

## Supporting Information

### **Metal-Free [2+2+1] Cycloaddition Polymerization of Alkynes, Nitriles, and Oxygen Atoms to Functional Polyoxazoles**

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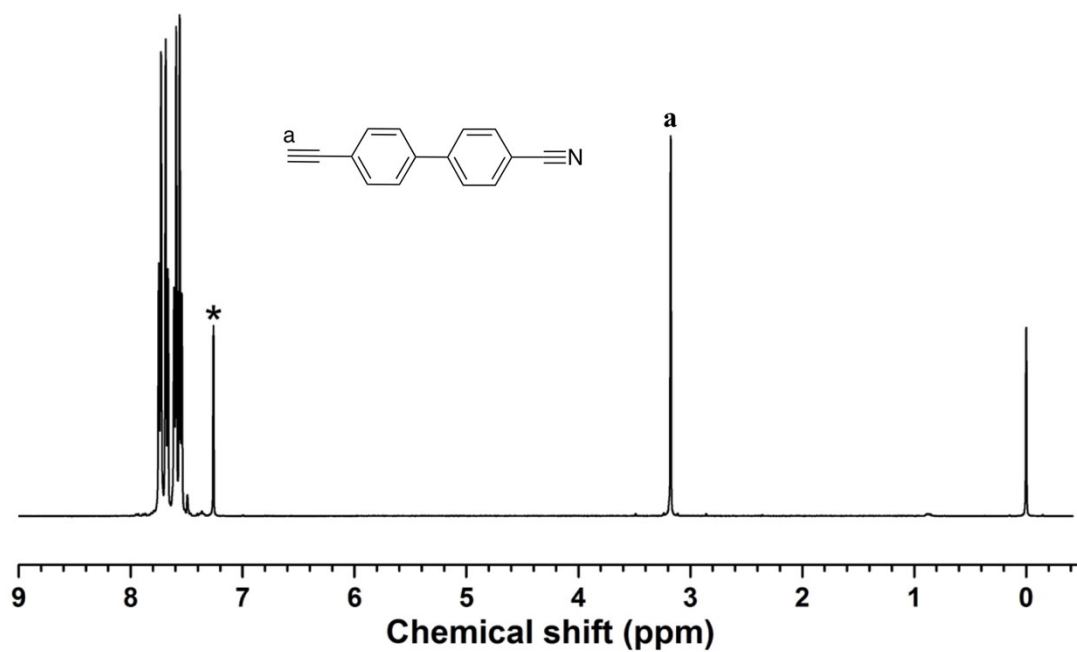


Figure S1 The  $^1\text{H}$ -NMR spectrum of 4-Cyano-4'-ethynylbiphenyl in  $\text{CDCl}_3$ .

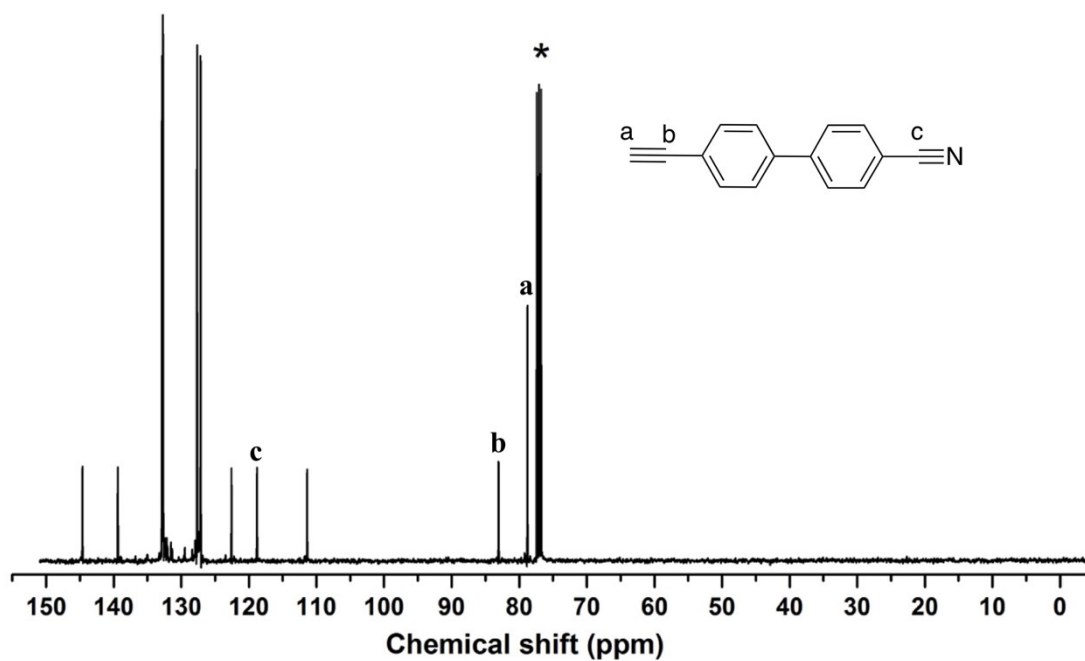
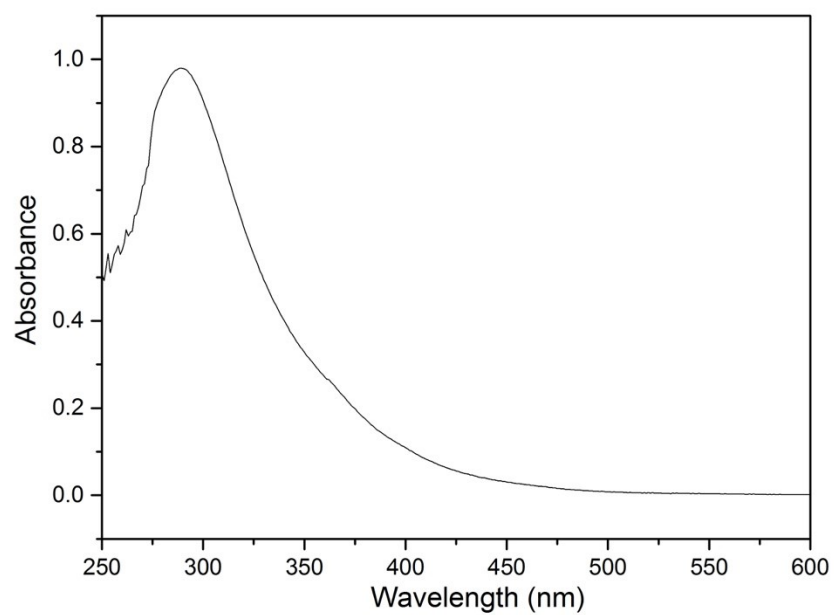
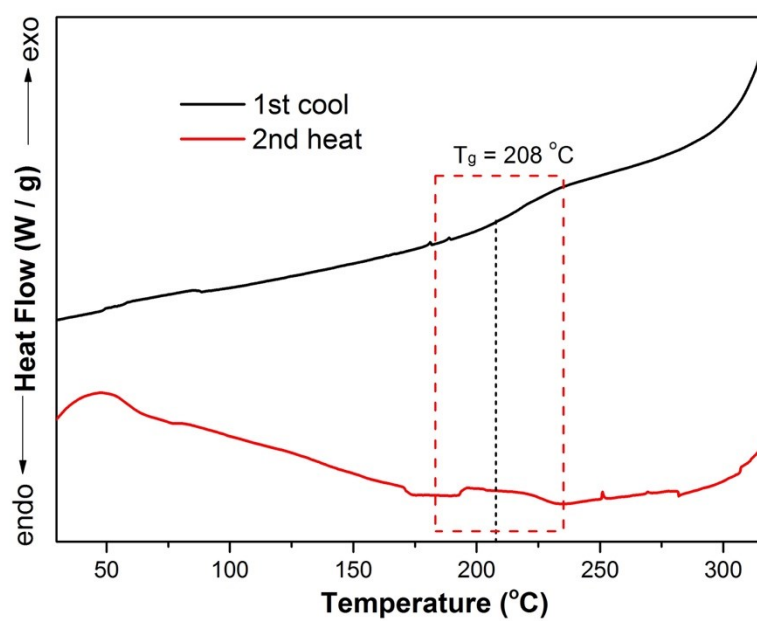


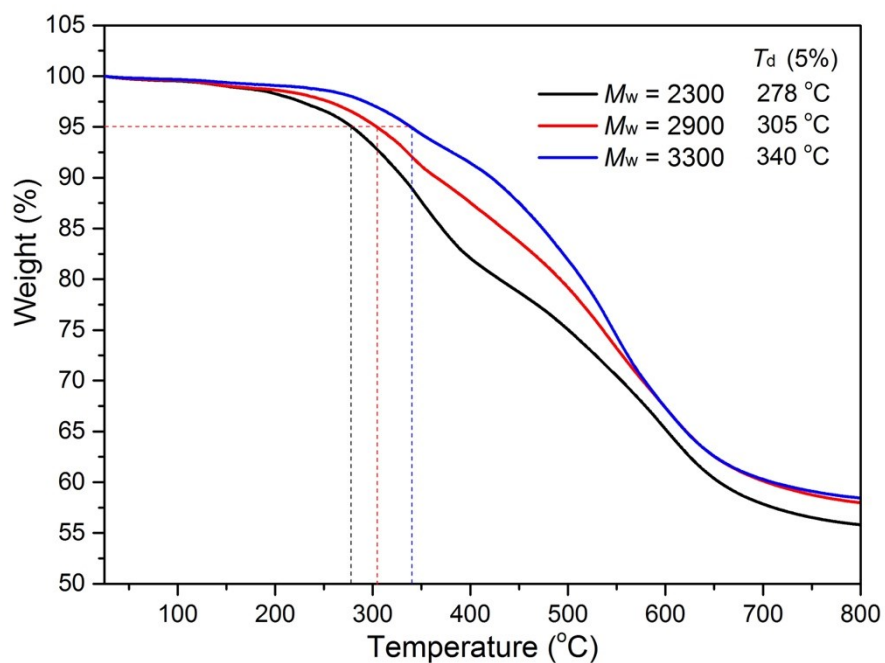
Figure S2 The  $^{13}\text{C}$ -NMR spectrum of 4-Cyano-4'-ethynylbiphenyl in  $\text{CDCl}_3$ .



**Figure S3** UV-vis absorbance spectra of the polyoxazoles in THF. Solution concentration:  $1 \times 10^{-4}$  mol / L.

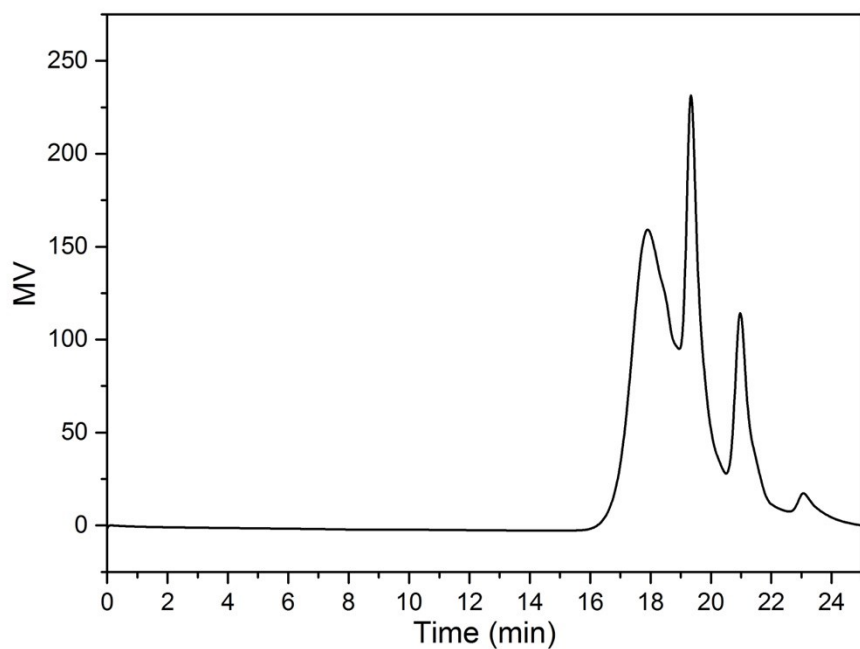


**Figure S4** DSC of the polyoxazoles. The measurements were performed under  $N_2$  atmosphere at the heating rate of  $10 \text{ }^\circ\text{C}/\text{min}$ .

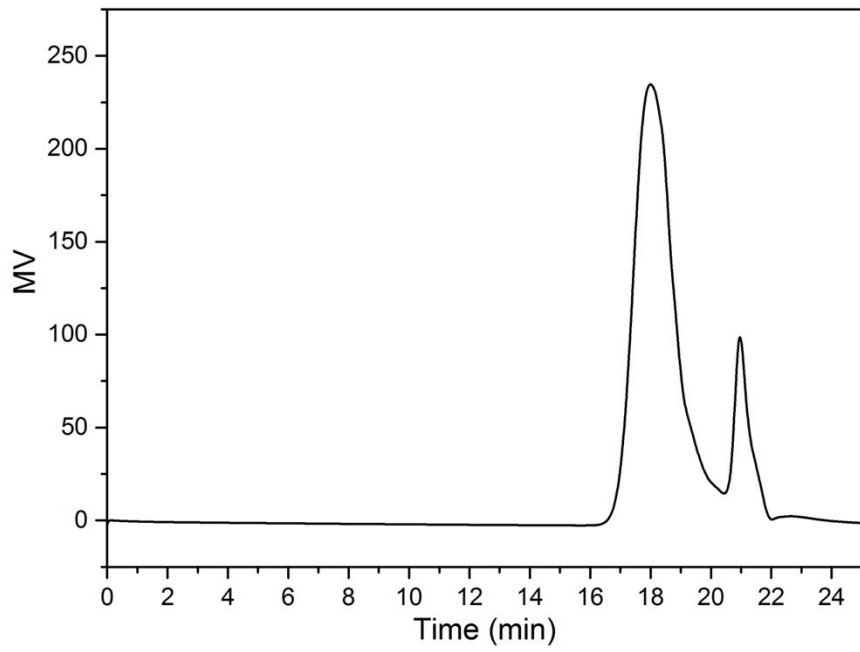


**Figure S5** Thermograms of the polyoxazoles with different number average molecular weight ( $M_w$ ). The measurements were performed under  $N_2$  atmosphere at the heating rate of  $10\text{ °C/min}$ .

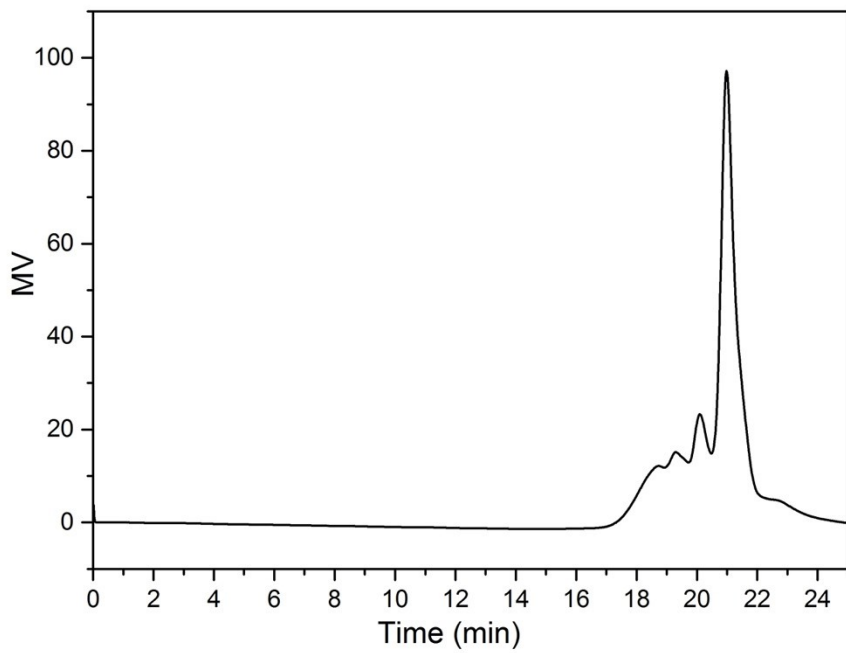
**Appendix:**



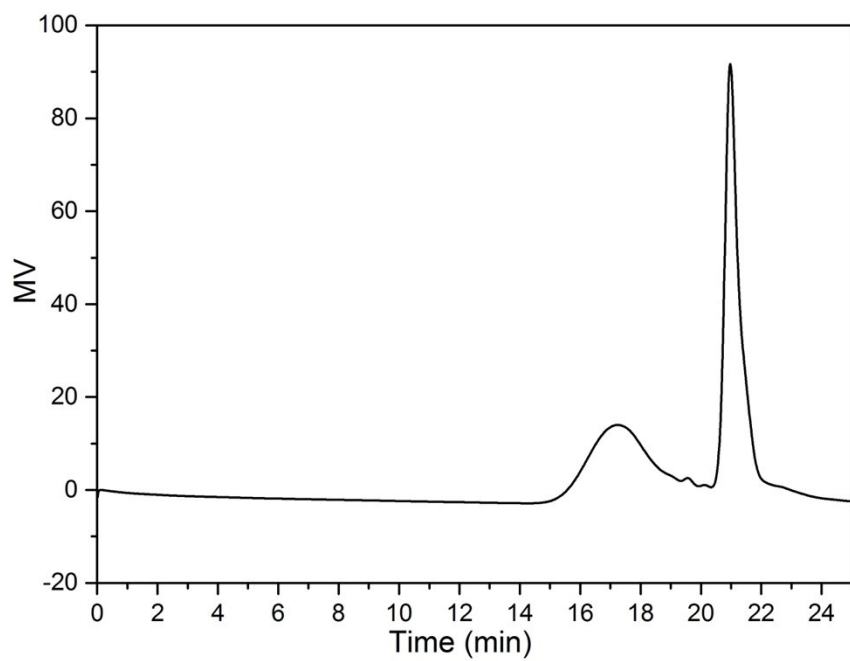
**Figure SA1** The GPC result of entry 1 in Table 1.



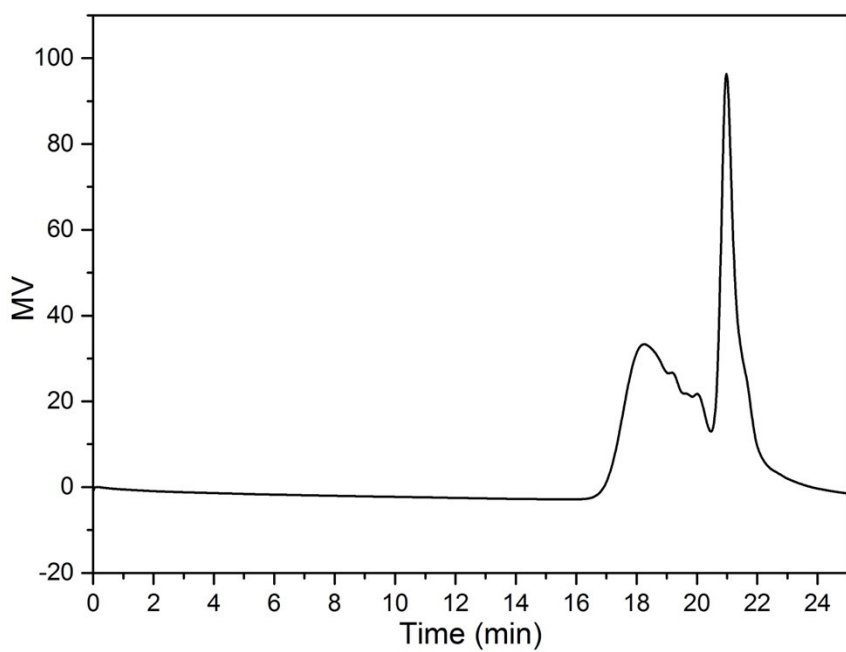
**Figure SA2** The GPC result of entry 2 in Table 1.



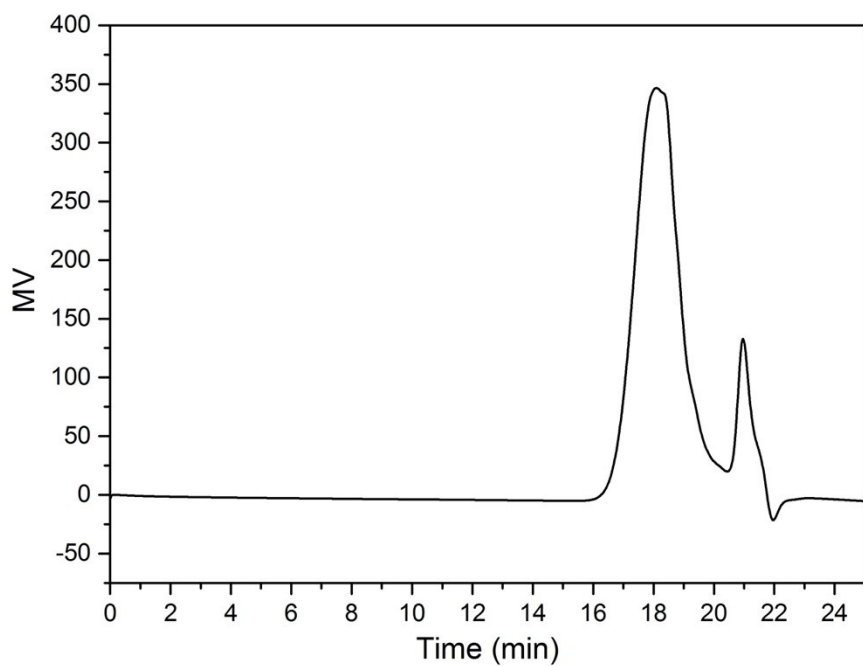
**Figure SA3** The GPC result of entry 3 in Table 1.



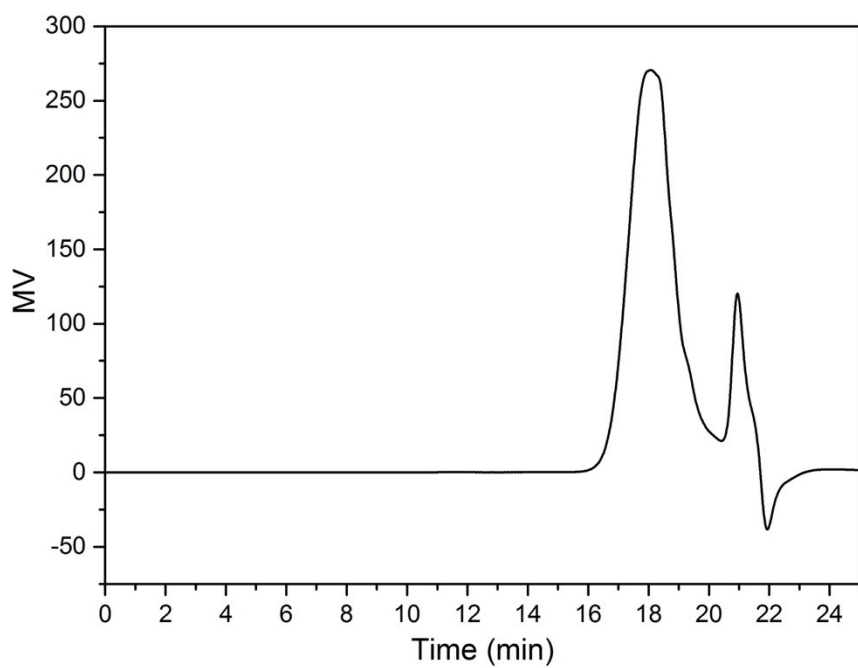
**Figure SA4** The GPC result of entry 4 in Table 1.



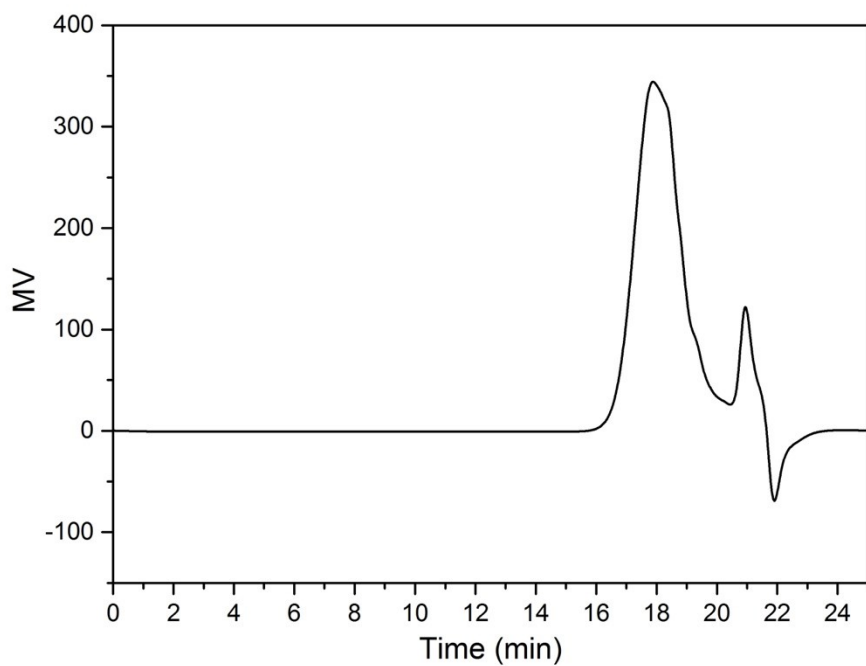
**Figure SA5** The GPC result of entry5 in Table 1.



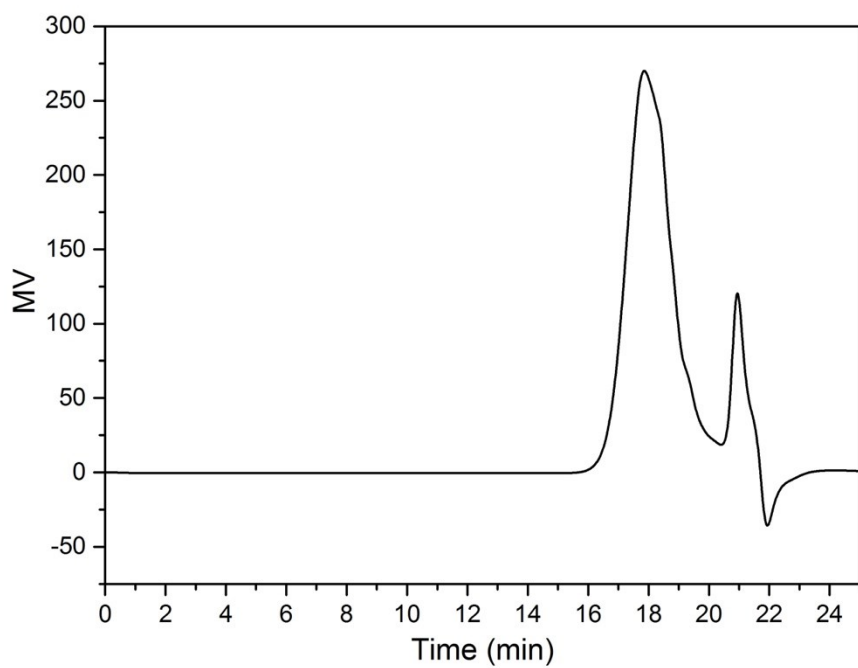
**Figure SA6** The GPC result of entry 1 in Table 2.



**Figure SA7** The GPC result of entry 2 in Table 2.

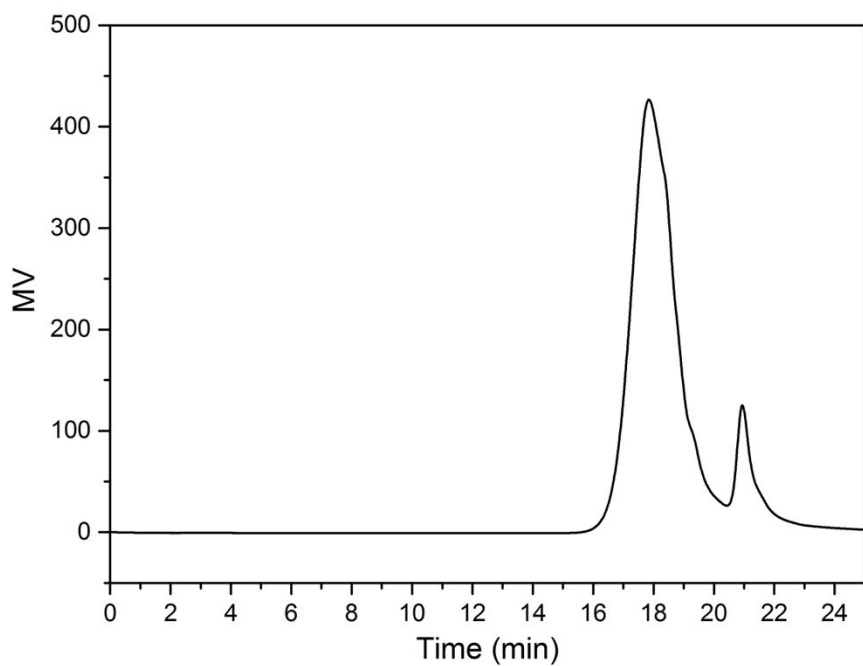


**Figure SA8** The GPC result of entry 3 in Table 2.

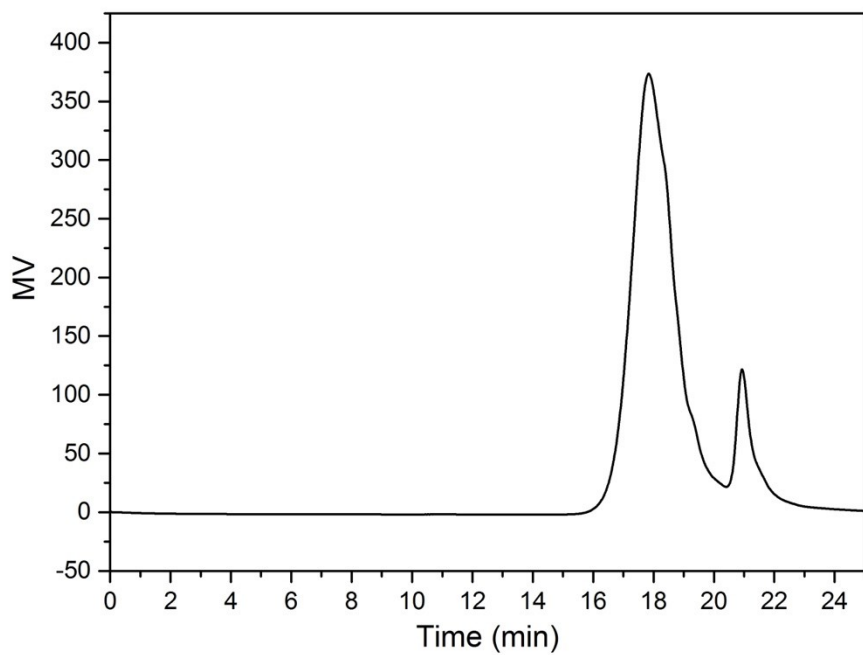


**Figure SA9** The GPC result of entry 4 in Table 2.

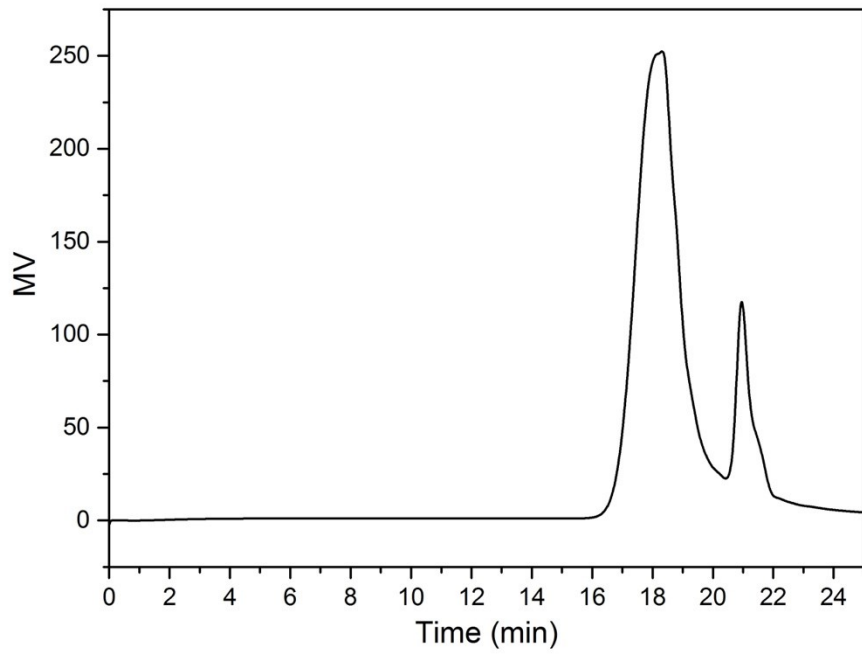




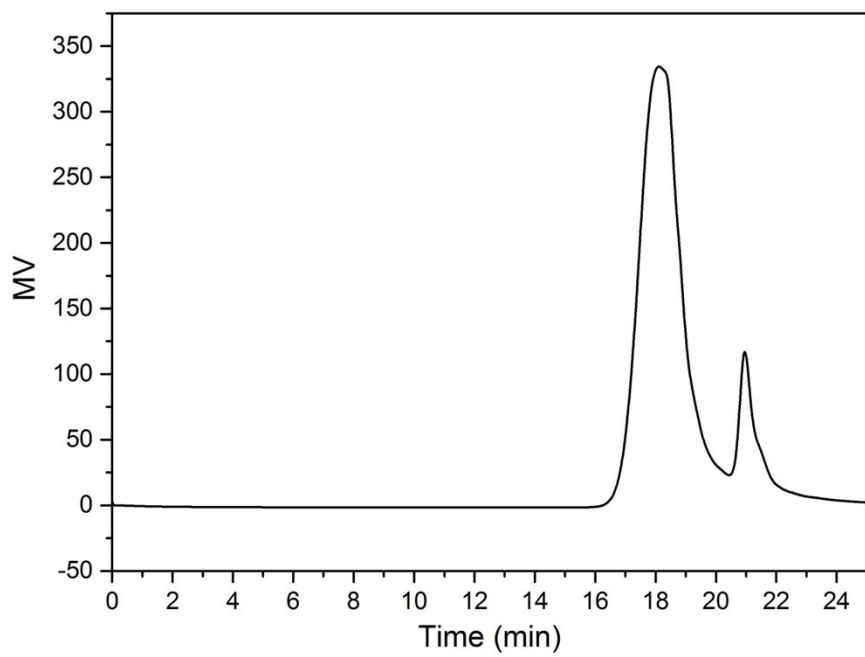
**Figure SA10** The GPC result of entry 5 in Table 2.



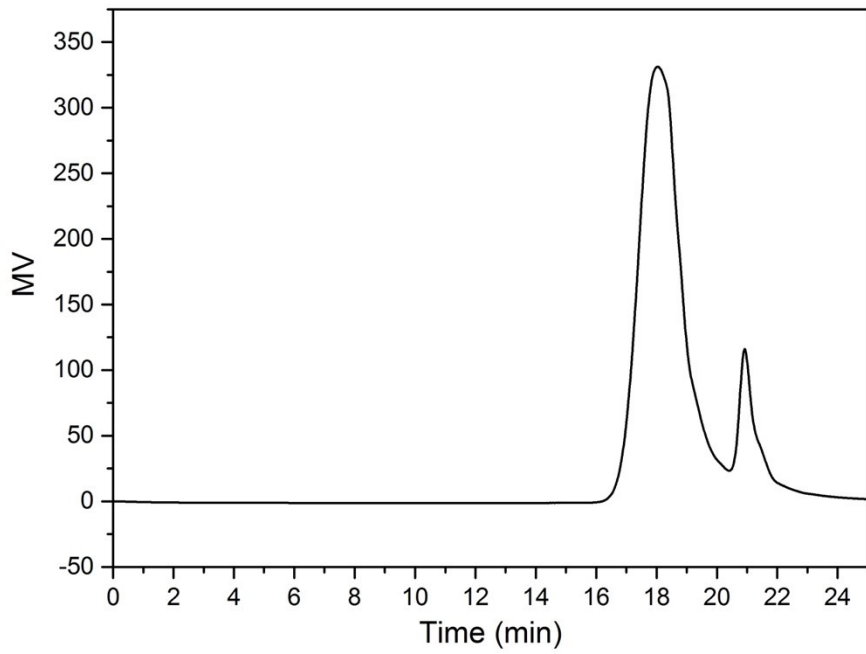
**Figure SA11** The GPC result of entry 6 in Table 2.



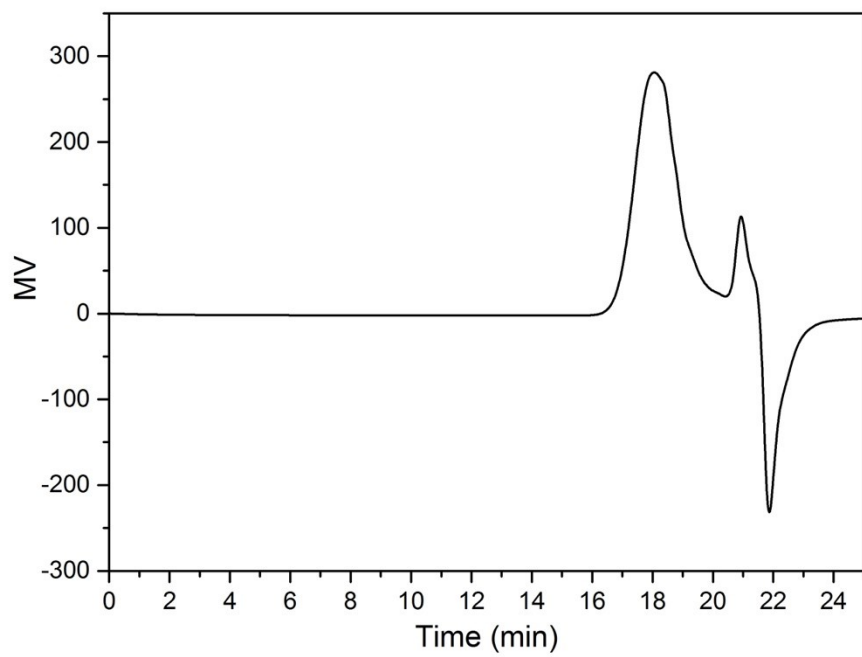
**Figure SA12** The GPC result of entry 1 in Table 3.



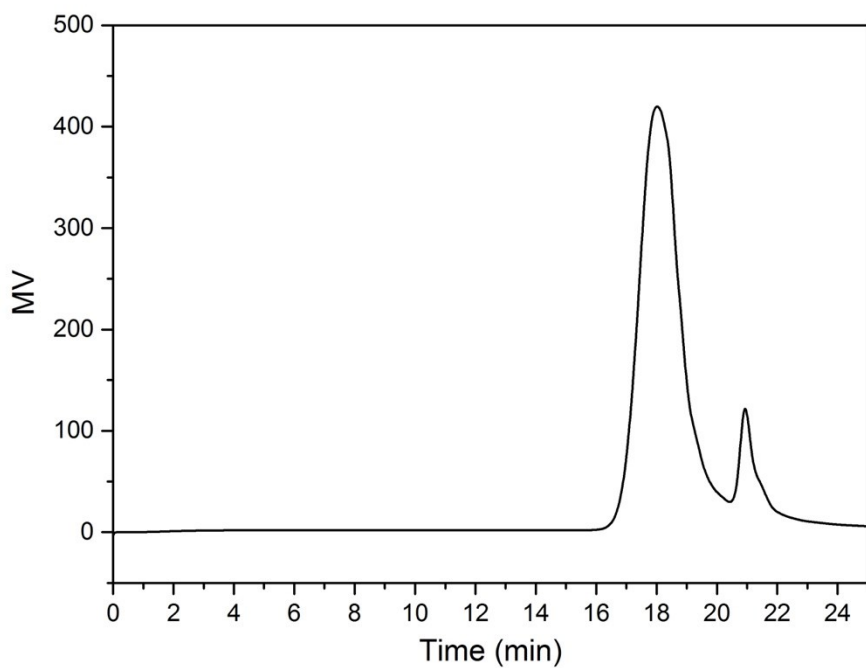
**Figure SA13** The GPC result of entry 2 in Table 3.



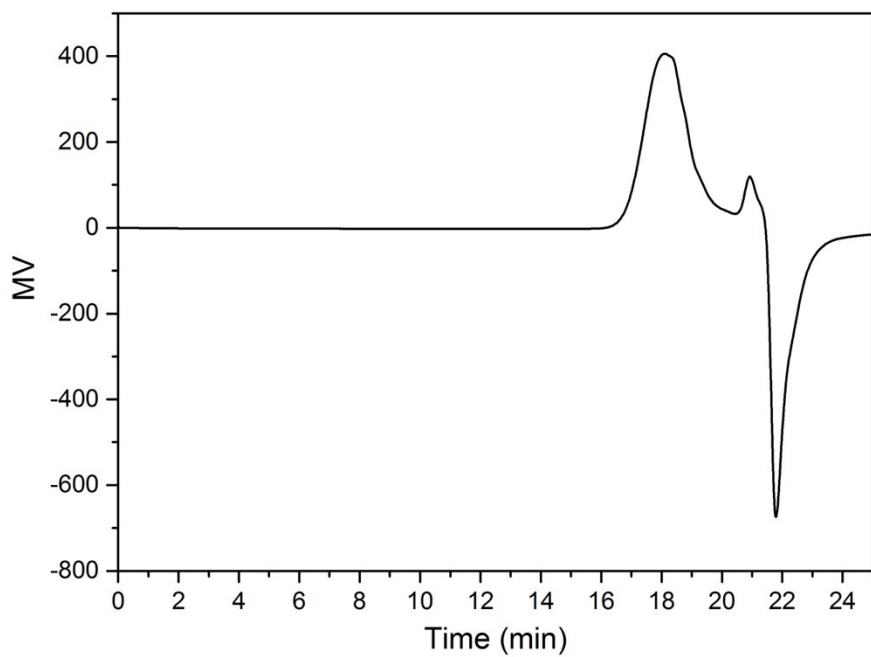
**Figure SA14** The GPC result of entry 3 in Table 3.



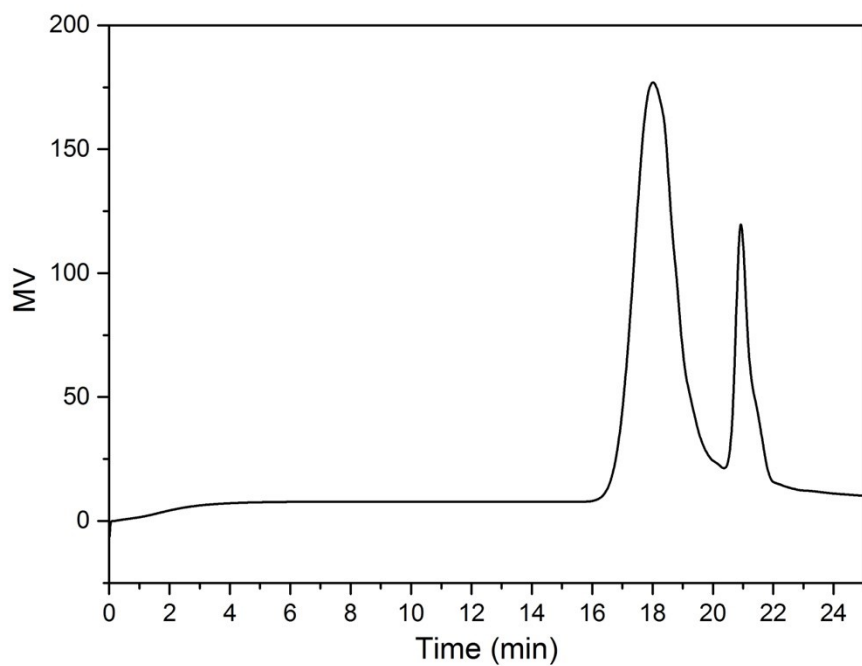
**Figure SA15** The GPC result of entry 4 in Table 3.



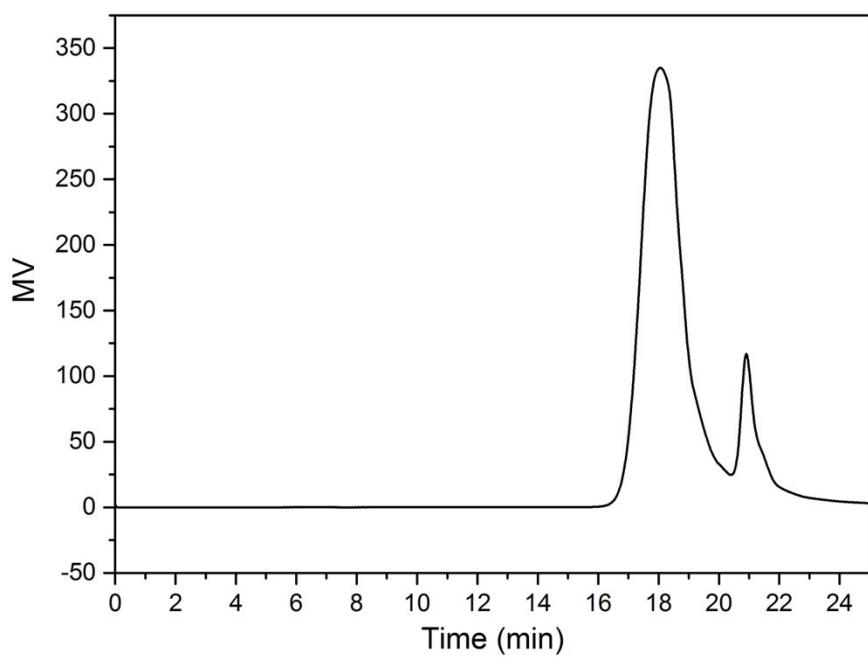
**Figure SA16** The GPC result of entry 5 in Table 3.



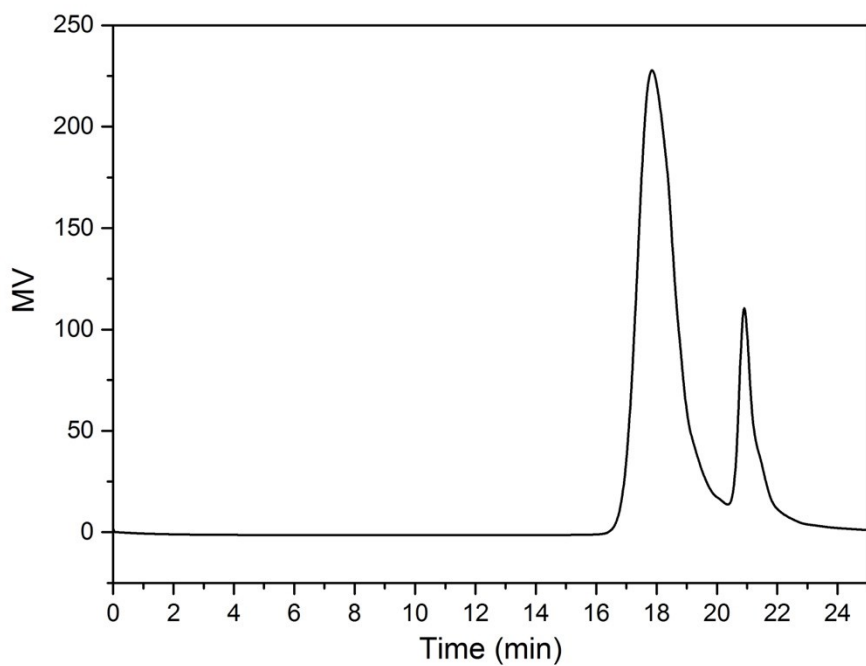
**Figure SA17** The GPC result of entry 6 in Table 3.



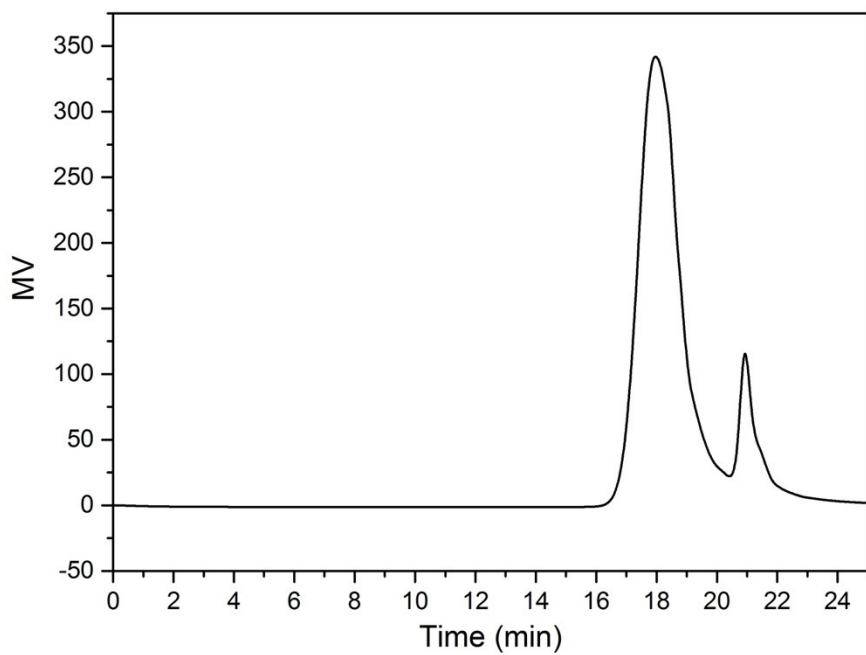
**Figure SA18** The GPC result of entry 7 in Table 3.



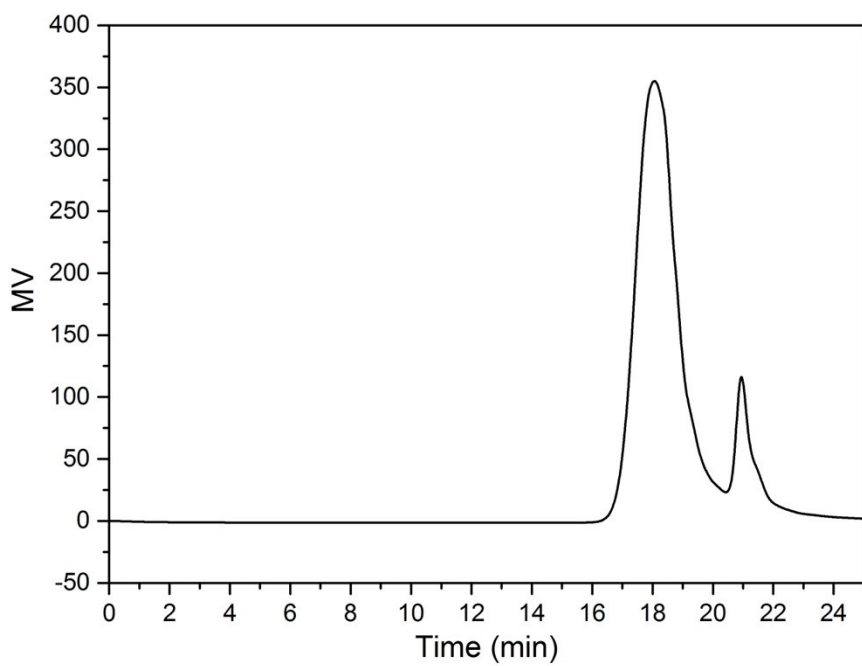
**Figure SA19** The GPC result of entry 1 in Table 4.



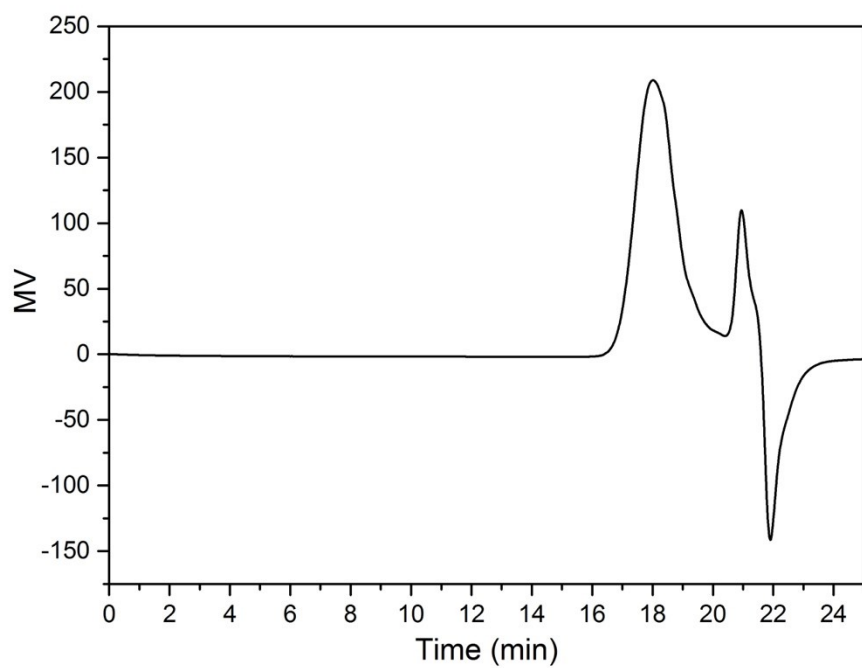
**Figure SA20** The GPC result of entry 2 in Table 4.



**Figure SA21** The GPC result of entry 3 in Table 4.



**Figure SA22** The GPC result of entry 4 in Table 4.



**Figure SA23** The GPC result of entry 5 in Table 4.