Supporting Information

to

Upgrading of levulinic acid with dimethylcarbonate as solvent/reagent.

Alessio Caretto, Alvise Perosa*

Department of Molecular Sciences and Nanosystems, Università Ca' Foscari Venezia, Dorsoduro
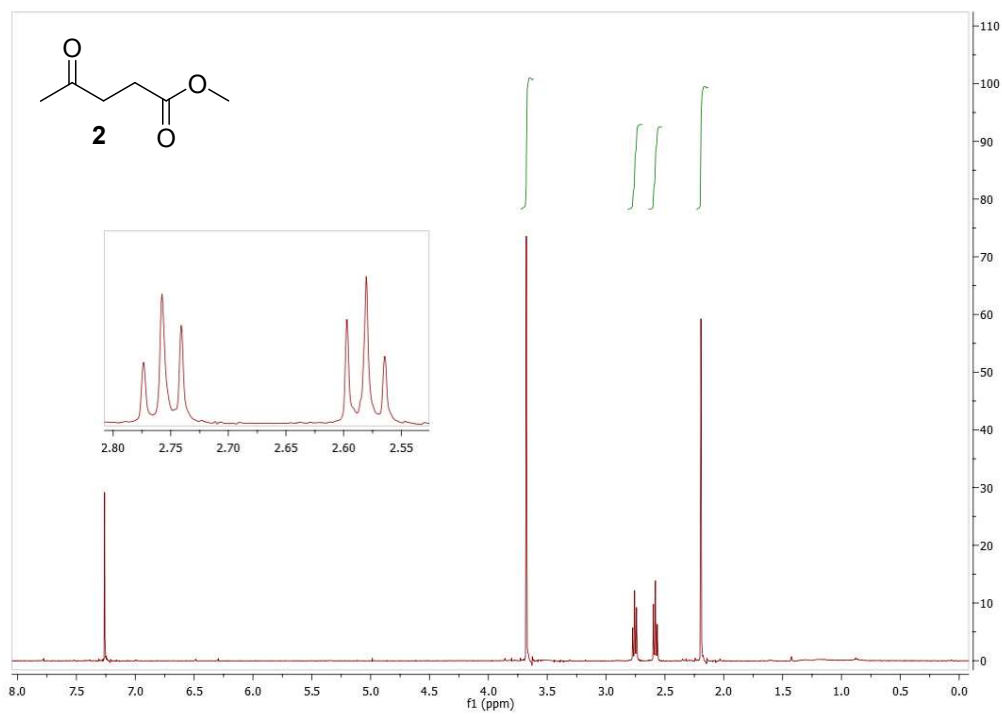2137, 30123 Venezia, Italy

alvise@unive.it

Figure S1: ¹H NMR of 2.

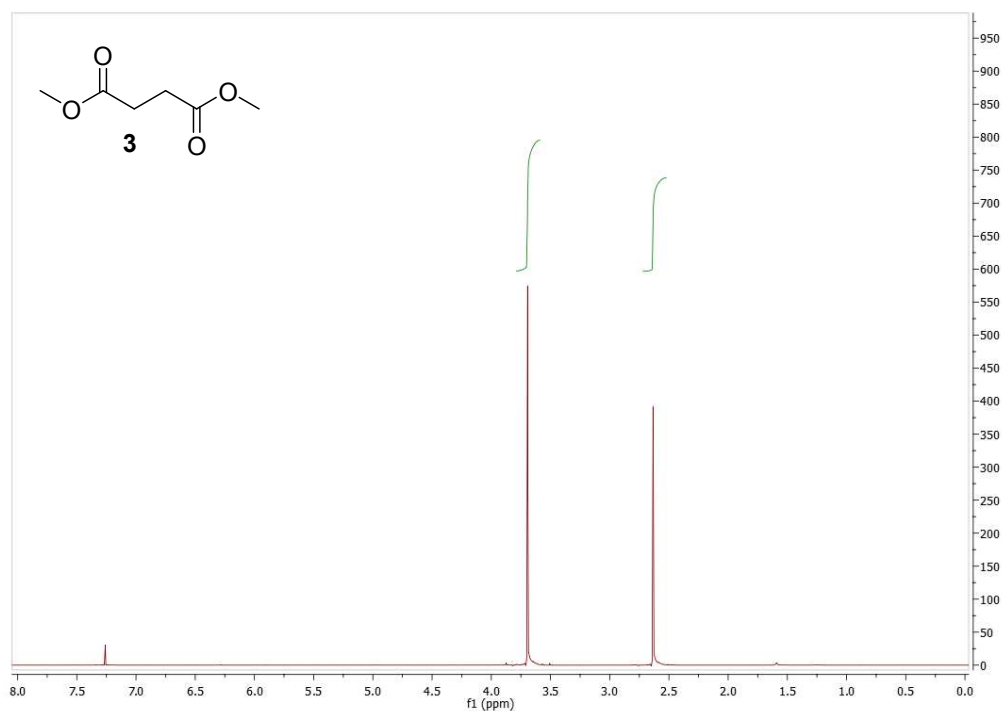**¹H NMR** (CDCl₃, 400 MHz) δ (ppm): 3.67 (s, 3H), 2,75 (t, 2H, J = 6.5 Hz), 2.57 (t, 2H, J = 6.5 Hz), 2.18 (s, 3H).

Figure S2: ¹H NMR of 3.

¹H NMR (CDCl₃, 400 MHz) δ (ppm): 3.68 (s, 6H), 2.62 (s, 4H).

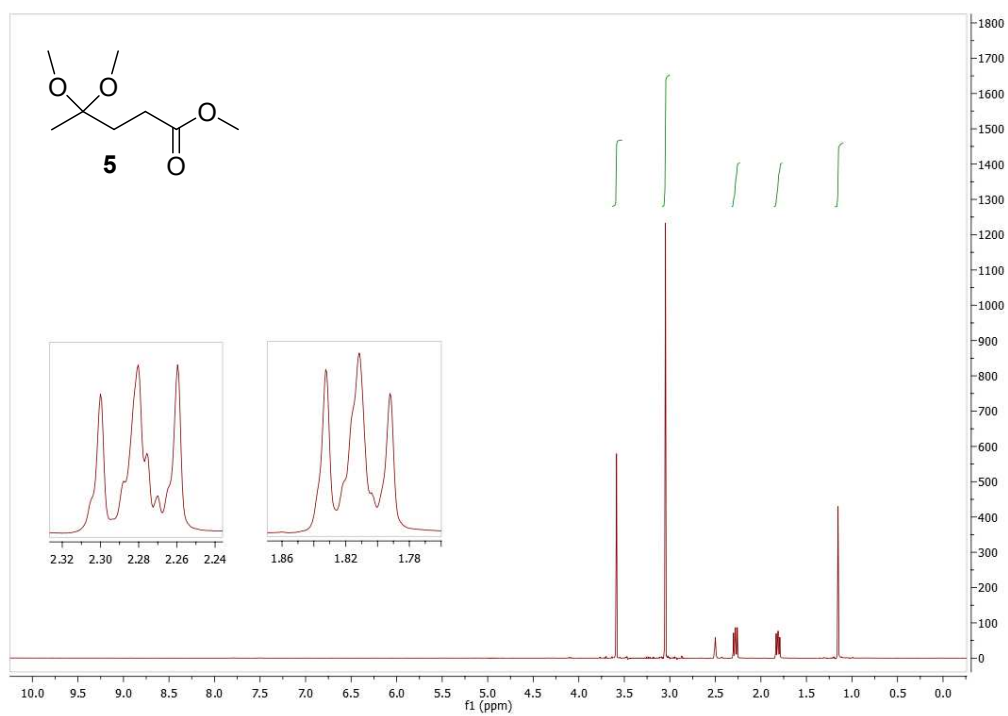**Figure S3:** ^{1}H NMR of 5.

^{1}**H NMR** (CDCl$_3$, 400 MHz) δ (ppm): 3.67 (s, 3H), 3.17 (s, 6H), 2.35 (m, 2H), 1.95 (m, 2H), 1.24 (s, 3H).
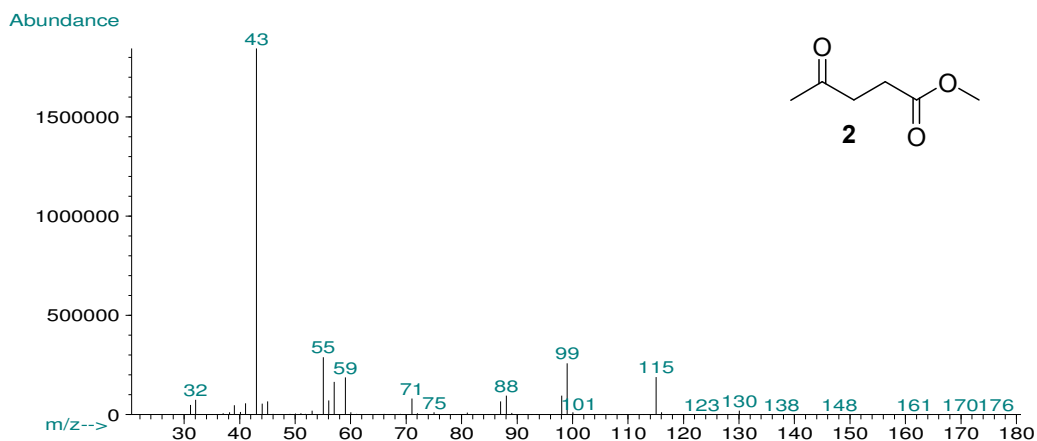
Figure S4: Mass spectrum of 2.

GC-MS (relative intensity, 70 eV) m/z: 130 (M^+, <1%), 115 (M^+-CH_3, 10), 99 (M^+-OCH_3, 14), 98 (5), 88 (5), 87 (4), 71 (M^+-$COOCH_3$, 4), 59 (10), 57 (9), 56 (4), 55 (16), 43 ($[CH_3CO]^+$, 100), 32 (4).
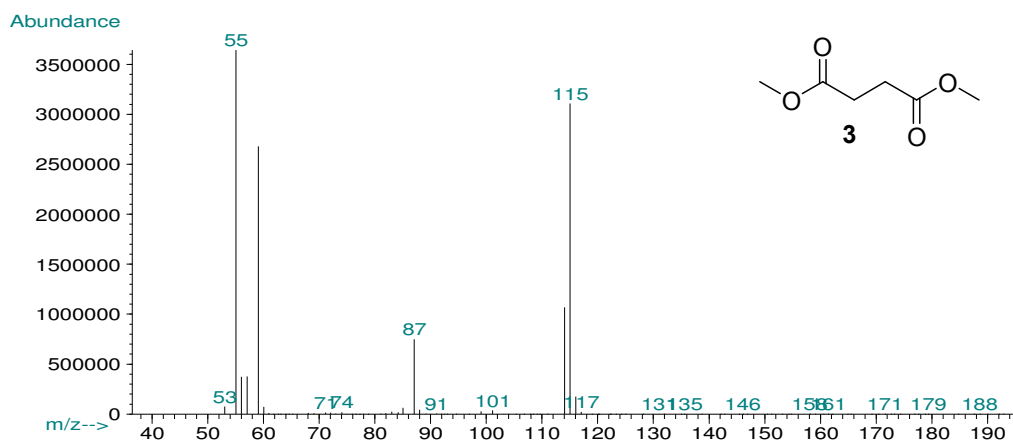

Figure S5: Mass spectrum of 3.

GC-MS (relative intensity, 70 eV) m/z: 146 (M^+, <1%), 116 (5), 115 (M^+-OCH_3, 84), 114 (28), 87 (M^+-$COOCH_3$, 20), 59 ($[COOCH_3]^+$, 72), 57 (10), 56 (10), 55 (100), 53 (18).
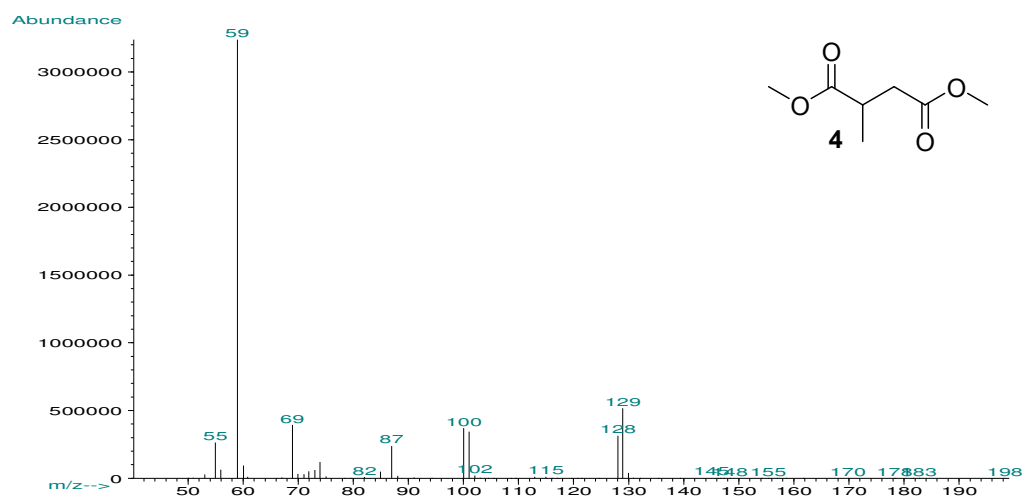
Figure S6: Mass spectrum of 4.

GC-MS (relative intensity, 70 eV) m/z: 160 (M$^+$, <1%), 129 (M$^+$-OCH$_3$, 16), 128 (10), 101 (M$^+$-COOCH$_3$, 11), 100 (11), 69 (12), 59 ([COOCH$_3$]$^+$, 100), 55 (8).
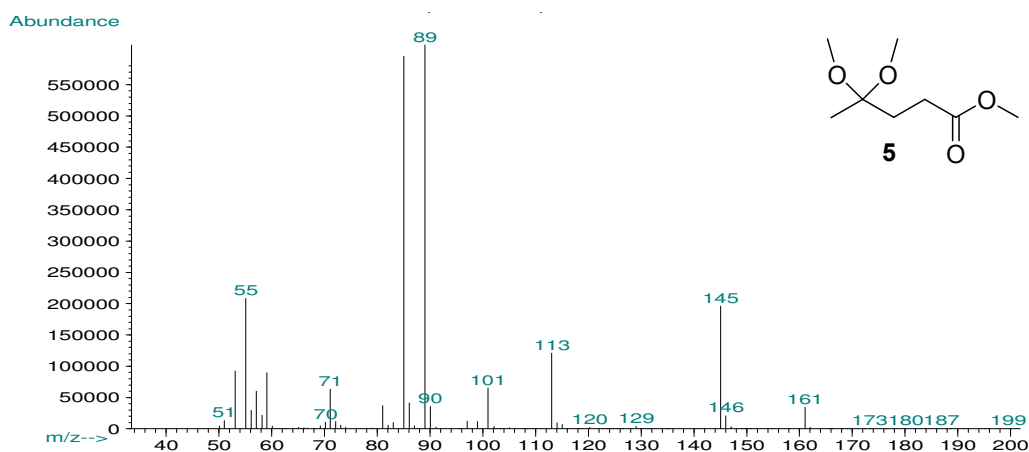

Figure S7: Mass spectrum of 5.

GC-MS (relative intensity, 70 eV) m/z: 176 (M$^+$, <1%), 161 (M$^+$-CH$_3$, 6), 146 (3), 145 (M$^+$-OCH$_3$, 32), 113 (20), 101 (11), 89 (100), 85 (97), 71 (10), 55 (34).