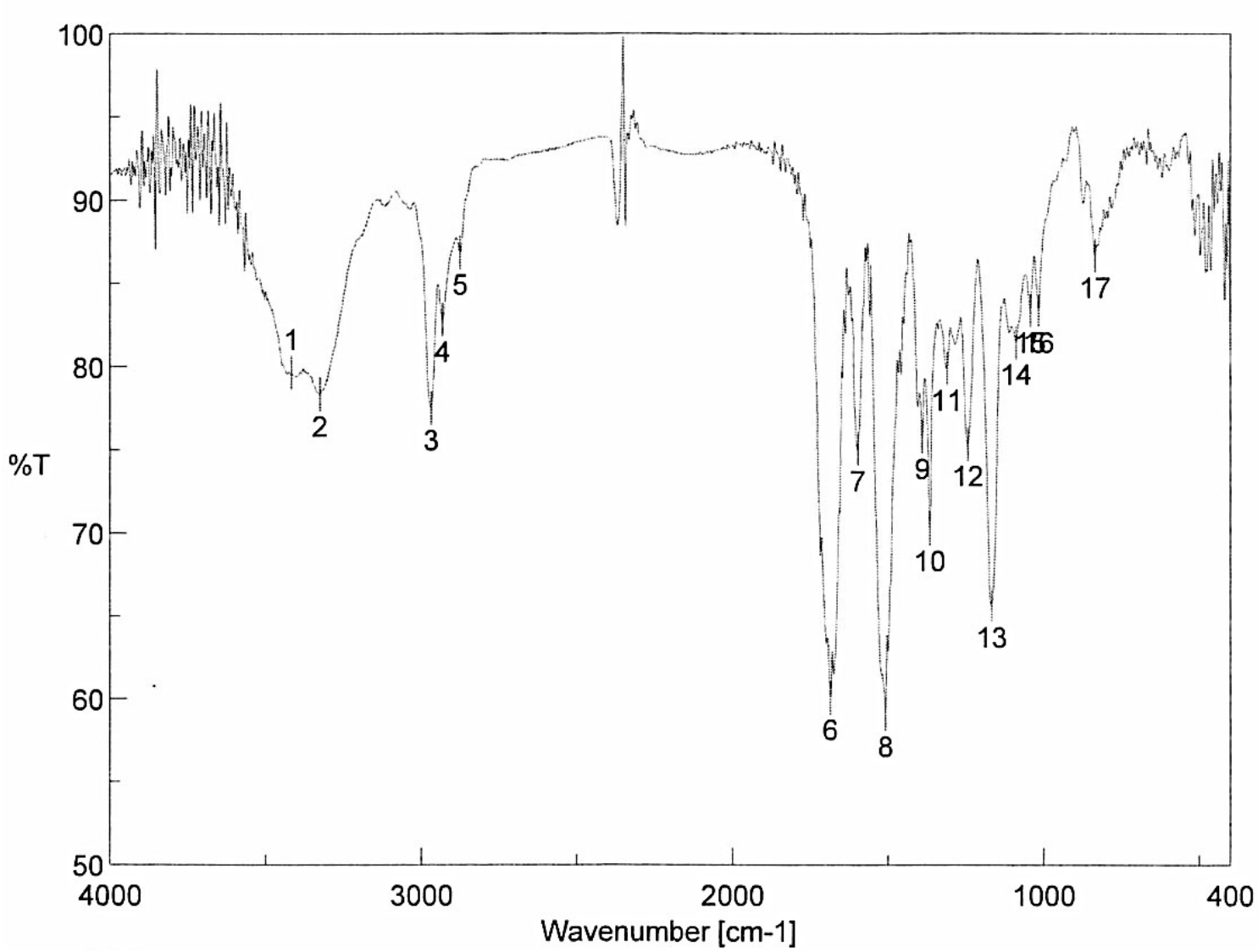

Fig. S6 IR spectrum of poly(**1b**).

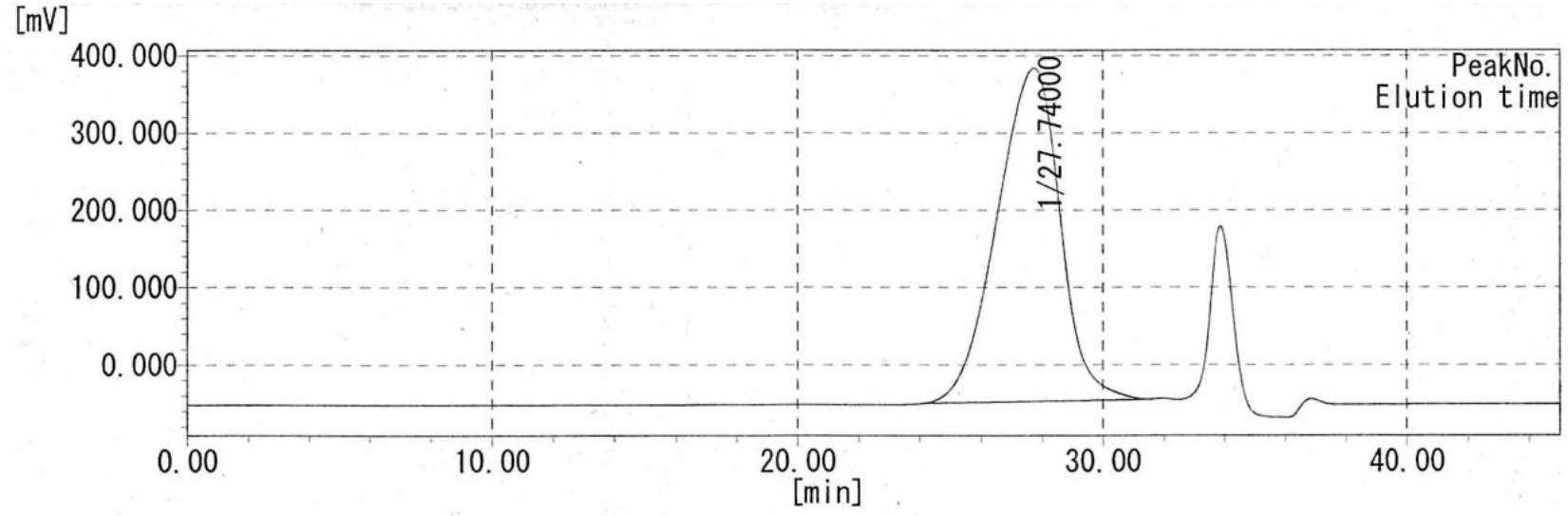

Fig. S7 SEC curve of poly(**1b**) (Sample: Table 1, run 5).

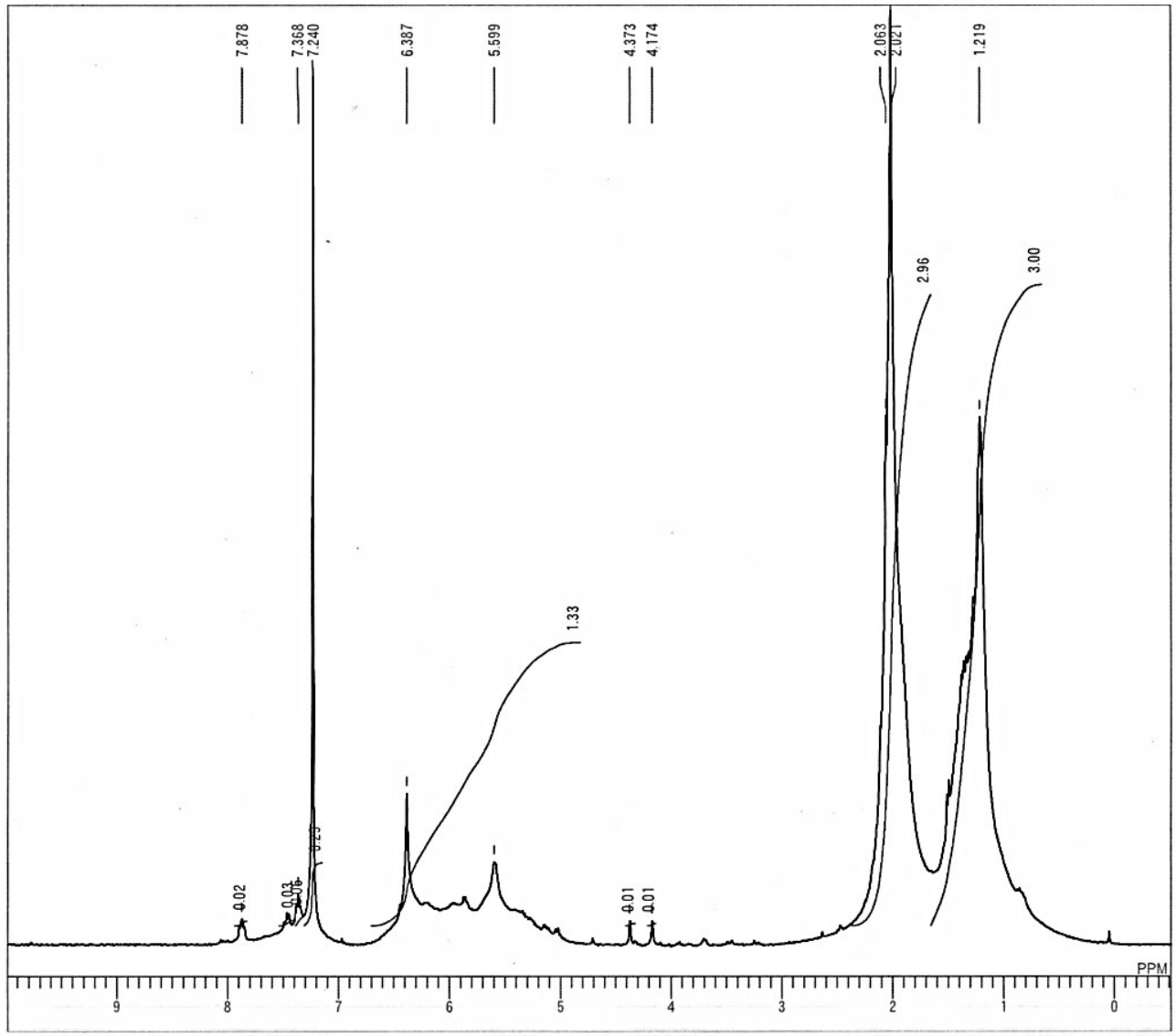

Fig. S8 ^{1}H NMR (400 MHz) spectrum of poly(**1c**) measured in $CDCl_3$.

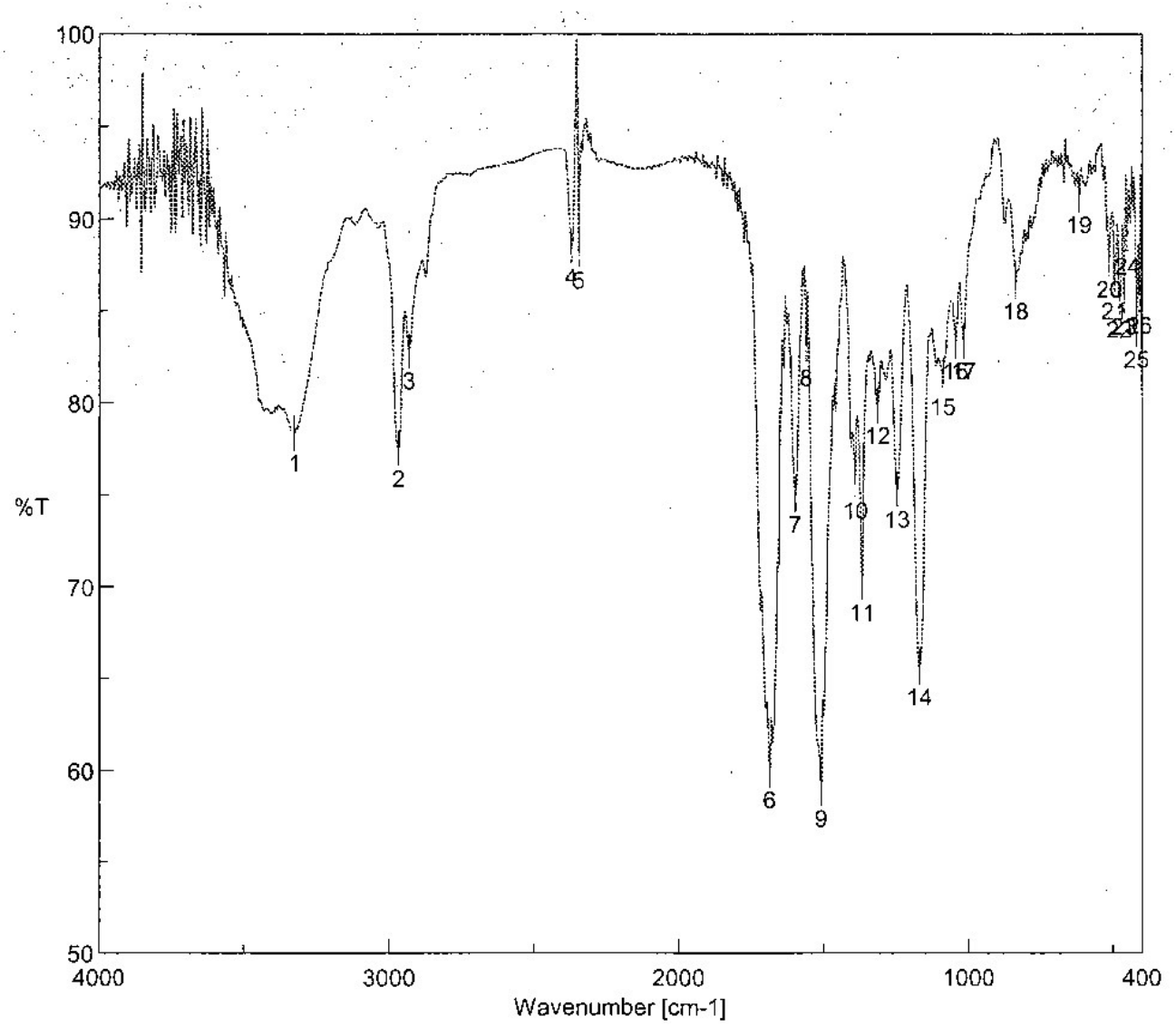

Fig. S9 IR spectrum of poly(**1c**).

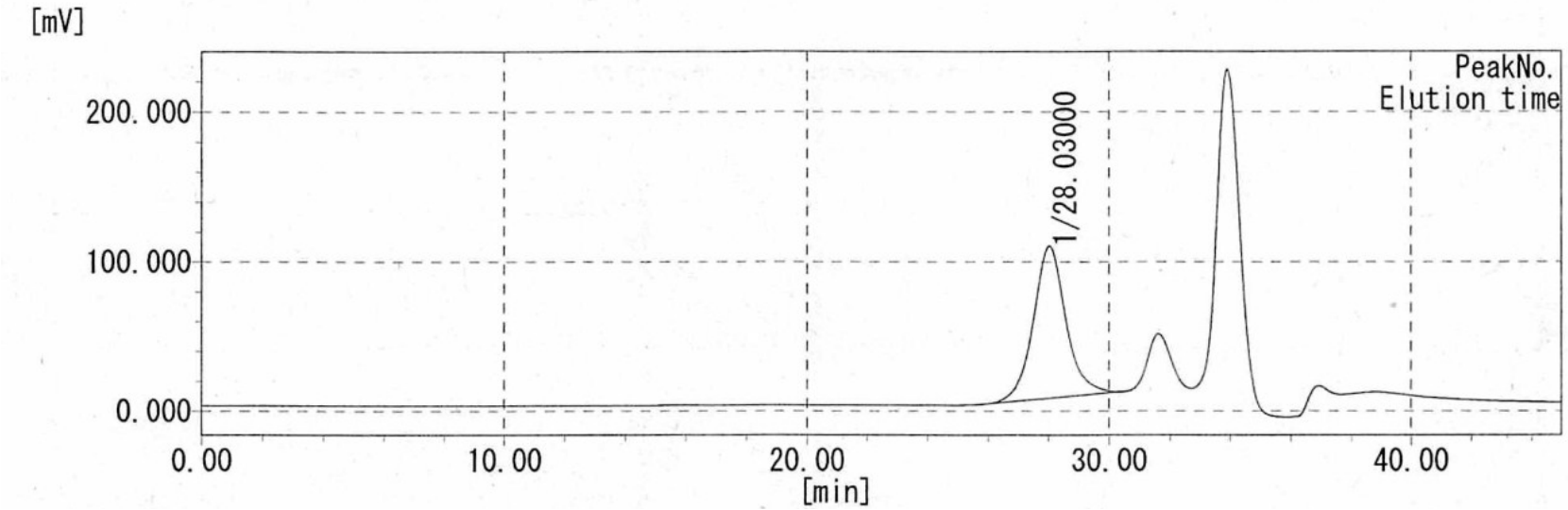

Fig. S10 SEC curve of poly(**1c**) (Sample: Table 1, run 7).

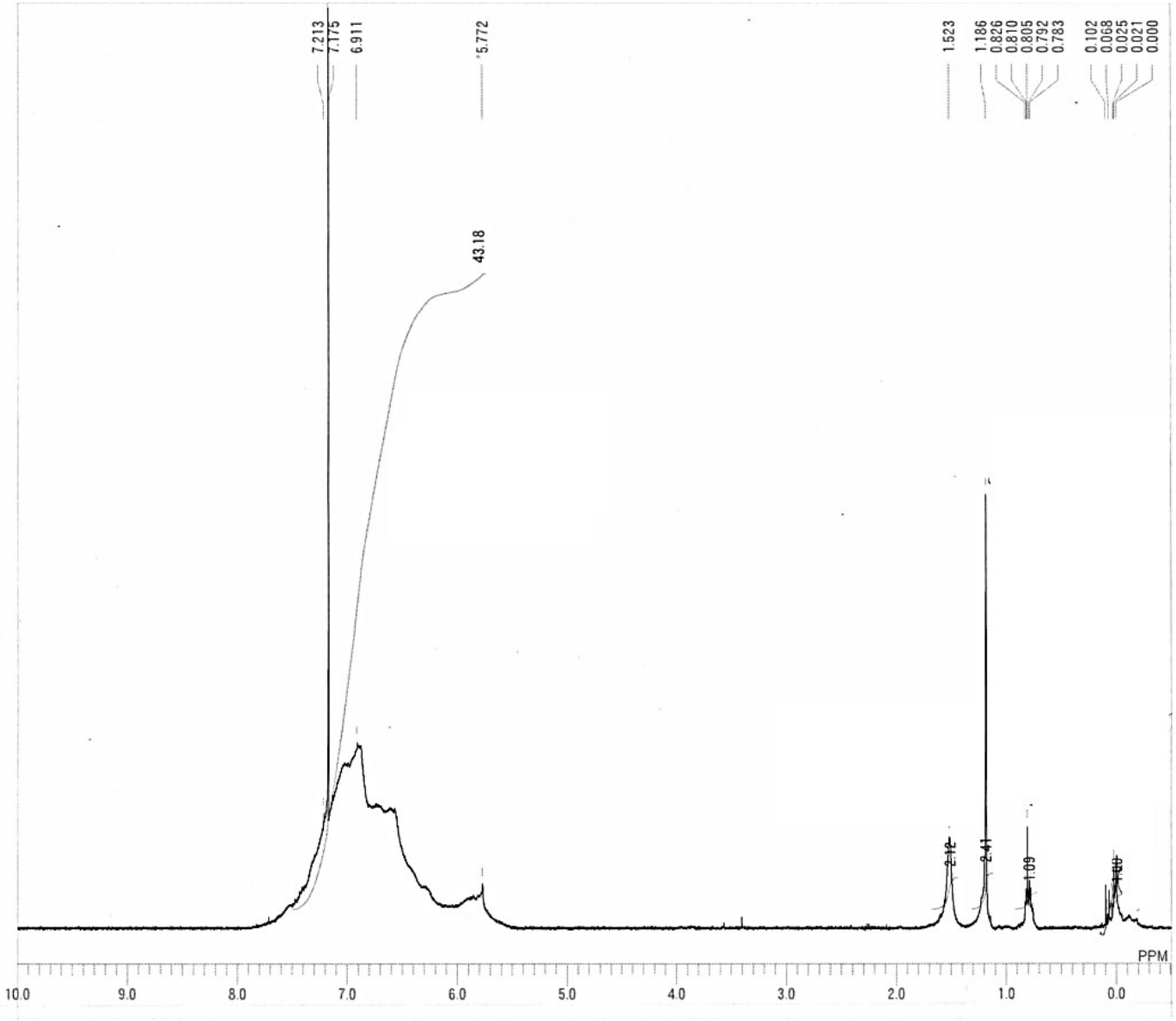

Fig. S11 ^{1}H NMR (400 MHz) spectrum of Si coupled poly(**1a**) measured in $CDCl_3$.

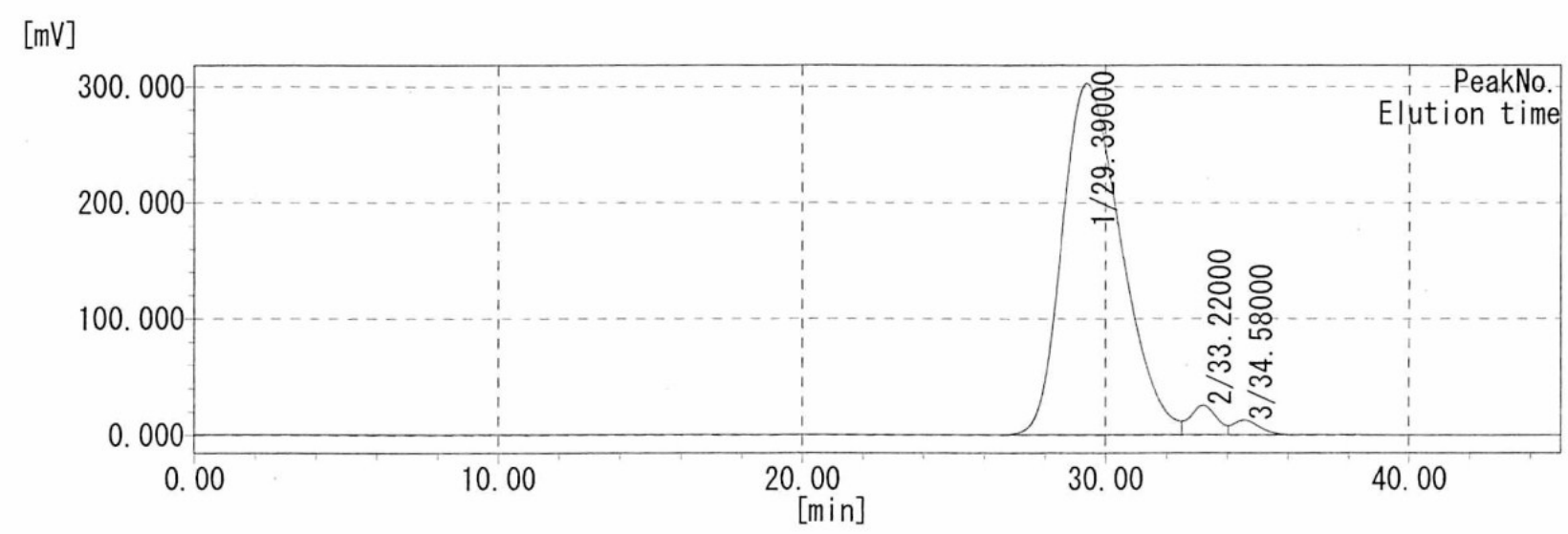

Fig. S12 SEC curve of poly(**1a**) before Si coupling.

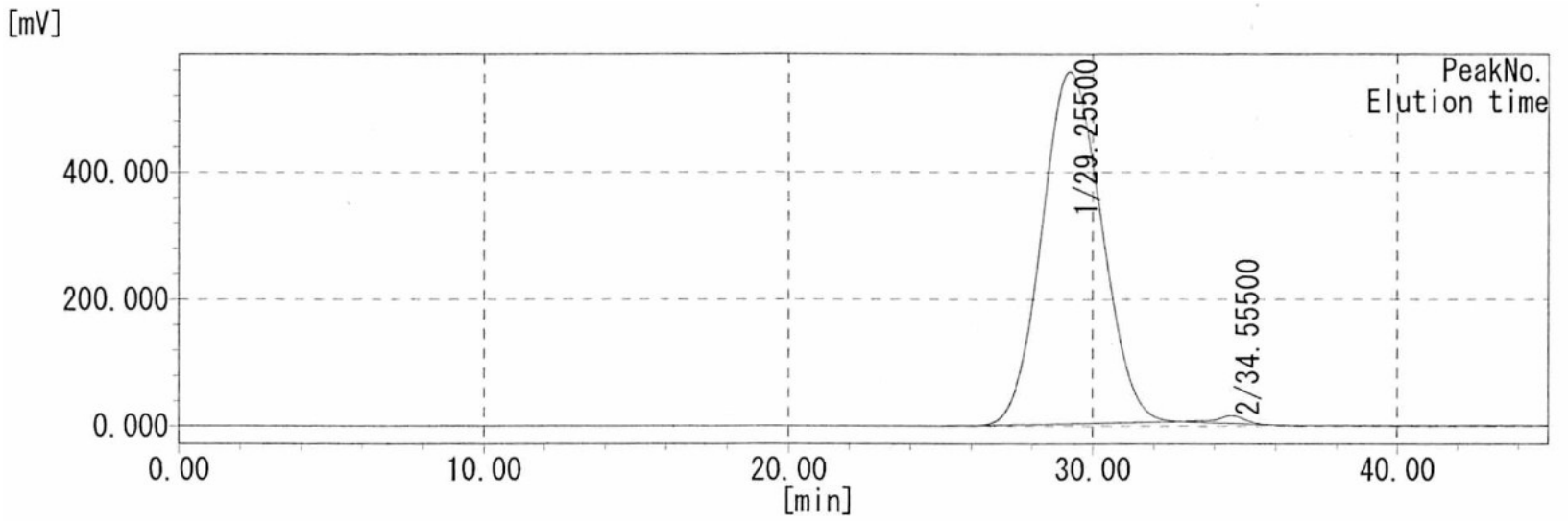

Fig. S13 SEC curve of poly(**1a**) after Si coupling.

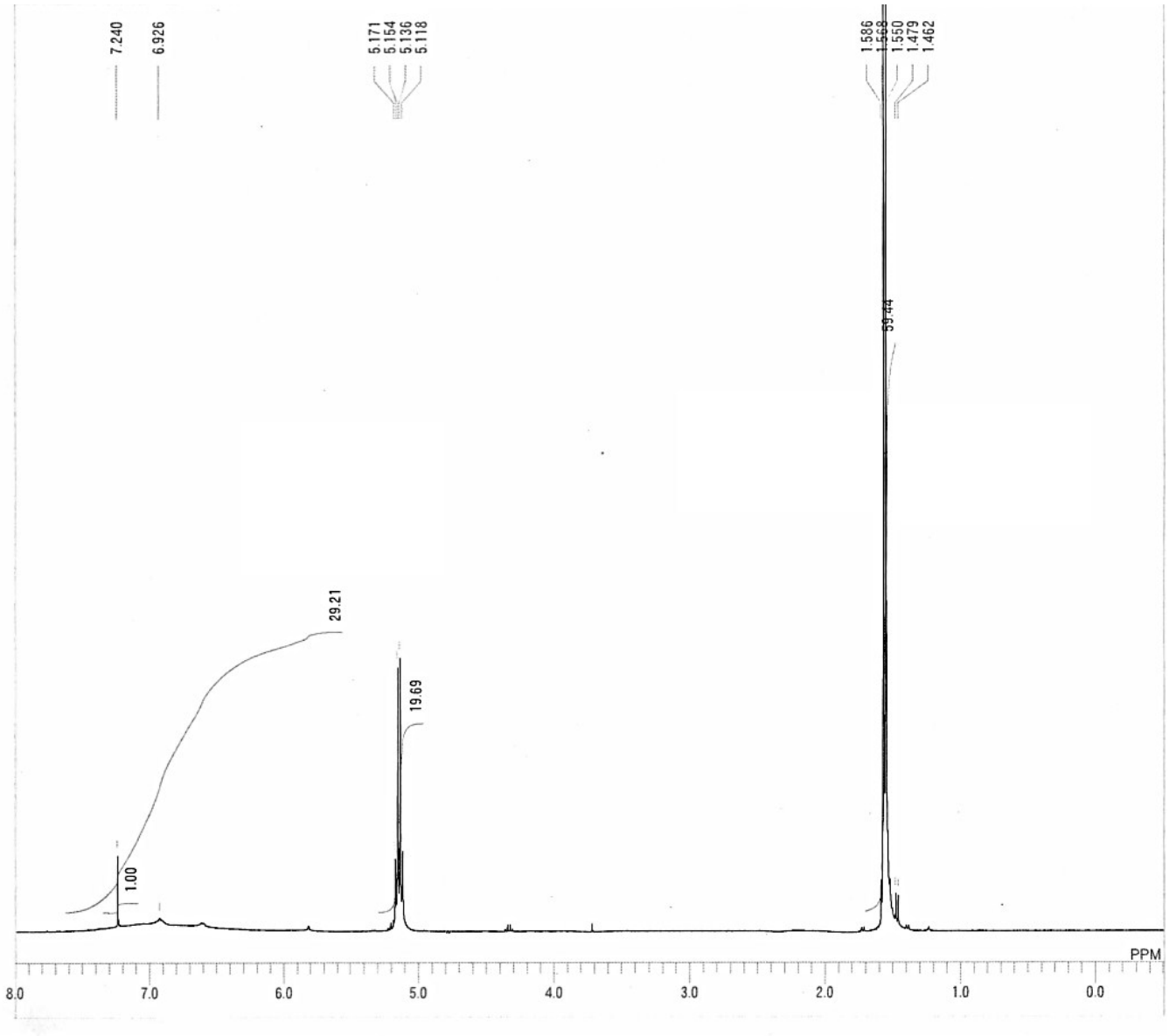

Fig. S14 ^{1}H NMR (400 MHz) of poly(**1a**)-*block*-poly(**2a**) measured in $CDCl_3$.

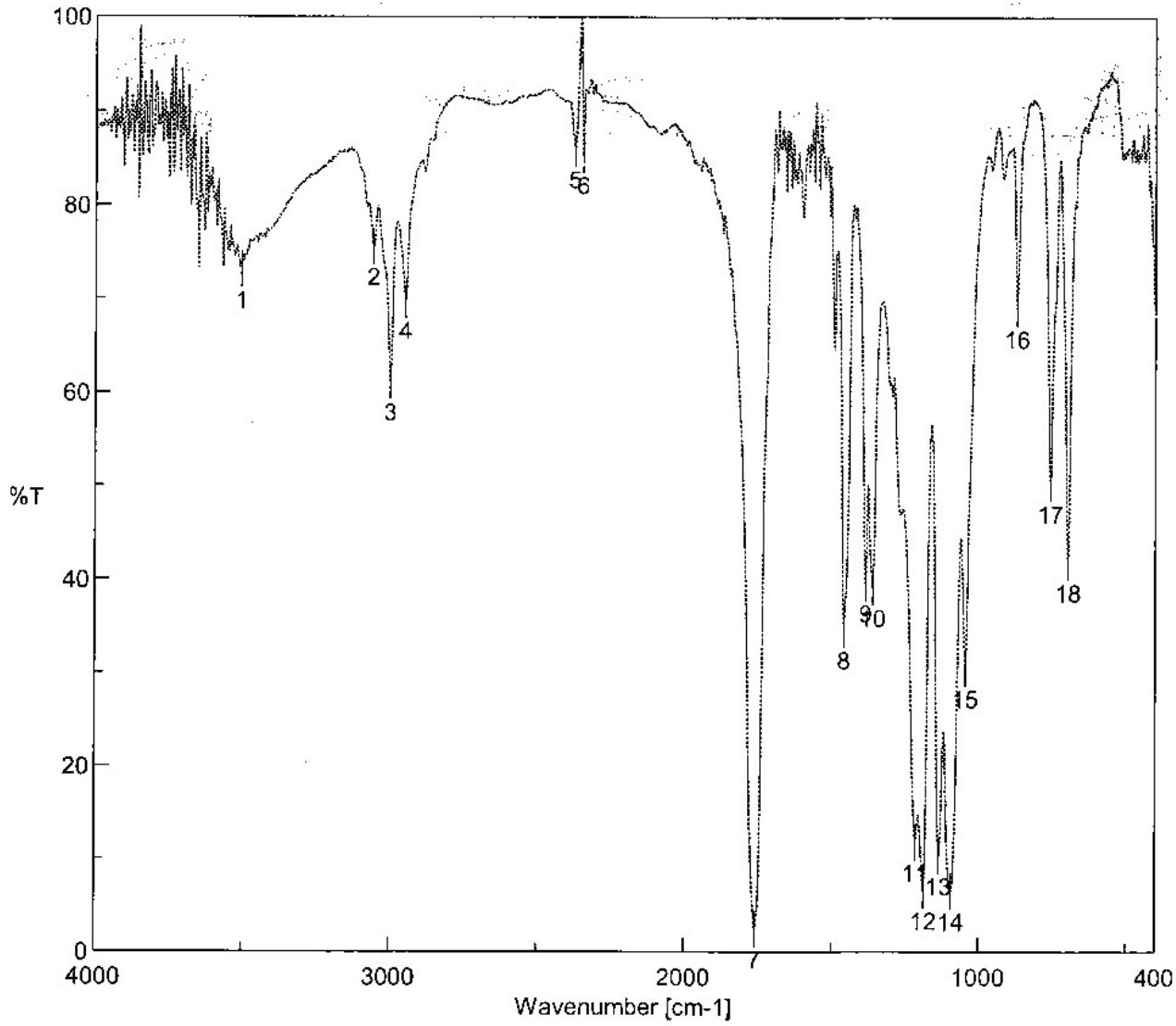

Fig. S15 IR spectrum of poly(**1a**)-*block*-poly(**2a**).

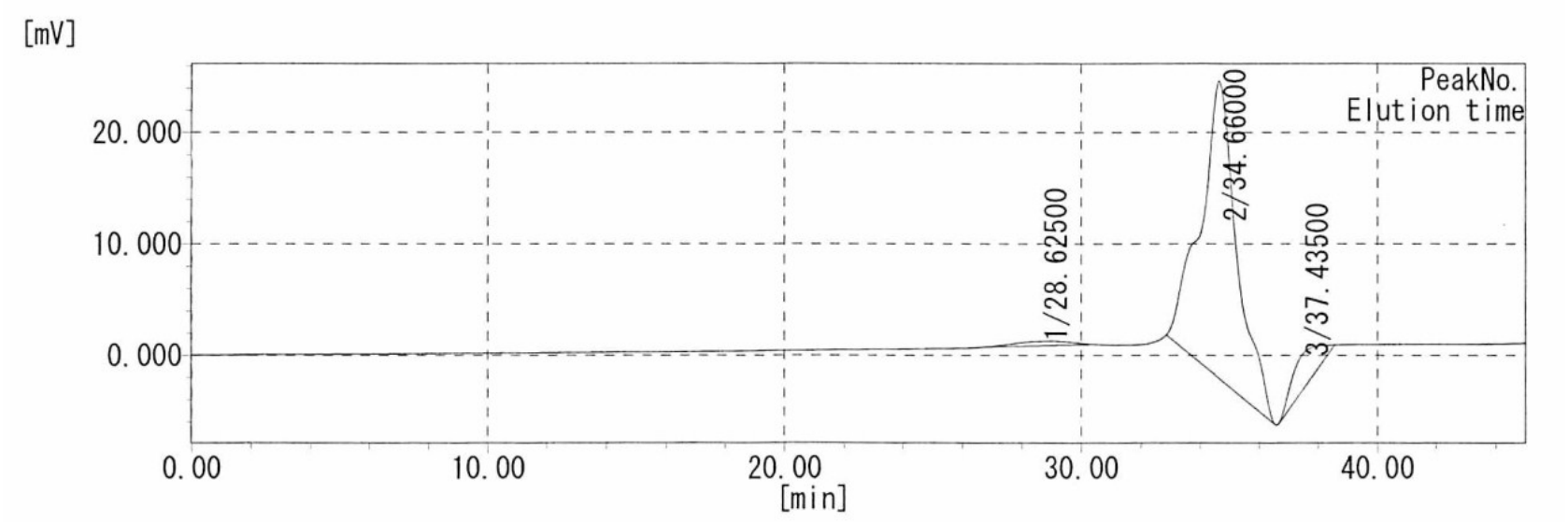

Fig. S16 SEC curve of poly(**1a**)-*block*-poly(**2a**).

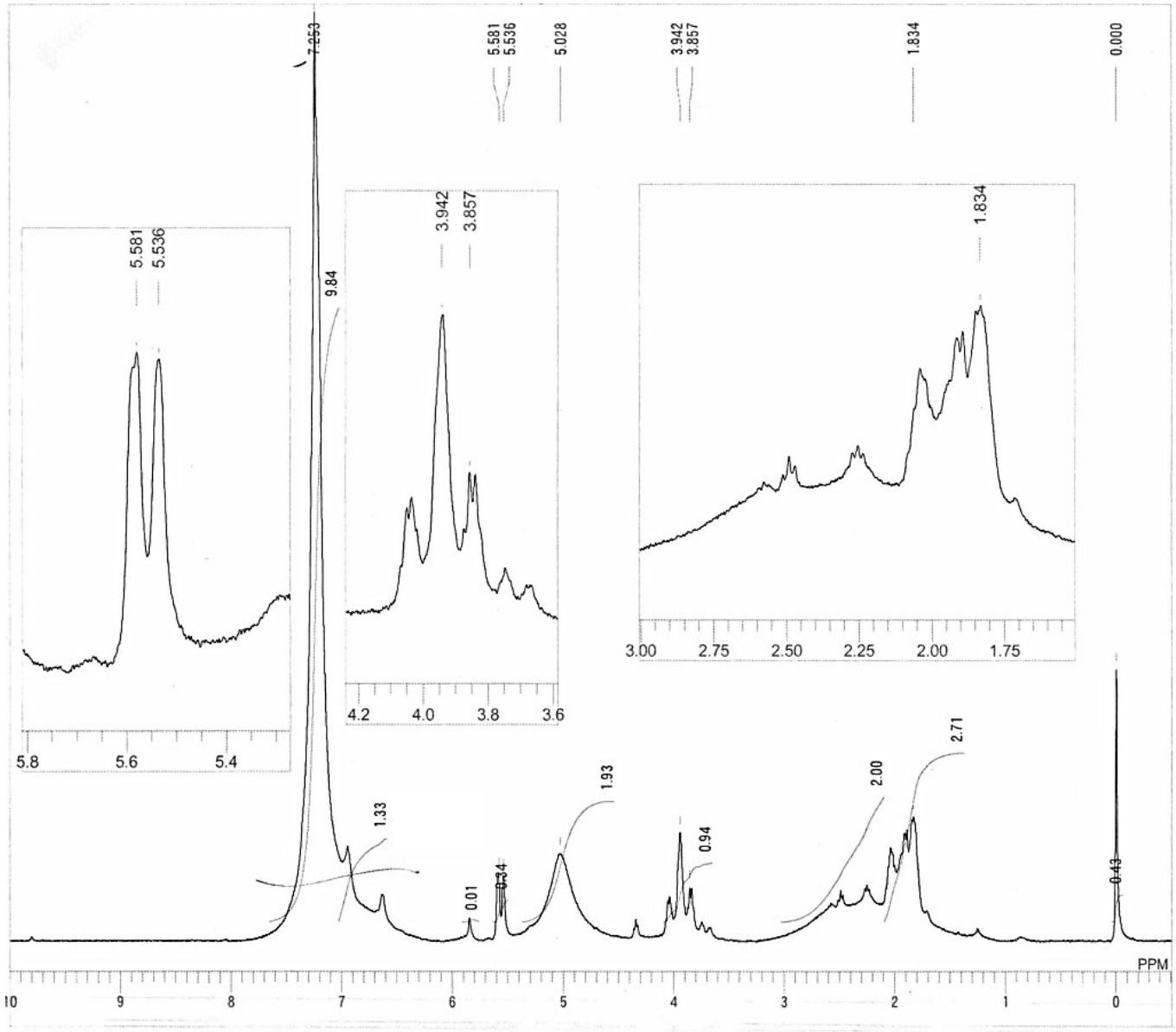

Fig. S17 ^{1}H NMR (400 MHz) spectrum of poly(**1a**)-*block*-poly(**2b**) measured in $CDCl_3$.

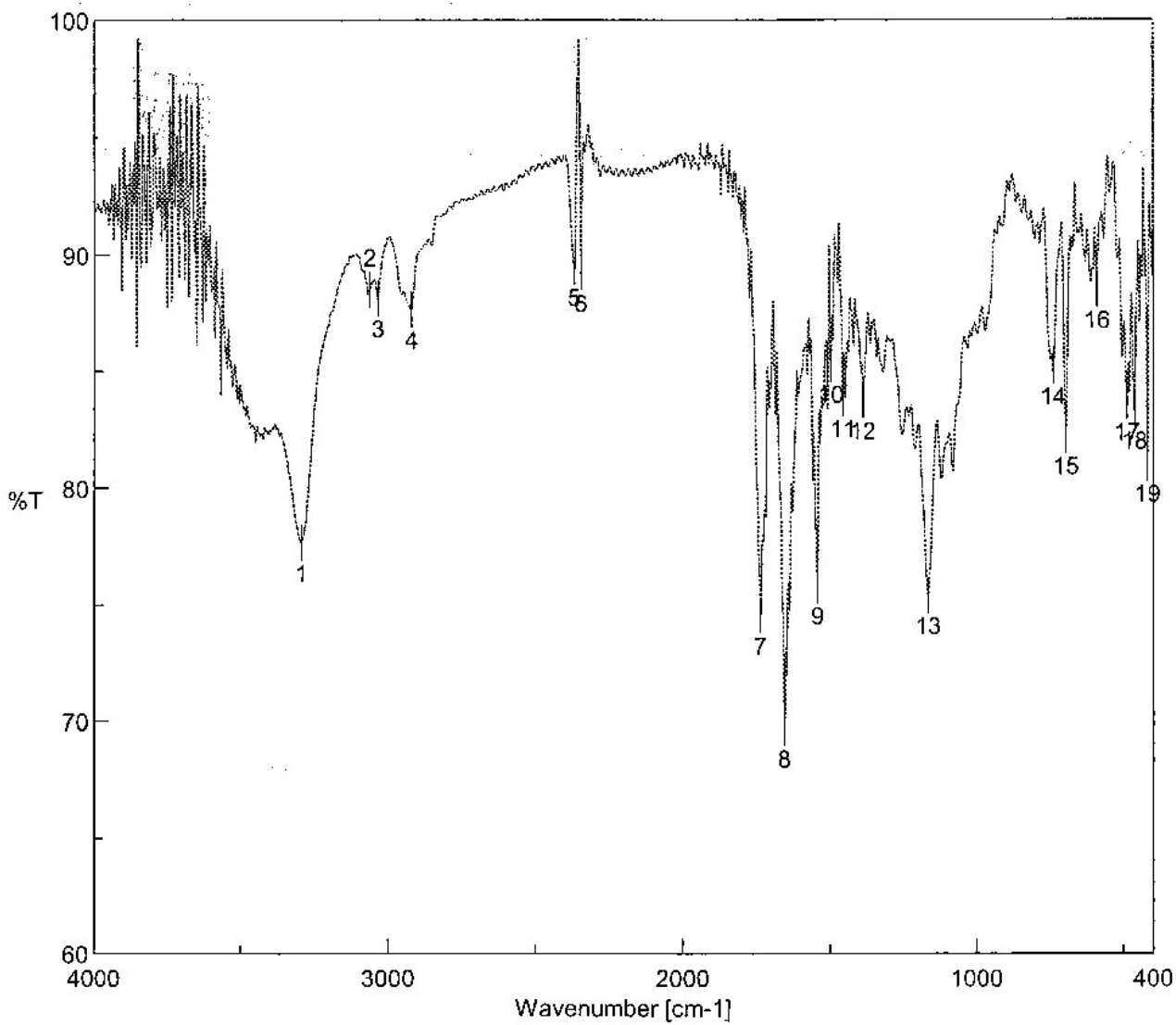

Fig. S18 IR spectrum of poly(**1a**)-*block*-poly(**2b**).

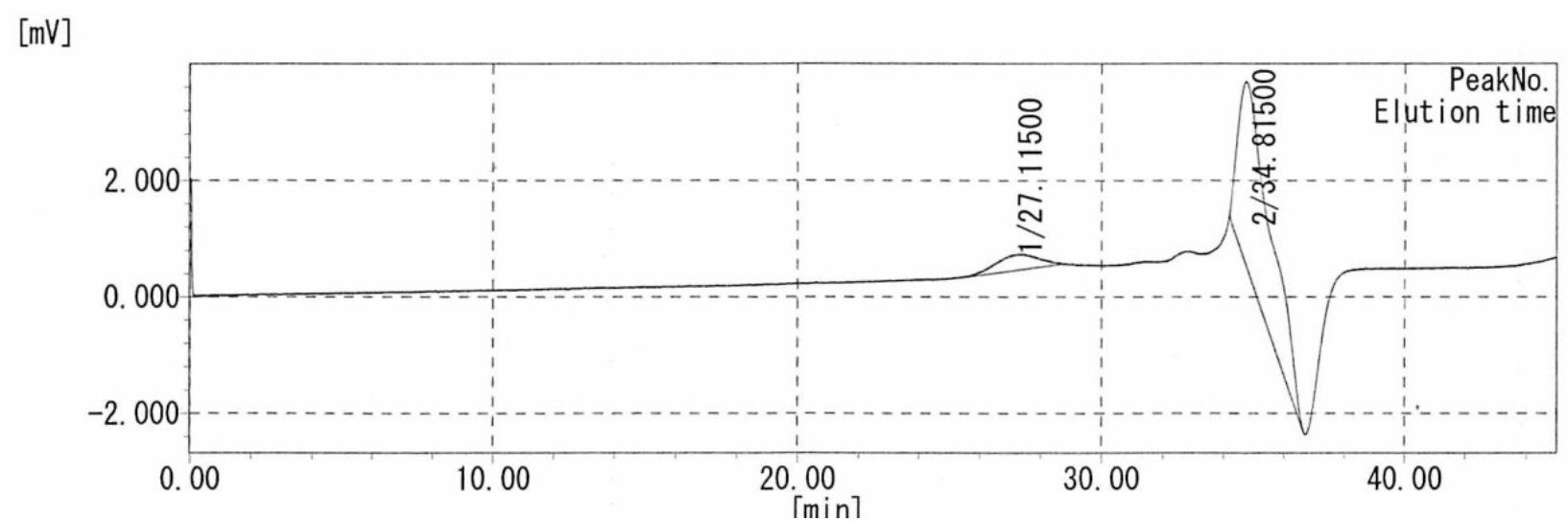

Fig. S19 SEC curve of poly(**1a**)-*block*-poly(**2b**).

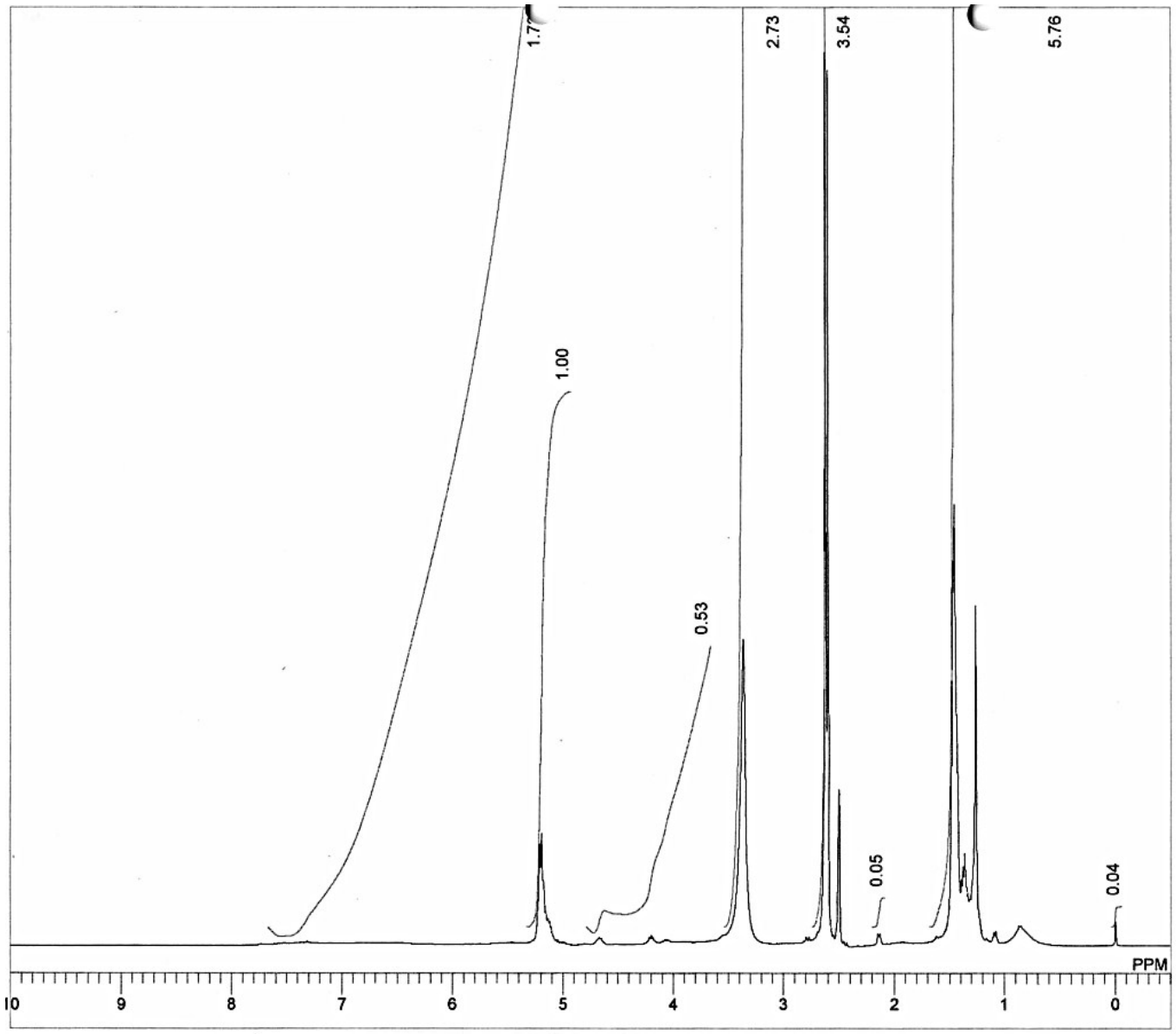

Fig. S20 ^{1}H NMR (400 MHz) spectrum of poly(**1b**)-*block*-poly(**2a**) measured in $CDCl_3$.

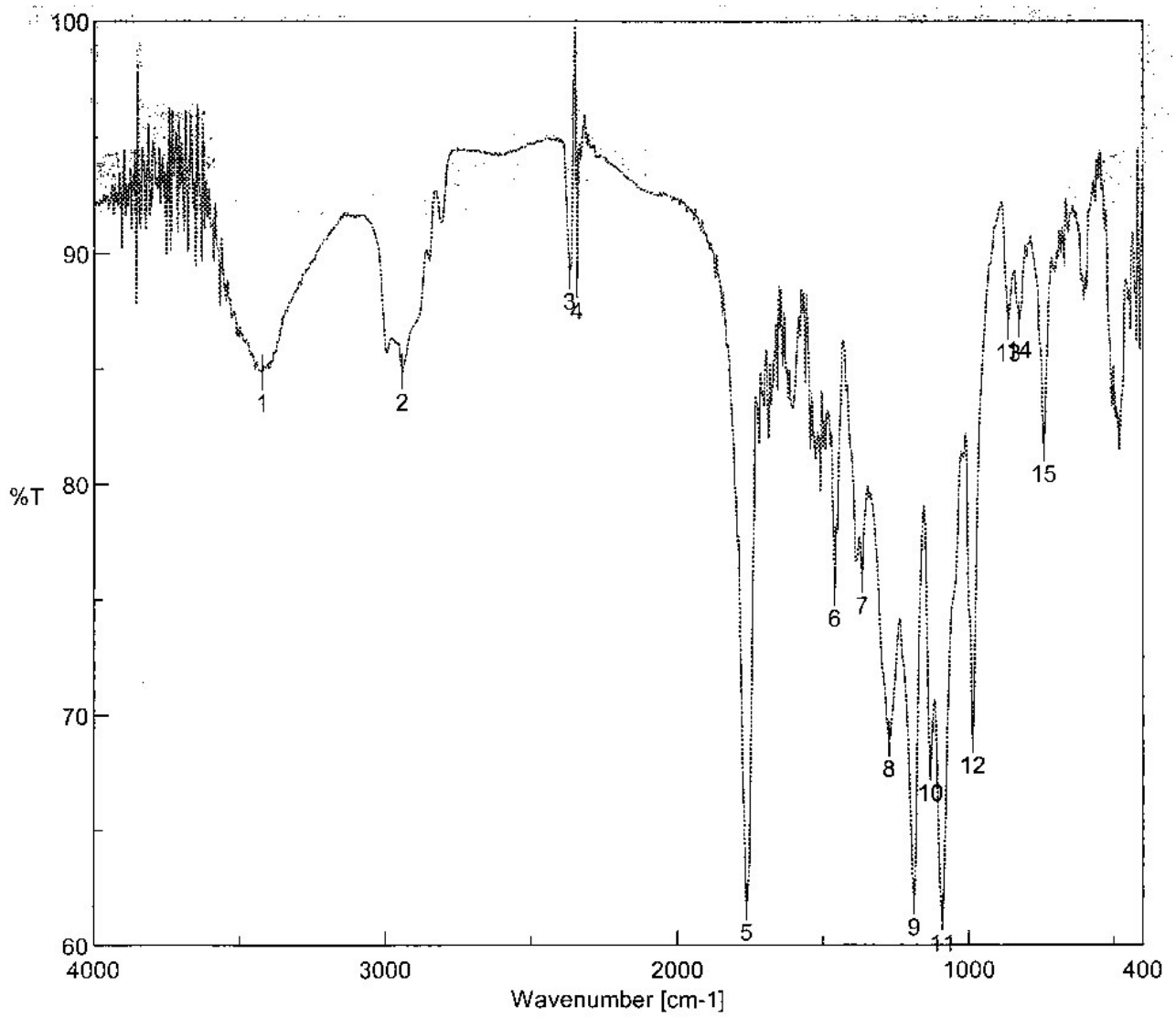

Fig. S21 IR spectrum of poly(**1b**)-*block*-poly(**2a**).

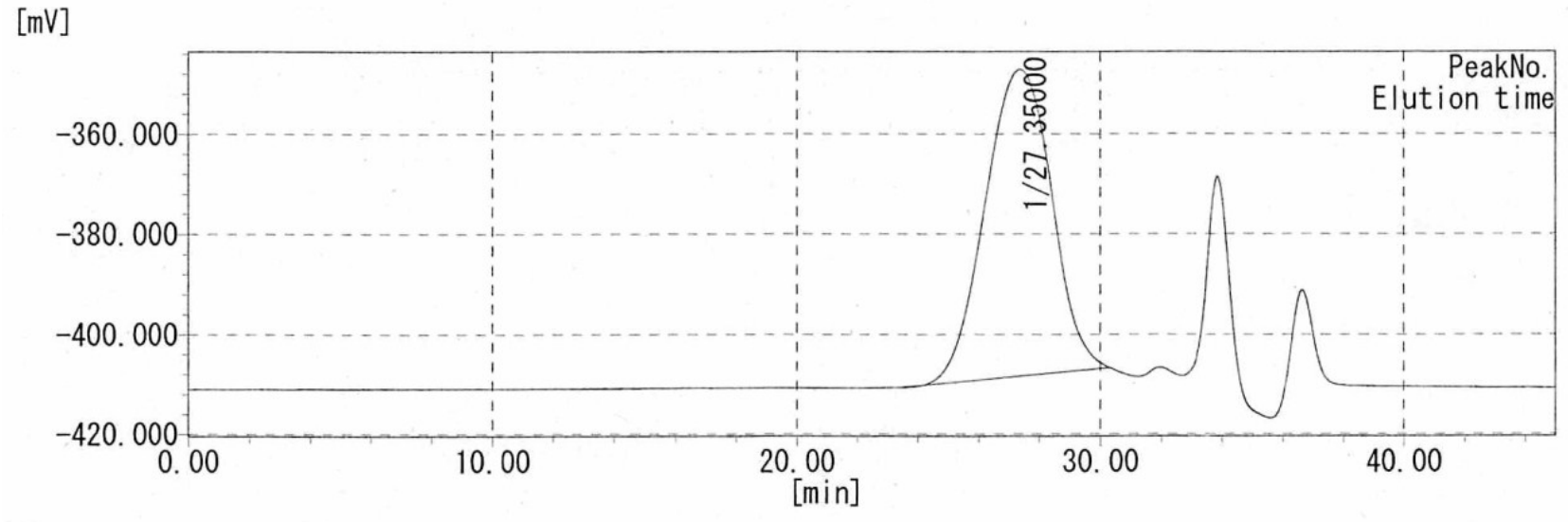

Fig. S22 SEC curve of poly(**1b**)-*block*-poly(**2a**).

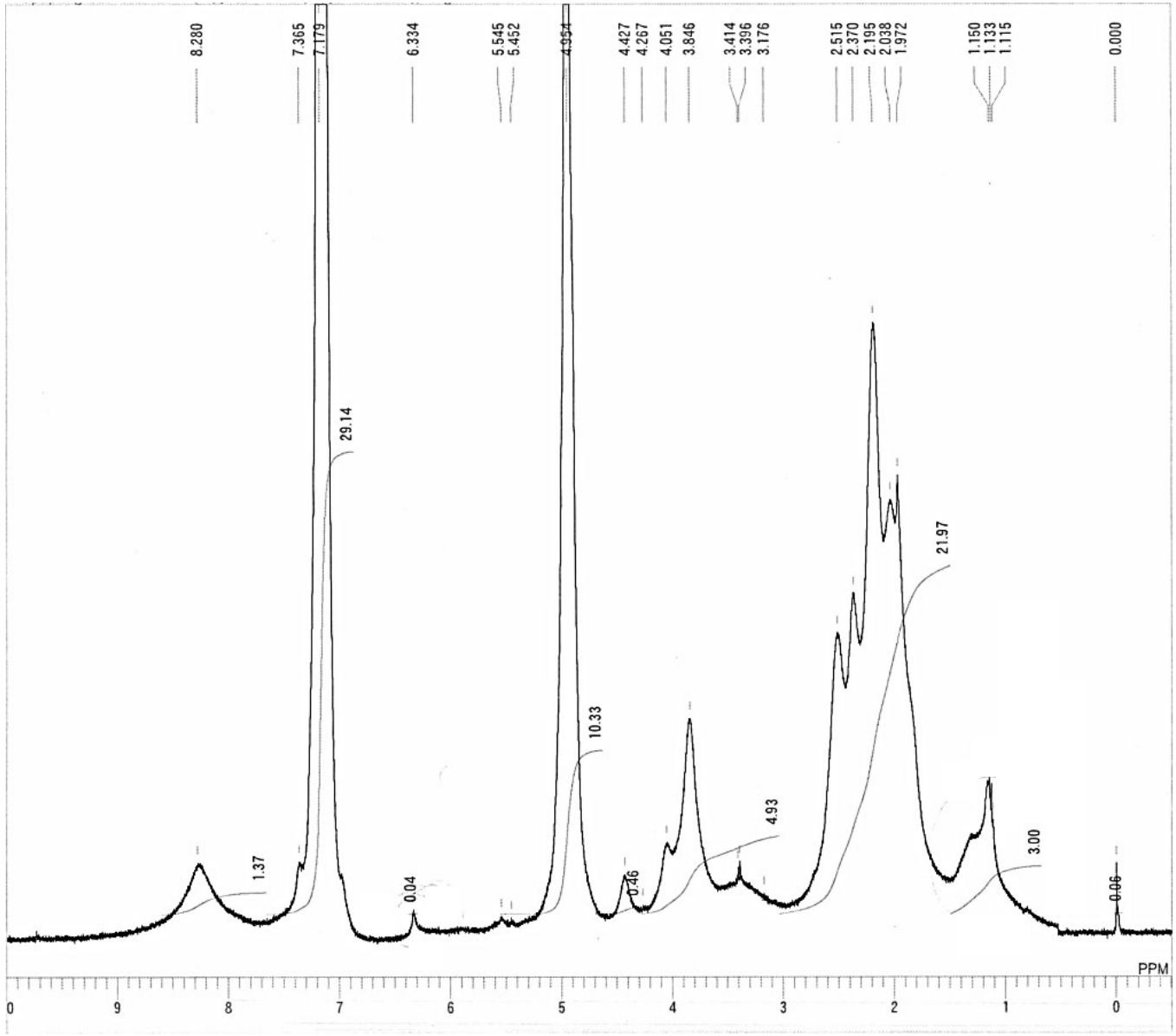

Fig. S23 ^{1}H NMR (400 MHz) spectrum of poly(**1c**)-*block*-poly(**2b**) measured in $CDCl_3$.

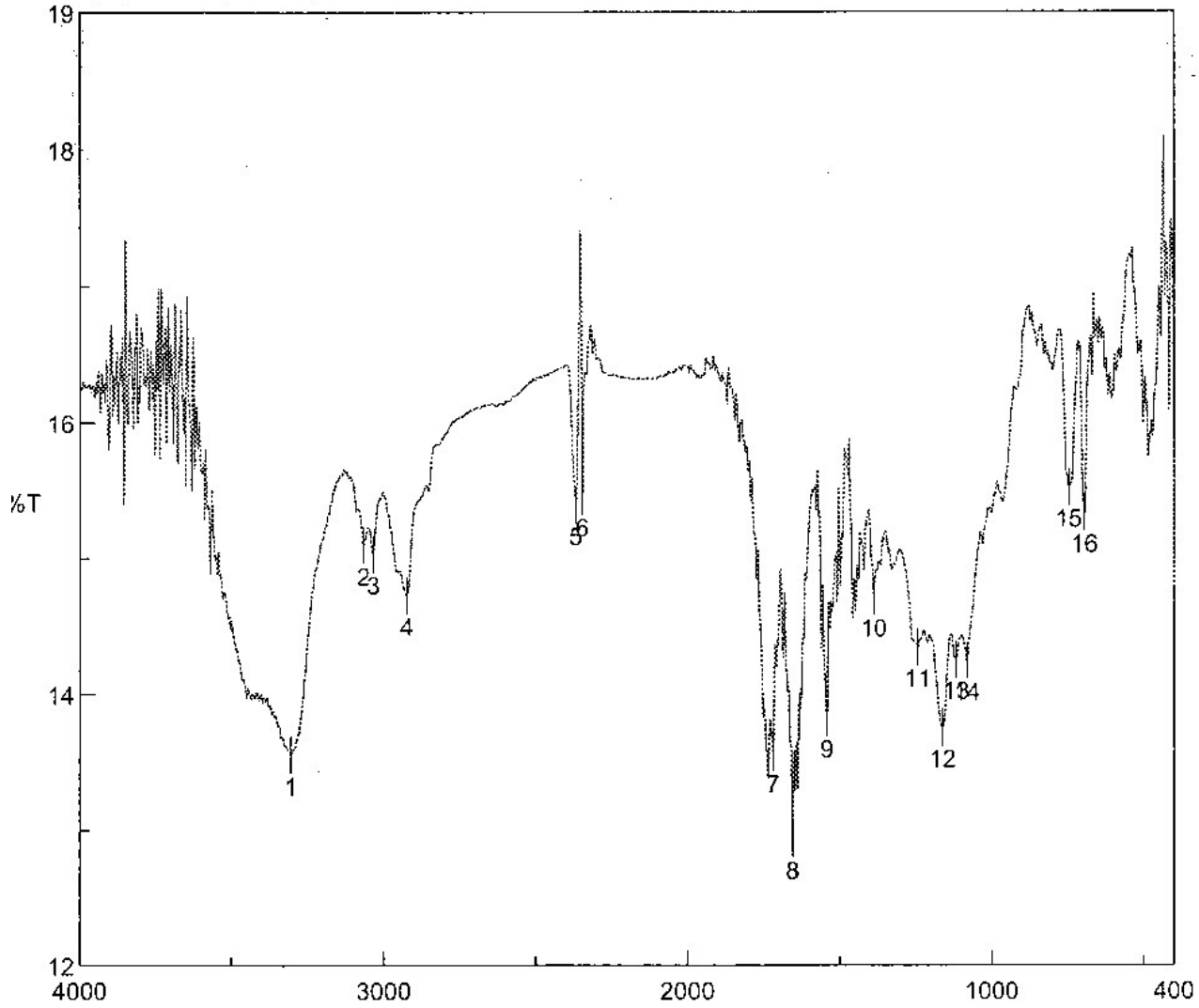

Fig. S24 IR spectrum of poly(**1c**)-*block*-poly(**2b**).

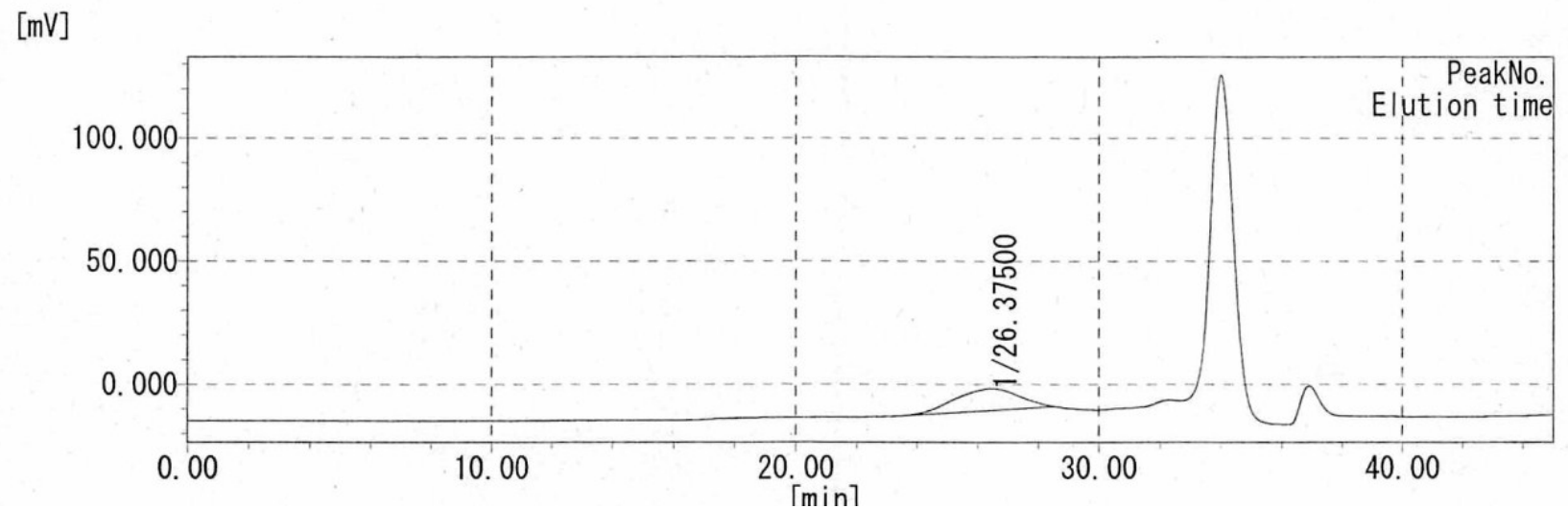

Fig. S25 SEC curve of poly(**1c**)-*block*-poly(**2b**).

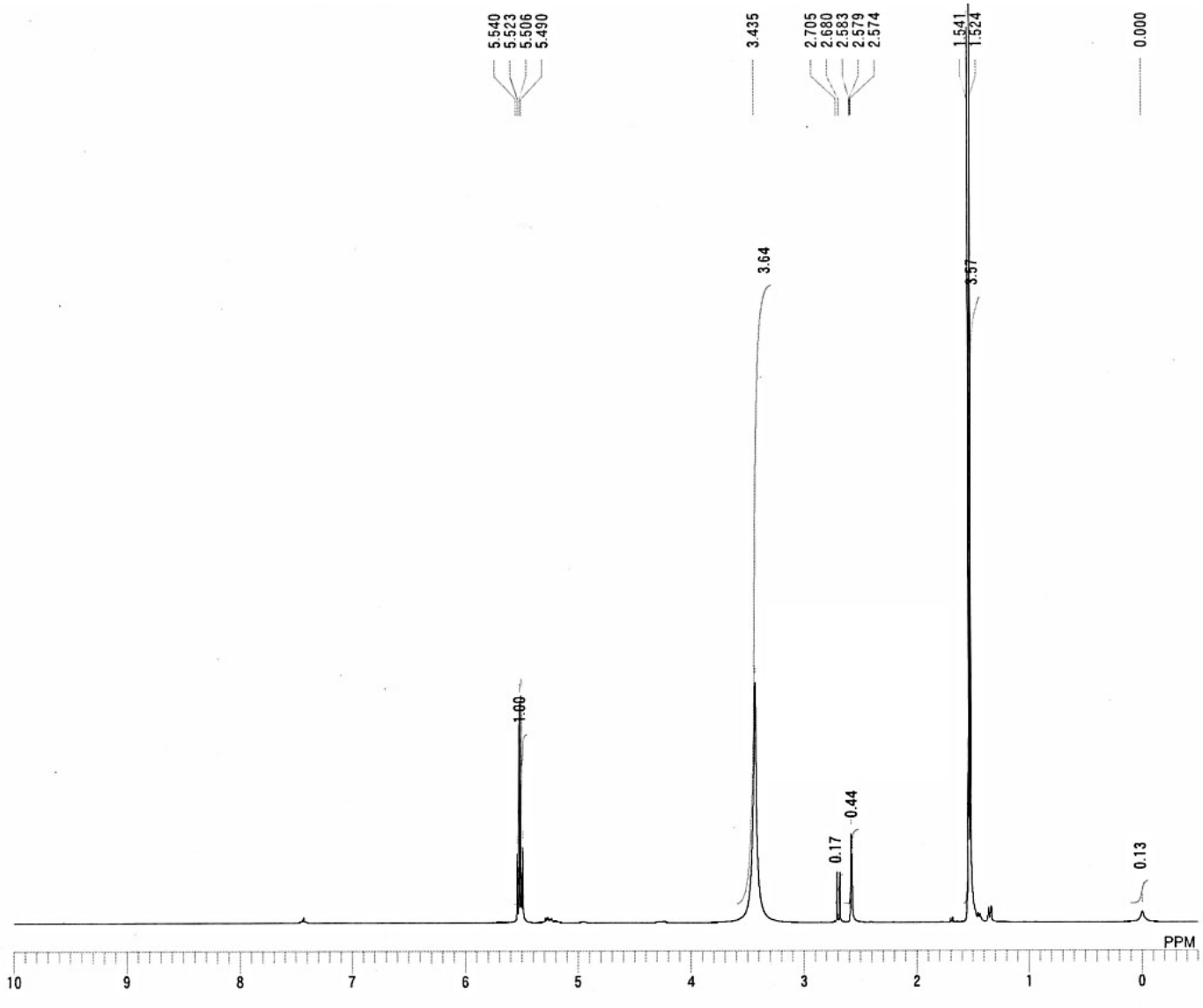

Fig. S26 ^{1}H NMR (400 MHz) spectrum of poly(**2a**) measured in $CDCl_3$.

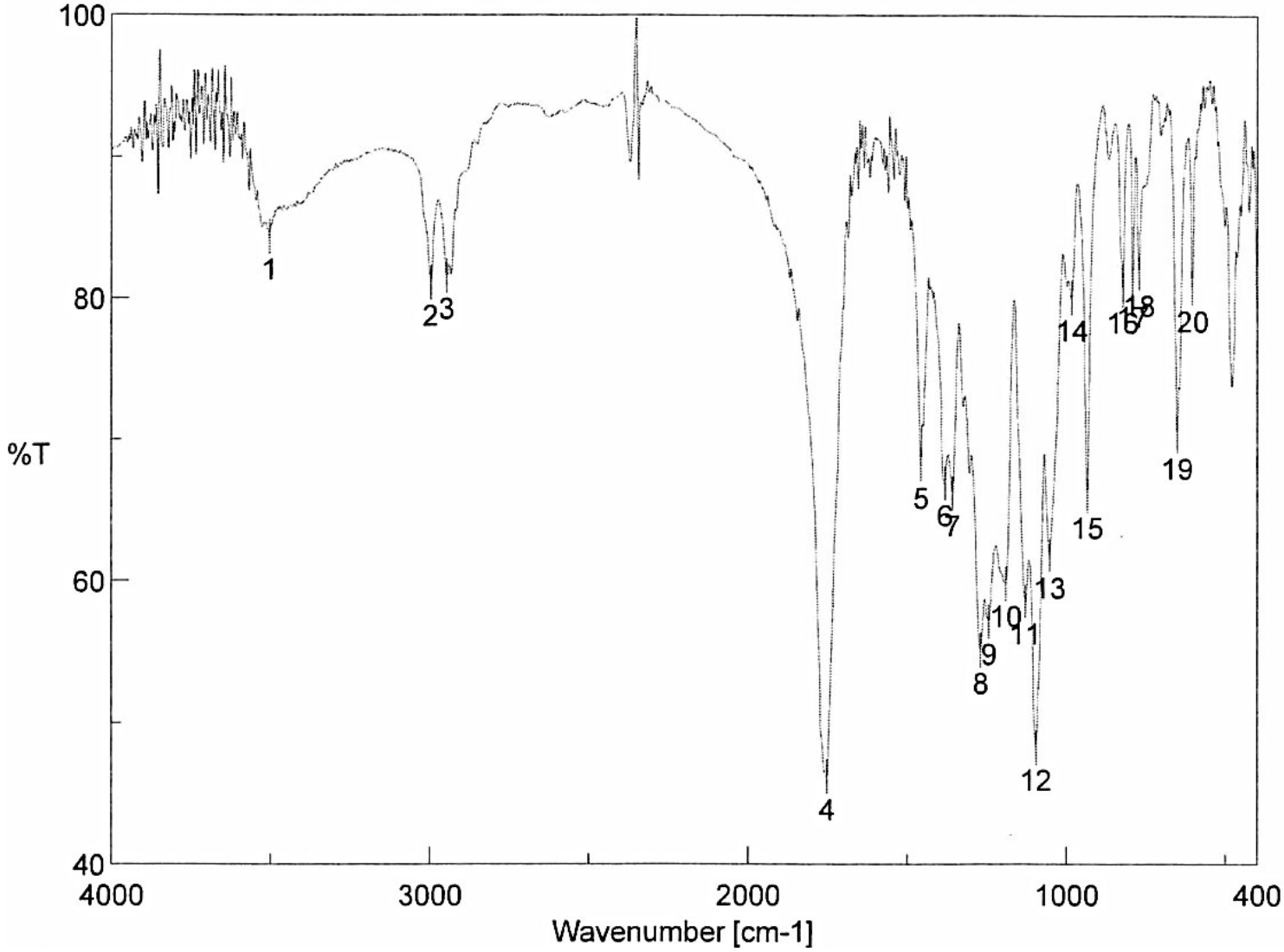

Fig. S27 IR spectrum of poly(**2a**).