Supporting information

For the manuscript

Surface-initiated RAFT Polymerization of Sulfobetaine from Cellulose Membranes to Improve Hemocompatibility and Antibiofouling Properties

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Synthesis of Dithiobenzoic Acid (DTBA) [1]

DTBA was prepared by the reaction of benzyl chloride (63.0 g, 0.5 mol) with elemental sulfur (32.0 g, 1.0 mol) and sodium methoxide (30% solution in methanol, 180.0 g, 1.0 mol) in methanol (250 g) as described elsewhere. DTBA is unstable and was used immediately after preparation.

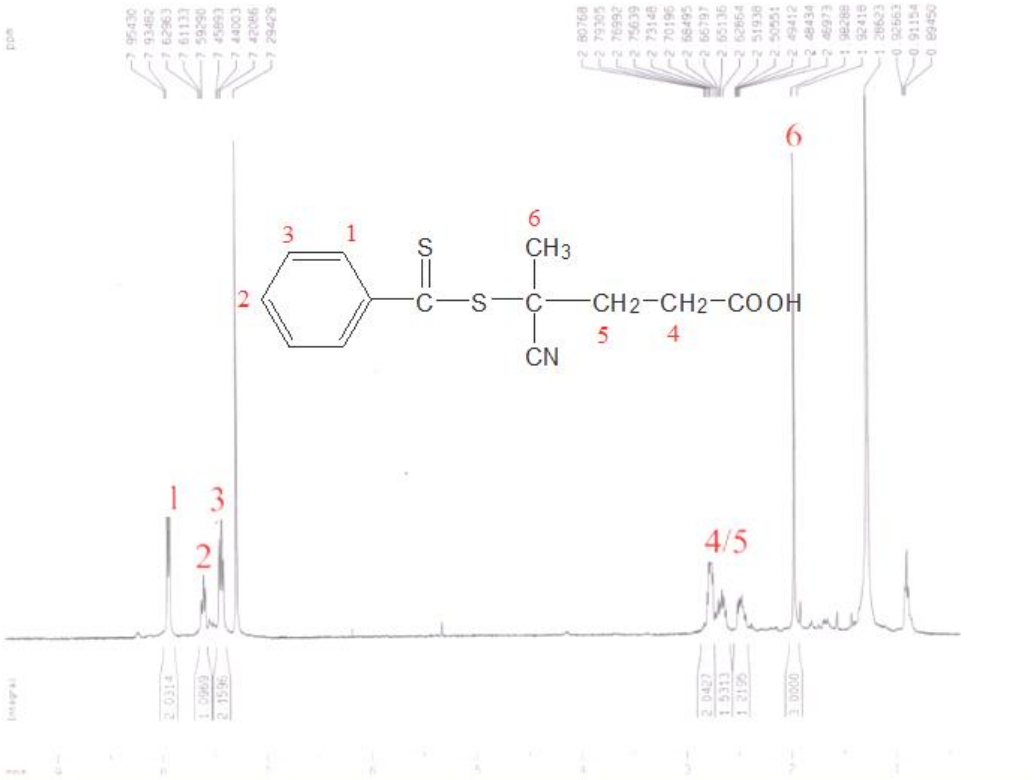
Synthesis of Di(thiobenzoyl) Disulfide(DTBD)

Potassium ferricyanide(III) (32.93 g, 0.1 mol) was dissolved in deionized water (500.0 mL). Sodium dithiobenzoate solution (350.0 mL) was transferred to a 1 L conical flask equipped with a magnetic stir bar. Potassium ferricyanide solution was added dropwise to the sodium dithiobenzoate via an addition funnel over a period of 1 h under vigorous stirring. The red precipitate was filtered and washed with deionized water until the washings became colorless. The

solid was dried in vacuum at room temperature overnight. The product was recrystallized from ethanol and of DTBD was obtained.

Synthesis of 4-Cyanopentanoic Acid Dithiobenzoate(CPADB) [2]

DTBD (4.25 g, 14.0 mmol) and dry 4, 4'-azobis(4-cyanopentanoic acid) (5.84 g, 21.0 mmol) were dissolved in distilled ethyl acetate (80.0 mL). The mixture was refluxed at 85 °C for 18 h. After the reaction ethyl acetate was removed in a vacuum. The crude product was isolated by column chromatography (silica gel 60 Å, 70-230 mesh) using ethyl acetate/hexane (2:3) as an eluent. Red fractions were collected, and the solvent mixture was evaporated. The red residue was placed in a freezer to crystallize. The product was recrystallized from benzene. CPADB was monitored by ^{1}H NMR dissolved in $CDCl_3$. ^{1}H NMR ($CDCl_3$) δ(ppm) 1.95 (s, 3H, CH_3); 2.40-2.80 (m, 4H, CH_2CH_2); 7.42 (m, 2H, m-ArH); 7.60 (m, 1H, p-ArH) and 7.91 (m, 2H, o-ArH).



Supplementary Figure 1. H-NMR data of CPADB

References

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[2] SH Thang, YK Chong, RTA Mayadunne, GMoad and E Rizzardo. Tetrahedron Lett. 1999, 40(12): 2435-2438.