Electronic Supplementary Material (ESI) for Green Chemistry.

Supporting information

Selective isomerization-carbonylation of a terpene trisubstituted double bond

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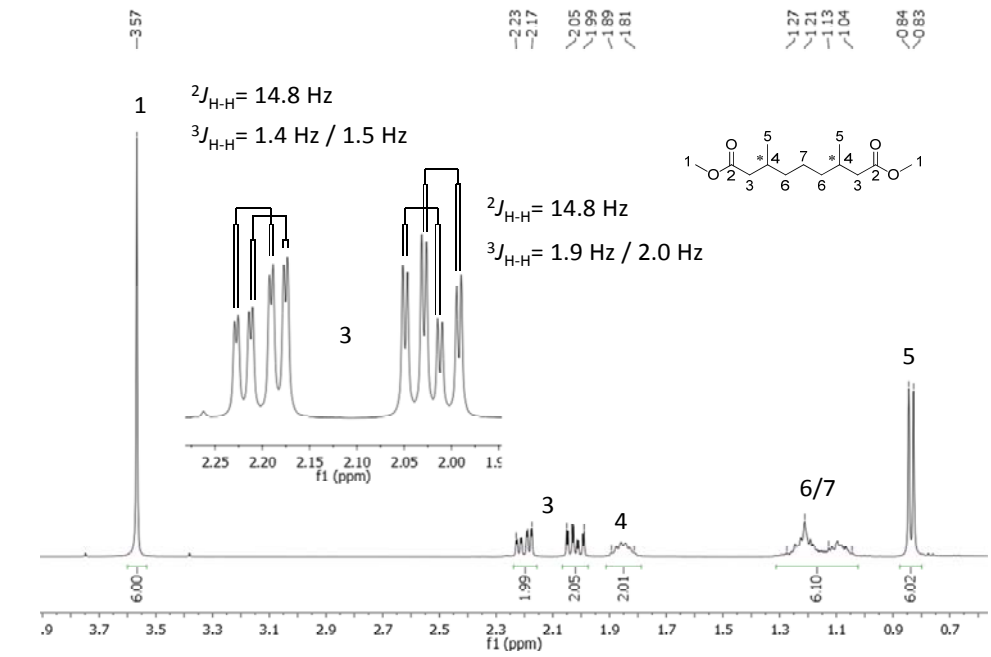

Figure S1: ^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of dimethyl 3,7-dimethylnonane-1,9-dioate (**2**).

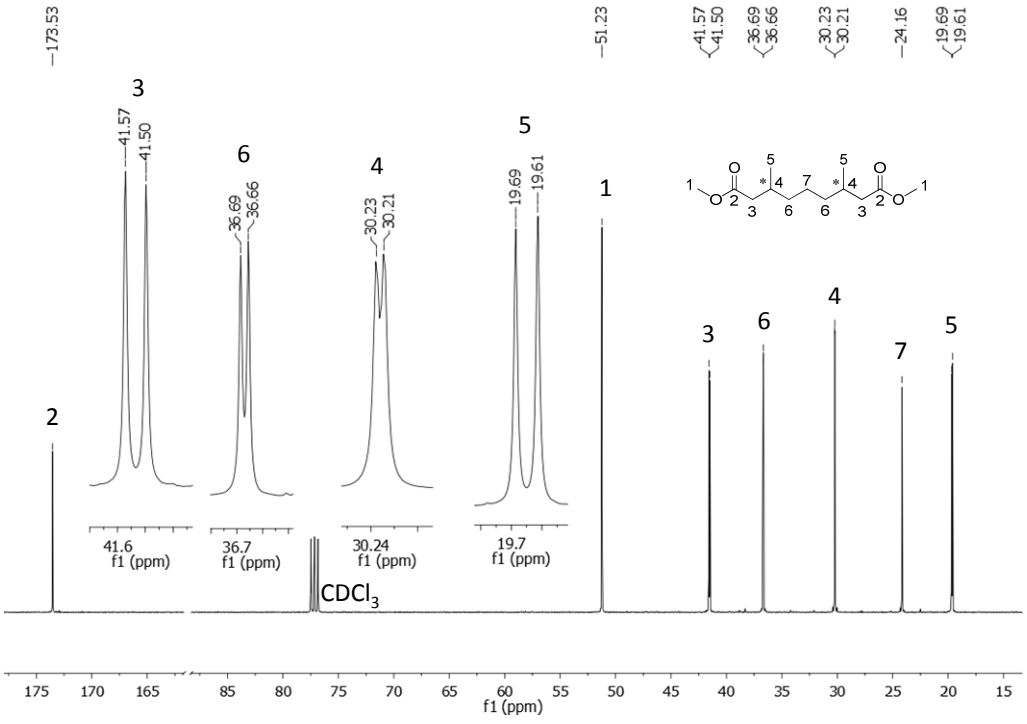

Figure S2: ^{13}C {^{1}H} NMR spectrum (100 MHz, $CDCl_3$, 25 °C) of dimethyl 3,7-dimethylnonane-1,9-dioate (**2**).

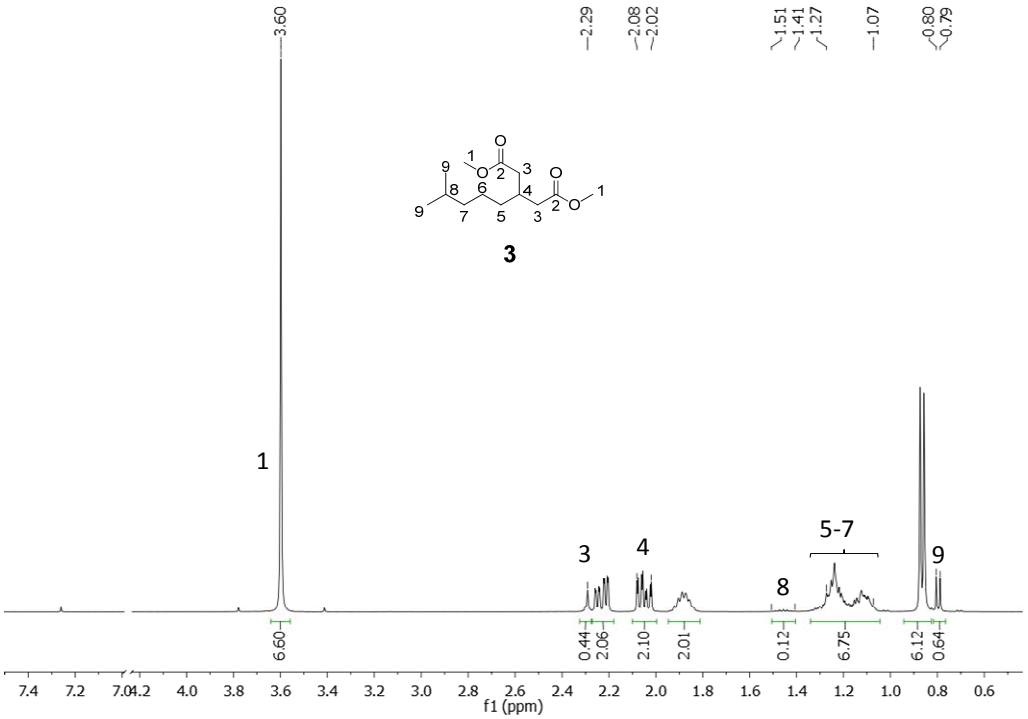

Figure S3: ^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of enriched dimethyl 3-(4-methylpentyl)pentanedioate (**3**) with dimethyl 3,7-dimethylnonane-1,9-dioate (**2**) (ratio 1:10).

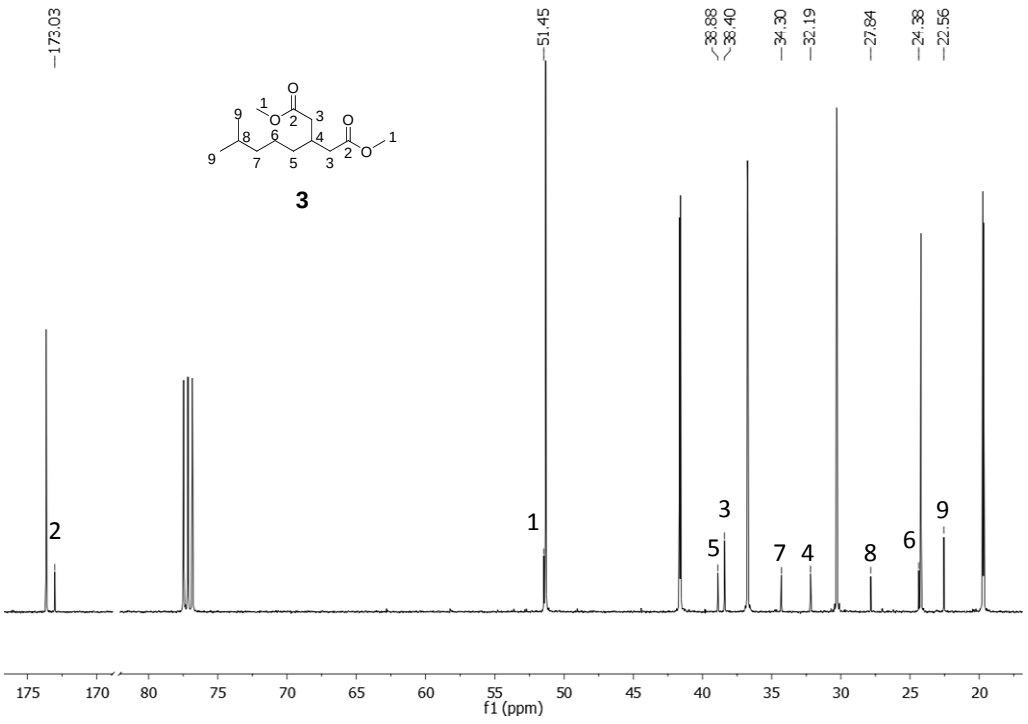

Figure S4: ^{13}C {^{1}H} NMR spectrum (100 MHz, $CDCl_3$, 25 °C) of enriched dimethyl 3-(4-methylpentyl)pentanedioate (**3**) with dimethyl 3,7-dimethylnonane-1,9-dioate (**2**) (ratio 1:10).

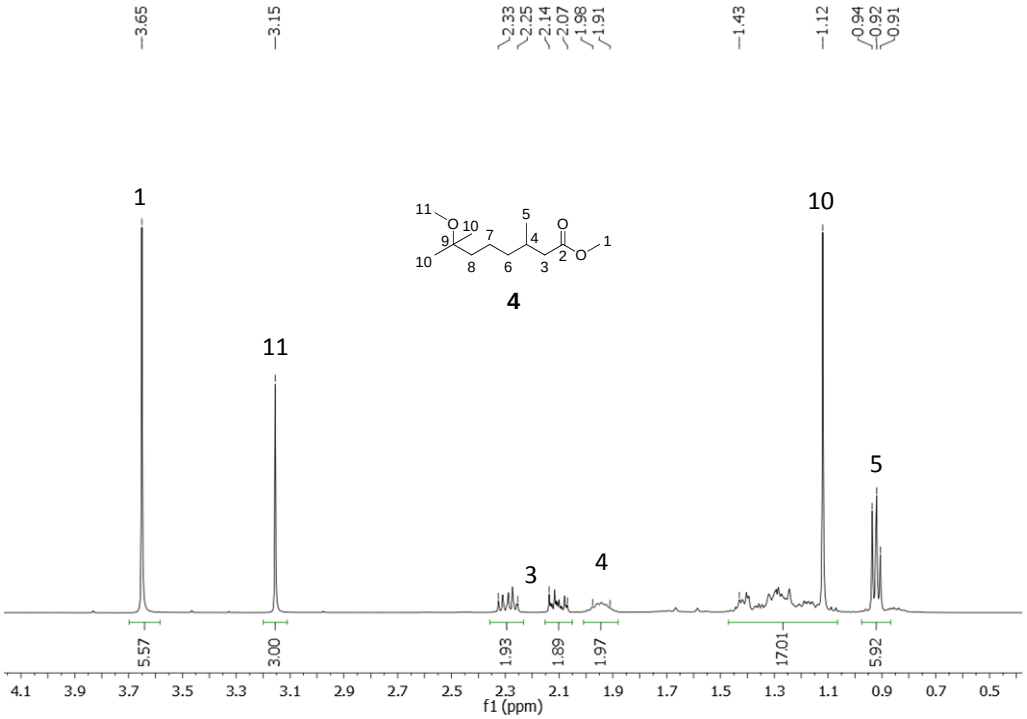

Figure S5: ^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of enriched methyl 7-methoxy-3,7-dimethyloctanoate (**4**) with dimethyl 3,7-dimethylnonane-1,9-dioate (**2**) (ratio 3:1).

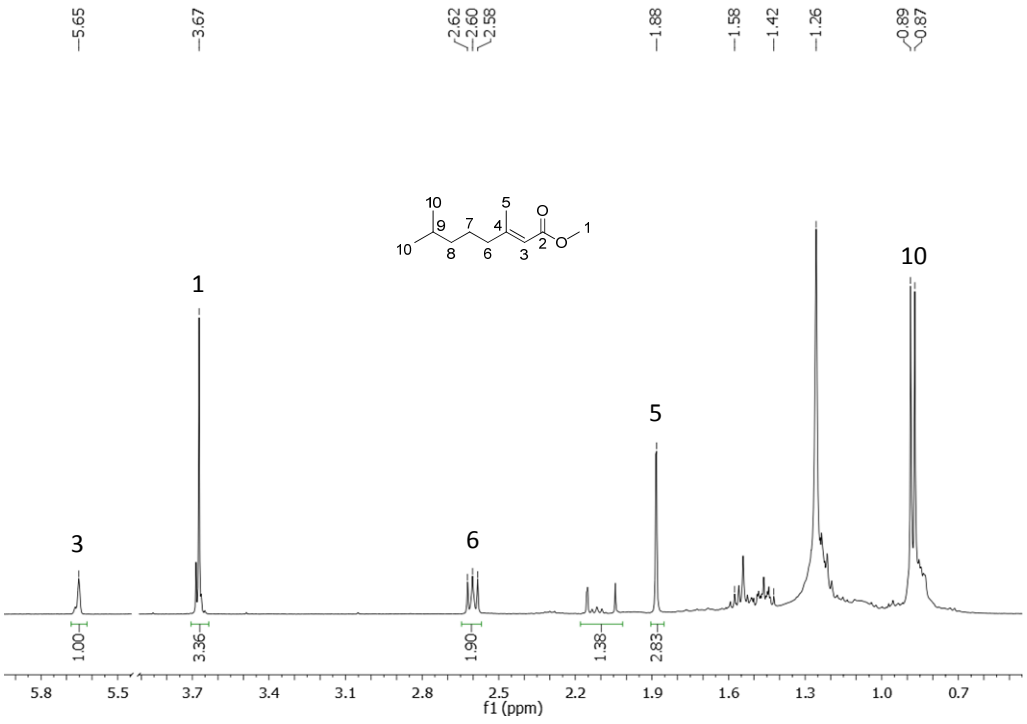

Figure S6: ^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of methyl 3,7-dimethyloct-2-enoate (**5**).

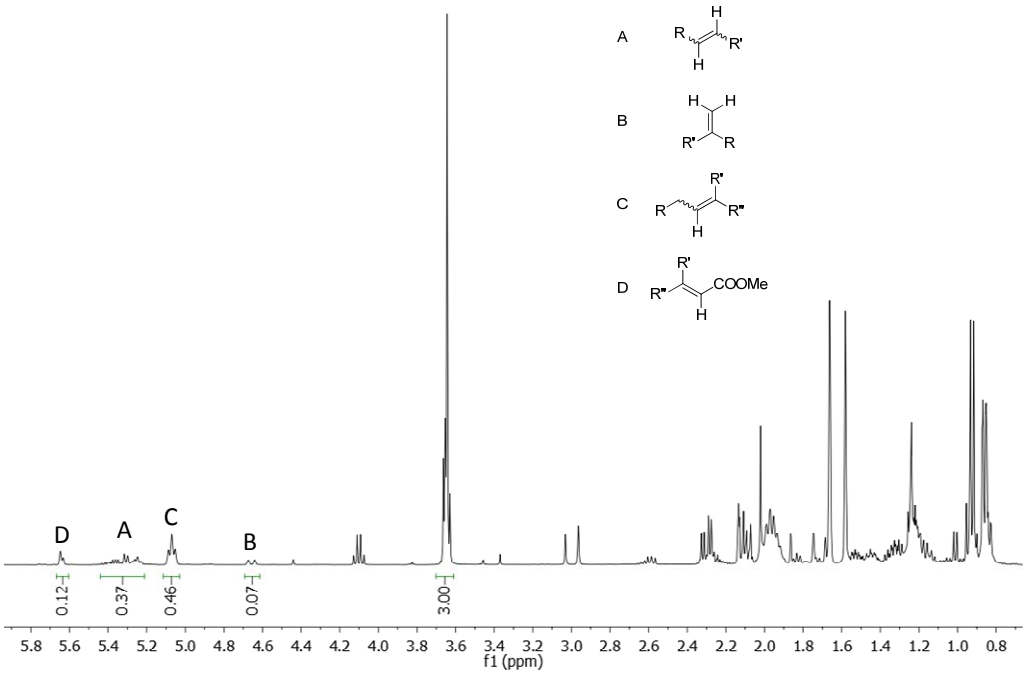

Figure S7: ^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of double bond isomers of the (esterified) starting material (depleted in **5** to facilitate observation of all isomers).

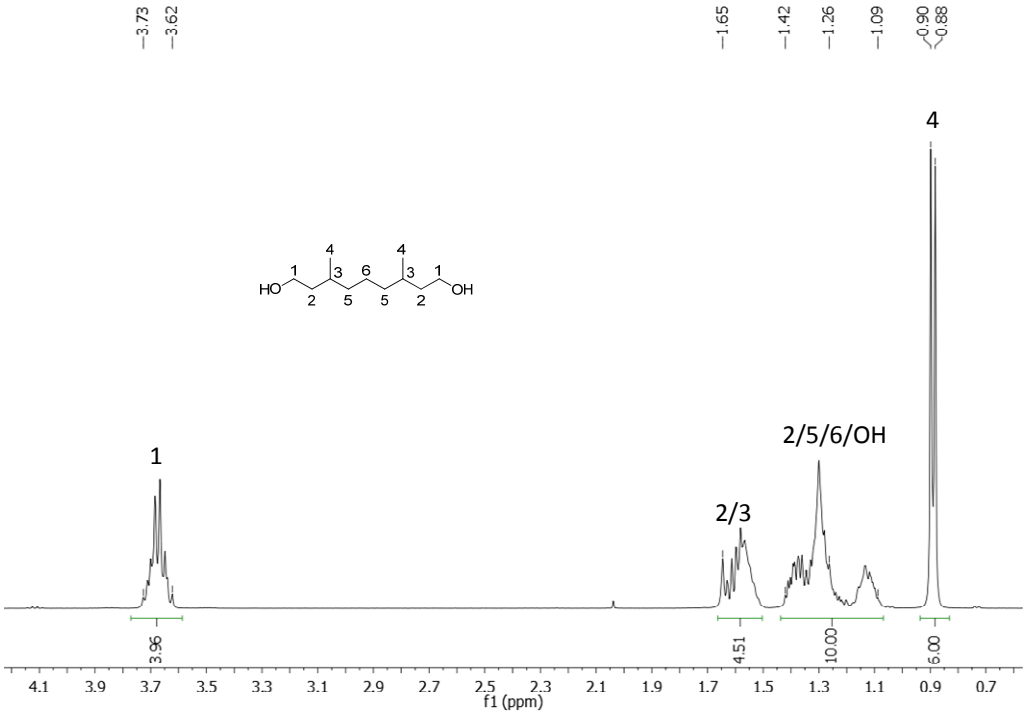

Figure S8: ^{1}H NMR spectrum (400 MHz, $CDCl_3$, 25 °C) of 3,7-dimethylnonane-1,9-diol (**6**).

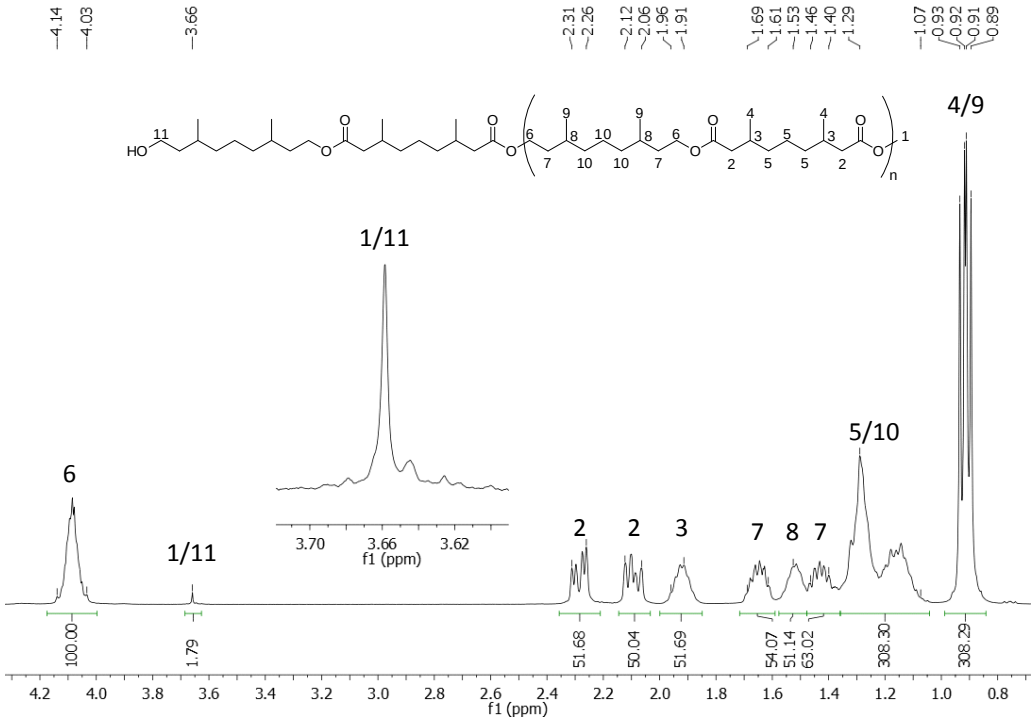

Figure S9: ^{1}H NMR spectrum (400 MHz, $C_2D_2Cl_4$, 25 °C) of poly[1,9-(3,7-dimethyl)nonadiyl-1,9-(3,7-dimethyl)nonanedioate] (**7**). Insert shows enlargement of the end group region.

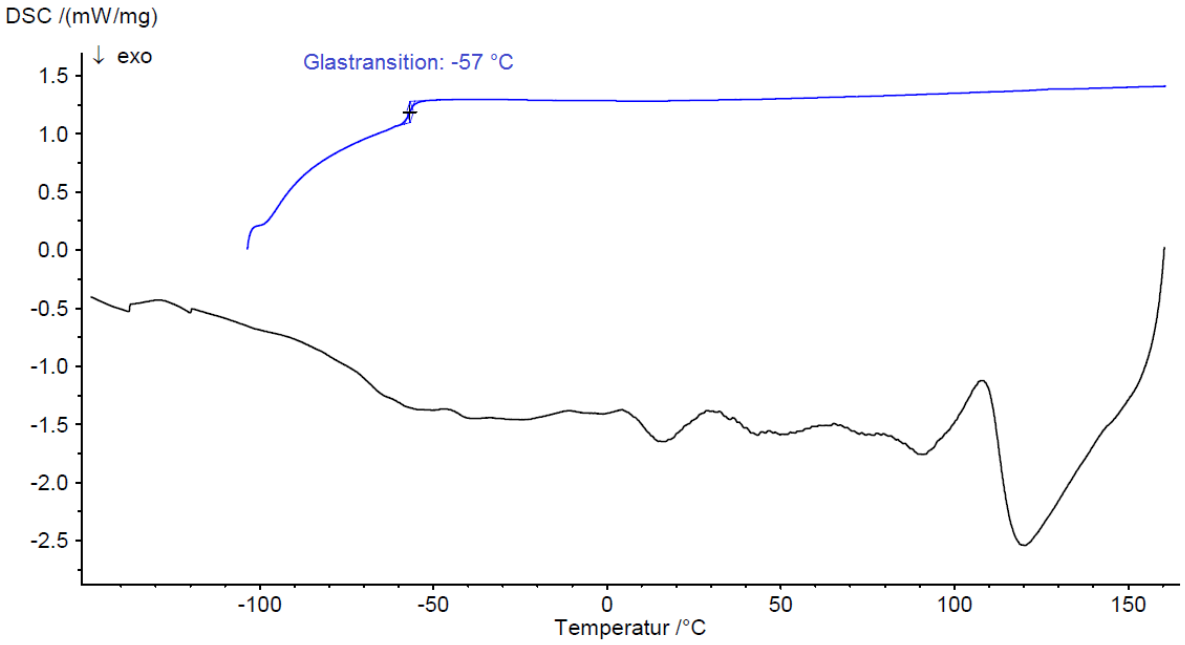

Figure S10: DSC trace of poly[1,9-(3,7-dimethyl)nonadiyl-1,9-(3,7-dimethyl)nonanedioate] (**7**).

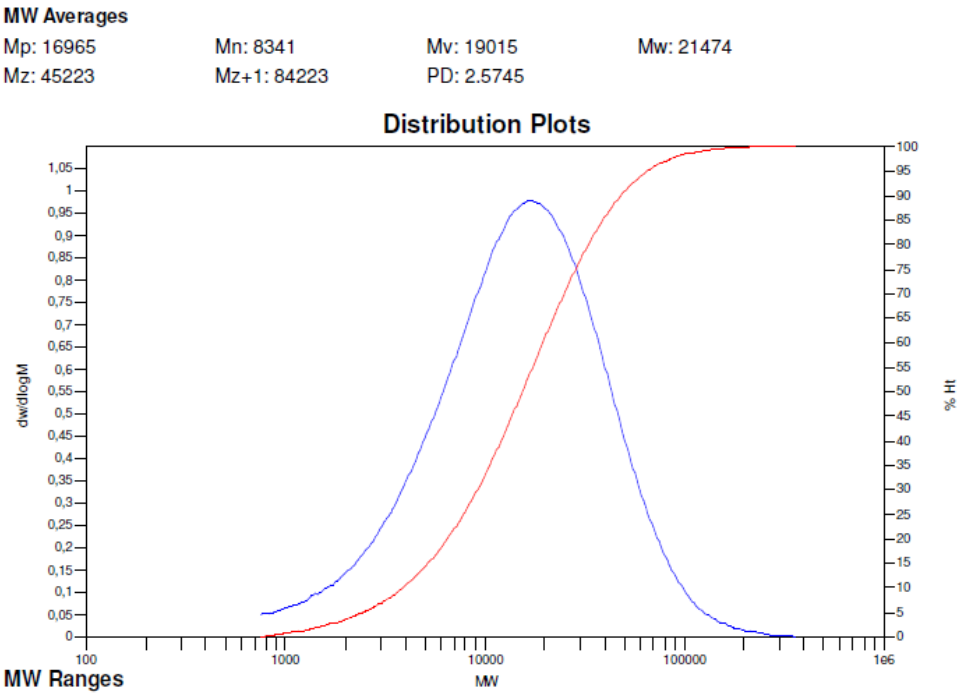

Figure S11: GPC trace of poly[1,9-(3,7-dimethyl)nonadiyl-1,9-(3,7-dimethyl)nonanedioate] (**7**) (TCB: 160 °C, *vs*. PE standards).