



SUPPLEMENTARY MATERIAL TO
Antistatic properties of dicarboxylic acid esters

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MATERIALS AND METHODS

All chemicals were of analytical grade and used without further purification. The synthesized esters were prepared according to previously reported procedures cited in the main text.

Physicochemical properties

Table SI – Physicochemical properties of dicarboxylic acid esters

Ester	Acid number	Refractive index	Density	Yield, %
Diethyl succinate	1.20	1.4495	0.8705	85
Dinonyl succinate	2.20	1.4567	0.9096	89
Butyl octyl succinate	1.80	1.4335	0.9429	80
2-Hydroxyethyl octyl succinate	1.89	1.4413	0.9385	88
2-(Hexanoyloxy)ethyl octyl succinate	3.12	1.3501	0.9158	85
Bis[2-(hexanoyloxy)ethyl] succinate	1.05	1.3582	0.9804	84
Diethyl adipate	2.90	1.4525	0.9258	88
Butyl octyl adipate	1.60	1.4431	0.9172	87
2-(Hexanoyloxy)ethyl octyl adipate	2.55	1.4465	0.9470	85
Bis[2-(hexanoyloxy)ethyl] adipate	1.82	1.3392	1.0174	82
Bis(4-methylcyclohexyl) adipate	1.10	1.4650	1.028	85
Heptyl 4-methylcyclohexyl adipate	2.30	1.4519	0.9580	81
Bis[4-methylcyclohexyl] sebacate	2.75	1.4480	0.9281	83
Dibenzyl sebacate	2.57	-	-	76
2-Hydroxyethyl octyl sebacate	1.68	1.4449	0.8891	78
Bis[2-(hexanoyloxy)ethyl] sebacate	2.04	1.3400	1.0210	77

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Table SII – Physicochemical properties of cyclohexenylsuccinic acid esters

Ester	Acid number	Refractive index	Density	Yield, %
Dibutyl 2-(cyclohex-1-en-1-yl)succinate	1.15	1.4353	1.1995	89
Butyl isobutyl 2-(cyclohex-1-en-1-yl)succinate	2.70	1.4383	1.1941	88
Butyl nonyl 2-(cyclohex-1-en-1-yl)succinate	2.81	1.4683	0.9567	82
Dibenzyl 2-(cyclohex-1-en-1-yl)succinate	1.30	1.5310	1.1303	83
Dinonyl 2-(cyclohex-1-en-1-yl)succinate	1.12	1.4690	0.9514	79
Benzyl cyclohexyl 2-(cyclohex-1-en-1-yl)succinate	2.88	1.5385	1.0331	82

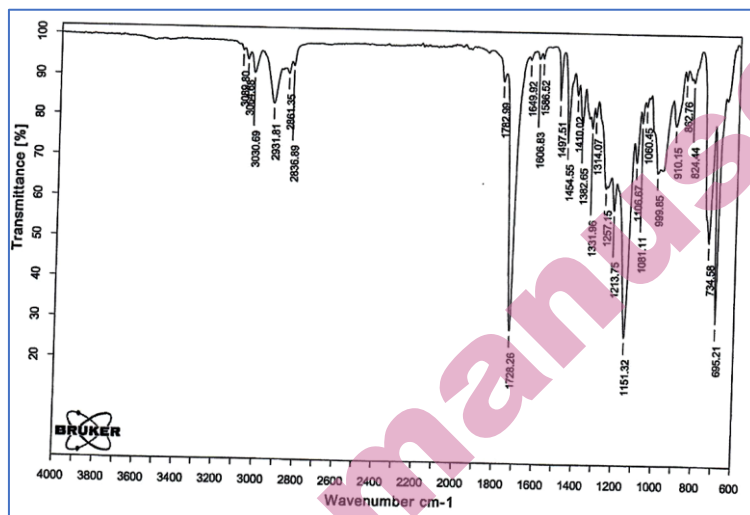
IR spectra

Fig. S1 – IR spectrum of dibenzyl 2-(cyclohex-1-en-1-yl)succinate

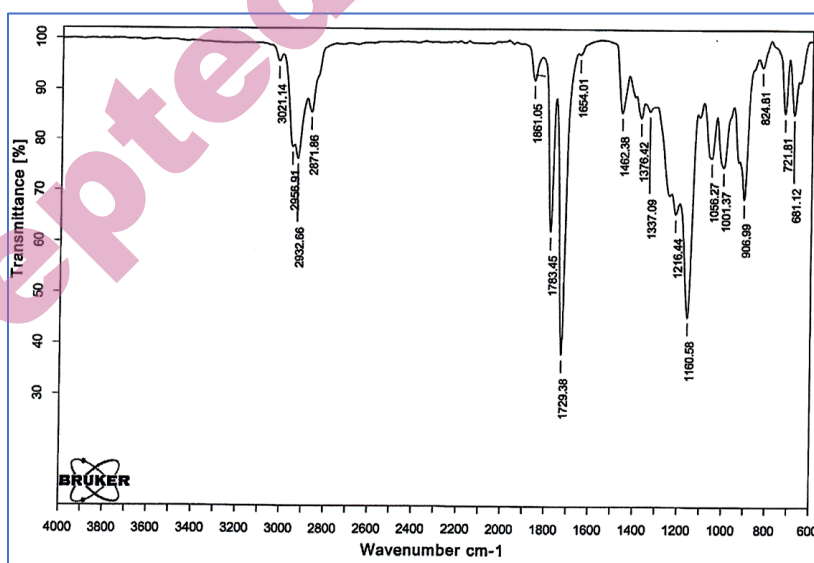


Fig. S2 – IR spectrum of butyl isobutyl 2-(cyclohex-1-en-1-yl)succinate

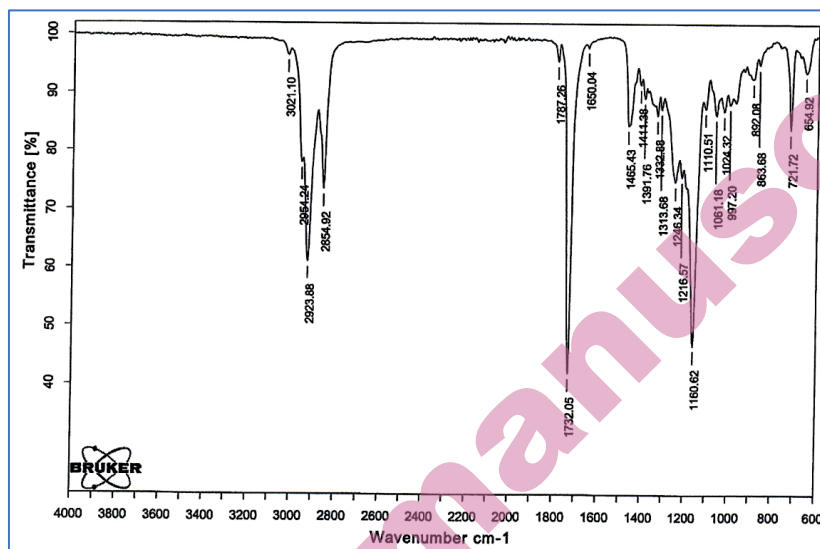


Fig. S3 – IR spectrum of butyl nonyl 2-(cyclohex-1-en-1-yl)succinate

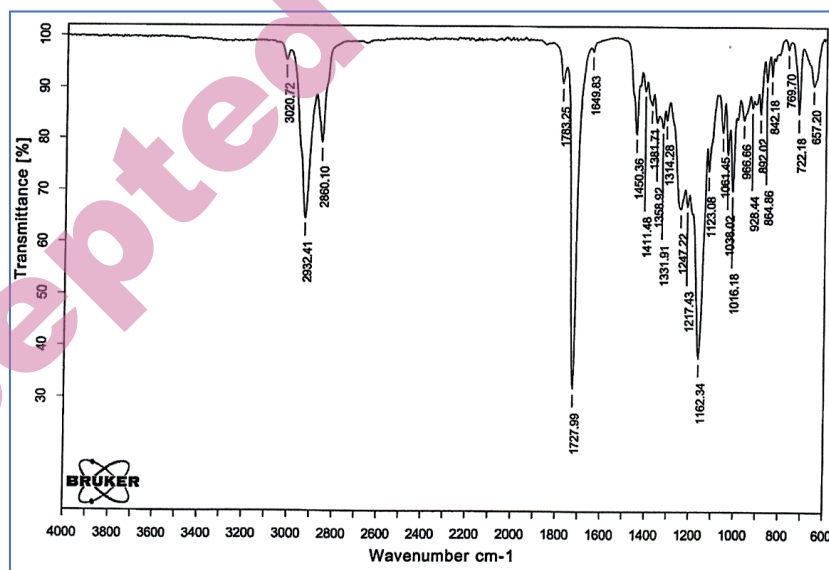


Fig. S4 – IR spectrum of benzyl cyclohexyl 2-(cyclohex-1-en-1-yl)succinate

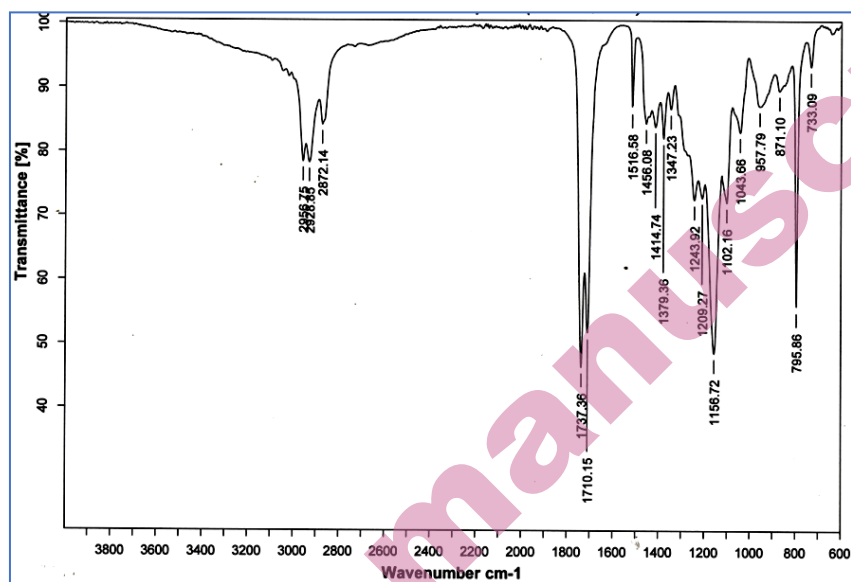


Fig. S5 – IR spectrum of bis[2-(hexanoyloxy)ethyl] succinate

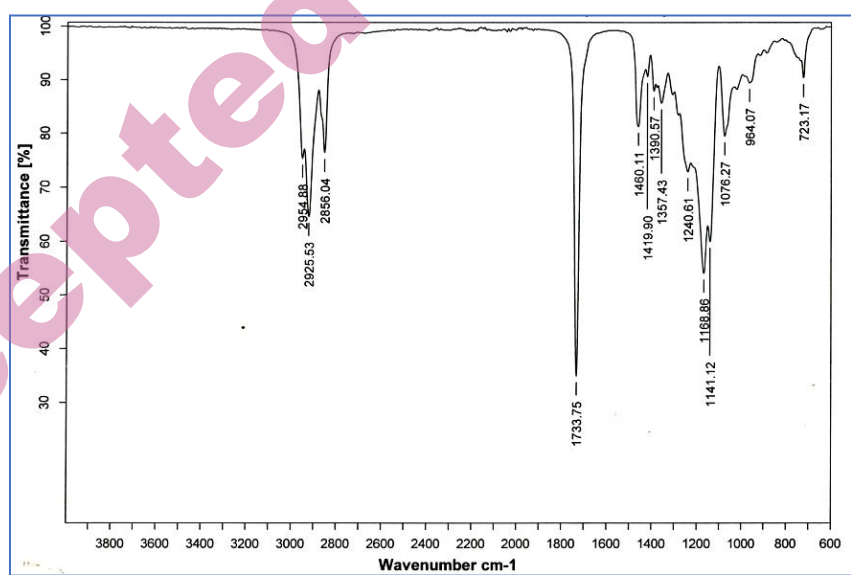


Fig. S6 – IR spectrum of butyl octyl adipate

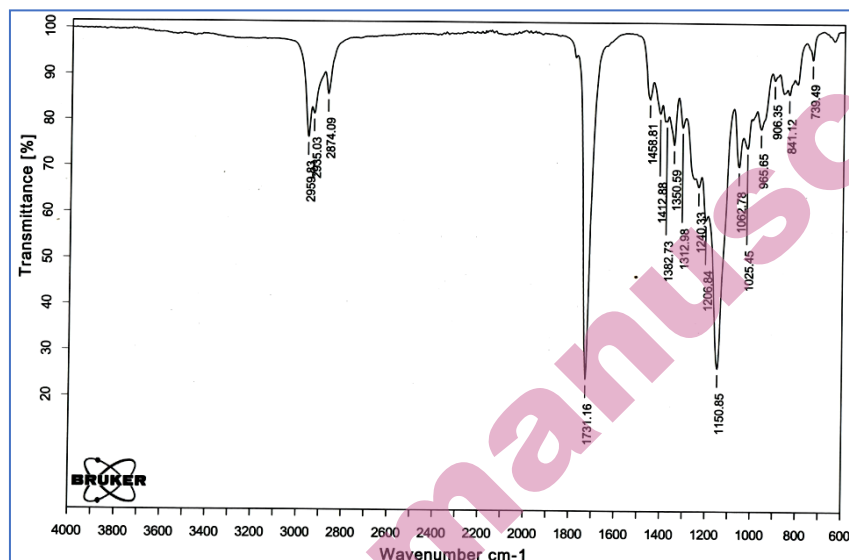


Fig. S7 – IR spectrum of 2-hydroxyethyl octyl succinate

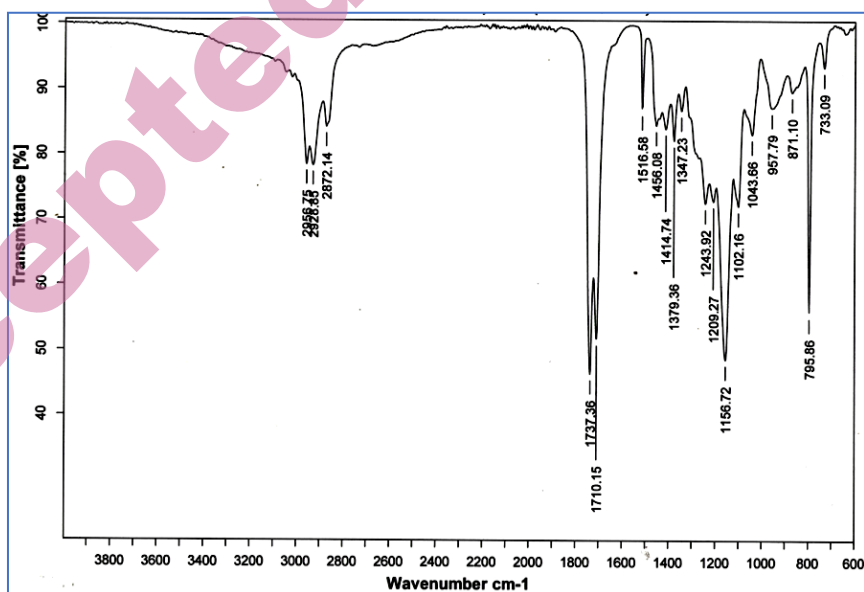


Fig. S8 – IR spectrum of bis[2-(hexanoyloxy)ethyl] succinate

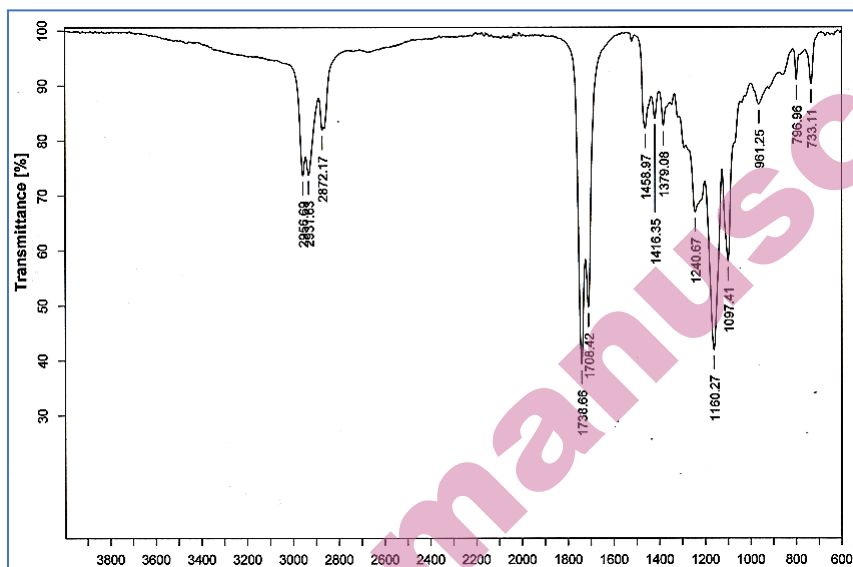


Fig. S9 – IR spectrum of 2-(hexanoyloxy)ethyl octyl adipate

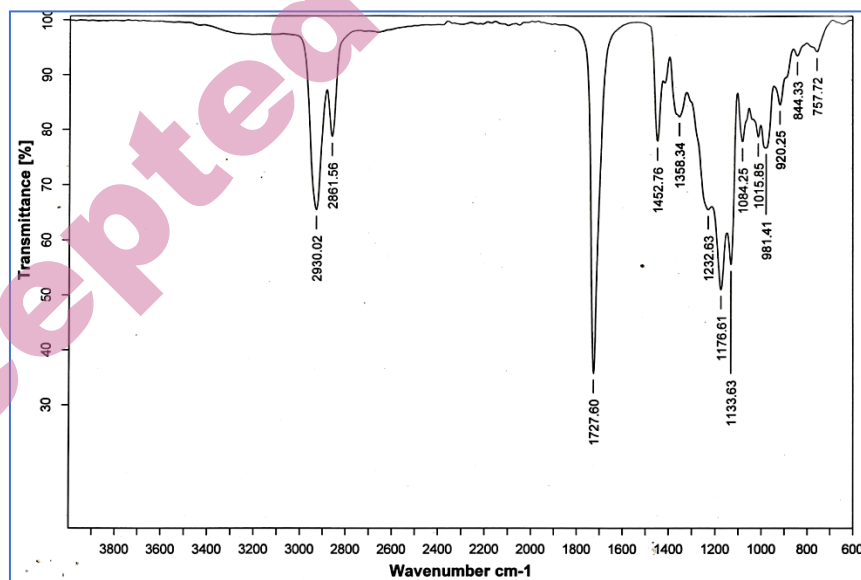


Fig. S9 – IR spectrum of bis(4-methylcyclohexyl) adipate

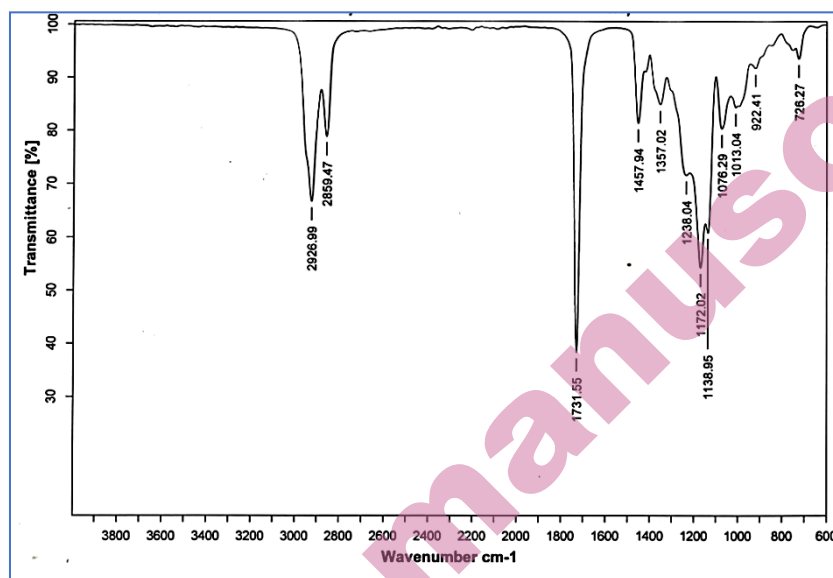


Fig. S10 – IR spectrum of heptyl 4-methylcyclohexyl adipate

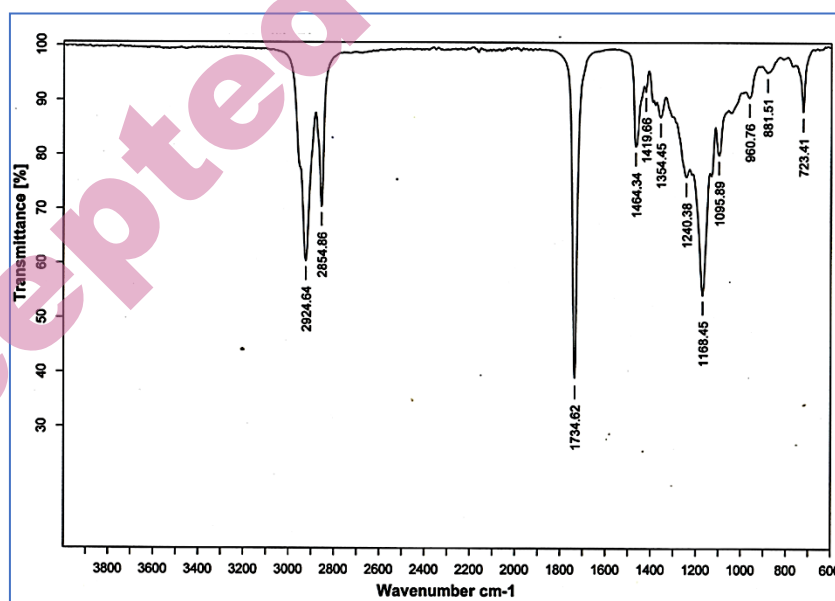


Fig. S11 – IR spectrum of 2-hydroxyethyl octyl sebacate

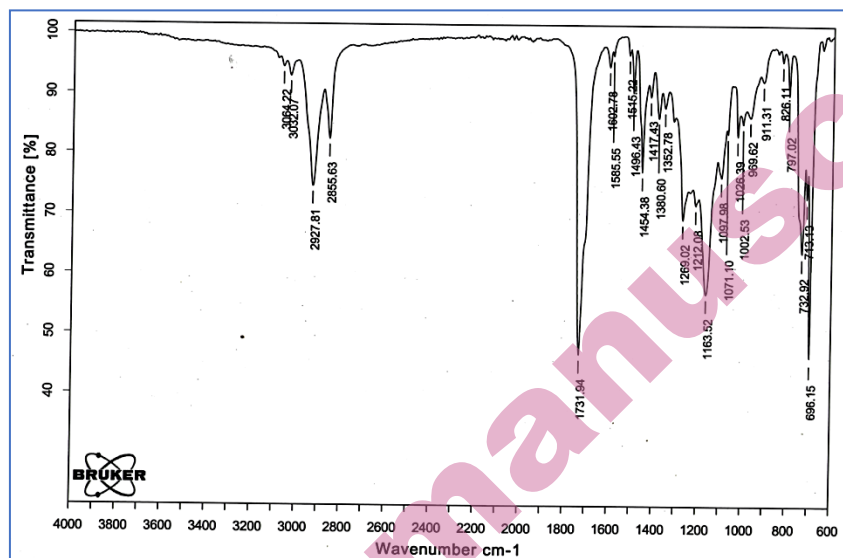


Fig. S12 – IR spectrum of dibenzyl sebacate

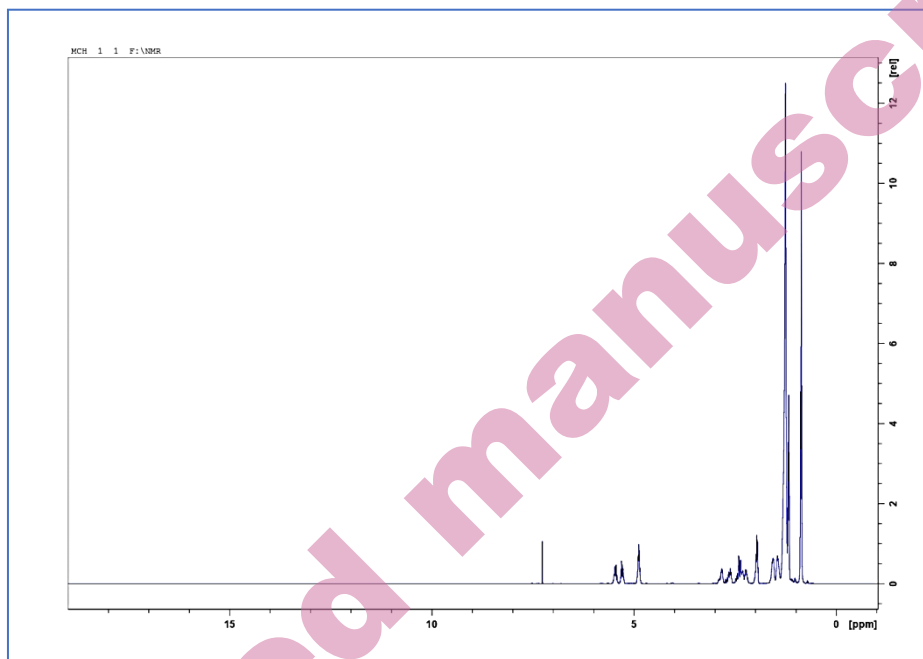
NMR spectra

Fig. S13 – ^1H NMR spectrum of bis(4-methylcyclohexyl) sebacate

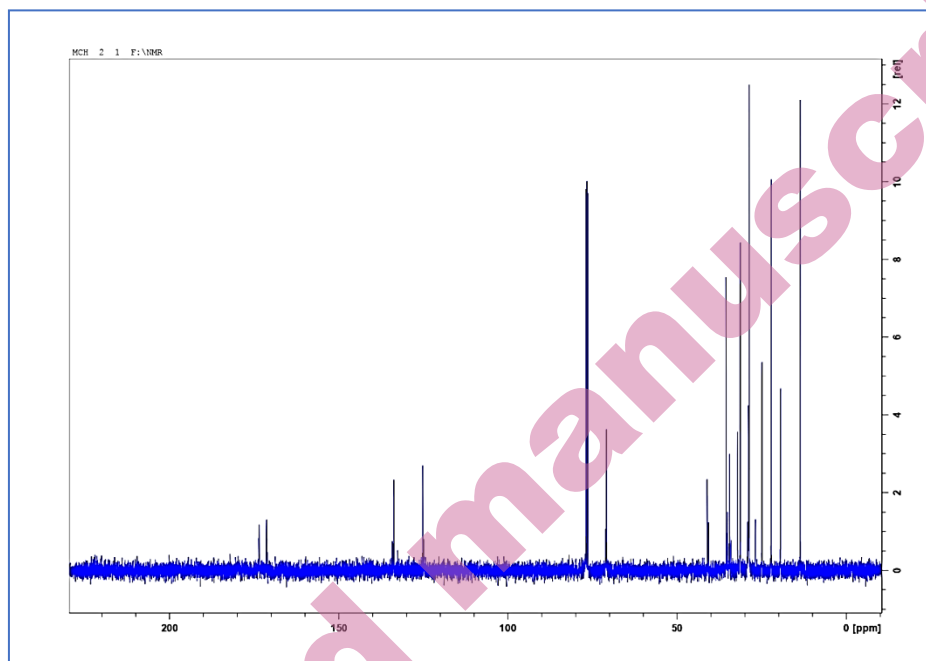


Fig. S14 – ^{13}C NMR spectrum of bis(4-methylcyclohexyl) sebacate