Supplementary Information

Water-soluble polyglycerol-dendronized poly(norbornene)s with functional side-chains

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Synthesis of monomer 1. *exo*-Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid (1.0 g, 7.2 mmol), *N*-Boc-2,2'-(ethylenedioxy)diethylamine (2.3 g, 9.4 mmol), EDCI (1.5 g, 7.8 mmol), and DMAP (0.18 g, 1.5 mmol) were dissolved in dichloromethane (30 mL) under a nitrogen atmosphere, and stirred at 25 °C for 14 h. Water was added and the mixture was extracted with dichloromethane. The combined organic layers were washed with water, dried over $MgSO_4$, filtered, and concentrated under reduced pressure. The crude product was purified by column chromatography on silica gel using dichloromethane/methanol (40:1) as eluent to yield **1** (2.5 g, 94%). ^{1}H NMR ($CDCl_3$): δ 6.19-5.95 (m, 3H), 4.99 (br, 1H), 3.70-3.39 (m, 10H), 3.31 (m, 2H), 2.91 (m, 2H), 2.10-1.84 (m, 2H), 1.71 (m, 1H), 1.43 (s, 9H), 1.32 (m, 2H).

Synthesis of NHS ester of coumarin 343 (d). To a solution of coumarin 343 (0.20 g, 0.70 mmol) and *N*-hydroxysuccinimide (NHS) (0.11 g, 0.91 mmol) in dichloromethane (20 mL) was added EDCI (0.18 g, 0.91 mmol). The mixture was stirred at 25 °C for 18 h under a nitrogen atmosphere. Water was added and the mixture was extracted with dichloromethane. The combined organic layers were washed with water, dried over $MgSO_4$, filtered, and concentrated under reduced pressure. The crude product was purified by column chromatography on silica gel using dichloromethane/methanol (50:1) as eluent to yield **d** (0.15 g, 55%). ^{1}H NMR ($CDCl_3$): δ 8.46 (s, 1H), 6.95 (s, 1H), 3.38 (m, 4H), 2.99-2.82 (m, 6H), 2.81-2.68 (m, 2H), 2.13-1.85 (m, 4H).

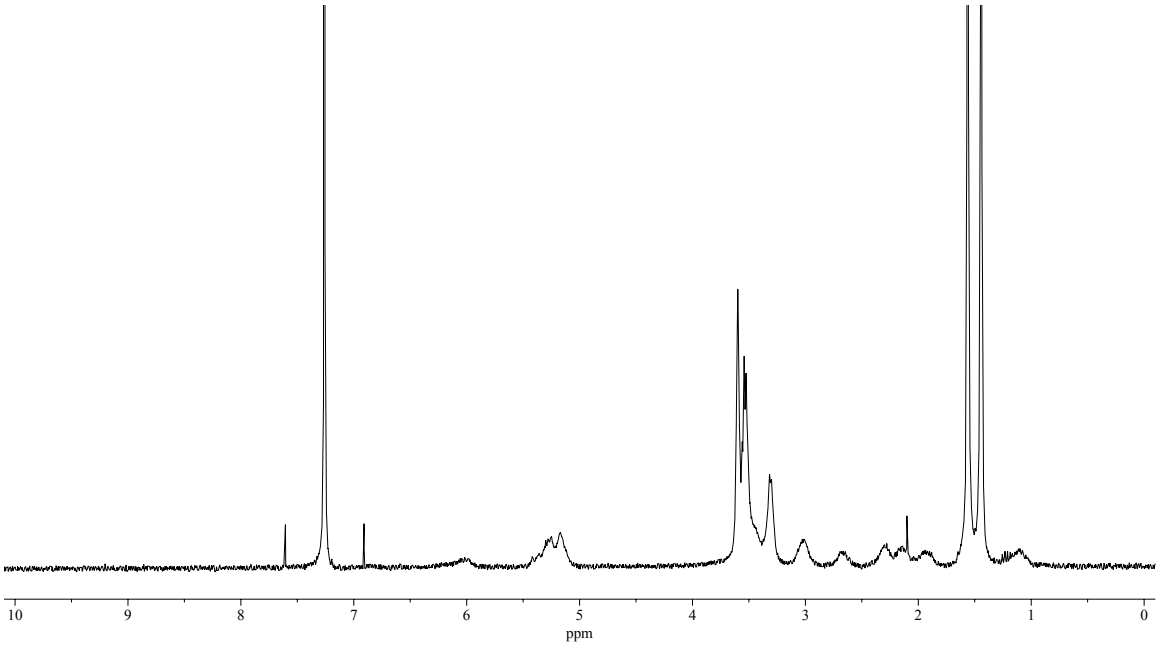

Figure S1. ^{1}H NMR spectrum of **2** in $CDCl_3$.

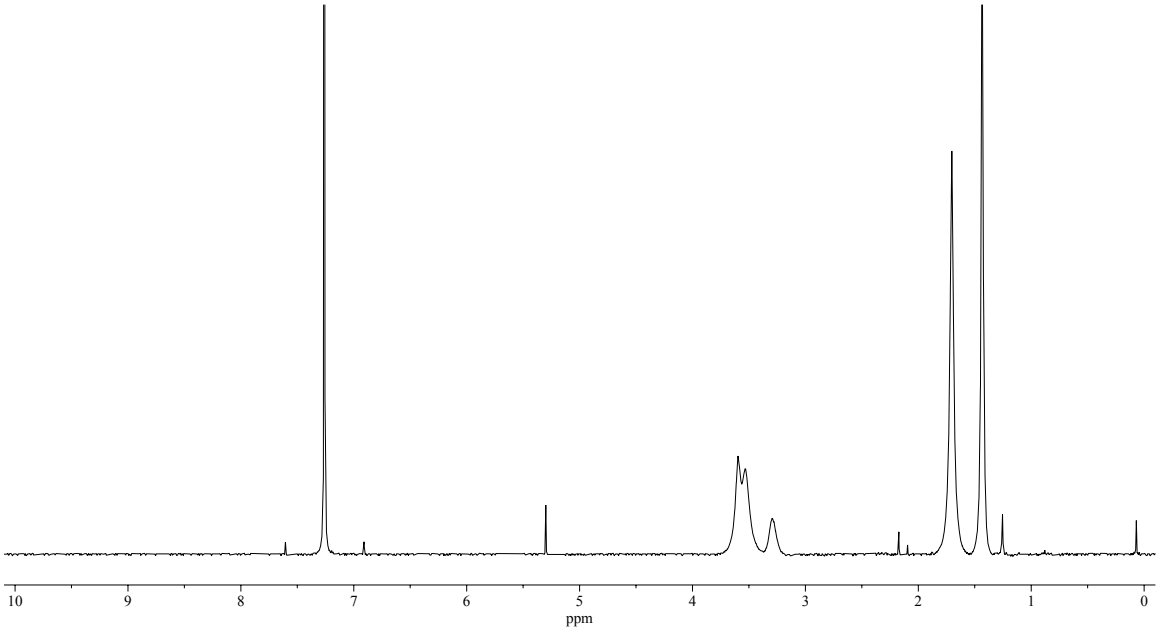

Figure S2. ^{1}H NMR spectrum of **3** in $CDCl_3$.

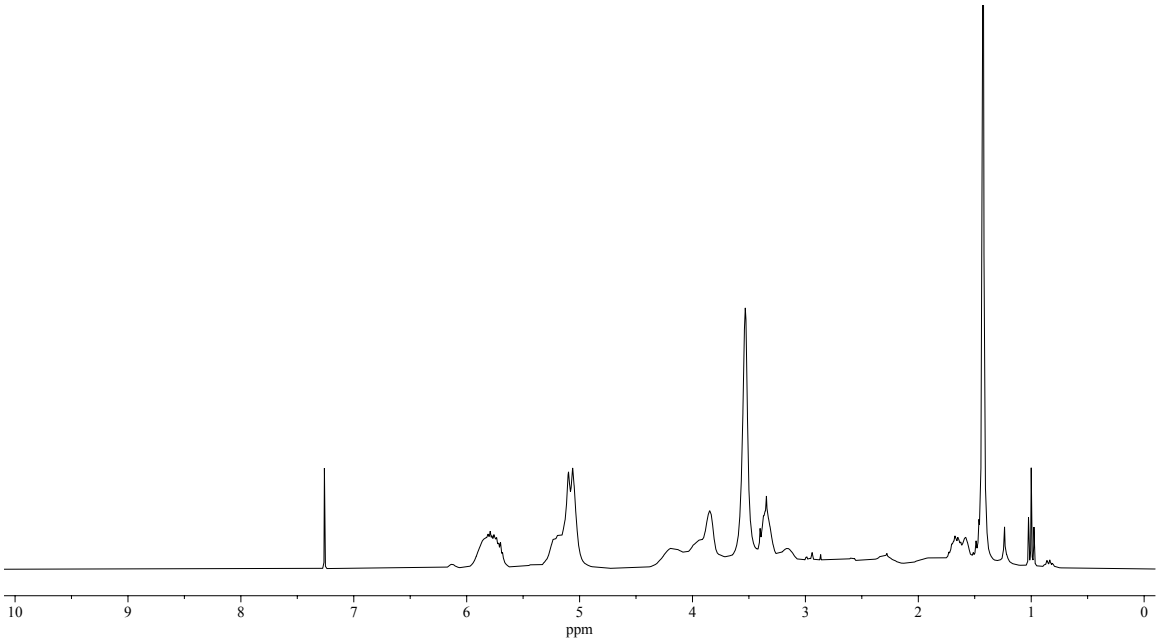

Figure S3. ^{1}H NMR spectrum of **4** in $CDCl_3$.

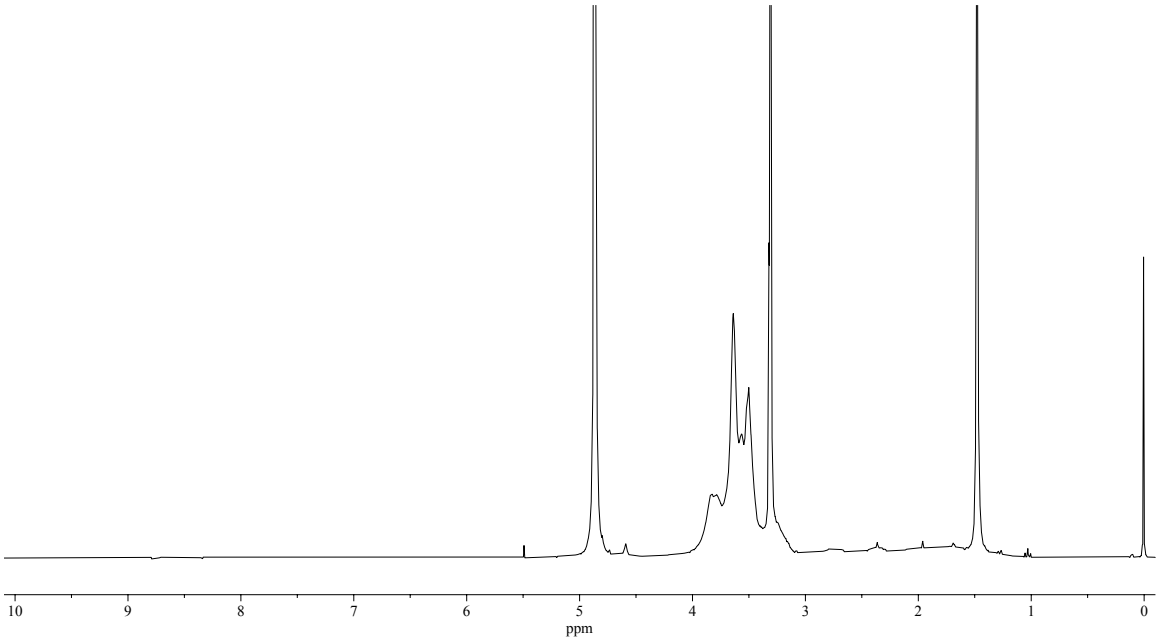

Figure S4. ^{1}H NMR spectrum of **5** in CD_3OD.

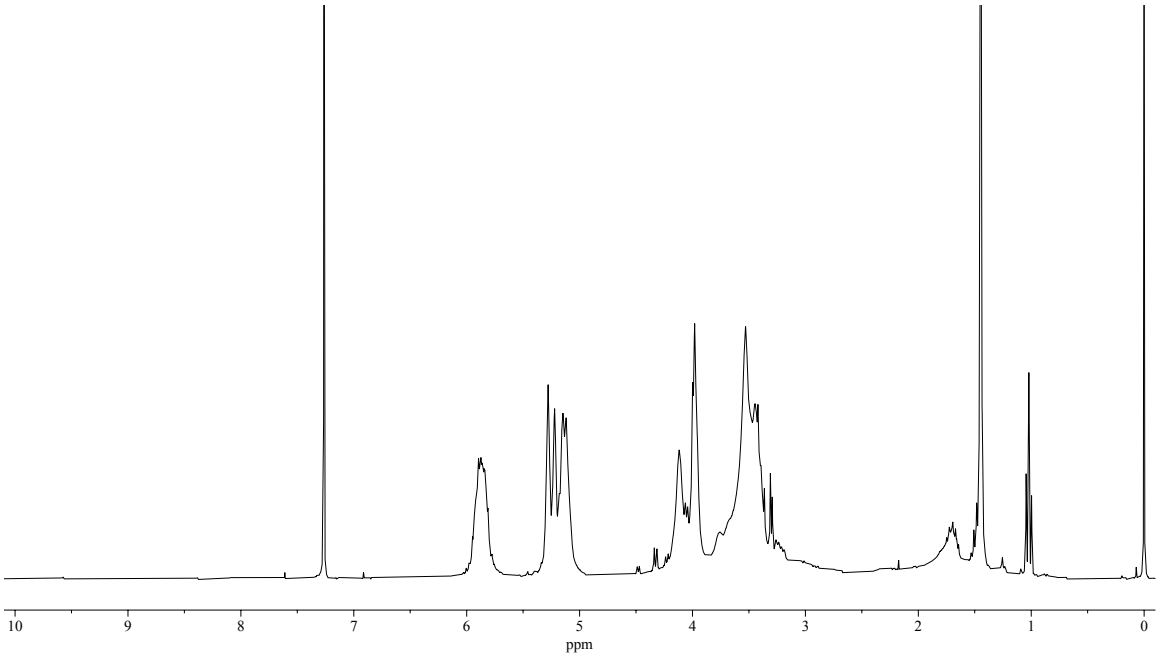

Figure S5. ^{1}H NMR spectrum of **6** in $CDCl_3$.

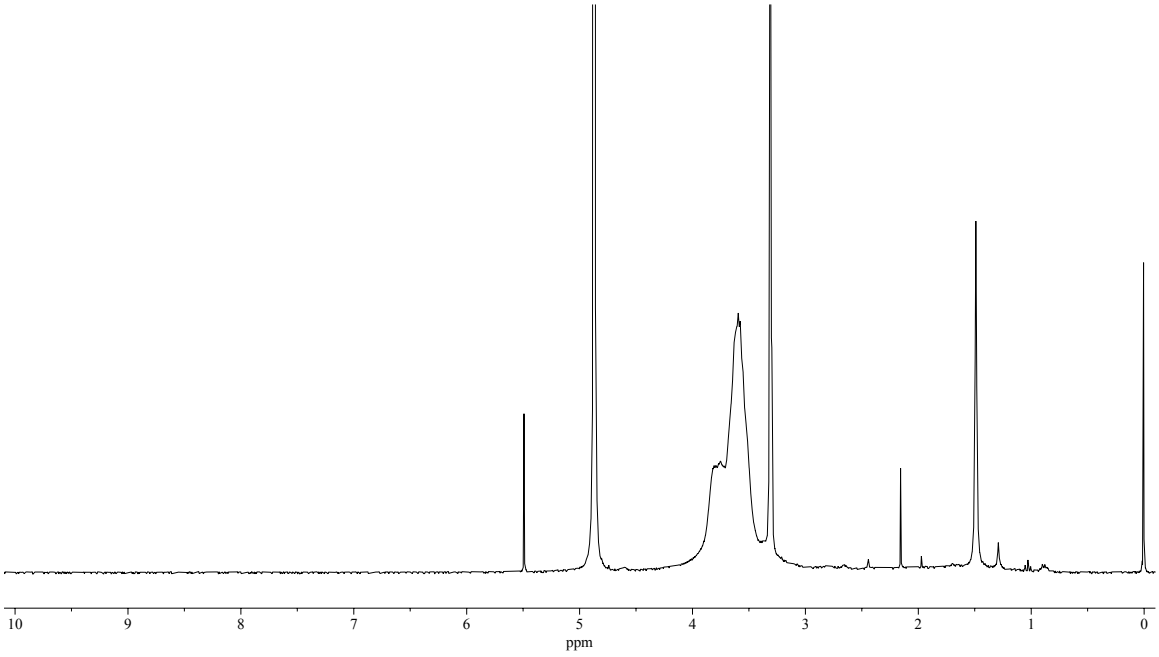

Figure S6. ^{1}H NMR spectrum of **7** in CD_3OD.

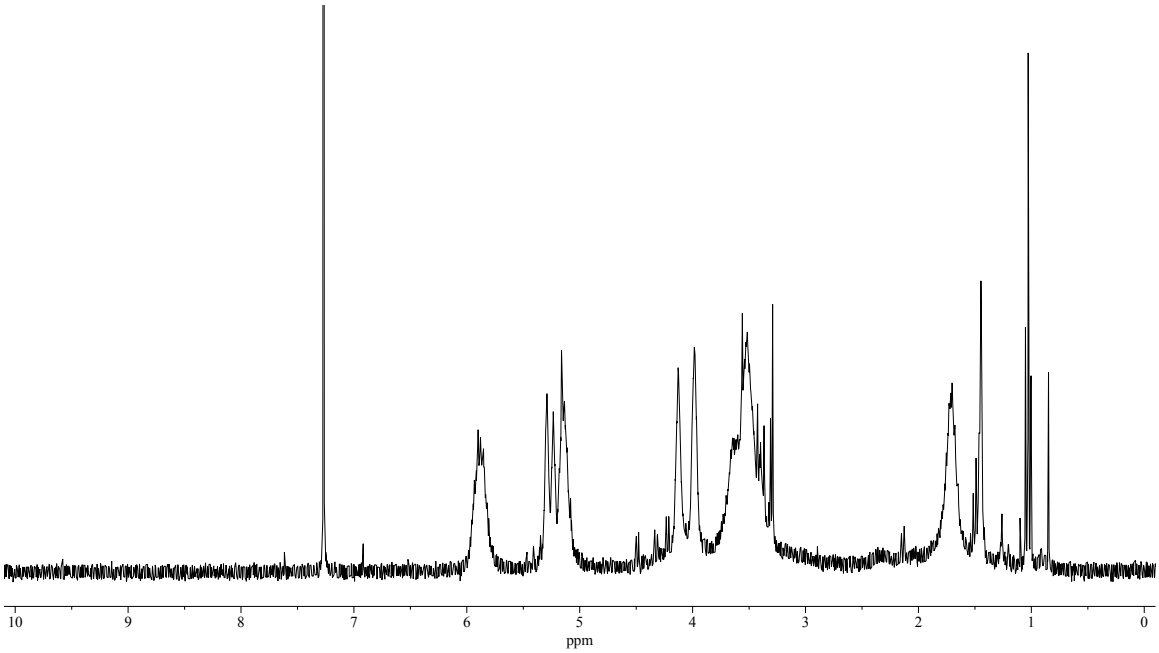

Figure S7. ^{1}H NMR spectrum of **8** in $CDCl_3$.

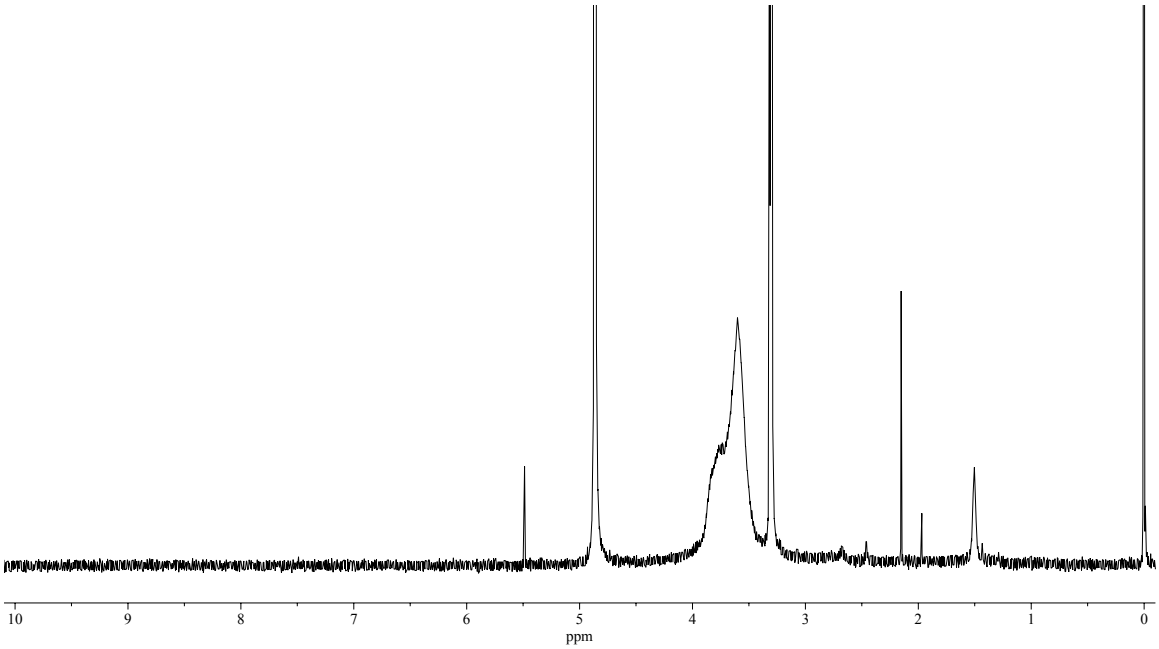

Figure S8. ^{1}H NMR spectrum of **9** in CD_3OD.

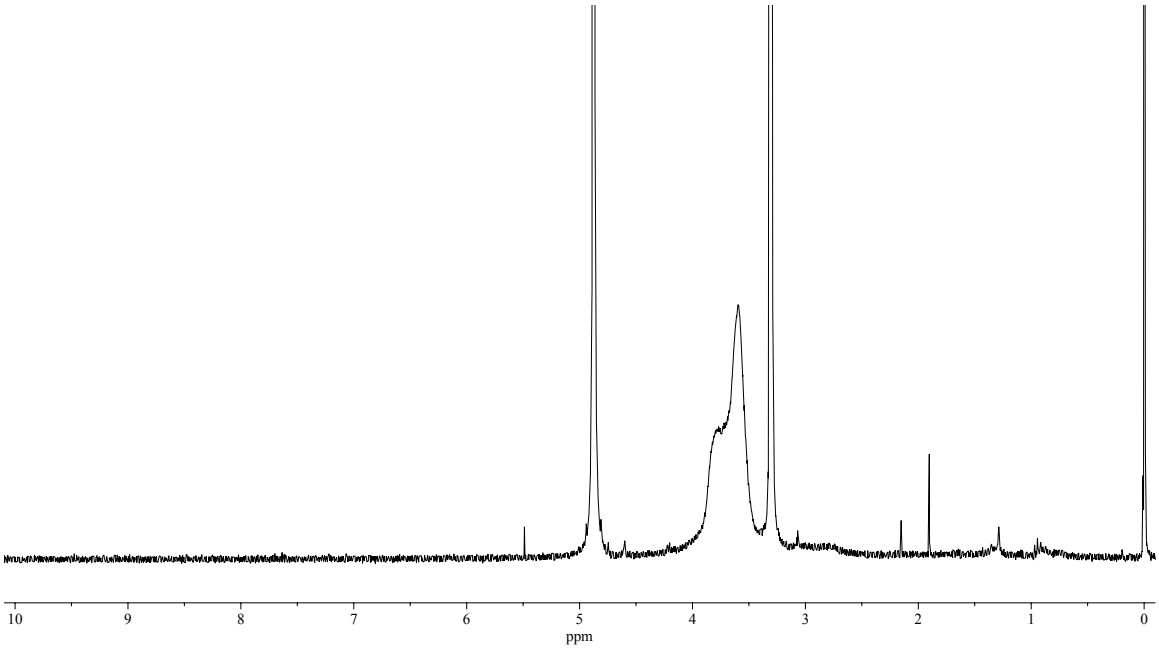

Figure S9. ^{1}H NMR spectrum of **10** in CD_3OD.

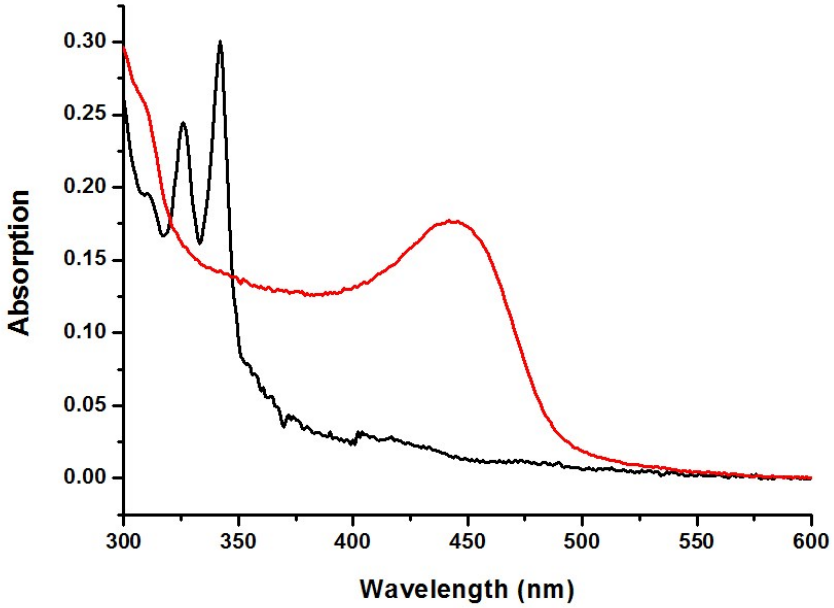

Figure S10. UV-vis absorption spectra of **11** (black) and **12** (red).