Electronic Supplementary Material (ESI) for Polymer Chemistry.

SUPPORTING INFORMATION

Synthesis of sustainable eugenol/hydroxyethylmethacrylate-based polymers with antioxidant and antimicrobial properties

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Compound **1**:

^{1}H NMR (400 MHz, $CDCl_3$) δ 6.92 – 6.62 (m, 3H, Ar), 5.96 (ddt, J = 16.8, 10.1, 6.7 Hz, 1H, CH), 5.52 (s, 1H, OH), 5.17 – 4.95 (m, 2H, CH_2), 3.88 (s, 3H, OCH_3), 3.33 (d, J = 6.7 Hz, 2H, CH_2).

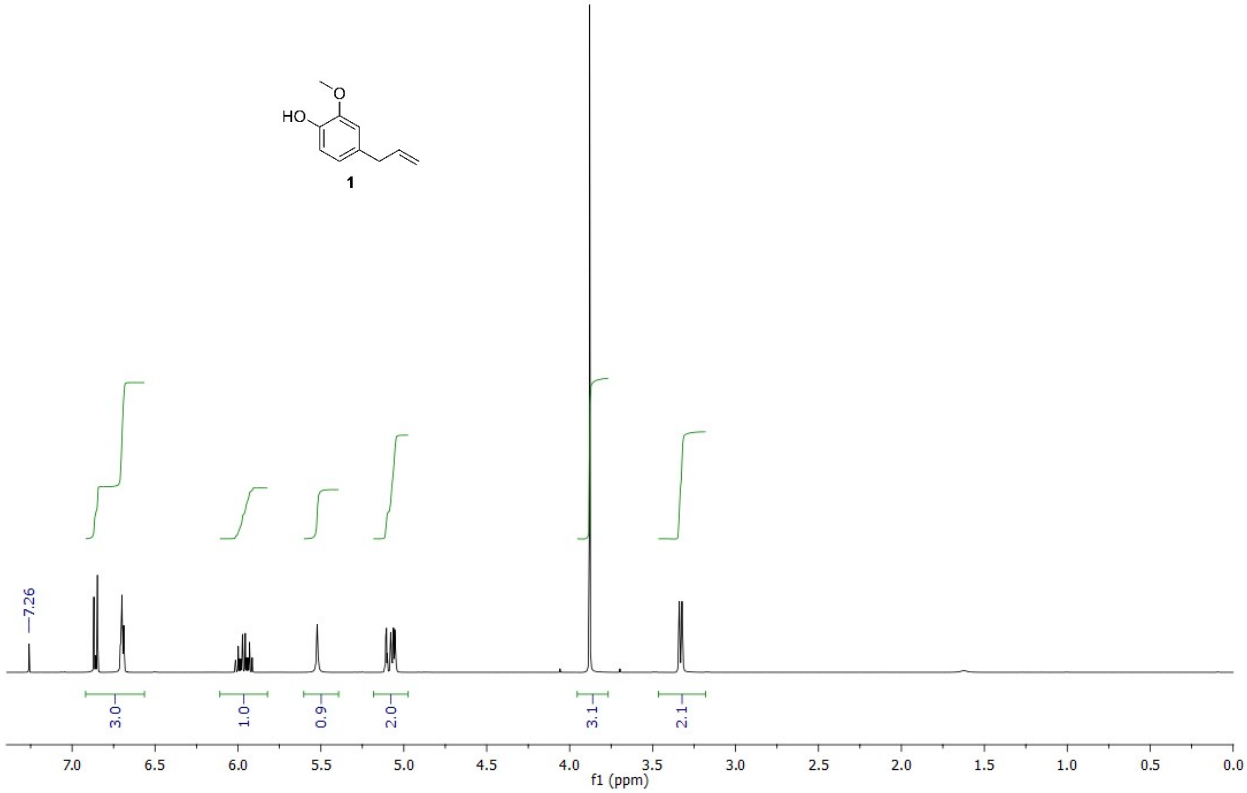

Fig. S1: ^{1}H NMR spectrum of eugenol (**1**) in $CDCl_3$.

Compound **2**:

1H NMR (400 MHz, CDCl3) δ 6.88 – 6.65 (m, 3H, Ar), 5.89 (s, 1H, OH), 3.84 (s, 3H, OCH_3), 3.11 (tdd, J = 5.4, 3.9, 2.7 Hz, 1H, CH), 2.77 (dd, J = 7.3, 3.2 Hz, 2H, CH_2), 2.52 (dd, J = 5.0, 2.7 Hz, 2H, CH_2).

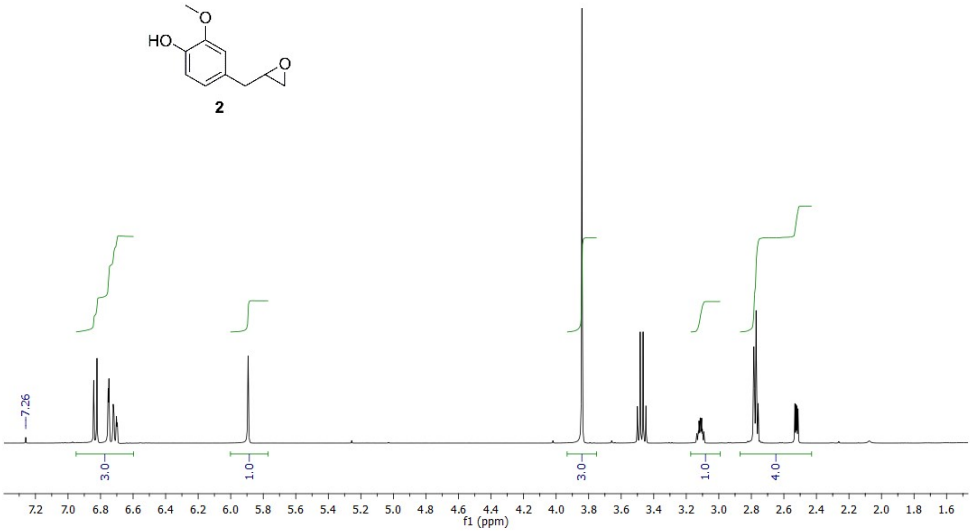

Fig. S2: ^{1}H NMR spectrum of **2** in $CDCl_3$. Peak at 3.47 ppm is related to residual solvent (diethyl ether).

Compound **3**:

^{1}H NMR (400 MHz, $CDCl_3$) δ 6.87 – 6.58 (m, 3H, Ar), 3.80 (s, 3H, O**C**$\mathbf{H_3}$), 3.18 – 3.06 (m, 1H, **CH**O), 2.84 – 2.71 (m, 3H), 2.54 (dd, 1H), 0.23 (s, 9H, $(CH_3)_3$).

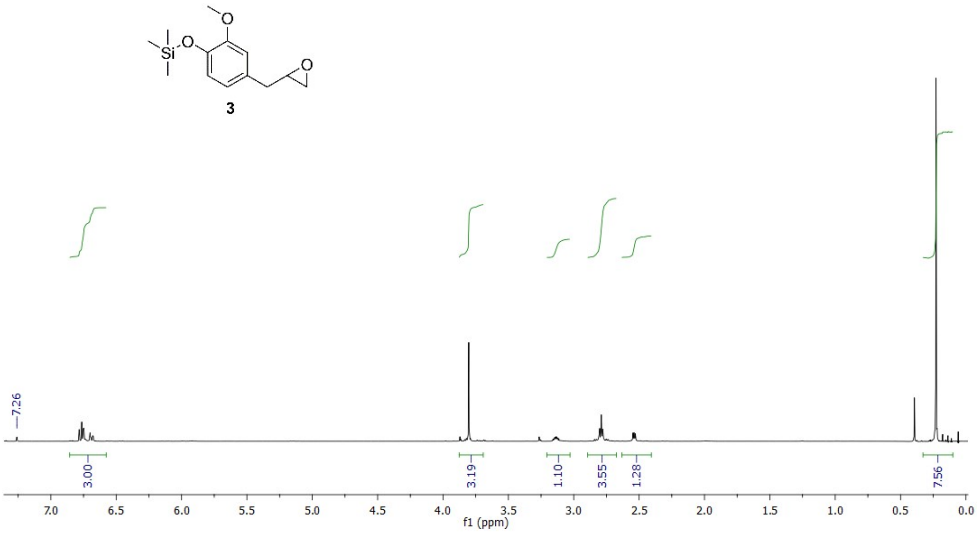

Fig. S3: ^{1}H NMR of compound **3** in $CDCl_3$.

^{1}H NMR (400 MHz, $CDCl_3$) δ 6.9 – 6.6 (m, ArEU), 6.1 (s, $=CH_2$), 5.6 (s, $=CH_2$), 4.2 (t, $O\mathbf{CH_2}CH_2O$), 3.9 (t, $OCH_2\mathbf{CH_2}O$), 3.8 ($O\mathbf{CH_3}$), 3.1 – 3.0 (m, CH), 2.9 – 2.4 (m, $Ar\mathbf{CH_2}$ and CH_2), 1.9 (s, $=CH_3$), 0.11 (m, $Si(CH_3)_3$).

^{13}C NMR (101 MHz, $CDCl_3$) δ 167.84 (C=O), 140.00 – 110.10 (7xC), 126.12 (CH_2), 66.49 (CH_2), 61.36 (CH_2), 56.00 (OCH_3), 52.81 (CH), 46.91 (CH_2), 38.46 (CH_2), 18.41 (CH_3), -0.41 (CH_3).

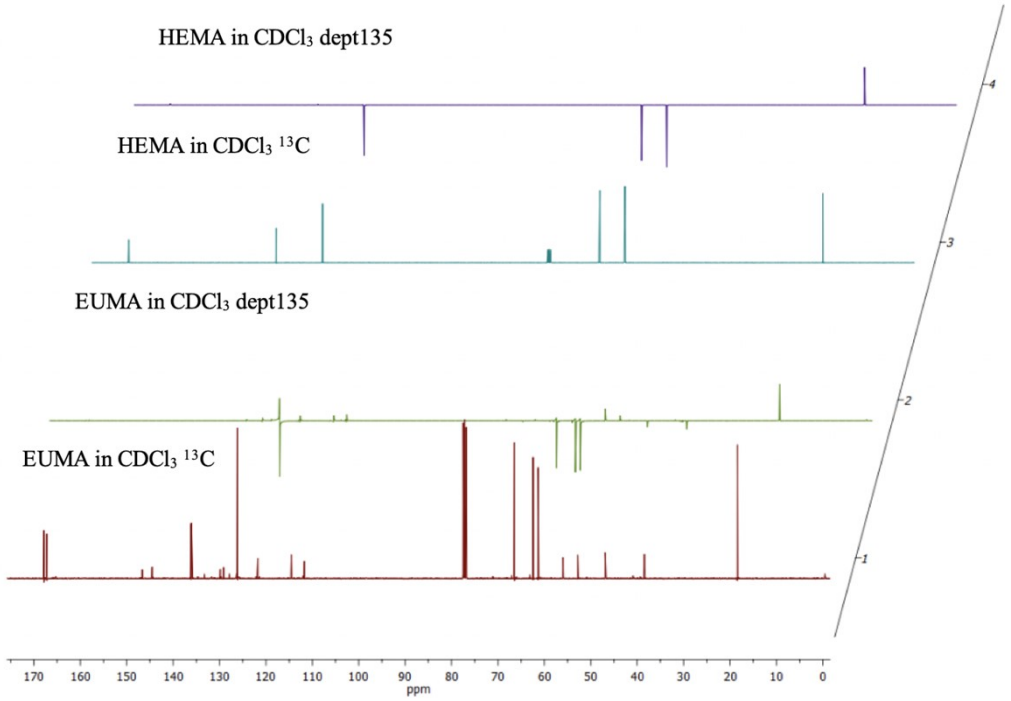

Fig. S4: ^{13}C and dept135 NMR spectra of EUMA (compound **5**) compared to that of pristine HEMA in $CDCl_3$.

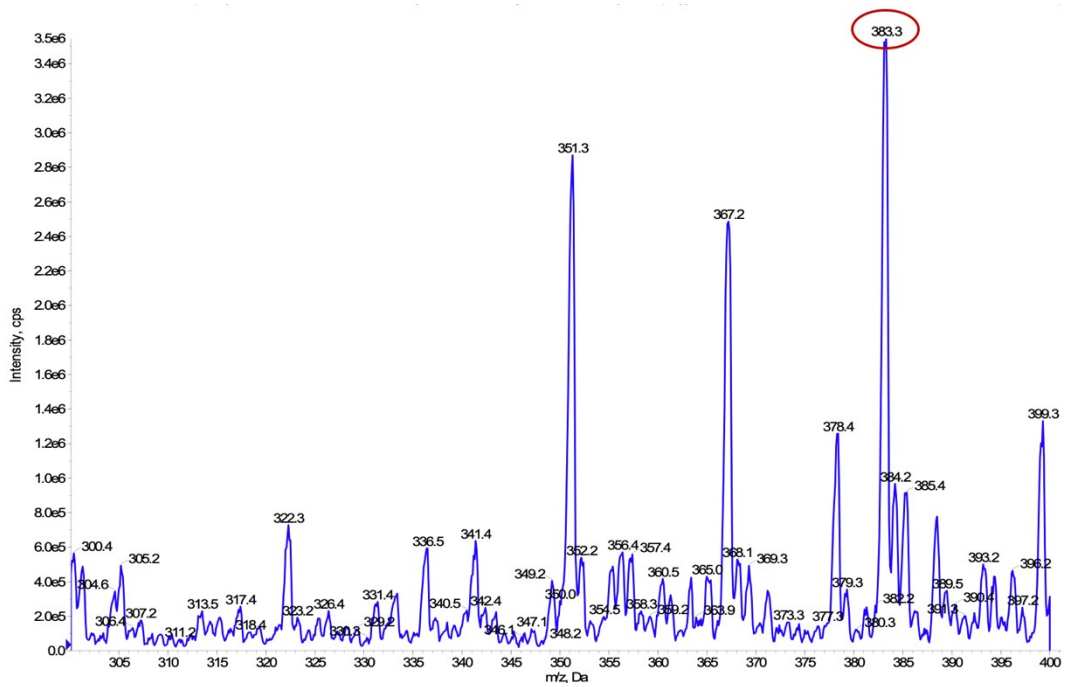

Fig. S5: Mass spectrometry spectrum of EUMA (compound 5).