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EXPERIMENTAL SECTION

General Information. The reagents were purchased from Sigma Aldrich, Alfa Aesar or TCI Chemicals and used without further purification. All reactions involving air- and moisture-sensitive materials were carried out under argon atmosphere in oven-dried glassware with magnetic stirring. THF was distilled from Na and benzophenone. CH₂Cl₂ was distilled from CaH₂. Column chromatography was performed with Kieselgel (230-400 mesh). Analytical TLC was performed with Silica gel 60 F254 aluminum plates (Merck) with visualization by UV light and charring with Pancaldi reagent ((NH₄)₆MoO₄, Ce(SO₄)₂, H₂SO₄, H₂O) or potassium permanganate solution (KMnO₄, K₂CO₃, NaOH, H₂O). NMR analyses were performed with Varian Mercury 400 MHz, Varian VNMRS 500 MHz and 600 MHz spectrometers. In case of ¹⁹F spectroscopy, spectra from Varian Mercury 400 MHz were collected with ¹H decoupling in contrast to spectra from Varian VNMRS 500 MHz. Chemical shifts are calibrated using residual solvents signals (CDCl₃: δ(H)= 7.26, δ(C)= 77.0; C₆D₆: δ(H)= 7.16, δ(C)= 128.0; toluene-d₈: δ(H)= 2.08, δ(C)= 20.4) and are reported in ppm. Infrared spectra (IR) were recorded on a JASCO FT/IR-6200 spectrophotometer and are reported in frequency of absorption (cm⁻¹). HRMS spectra were recorded on ESI-TOF Mariner spectrometer (Perspective Biosystem) or a Synapt G2-S Waters spectrometer with electrospray ionization. Melting points were measured on Melting Point Meter MPMH2 apparatus and are uncorrected. Optical rotations were recorded on a Jasco P-2000 polarimeter. Analytical high-performance liquid chromatography (HPLC) was performed using a Merck HPLC system outfitted with a Daicel Chiralpak IA (250 mm × 4.6 mm, 5 μm) column.

Experimental details and characterization data for starting esters 7a-w and 11a-d.

benzhydrylacacetate (7a). This compound was synthesized according to the literature procedure¹ starting with 498 mg (2.7 mmol) of diphenylmethanol and acetate anhydride. Yield: 421.1 mg (69%); white solid; mp = 43.1-43.9 °C; Rf (20% AcOEt/hexane) 0.58; ¹H NMR (400 MHz, CDCl₃) δ 7.30-7.11 (m, 10H), 6.81 (s, 1H), 2.07 (s, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 169.9, 140.2, 128.5, 127.9, 127.1, 76.9, 21.3; IR (film) ν: 3063, 3032, 1740, 1233, 699 cm⁻¹; HRMS (EI) m/z calcd for C₁₅H₁₄O₂ [M]⁺ 226.0994, found 226.1005.

benzhydryl propionate (7b). This compound was synthesized according to the literature procedure² starting with 1.1 g (6 mmol) of diphenylmethanol. Yield: 1.92 g (100%); colorless oil; Rt (20% AcOEt/hexane) 0.73; ¹H NMR (400 MHz, CDCl₃) δ 7.38 – 7.32 (m, 7H), 7.33 – 7.26 (m, 3H), 6.91 (s, 1H), 2.46 (qd, J = 7.5, 1.1 Hz, 2H), 1.19 (td, J = 7.5, 1.1 Hz, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 169.9, 140.2, 128.5, 127.9, 127.1, 76.9, 21.3; IR (film) ν: 3063, 3032, 2927, 2856, 1739, 1453, 1158, 744, 699 cm⁻¹; HRMS (EI) m/z calcd for C₁₅H₂₁O₂ [M]⁺ 310.1933, found 310.1942.

benzhydryl octanoate (7c). This compound was synthesized according to the literature procedure² starting with 1.1 g (6 mmol) of diphenylmethanol. Yield: 1.75 g (94%); colorless oil; Rt (20% AcOEt/hexane) 0.79; ¹H NMR (400 MHz, CDCl₃) δ 7.39 – 7.33 (m, 8H), 7.34 – 7.23 (m, 2H), 6.91 (s, 1H), 2.43 (t, J = 7.5 Hz, 2H), 1.67 (p, J = 7.0 Hz, 2H), 1.33 – 1.23 (m, 8H), 0.88 (t, J = 7.0 Hz, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 172.7, 140.4, 128.5, 127.8, 127.1, 34.6, 31.6, 29.1, 28.9, 25.0, 22.6, 14.1; IR (film) ν: 2954, 2927, 2856, 1739, 1453, 1158, 744, 699 cm⁻¹; HRMS (EI) m/z calcd for C₂₁H₃₂O₂ [M]⁺ 310.1933, found 310.1942.
**benzhydryl cyclohexanecarboxylate (7d).** This compound was synthesized according to the literature procedure\(^2\) starting with 995 mg (5.4 mmol) of diphenylmethanol. Yield: 1.7 g (99%); white solid; mp 58.4-58.7 °C; R\(_f\) (15% AcOEt/hexane) 0.63; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 7.38-7.20 (m, 10H), 6.87 (s, 1H), 2.42 (tt, \(J = 11.1, 3.1\) Hz, 1H), 2.03-1.91 (m, 2H), 1.66 (dt, \(J = 5.4, 1.9\) Hz, 1H), 1.49 (dd, \(J = 13.1, 11.6, 11.1, 3.1\) Hz, 2H), 1.37-1.17 (m, 3H); \(^13\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 174.8, 140.5, 128.4, 127.8, 127.0, 76.4, 43.3, 29.0, 25.8, 25.4; IR (film) \(\nu\) 3087, 3063, 3032, 2932, 2855, 1734, 1451, 1245, 1164, 1130, 699 cm\(^{-1}\); HRMS (ESI-TOF) \(m/z\) calcd for C\(_{20}\)H\(_{22}\)O\(_2\)Na \([M+Na]^+\) 317.1517, found 317.1511.

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**benzhydryl 4-methoxybenzoate (7e).** This compound was synthesized according to the literature procedure\(^2\) starting with 995 mg (5.4 mmol) of diphenylmethanol. Yield: 1.6 g (93%); white solid; mp 104.1-104.4 °C; R\(_f\) (15% AcOEt/hexane) 0.47; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 8.12 (dd, \(J = 8.9, 1.5\) Hz, 2H), 7.48-7.42 (m, 4H), 7.42-7.32 (m, 4H), 7.32-7.25 (m, 2H), 6.95 (d, \(J = 8.9\) Hz, 2H), 3.86 (s, 3H); \(^13\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 165.3, 163.6, 140.5, 131.8, 128.5, 127.9, 127.1, 122.7, 113.7, 77.1, 55.4; IR (film) \(\nu\) 3062, 3031, 2935, 1712, 1605, 1256, 1167, 1097, 698 cm\(^{-1}\); HRMS (ESI-TOF) \(m/z\) calcd for C\(_{21}\)H\(_{18}\)O\(_3\)Na \([M+Na]^+\) 341.1154, found 341.1149.

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**benzhydryl 4-methylbenzoate (7f).** This compound was synthesized according to the literature procedure\(^2\) starting with 497 mg (2.7 mmol) of diphenylmethanol. Yield: 510.1 mg (63%); orange solid; mp 112.3-113.7 °C; R\(_f\) (15% AcOEt/hexane) 0.73; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 8.07-7.99 (m, 2H), 7.47-7.39 (m, 4H), 7.38-7.31 (m, 4H), 7.32-7.20 (m, 4H), 7.11 (s, 1H), 2.41 (s, 3H); \(^13\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 165.6, 143.8, 140.4, 129.8, 129.1, 128.5, 127.9, 127.1, 122.7, 113.7, 55.4; IR (film) \(\nu\) 3087, 3062, 3033, 2924, 1718, 1267, 1100, 752, 698 cm\(^{-1}\); HRMS (EI) \(m/z\) calcd for C\(_{21}\)H\(_{18}\)O\(_2\) 302.1307, found 302.1308.

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**benzhydryl biphenyl-4-carboxylate (7g).** This compound was synthesized according to the literature procedure\(^2\) starting with 866.4 mg (4 mmol) of 4-biphenyl-carboxylic acid chloride. Yield 1.01 g (69%); white solid; mp 113-114 °C; R\(_f\) (20% AcOEt/hexane) 0.71; \(^1\)H NMR (500 MHz, CDCl\(_3\)) \(\delta\) 8.25 (d, \(J = 8.4\) Hz, 2H), 7.74-7.69 (m, 2H), 7.65 (d, \(J = 7.6\) Hz, 2H), 7.54-7.46 (m, 6H), 7.46-7.36 (m, 5H), 7.36-7.30 (m, 2H), 7.19 (s, 1H); \(^13\)C NMR (126 MHz, CDCl\(_3\)) \(\delta\) 165.5, 145.9, 140.3, 140.0, 130.3, 129.0, 128.6, 128.2, 128.0, 127.3, 127.2, 127.2, 77.5. The spectroscopic data in agreement with literature.\(^4\)
**diphenylmethyl benzoate (7h).** This compound was synthesized according to the literature procedure\(^2\) starting with 2.9 g (16.0 mmol) of diphenylmethanol. Yield: 4.4 g (94%); white solid; mp 95.9-96.4 °C; R\(_f\) (20% AcOEt/hexane) 0.65; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 8.18 (m, 2H), 7.63-7.54 (m, 1H), 7.54-7.44 (m, 6H), 7.43-7.34 (m, 4H), 7.35-7.29 (m, 2H), 7.16 (s, 1H); \(^1\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 165.6, 162.4 140.3, 134.5, 133.1, 130.6, 130.3, 129.8, 128.9, 128.7, 128.4, 128.0, 127.2, 77.4; IR (film) \(\nu\): 3087, 3063, 3032, 1721, 1265, 1106, 701 cm\(^{-1}\); HRMS (EI) \(m/z\) calcd for C\(_{20}\)H\(_{16}\)O\(_2\) [M]\(^+\) 288.1150, found 288.1152.

**benzhydryl 2-chlorobenzoate (7i).** This compound was synthesized according to the literature procedure\(^2\) starting with 995 mg (5.4 mmol) of diphenylmethanol. Yield: 1.53 g (88%); white solid; mp 79.2-80.1 °C; R\(_f\) (15% AcOEt/hexane) 0.67; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 7.95 (dd, \(J\) = 7.9, 1.7 Hz, 1H), 7.54-7.45 (m, 5H); 7.45-7.72 (m, 8H); \(^1\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 164.6, 139.9, 134.0, 132.7, 131.7, 131.2, 130.0, 128.6, 128.0, 127.2, 78.4; IR (film) \(\nu\): 3064, 3032, 1733, 1287, 1246, 1120, 1048, 745, 699 cm\(^{-1}\); HRMS (ESI-TOF) \(m/z\) calcd for C\(_{20}\)H\(_{15}\)ClO\(_2\)Na [M+Na]\(^+\) 345.0658, found 345.0647.

**benzhydryl 2-iodobenzoate (7j).** This compound was synthesized according to the literature procedure\(^5\) starting with 992.1 mg (4 mmol) of 2-iodo-carboxylic acid chloride. Yield: 1.65 g (100%); colorless thick oil; R\(_f\) (5% MTBE/hexane + 1% TEA) 0.45; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 8.01 (dd, \(J\) = 7.9, 1.2 Hz, 1H), 7.91 (dd, \(J\) = 7.9, 1.7 Hz, 1H), 7.53 – 7.41 (m, 4H), 7.40 – 7.26 (m, 8H), 7.15 (s, 1H); \(^1\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 165.3, 141.5, 139.8, 134.8, 132.7, 131.1, 128.5, 128.0, 127.9, 127.3, 94.3, 78.4; IR (film) \(\nu\): 3061, 3031, 1723, 1253, 1113, 743, 699 cm\(^{-1}\); HRMS (ESI-TOF) \(m/z\) calcd for C\(_{20}\)H\(_{19}\)IO\(_2\)Na [M+Na]\(^+\) 437.0014, found 437.0002.

**benzhydryl 3-iodobenzoate (7k).** This compound was synthesized according to the literature procedure\(^5\) starting with 992.7 mg (4 mmol) of 3-iodo-carboxylic acid chloride. Yield: 1.55g (94%); colorless thick oil; R\(_f\) (20% AcOEt/hexane) 0.85; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 8.45 (t, \(J\) = 1.7 Hz, 1H), 8.10 (dt, \(J\) = 7.8, 1.4 Hz, 1H), 7.90 (dd, \(J\) = 7.8, 1.7, 1.0 Hz, 1H), 7.46 – 7.39 (m, 4H), 7.38 – 7.35 (m, 4H), 7.33 – 7.28 (m, 2H), 7.20 (t, \(J\) = 7.8 Hz, 1H), 7.12 (s, 1H); \(^1\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 164.1, 142.0, 139.9, 138.6, 132.2, 130.1, 129.0, 128.6, 128.1, 127.2, 93.9, 77.9; IR (film) \(\nu\): 3062, 3031, 1723, 1253, 1113, 743, 699 cm\(^{-1}\); HRMS (ESI-TOF) \(m/z\) calcd for C\(_{22}\)H\(_{19}\)I\(_2\)O\(_2\)Na [M+Na]\(^+\) 437.0014, found 437.0009.
benzhydryl 4-trifluorobenzoate (7l). This compound was synthesized according to the literature procedure starting with 995 mg (5.4 mmol) of diphenylmethanol. Yield: 1.92 g (100%); white solid; mp 94.9-96.2 °C; Rf (15% AcOEt/hexane) 0.33; 1H NMR (400 MHz, CDCl3) δ 8.30-8.20 (m, 2H), 7.77-7.67 (m, 2H), 7.48-7.40 (m, 4H), 7.28-7.20 (m, 6H), 7.14 (s, 1H); 13C NMR (101 MHz, CDCl3) δ 164.4, 139.8, 133.5, 130.2, 128.6, 128.2, 127.1, 125.5 (q, J = 3.72 Hz), 78.1; 19F NMR (376 MHz, CDCl3) δ -63.2; IR (film) ν: 3089, 3065, 3033, 1726, 1412, 1325, 1270, 1170, 1131, 1099, 1066, 700 cm⁻¹; HRMS (EI) m/z calcd for C21H15F3O2 [M]⁺ 356.1024, found 356.1031.

3,4-dimethoxybenzylbenzoate (7m). This compound was synthesized according to the literature procedure starting with 1.0 g (6 mmol) of 3,4-dimethoxybenzyl alcohol. Yield 1.63 g (100%); colorless oil; Rf (20% AcOEt/hexane) 0.36; 1H NMR (400 MHz, CDCl3) δ 8.06 (m, 2H), 7.58–7.48 (m, 1H), 7.46–7.34 (m, 2H), 7.05–6.96 (m, 2H), 6.86 (d, J = 8.2 Hz, 1H), 5.30 (s, 2H), 3.89 (s, 3H), 3.86 (s, 3H); 13C NMR (101 MHz, CDCl3) δ 166.5, 149.2, 149.1, 133.0, 130.3, 130.1, 128.6, 128.4, 128.3, 121.3, 111.9, 111.2, 66.8, 55.9; The spectroscopic data in agreement with literature.

4-methoxybenzylbenzoate (7n). This compound was synthesized according to the literature procedure starting with 967.1 mg (7 mmol) of 4-methoxybenzyl alcohol. Yield: 1.7 g (100%); white solid; mp 37.9-38.5 °C; Rf (20% AcOEt/hexane) 0.59; 1H NMR (400 MHz, CDCl3) δ 8.10–8.04 (m, 2H), 7.58–7.52 (m, 1H), 7.42 (t, J = 7.8 Hz, 2H), 6.93 (s, 2H), 5.44 (s, 2H), 2.44 (s, 6H), 2.32 (s, 3H); 13C NMR (101 MHz, CDCl3) δ 166.5, 159.7, 132.9, 130.3, 130.1, 129.7, 128.3, 121.3, 111.9, 111.2, 66.5, 55.3; IR (film) ν: 3063, 3035, 3007, 2654, 2919, 2864, 1717, 1269, 1108, 711 cm⁻¹; HRMS (ESI-TOF) m/z calcd for C15H14O3Na [M+Na]⁺ 242.1204, found 242.0945.

2,4,6-trimethylbenzylbenzoate (7o). This compound was synthesized according to the literature procedure starting with 525.7 mg (3.5 mmol) of 2,4,6-trimethylbenzyl alcohol. Yield: 839 mg (100%); colorless crystals; mp 42.1-42.5 °C; Rf (20% AcOEt/hexane) 0.73; 1H NMR (400 MHz, CDCl3) δ 8.07-8.00 (m, 2H), 7.58-7.52 (m, 1H), 7.42 (t, J = 7.8 Hz, 2H), 6.93 (s, 2H), 5.44 (s, 2H), 2.44 (s, 6H), 2.32 (s, 3H); 13C NMR (101 MHz, CDCl3) δ 166.7, 138.4, 138.3, 132.9, 130.3, 129.7, 129.2, 129.1, 128.3, 61.6, 21.0, 19.6; IR (film) ν: 3061, 3032, 2964, 2919, 2864, 1717, 1269, 1108, 711 cm⁻¹; HRMS (ESI-TOF) m/z calcd for C17H18O2Na [M+Na]⁺ 277.1204, found 277.1197.

1-phenylethyl benzoate (7p). This compound was synthesized according to the literature procedure starting with 427.7 mg (3.5 mmol) of 1-phenylethanol. Yield: 326.9 mg (54%); colorless oil; Rf (20% AcOEt/hexane) 0.74; 1H NMR (400
MHz, CDCl$_3$) $\delta$ 8.21 - 7.92 (m, 2H), 7.59 - 7.53 (m, 1H), 7.48 - 7.41 (m, 4H), 7.38 (ddd, $J$ = 7.9, 6.6, 1.3 Hz, 2H), 7.34 - 7.28 (m, 1H), 6.15 (q, $J$ = 6.6 Hz, 1H), 1.69 (d, $J$ = 6.6 Hz, 3H); $^{13}$C NMR (101 MHz, CDCl$_3$) $\delta$ 166.5, 138.1, 133.2, 133.0, 130.3, 129.7, 129.3, 128.4, 128.4, 66.7, 21.2; IR (film) $\nu$: 3064, 3033, 2981, 2932, 1717, 1270, 712 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{15}$H$_{14}$O$_2$ [M]$^+$ 226.0994, found 226.1003.

4-methylbenzylbenzoate (7q). This compound was synthesized according to the literature procedure$^2$ starting with 858.2 mg (7 mmol) of 4-methylbenzyl alcohol. Yield: 1.49 g (94%); colorless oil; R$_f$(15% AcOEt/hexane) 0.74; $^1$H NMR (400 MHz, CDCl$_3$) $\delta$ 8.16 - 8.10 (m, 2H), 7.60 - 7.53 (m, 1H), 7.49 - 7.42 (m, 2H), 7.41 - 7.36 (m, 2H), 7.31 - 7.14 (m, 2H), 5.37 (s, 2H), 2.40 (s, 3H); $^{13}$C NMR (101 MHz, CDCl$_3$) $\delta$ 166.5, 138.1, 133.2, 133.0, 130.3, 129.7, 129.3, 128.4, 128.4, 66.7, 21.2; IR (film) $\nu$: 3059, 3031, 2952, 2888, 1719, 1274, 1110, 839, 712 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{15}$H$_{14}$O$_2$ [M]$^+$ 226.0994, found 226.1003.

2-(trimethylsilanyl)ethyl benzoate (7r). This compound was synthesized according to the literature procedure$^7$ starting with 366.6 mg (3 mmol) of benzoic acid. Yield: 627.4 mg (94%); colorless oil; R$_f$(20% AcOEt/hexane) 0.74; $^1$H NMR (400 MHz, C$_6$D$_6$) $\delta$ 8.34 - 8.16 (m, 2H), 7.29 - 7.12 (m, 3H), 4.48 - 4.37 (m, 2H), 1.07 - 0.96 (m, 2H), 0.00 (s, 9H); $^{13}$C NMR (101 MHz, C$_6$D$_6$) $\delta$ 165.9, 132.3, 131.1, 129.5, 128.1, 62.6, 17.2, -1.9; IR (film) $\nu$: 3066, 2954, 2898, 1719, 1274, 1110, 839, 712 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{12}$H$_{18}$O$_2$Si [M]$^+$ 222.1045, found 222.1036.

benzyloxymethyl benzoate (7s). This compound was synthesized according to the literature procedure$^8$ starting with 2.3 ml (technical, ~60% (NMR), 8 mmol) of benzyl chloromethyl ether. Yield: 1.55 g (80%); R$_f$(20% AcOEt/hexane) 0.73; $^1$H NMR (400 MHz, C$_6$D$_6$) $\delta$ 8.12 - 8.06 (m, 2H), 7.24 - 7.18 (m, 2H), 7.14 - 7.08 (m, 3H), 7.08 - 7.00 (m, 3H), 5.41 (s, 2H), 4.52 (s, 2H); $^{13}$C NMR (101 MHz, C$_6$D$_6$) $\delta$ 165.41, 137.50, 132.73, 130.28, 129.69, 128.20, 128.18, 127.55, 127.53, 88.86, 71.66. The spectroscopic data in agreement with literature.$^8$

1-adamantyl benzoate (7t). This compound was synthesized according to the literature procedure$^7$ starting with 1.06 g (7 mmol) of adamantyl alcohol. Yield: 1.18 g (66%); white solid; mp 84-85 °C; R$_f$(20% AcOEt/hexane) 0.87; $^1$H NMR (400 MHz, CDCl$_3$) $\delta$ 0.07 - 7.93 (m, 2H), 7.56 - 7.46 (m, 1H), 7.44 - 7.36 (m, 2H), 2.31 - 2.25 (m, 6H), 2.23 (s, 3H), 1.89 - 1.65 (m, 6H); $^{13}$C NMR (101 MHz, CDCl$_3$) $\delta$ 165.4, 132.3, 132.1, 129.4, 128.1, 8, 41.5, 36.3, 30.9. The spectroscopic data in agreement with literature.$^9$
**[(2S,5R)-1-benzoyl-2-(1-methylethyl)-5-methylcyclohexan-1-ol (7u)]**. This compound was synthesized according to the literature procedure starting with 1.6 g (10 mmol) of menthol. Yield: 1.29 g (85%); colorless oil; R<sub>t</sub>(15% PhMe/hexane) 0.49; ¹H NMR (400 MHz, CDCl<sub>3</sub>) δ 8.11 – 7.99 (m, 2H), 7.58 – 7.50 (m, 1H), 7.48 – 7.39 (m, 2H), 4.94 (td, J = 10.9, 4.4 Hz, 1H), 2.19 – 2.06 (m, 1H), 1.97 (ddt, J = 14.0, 7.0, 2.7 Hz, 1H), 1.80 – 1.68 (m, 2H), 1.56 (ddt, J = 12.3, 10.4, 3.1 Hz, 2H), 1.22 – 1.04 (m, 2H), 0.93 (dd, J = 6.8, 4.2 Hz, 6H), 0.80 (d, J = 7.0 Hz, 3H); ¹³C NMR (101 MHz, CDCl<sub>3</sub>) δ 166.1, 132.6, 129.5, 128.3, 74.8, 47.3, 41.0, 34.4, 31.5, 26.5, 23.7, 22.0, 20.8, 16.5. The spectroscopic data in agreement with literature.<sup>10</sup>

![Geranyl Benzoate](image)

**[(R)-naproxen 4-methoxybenzyl ester (7v)]**. This compound was synthesized according to the literature procedure starting with 184 mg (0.8 mmol) of (R)-naproxen. Yield: 222 mg (79%); white solid; mp 80.3–89.3 °C; [α]<sub>D</sub> +62.9 (c = 1.0, CHCl<sub>3</sub>); R<sub>t</sub>(15% AcOEt/hexane) 0.33; ¹H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.60 (t, J = 8.4 Hz, 2H), 7.55 (s, 1H), 7.31 (dd, J = 8.5, 1.9 Hz, 1H), 7.14 – 7.09 (m, 2H), 7.09 – 7.01 (m, 2H), 6.74 (dd, J = 7.0, 1.8 Hz, 2H), 5.07 – 4.89 (m, 2H), 3.84 (s, 3H), 3.82 – 3.77 (q, J = 7.1 Hz, 1H), 3.71 (s, 3H), 1.50 (d, J = 7.3 Hz, 3H); ¹³C NMR (126 MHz, CDCl<sub>3</sub>) δ 174.5, 159.5, 157.6, 135.6, 133.6, 129.8, 129.3, 128.9, 128.1, 127.1, 126.3, 125.9, 118.9, 113.8, 105.6, 66.3, 55.3, 55.2, 45.5, 18.6; IR (film) ν: 3058, 2957, 2937, 2905, 2837, 1731, 1608, 1514, 1249, 1173, 1033, 853, 819 cm<sup>−1</sup>; HRMS (EI) m/z calcd for C<sub>23</sub>H<sub>22</sub>O<sub>4</sub> [M]+ 350.1518, found 350.1727.

2,4-dimethoxybenzyl 4-hydroxybenzoate (substrate for compound 7w synthesis). This compound was synthesized according to the literature procedure<sup>11</sup> starting with 1.68 g (10 mmol) of 2,4-dimethoxybenzyl alcohol and 1.4 g (10.1 mmol) 4-hydroxybenzoic acid. Yield: 695.1 mg (44%); white solid; mp 116.3 – 120.9 °C; R<sub>t</sub>(50% AcOEt/hexane) 0.24; ¹H NMR (400 MHz, CDCl<sub>3</sub>) δ 7.60 – 7.29 (m, 2H), 7.36 – 7.28 (m, 1H), 6.90 – 6.79 (m, 2H), 6.48 (dq, J = 4.5, 2.4 Hz, 2H), 6.06 (bs, 1H), 5.32 (s, 2H), 3.82 (s, 3H), 3.81 (s, 3H); ¹³C NMR (101MHz, CDCl<sub>3</sub>) δ 166.8, 161.2, 160.0, 159.0, 132.0, 131.1, 122.9, 117.0, 115.2, 104.1, 98.6, 62.0, 55.5, 55.4; IR (film) ν: 3336, 2959, 2836, 1681, 1609, 1591, 1511, 1273, 1209, 1163, 1118, 1037 cm<sup>−1</sup>; HRMS (EI) m/z calcd for C<sub>21</sub>H<sub>16</sub>O<sub>5</sub> [M]+ 288.0998, found 288.1004.

2,4-dimethoxybenzyl 4-((tert-butyldimethylsilyl)oxy)benzoate (7w). This compound was synthesized according to the literature procedure<sup>12</sup> starting with 300.5 mg (1 mmol) of 2,4-dimethoxybenzyl 4-hydroxybenzoate. Yield: 391.5 mg (95%); colorless oil; R<sub>t</sub>(50% AcOEt/hexane) 0.90; ¹H NMR (400 MHz, CDCl<sub>3</sub>) δ 7.99 – 7.91 (m, 2H), 7.35 – 7.29 (m, 1H), 6.88 – 6.79 (m, 2H), 6.48 (dq, J = 5.2, 2.4 Hz, 2H), 5.31 (s, 2H), 3.83 (s, 3H), 3.81 (s, 3H), 0.98 (s, 9H), 0.21 (s, 6H); ¹³C NMR (101 MHz, CDCl<sub>3</sub>) δ 166.4, 161.1, 160.0, 159.0, 131.6, 131.0, 123.7, 119.7, 117.2, 104.1, 98.6, 61.8, 55.5, 55.4, 25.6, 18.2, -4.4; IR (film) ν: 2954, 2933, 2894, 2858, 1713, 1604, 1510, 1465, 1263, 1209, 1161, 1112, 1094, 911, 838, 784 cm<sup>−1</sup>; HRMS (ESI) m/z calcd for C<sub>26</sub>H<sub>30</sub>O<sub>3</sub>Na [M+Na]<sup>+</sup> 425.1760, found 425.1766.

**Geranyl Benzoate (11a).** This compound was synthesized according to the literature procedure<sup>2</sup> starting with 976 mg (10 mmol) of benzoic acid. Yield: 2.2 g (85%); colorless oil; R<sub>t</sub>(5% AcOEt/hexane) 0.48; ¹H NMR (400 MHz, CDCl<sub>3</sub>) δ 8.11 – 7.97 (m, 2H), 7.60 – 7.50 (m, 1H), 7.46 – 7.38 (m, 2H), 5.51 – 5.43 (m, 1H), 5.10 (m, 1H), 4.84 (dd, J = 7.0, 1.0 Hz, 2H), 2.19 – 2.04 (m, 4H), 1.77 (d, J = 1.3 Hz, 3H), 1.68 (d, J = 1.3 Hz, 3H), 1.61 (s, 3H); ¹³C NMR (101 MHz, CDCl<sub>3</sub>) 166.6.
benzoic acid pin-2-en-10-yl ester (11b). This compound was synthesized according to the literature procedure\(^2\) starting with 1.5 g (9.5 mmol) of myrtenol. Yield: 2.17 g (90%); colorless oil; R\(_f\) (15% PhMe/hexane) 0.5; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 8.07 – 8.01 (m, 2H), 7.60 – 7.51 (m, 1H), 7.47 – 7.39 (m, 2H), 5.66 (dq, \(J\) = 2.9, 1.5 Hz, 1H), 4.70 (q, \(J\) = 1.5 Hz, 2H), 2.44 (dt, \(J\) = 8.7, 5.6 Hz, 1H), 2.22 (td, \(J\) = 5.6, 1.4 Hz, 1H), 1.31 (s, 3H), 1.24 (d, \(J\) = 8.7 Hz, 1H), 0.88 (s, 3H); \(^{13}\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 166.5, 143.0, 132.8, 129.6, 128.3, 121.6, 67.5, 43.7, 40.8, 38.1, 31.5, 31.3, 26.2, 21.2; IR (film) \(\nu\): 3033, 2986, 2918, 2885, 2832, 1720, 1270, 1111, 712 cm\(^{-1}\); HRMS (ESI-TOF) m/z calcd for C\(_{17}\)H\(_{20}\)O\(_2\)Na [M+Na]\(^+\) 279.1361, found 279.1359.

geranyl propionate (11c). This compound was synthesized according to the literature procedure\(^2\) starting with 925.5 mg (10 mmol) of graniol. Yield: 648.3 mg (51%); colorless oil; R\(_f\) (20% AcOEt/hexane) 0.81; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 5.34 (tq, \(J\) = 7.0, 1.3 Hz, 1H), 5.11 – 5.05 (m, 1H), 4.59 (d, \(J\) = 7.0 Hz, 2H), 2.32 (q, \(J\) = 7.6 Hz, 2H), 2.15 – 1.99 (m, 4H), 1.70 (s, 3H), 1.68 (s, 3H), 1.60 (d, \(J\) = 1.3 Hz, 3H), 1.14 (t, \(J\) = 7.6 Hz, 3H); \(^{13}\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 174.4, 142.0, 131.8, 123.7, 118.4, 61.2, 39.5, 27.6, 26.3, 25.6, 17.6, 16.4, 9.1. The spectroscopic data in agreement with literature.\(^4\)

retinyl propionate (11d). Commercially available reagent.

**Experimental details and characterization data for of alkenes 10a-v and 12a-d**

**General synthetic procedure for direct ester-alkene formations.** To a cooled (\(-40^\circ\)C) solution of ester in PhMe (4 mL/mmol) Tebbe reagent (1.4 equiv, 0.5M solution in PhMe) and pyridine (1.4 equiv) were added subsequently. Obtained mixture was allowed to warm up to room temperature and stirred until complete conversion of ester (TLC) (2-12h). After the starting ester disappearance, reaction was poured in the cold (0 \(^\circ\)C) mixture of the NaOH (10% aqueous solution) and toluene (1:1) and immediately filtered. The organic phase was washed with the diluted NaOH, water, dried over Na\(_2\)SO\(_4\) evaporated, redissolved in the PhMe (6ml/mmol), cooled to -40 \(^\circ\)C and treated by the next portion of Tebbe reagent (3.0 equiv). Obtained mixture was allowed to warm up to room temperature and stirred until the vinyl ether disappearance (TLC). Subsequently, the pyridine (3.0 equiv.) was added. The resulting mixture was stirred in the room temperature (2-4h), until complete ketone conversion. Then it was poured in the cold mixture (0 \(^\circ\)C) of the NaOH (10% aqueous solution) and toluene (1:1). The precipitate was filtered. The organic phase was washed with the diluted NaOH (1 time) and water (2 times), dried over Na\(_2\)SO\(_4\) and evaporated. The residue was purified by FCC in the appropriate solvent system to give a pure product.

(3-methylbut-3-ene-1,1-diyldibenzene (10a). This compound was synthesized according to the general procedure starting with 226.1 mg (1 mmol) of ester 7a. Yield: 128.6 mg (57%); colorless oil; R\(_f\) (20% AcOEt/hexane) 0.88; \(^1\)H NMR (400 MHz, CDCl\(_3\)) \(\delta\) 7.16-7.03 (m, 8H), 7.02-6.92 (m, 2H), 4.74-4.52 (m, 2H), 4.06 (t, \(J\) = 7.9 Hz, 1H), 2.64 (d, \(J\) = 7.9 Hz, 2H), 1.52 (s, 3H); \(^{13}\)C NMR (101 MHz, CDCl\(_3\)) \(\delta\) 144.8, 143.0, 128.2, 128.0, 126.0, 112.6, 49.4, 43.8, 22.3. The spectroscopic data in agreement with literature.\(^5\)
This compound was synthesized according to the general procedure starting with 240.3 mg (1 mmol) of ester 7b. Yield: 67.2 mg (28%); colorless oil; Rf (5% AcOEt/hexane) 0.84; 1H NMR (400 MHz, CDCl3) δ 7.33 – 7.21 (m, 8H), 7.21 – 7.15 (m, 2H), 4.72 (q, J = 1.6 Hz, 1H), 4.67 – 4.60 (m, 1H), 4.20 (t, J = 7.8 Hz, 1H), 2.81 (dd, J = 7.8, 1.1 Hz, 2H), 2.01 (q, J = 7.5 Hz, 2H), 1.02 (t, J = 7.5 Hz, 3H); 13C NMR (101 MHz, CDCl3) δ 148.8, 144.8, 128.3, 127.9, 126.1, 110.3, 49.4, 42.3, 28.9, 12.3; IR (film) ν: 3084, 3061, 3026, 2965, 2932, 1646, 1600, 1494, 1450, 890, 743, 698 cm⁻¹; HRMS (EI) m/z calcd for C18H20 [M]⁺ 236.1565, found 236.1566.

This compound was synthesized according to the general procedure starting with 310.2 mg (1 mmol) of ester 7c. Yield: 106.9 mg (35%); colorless oil; Rf (5% AcOEt/hexane) 0.71; 1H NMR (400 MHz, CDCl3) δ 7.34 – 7.24 (m, 8H), 7.19 (m, 2H), 4.73 (d, J = 1.7 Hz, 1H), 4.65 (d, J = 1.7 Hz, 1H), 4.21 (t, J = 7.8 Hz, 1H), 2.81 (d, J = 7.8 Hz, 2H), 2.00 (t, J = 7.6 Hz, 2H), 1.44 (p, J = 7.6 Hz, 2H), 1.36 – 1.25 (m, 8H), 0.92 (t, J = 6.9 Hz, 3H); 13C NMR (101 MHz, CDCl3) δ 147.4, 144.9, 128.3, 128.0, 126.1, 111.4, 5.4, 42.1, 36.2, 31.9, 29.4, 29.2, 27.7, 22.7, 14.1; IR (film) ν: 3062, 3027, 2954, 2926, 2854, 1644, 1600, 1494, 1451, 890, 743, 699 cm⁻¹; HRMS (EI) m/z calcd for C23H30 [M]⁺ 306.2348, found 306.2364.

This compound was synthesized according to the general procedure starting with 147.1 mg (0.5 mmol) of ester 7d. Yield: 54.8 mg (38%); yellow oil; Rf (15% AcOEt/hexane) 0.89; 1H NMR (400 MHz, CDCl3) δ 7.34 – 7.23 (m, 8H), 7.21 – 7.14 (m, 2H), 4.73 (s, 1H), 4.58 (d, J = 1.3 Hz, 1H), 4.20 (t, J = 7.7 Hz, 1H), 2.81 (d, J = 7.7 Hz, 2H), 1.85 – 1.62 (m, 6H), 1.36 – 1.04 (m, 5H); 13C NMR (101 MHz, CDCl3) δ 152.5, 145.0, 128.3, 128.0, 126.1, 111.4, 5.4, 44.3, 41.0, 32.5, 26.9, 26.4; IR (film) ν: 3092, 3065, 2958, 1806, 1727, 1389, 1170, 713 cm⁻¹; HRMS (EI) m/z calcd for C22H26 [M]⁺ 290.2035, found 290.2039.

This compound was synthesized according to the general procedure starting with 159.1 mg (0.5 mmol) of ester 7e. Yield: 105.1 mg (67%); yellow oil; Rf (15% AcOEt/hexane) 0.69; 1H NMR (400 MHz, CDCl3) δ 7.37 – 7.28 (m, 6H), 7.28 – 7.19 (m, 6H), 6.93 (d, J = 8.8 Hz, 2H), 5.14 (d, J = 1.3 Hz, 1H), 4.83 (d, J = 1.3 Hz, 1H), 4.16 (t, J = 7.5 Hz, 1H), 3.87 (s, 3H), 3.30 (dd, J = 7.5, 1.3 Hz, 2H); 13C NMR (101 MHz, CDCl3) δ 159.2, 145.6, 144.6, 133.6, 128.3, 128.1, 127.6, 126.2, 113.8, 113.6, 55.3, 49.3, 41.9; IR (film) ν: 3083, 3060, 3027, 3001, 2934, 2835, 1605, 1511, 1248, 835, 700 cm⁻¹; HRMS (EI) m/z calcd for C23H20O [M]⁺ 314.1671, found 314.1678.
**4,4-diphenyl-2-(4-methylphenyl)-1-butene (10f).** This compound was synthesized according to the general procedure starting with 151.1 mg (0.5 mmol) of ester 7f. Yield: 108.4 mg (71%); white waxy solid; R_f (15% AcOEt/hexane) 0.86; ¹H NMR (400 MHz, CDCl₃) δ 7.30 – 7.20 (m, 6H), 7.21 – 7.11 (m, 8H), 5.12 (bs, 1H), 4.80 (bs, 1H), 4.09 (t, J = 7.7 Hz, 1H), 3.25 (dd, J = 7.7, 1.3 Hz, 2H), 2.37 (s, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 146.0, 144.6, 138.2, 137.1, 129.0, 128.3, 128.0, 126.3, 126.1, 114.2, 49.1, 41.7, 21.1; IR (film) ν: 3038, 3059, 3026, 2921, 1494, 1450, 824, 743, 699 cm⁻¹; HRMS (EI) m/z calcd for C₂₃H₂₂O [M]+ 298.1722, found 298.1720.

**4,4-diphenyl-2-biphenyl-1-butene (10g).** This compound was synthesized according to the general procedure starting with 180.1 mg (0.5 mmol) of ester 7g. Yield: 139.2 mg (81%); white solid; mp 100.3 – 101.0 °C; R_f (5% AcOEt/hexane) 0.71; ¹H NMR (400 MHz, CDCl₃) δ 7.67 – 7.61 (m, 2H), 7.61 – 7.56 (m, 2H), 7.50 – 7.40 (m, 4H), 7.40 – 7.33 (m, 1H), 7.33 – 7.24 (m, 3H), 7.24 – 7.15 (m, 7H), 5.23 (d, J = 1.3 Hz, 1H), 4.89 (d, J = 1.3 Hz, 1H), 4.16 (t, J = 7.7, 1.3 Hz, 2H); ¹³C NMR (101 MHz, CDCl₃) δ 145.7, 144.5, 140.7, 140.2, 140.0, 128.8, 128.3, 128.1, 127.3, 127.0, 126.9, 126.8, 126.1, 114.9, 49.3, 41.7; IR (film) ν: 3083, 3059, 3027, 2938, 1600, 1488, 1449, 899, 843, 770, 742, 698 cm⁻¹; HRMS (EI) m/z calcd for C₂₈H₂₄ [M]+ 360.1878, found 360.1887.

**2,4,4-triphenyl-1-butene (10h).** This compound was synthesized according to the general procedure starting with 142.1 mg (0.5 mmol) of ester 7h. Yield: 115 mg (81%); yellow oil; R_f (15% AcOEt/hexane) 0.77; ¹H NMR (400 MHz, CDCl₃) δ 7.45 – 7.39 (m, 4H), 7.37 – 7.31 (m, 5H), 7.30 – 7.19 (m, 5m), 5.24 (d, J = 1.3 Hz, 1H), 4.89 (d, J = 1.3 Hz, 1H), 4.16 (t, J = 7.7, 1.3 Hz, 2H); ¹³C NMR (101 MHz, CDCl₃) δ 146.5, 144.2, 143.5, 141.3, 132.0, 129.5, 128.5, 128.3, 128.1, 128.0, 128.0, 126.4, 126.2, 125.9, 117.9, 49.6, 42.3; IR (film) ν: 3082, 3059, 3026, 2930, 1600, 1485, 1449, 899, 843, 770, 742, 698 cm⁻¹; HRMS (EI) m/z calcd for C₂₂H₂₀ [M]+ 284.1565, found 284.1573.

**4,4-diphenyl-2-(2-chlorophenyl)-1-butene (10i).** This compound was synthesized according to the general procedure starting with 161.1 mg (0.5 mmol) of ester 7l. Yield: 60.6 mg (30%); yellow oil; R_f (15% AcOEt/hexane) 0.81; ¹H NMR (500 MHz, CDCl₃) δ 7.40 (dd, J = 8.0, 1.3 Hz, 1H), 7.34 – 7.28 (m, 4H), 7.28 – 7.13 (m, 8H), 6.89 (dd, J = 7.5, 1.7 Hz, 1H), 5.21 (q, J = 1.3 Hz, 1H), 5.00 (bs, 1H), 4.02 (t, J = 8.0 Hz, 1H), 3.36 (dd, J = 8.0, 1.3 Hz, 2H); ¹³C NMR (126 MHz, CDCl₃) δ 146.5, 144.2, 143.5, 141.3, 132.0, 129.5, 128.5, 128.3, 128.1, 128.0, 126.4, 126.2, 125.9, 117.9, 49.6, 42.3; IR (film) ν: 3060, 3027, 2925, 1628, 1595, 761, 743, 699 cm⁻¹; HRMS (EI) m/z calcd for C₂₂H₁₉Cl [M]+ 318.1175, found 315.1178.
4,4-diphenyl-2-(2-iodophenyl)-1-butene (10j). This compound was synthesized according to the general procedure starting with 207 mg (0.5 mmol) of ester 7j. Yield: 115.4 mg (28%); colorless oil; Rf (5% AcOEt/hexane) 0.82; 1H NMR (400 MHz, CD6): δ 7.69 (dd, J = 7.8, 1.2 Hz, 1H), 7.14 – 7.05 (m, 8H), 7.05 – 6.97 (m, 1H), 6.86 (dt, J = 7.5, 1.2 Hz, 1H), 6.69 (dd, J = 7.5, 1.7 Hz, 1H), 6.51 (td, J = 7.8, 1.7 Hz, 1H), 5.08 (d, J = 1.4 Hz, 1H), 4.85 (s, 1H), 4.03 (t, J = 7.8 Hz, 1H), 3.24 (dd, J = 7.8, 1.4 Hz, 2H); 13C NMR (101 MHz, CD6): δ 150.1, 147.5, 144.3, 139.2, 129.8, 128.3, 128.1, 127.5, 126.0, 117.7, 97.2, 49.5, 42.5; IR (film) ν: 3083, 3060, 3025, 2926, 1599, 1494, 1463, 1450, 1429, 1011, 908, 763, 742, 699 cm⁻¹; HRMS (EI) m/z calcd for C22H20I [M]⁺ 410.0532, found 410.0525.

4,4-diphenyl-2-(3-iodophenyl)-1-butene (10k). This compound was synthesized according to the general procedure starting with 414 mg (1 mmol) of ester 7k. Yield: 94.5 mg (23%); colorless thick oil; Rf (20% AcOEt/hexane) 0.87; 1H NMR (600 MHz, CD6): δ 7.70 (t, J = 1.7 Hz, 1H), 7.42 (ddd, J = 7.8, 1.7, 1.0 Hz, 1H), 7.10 – 7.06 (m, 4H), 7.03 – 7.00 (m, 6H), 6.60 (t, J = 7.8 Hz, 1H), 4.94 (d, J = 1.2 Hz, 1H), 4.75 (d, J = 1.2 Hz, 1H), 3.99 (t, J = 7.8 Hz, 1H), 2.99 (dd, J = 7.8, 1.2 Hz, 2H); 13C NMR (151 MHz, CD6): δ 145.0, 144.2, 143.7, 136.2, 135.5, 129.8, 128.2, 127.9, 126.1, 125.4, 115.8, 94.5, 49.3, 41.2; IR (film) ν: 3083, 3059, 3026, 2923, 2852, 1552, 1494, 1450, 788, 744, 699 cm⁻¹; HRMS (EI) m/z calcd for C22H19I [M]⁺ 410.0532, found 410.0547.

4,4-diphenyl-2-(4-trifluorophenyl)-1-butene (10l). This compound was synthesized according to the general procedure starting with 178.1 mg (0.5 mmol) of ester 7l. Yield: 41.6 mg (17%); yellow oil; Rf (15% AcOEt/hexane) 0.82; 1H NMR (400 MHz, CDCl3): δ 7.66 (d, J = 8.1 Hz, 2H), 7.48 (d, J = 8.1 Hz, 2H), 7.38–7.31 (m, 5H), 7.29–7.22 (m, 5H), 5.29 (d, J = 1.2 Hz, 1H), 5.06 (d, J = 1.2 Hz, 1H), 4.12 (t, J = 7.7 Hz, 1H), 3.36 (dd, J = 7.7, 1.2 Hz, 2H); 13C NMR (101 MHz, CDCl3): δ 145.4, 144.8 (d, J = 1.2 Hz, 2H), 144.1, 129.0, 128.9, 128.4, 128.2 (d, J = 13.5 Hz), 127.9, 126.7, 126.3, 125.3 (q, J = 3.6 Hz), 116.8, 49.3, 41.5; 19F NMR (376 MHz, CDCl3): δ -62.5; IR (film) ν: 3060, 3028, 2931, 1326, 1166, 1122, 1067, 700 cm⁻¹; HRMS (EI) m/z calcd for C23H18F3 [M]** 352.1439, found 352.1446.

2-phenyl-4-(3,4-dimethoxyphenyl)-1-butene (10m). This compound was synthesized according to the general procedure starting with 272.1 mg (1 mmol) of ester 7m. Yield: 80.5 mg (30%); yellow oil; Rf (20% AcOEt/hexane) 0.73; 1H NMR (400 MHz, CDCl3): δ 7.47–7.41 (m, 2H), 7.36 (m, 2H), 7.32–7.27 (m, 1H), 6.82–6.78 (m, 1H), 6.76–6.66 (m, 2H), 5.30 (d, J = 1.3 Hz, 1H), 5.08 (d, J = 1.3 Hz, 1H), 3.87 (s, 6H), 2.85–2.78 (m, 2H), 2.77–2.70 (m, 2H); 13C NMR (101 MHz, CDCl3): δ 148.8, 147.9, 147.2, 141.2, 134.6, 128.3, 127.4, 126.2, 120.2, 112.7, 111.9, 111.3, 55.9, 55.8, 37.4, 34.3; IR (film)
2-phenyl-4-(4-methoxyphenyl)-1-butene (10n). This compound was synthesized according to the general procedure starting with 242.1 mg (1 mmol) of ester 7n. Yield: 153.4 mg (64%); yellow oil; Rf (15% AcOEt/hexane) 0.67; 1H NMR (400 MHz, CDCl$_3$) $\delta$ 7.49-7.44 (m, 2H), 7.40-7.35 (m, 2H), 7.35-7.26 (m, 1H), 7.15-7.08 (m, 1H), 6.91-6.82 (m, 2H), 5.32 (d, $J = 1.3$ Hz, 1H), 5.08 (d, $J = 1.3$ Hz, 1H), 3.81 (s, 3H), 2.85-2.71 (m, 4H); 13C NMR (101 MHz, CDCl$_3$) $\delta$ 157.8, 147.9, 141.2, 134.1, 129.3, 128.4, 127.4, 126.2, 113.8, 112.7, 112.0, 55.3, 37.6, 33.9; IR (film) $\nu$: 3060, 3029, 2931, 2835, 1684, 1512, 1245, 1035, 824, 692 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{18}$H$_{20}$O$_2$ [M]$^{+}$ 268.1463, found 268.1467.

![2-phenyl-4-(4-methoxyphenyl)-1-butene](image)

2-phenyl-4-(2,4,6-trimethylphenyl)-1-butene (10o). This compound was synthesized according to the general procedure starting with 127.1 mg (0.5 mmol) of ester 7o. Yield: 48.1 mg (38%); yellow oil; Rf (15% AcOEt/hexane) 0.81; 1H NMR (500 MHz, CDCl$_3$) $\delta$ 7.42-7.36 (m, 2H), 7.30-7.23 (m, 2H), 7.23-7.18 (m, 1H), 6.76 (s, 2H), 5.26 (d, $J = 1.3$ Hz, 1H), 5.08 (q, $J = 1.3$ Hz, 1H), 2.69-2.62 (m, 2H), 2.56-2.49 (m, 2H), 2.20 (s, 6H), 2.17 (s, 3H); 13C NMR (126 MHz, CDCl$_3$) $\delta$ 148.7, 141.2, 136.0, 135.7, 135.1, 128.9, 128.4, 127.5, 126.1, 121.2, 34.8, 28.9, 20.8, 19.7; IR (film) $\nu$: 3080, 2952, 2922, 2862, 1485, 1449, 894, 850, 776, 702 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{23}$H$_{22}$O [M]$^{+}$ 250.1722, found 250.1731.

![2-phenyl-4-(2,4,6-trimethylphenyl)-1-butene](image)

2,4-diphenyl-1-pentene (10p). This compound was synthesized according to the general procedure starting with 113.1 mg (0.5 mmol) of ester 7p. Yield: 24.3 mg (22%); yellow oil; Rf (15% AcOEt/hexane) 0.80; 1H NMR (400 MHz, CDCl$_3$) $\delta$ 7.43 – 7.38 (m, 2H), 7.36 (ddd, $J = 7.6$, 6.6, 1.3 Hz, 2H), 7.32 – 7.26 (m, 3H), 7.22 – 7.15 (m, 3H), 5.24 (d, $J = 1.7$ Hz, 1H), 4.99 (d, $J = 1.3$ Hz, 1H), 2.94 – 2.78 (m, 2H), 2.69 (ddd, $J = 13.2$, 7.6, 1.0 Hz, 1H), 1.24 (d, $J = 6.6$ Hz, 3H); 13C NMR (101 MHz, CDCl$_3$) $\delta$ 147.2, 147.0, 141.1, 128.3, 128.3, 127.3, 126.9, 126.4, 125.9, 114.3, 44.7, 37.9, 21.3; IR (film) $\nu$: 3082, 3059, 3027, 2960, 2926, 2870, 1494, 1451, 700 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{18}$H$_{18}$O [M]$^{+}$ 222.1409, found 222.1414.

![2,4-diphenyl-1-pentene](image)

2-phenyl-4-(4-methylphenyl)-1-butene (10q'). This compound was synthesized according to the general procedure starting with 226.1 mg (1 mmol) of ester 7q' it was obtained as an inseparable mixture of isomers 10q' and 10q" (1:1). Yield: 114.2 mg (51%); yellow oil; Rf (15% AcOEt/hexane) 0.67; 1H NMR (400 MHz, CDCl$_3$) $\delta$ $\text{inter alia}$ 5.32 (d, $J = 1.4$ Hz, 1H), 5.09 (q, $J = 1.3$ Hz, 1H), 2.88 – 2.70 (m, 4H); 13C NMR (101 MHz, CDCl$_3$) $\delta$ $\text{inter alia}$ 147.96, 112.56, 41.09, 34.32; IR (film) $\nu$: 3047, 3020, 2922, 2857, 1514, 1446, 801, 748, 701 cm$^{-1}$; HRMS (EI) $m/z$ calcd for C$_{18}$H$_{18}$O [M]$^{+}$ 222.1409, found 222.1412.

![2-phenyl-4-(4-methylphenyl)-1-butene](image)

2-methyl-2-phenyl-4-(4-methylphenyl)-2-butene (10q''). This compound was synthesized according to the general procedure starting with 226.1 mg (1 mmol) of ester 7q it was obtained as an inseparable mixture of isomers 10q' and 10q" (1:1). 1H NMR (400 MHz, CDCl$_3$) $\delta$ $\text{inter alia}$ 3.97 (s, 1H), 3.93 (s, 2H), 2.35 (s, 3H); 13C NMR (101 MHz, CDCl$_3$) $\delta$ $\text{inter alia}$ 141.18, 130.23, 37.42, 21.01.
2-phenyl-5-trimethylsilyl-1-penctene (10r). This compound was synthesized according to the general procedure starting with 111.1 mg (0.5 mmol) of ester 7r. Yield: 27.6 mg (27%); yellow oil; Rf(15% AcOEt/hexane) 0.80; 1H NMR (600 MHz, CDCl3) δ 7.47-7.43 (m, 2H), 7.40-7.35 (m, 2H), 7.34-7.28 (m, 1H), 5.32 (bs, 1H), 5.10 (q, J = 1.4 Hz, 1H), 2.57 (td, J = 7.4, 1.4 Hz, 2H), 1.57-1.47 (m, 2H), 0.62-0.54 (m, 2H), 0.00 (s, 9H); 13C NMR (151 MHz, CDCl3) δ 148.6, 141.5, 128.2, 128.2, 127.2, 126.1, 126.1, 112.2, 39.1, 22.7, 16.4, 1.7; IR (film) ν: 3081, 3058, 3027, 2952, 2928, 2828, 892, 858, 837, 776, 699 cm⁻¹; HRMS (EI) m/z calcd for C13H22Si [M⁺]⁹ 218.1491, found 218.1499.

[Diagram of 2-phenyl-5-trimethylsilyl-1-penctene]

2-phenyl-5-benzylxy-1-butene (10s). This compound was synthesized according to the general procedure starting with 121.1 mg (0.5 mmol) of ester 7s. Yield: 49.5 mg (21%); colorless oil; Rf(15% AcOEt/hexane) 0.87; 1H NMR (400 MHz, CDCl3) δ 7.35 – 7.30 (m, 2H), 7.27 – 7.21 (m, 3H), 7.19 – 7.05 (m, 7H), 5.31 (d, J = 1.4 Hz, 1H), 5.06 (d, J = 1.2 Hz, 1H), 4.25 (s, 2H), 3.45 (t, J = 7.0 Hz, 2H), 2.77 (td, J = 7.0, 1.2 Hz, 2H); 13C NMR (101 MHz, CDCl3) δ 145.56, 141.15, 138.94, 128.21, 128.17, 128.10, 127.29, 127.16, 126.10, 113.49, 72.55, 69.05, 35.82; IR (film) ν: 3083, 3060, 3029, 2926, 2858, 1494, 1452, 1362, 1100, 1028, 777, 737, 698 cm⁻¹; HRMS (ESI-TOF) m/z calcd for C19H22O Na⁺ 261.1255, found 261.1246.

[Diagram of 2-phenyl-5-benzylxy-1-butene]

3-adamantane-2-phenyl-1-propen (10t). This compound was synthesized according to the general procedure starting with 252.2 mg (1 mmol) of ester 7t. Yield: 111.4 mg (17% determined by NMR); colorless oil; Rf(2% EtOAc/hexane) 0.61; 1H NMR (400 MHz, CDCl3) δ signals due to alkene inter alia 7.46 – 7.36 (m, 2H), 7.35-7.19 (m, 3H), 5.28 (d, J = 2.0 Hz, 1H), 4.99 (d, J = 2.0 Hz, 1H); 13C NMR (101 MHz, CDCl3) δ signals due to alkene inter alia 146.0, 143.9, 128.1; 126.9; 126.4; 116.1; 48.8; 47.8; 43.0; 37.0; 35.6; 31.7; 28.8; IR (film) ν: 2904, 2847, 1450 cm⁻¹; HRMS (EI) m/z calcd for C18H24O Na⁺ 252.1887, found 252.1888.

[Diagram of 3-adamantane-2-phenyl-1-propen]

(4S)-4-(6-methoxynaphthalen-2-yl)-3-methylidenepentane-1-(4-methoxyphenyl) (10v). This compound was synthesized according to the general procedure starting with (1 mmol) of naproxen ester 7v. Yield: 15.3 mg (16%); yellow oil; Rf(15% AcOEt/hexane) 0.71; [α]²⁵D = 20.6 (c = 1.0, CHCl₃); the ee was determined by HPLC with a R&CO D column (3% isopropanol in n-hexane, 0.5 mL/min, 254 nm, minor tr = 9.81 min (R), major tr = 10.19 min (S)); 1H NMR (500 MHz, CDCl3) δ 7.66 (t, J = 8.4 Hz, 2H), 7.55 (d, J = 1.8 Hz, 1H), 7.29 (dd, J = 8.4, 1.8 Hz, 1H), 7.25, 7.15 – 7.09 (m, 2H), 6.97 (d, J = 8.6 Hz, 2H), 6.78 – 6.71 (m, 2H), 5.04 (s, 1H), 4.98 (d, J = 1.3 Hz, 1H), 3.90 (s, 3H), 3.74 (s, 3H), 3.55 (q, J = 7.1 Hz, 1H), 2.71 – 2.57 (m, 2H), 2.18 (m, 2H), 1.44 (d, J = 7.1 Hz, 3H); 13C NMR (126 MHz, CDCl3) δ 157.6, 157.3, 152.6, 140.4, 134.2, 133.2, 129.1, 129.0, 129.0, 126.8, 126.7, 125.5, 118.6, 113.6, 112.0, 109.2, 105.6, 55.3, 55.2, 45.5, 36.9, 33.6, 29.7, 20.6; IR (film) ν: 3056, 2957, 2930, 1605, 1510, 1425, 1034, 810 cm⁻¹; HRMS (EI) m/z calcd for C₂₂H₂₀O₂ [M⁺] 346.1933, found 346.1940.
(4-ethenyl-4,8-dimethylnona-1,7-dien-2-yl)benzene (12a). This compound was synthesized according to the general procedure starting with 258.2 mg (1 mmol) of ester 11a. Yield: 183.0 g (72%); colorless oil; Rf(5% AcOEt/hexane) 0.81; 1H NMR (400 MHz, CDCl3) δ 7.41 – 7.22 (m, 5H), 5.66 (dd, Jf = 175, 10.8 Hz, 1H), 5.28 (d, Jf = 2.0 Hz, 1H), 5.09 – 5.06 (m, 1H), 5.03 (m, 1H), 4.88 (dd, Jf = 10.8, 1.4 Hz, 1H), 4.83 (dd, Jf = 175, 1.4 Hz, 1H), 2.61 (s, 2H), 1.87 (dd, Jf = 10.8, 6.4 Hz, 2H), 1.69 (d, Jf = 1.3 Hz, 3H), 1.59 (s, 3H), 1.35 – 1.32 (m, 2H), 0.90 (s, 3H). 13C NMR (101 MHz, CDCl3) 146.9, 146.6, 143.7, 128.0, 126.9, 126.7, 125.0, 116.8, 111.3, 46.5, 40.9, 40.6, 29.7, 25.7, 23.0, 22.7, 17.6; IR (film) v: 3081, 3057, 3024, 2963, 2924, 2855, 1448, 1376, 904, 777, 700 cm−1; HRMS (EI) m/z calcd for C24H26 [M]+ 254.2035, found 254.2038.

2-phenyl-3-(6,6-dimethyl-2-methylidenebicyclo[3.1.1]hept-3-yl)prop-1-en (12b). This compound was synthesized as a side product the general procedure starting with 279.1 mg (1 mmol) of ester 11b. Yield: 132.1 g (48%); colorless oil; Rf(5% PhMe/hexane) 0.76; 1H NMR (400 MHz, CDCl3) δ 7.48 – 7.41 (m, 2H), 7.40 – 7.33 (m, 2H), 7.33 – 7.27 (m, 1H), 5.33 (dd, Jf = 18, 0.8 Hz, 1H), 5.15 – 5.07 (m, 1H), 4.77 (tt, Jf = 1.5 Hz, 1H), 4.73 (t, Jf = 1.5 Hz, 1H), 3.05 (q, Jf = 10.7 Hz, 1H), 2.62 – 2.53 (m, 2H), 2.49 (t, Jf = 5.5 Hz, 1H), 2.38 (dt, Jf = 9.9, 6.0, 1.8 Hz, 1H), 2.00 (dd, Jf = 8.8, 6.0, 1.7 Hz, 1H), 1.84 (ddq, Jf = 11.5, 7.4, 2.1 Hz, 1H), 1.70 (dd, Jf = 14.1, 3.7, 2.1 Hz, 1H), 1.32 (d, Jf = 9.9 Hz, 1H), 1.25 (s, 3H), 0.68 (s, 3H); 13C NMR (101 MHz, CDCl3) δ 156.6, 147.4, 141.2, 128.4, 127.4, 126.4, 114.3, 107.8, 52.5, 49.2, 41.2, 40.3, 32.2, 29.6, 28.7, 25.9, 21.7; IR (film) v: 3073, 3026, 2978, 2919, 2869, 1633, 1493, 1446, 1383, 1367, 1029, 879, 776, 702 cm−1; HRMS (EI) m/z calcd for C25H24 [M]+ 252.1878, found 254.1878.

6-ethenyl-2,6-dimethyl-8-methylidenedec-2-ene (12c). This compound was synthesized according to the general procedure starting with 210.3 mg (1 mmol) of granul propionate 11c. Yield: 79.9 mg (37%); colorless oil; Rf(5% AcOEt/hexane) 0.91; 1H NMR (400 MHz, CDCl3) δ 5.78 (dd, Jf = 175, 10.8 Hz, 1H), 5.09 (tt, Jf = 7.2, 1.5 Hz, 1H), 4.98 (dd, Jf = 10.8, 1.4 Hz, 1H), 4.90 (dd, Jf = 176, 1.5 Hz, 1H), 4.83 (q, Jf = 1.8 Hz, 1H), 4.70 (dt, Jf = 2.1, 1.0 Hz, 1H), 2.15 – 1.98 (m, 4H), 1.95 – 1.85 (m, 2H), 1.68 (d, Jf = 1.3 Hz, 3H), 1.59 (d, Jf = 1.3 Hz, 3H), 1.37 – 1.30 (m, 2H), 1.02 – 0.97 (m, 6H); 13C NMR (101 MHz, CDCl3) δ 148.8, 147.3, 131.0, 125.0, 111.6, 111.4, 48.1, 41.5, 40.1, 30.6, 25.7, 23.0, 22.2, 17.6, 12.6; IR (film) v: 3081, 2965, 2924, 2855, 1639, 1454, 1375, 909, 892 cm−1; HRMS (EI) m/z calcd for C21H24 [M]+ 206.2035, found 206.2038.

2-[(1E,3E,5E)-7-ethenyl-3,7-dimethyl-9-methylenedienoeca-1,3,5-trien-1-yl]-1,3,3-trimethylcyclohexene (12d). This compound was synthesized by the general procedure starting with 342.5 mg (1 mmol) of commercially available geranyl propionate. Yield: 100.3 mg (34%); colourless oil; Rf(5% AcOEt/hexane) 0.93; 1H NMR (600 MHz, CDCl3) δ 6.34 (dd, Jf = 15.4, 10.7 Hz, 1H), 6.13 – 5.95 (m, 3H), 5.91 (dd, Jf = 175, 10.7 Hz, 1H), 5.77 (d, Jf = 15.3 Hz, 1H), 5.01 – 4.95 (m, 2H), 4.84 – 4.82 (m, 1H), 4.75 – 4.70 (m, 2H), 2.21 (s, 2H), 2.01 – 1.97 (m, 4H), 1.91 (d, Jf = 1.2 Hz, 3H), 1.72 – 1.65 (m, 6H), 1.63 – 1.56 (m, 2H), 1.48 – 1.44 (m, 2H), 1.17 (s, 3H), 1.05 – 0.95 (m, 7H); 13C NMR (151 MHz, CDCl3) δ 148.2, 146.1, 142.0, 137.9, 137.8, 134.2, 130.0, 128.8, 126.0, 123.9, 112.0, 111.6, 48.3, 43.1, 39.6, 34.2, 33.0, 30.3, 28.9
(2 x CH₃), 23.6, 21.7, 19.3, 12.6, 12.5; IR (film) ν: 3081, 2963, 2926, 2865, 2827, 1640, 1456, 1373, 1360, 969, 913, 892 \text{ cm}^{-1}; \text{HRMS (EI) } m/z \text{ calcd for C}_{25}\text{H}_{38} [M]+ 338.2974, \text{ found 338.2981.}

**Synthesis of ketones 9a, 9h, 9n, 9v, 14a.**

**General synthetic procedure for direct ester - ketone formation.** To a solution of ester in PhMe (4 mL/mmol) cooled to -40 °C Tebbe reagent (1.4 equiv, 0.5M solution in PhMe) and pyridine (1.4 equiv) were added. The obtained mixture was allowed to warm up to room temperature and stirred (2-12h, TLC monitoring) until ester has been consumed. The resulting mixture was poured in the cold mixture (0 °C) of the NaOH (10% aqueous solution) and toluene (1:1). The precipitate was filtered. The organic phase was washed with the NaOH (1 time) and water (2 times), dried over Na₂SO₄ and evaporated. The crude mixture was dissolved in the PhMe (6ml/mmol), cooled to the -70 °C and the next portion of Tebbe reagent (3.0 equiv) was added. Obtained mixture was stirred (2-12h) in the -70 °C until the vinyl ether disappearance (TLC). The resulting mixture poured in the cold mixture (-40 °C) of the NaOH (10% aqueous solution) and toluene (1:1) and filtered. The organic phase was washed with diluted NaOH (1 time) and water (2 times), dried over Na₂SO₄ and evaporated. The residue was purified by FCC in the appropriate solvent system to give a pure product.

4,4'-diphenylbutan-2-one (9a). This compound was synthesized according to the general procedure starting with 226.1 mg (1 mmol) of ester 7a. Yield: 83.5 mg (37%); colorless oil; Rf(20% AcOEt/hexane) 0.76; ¹H NMR (400 MHz, C₆D₆) δ 7.09 (d, J = 4.3 Hz, 8H), 7.03 - 6.96 (m, 2H), 4.61 (t, J = 7.4 Hz, 1H), 2.71 (d, J = 7.4 Hz, 2H), 1.56 (s, 3H); ¹³C NMR (101 MHz, C₆D₆) δ 204.1, 144.3, 128.4, 127.8, 126.2, 49.2, 45.9, 29.7. The spectroscopic data in agreement with literature.¹⁶

1,3,3'-triphenylpropan-1-one (9h). This compound was synthesized according to the general procedure starting with 288.1 mg (1 mmol) of ester 7h. Yield: 197.6 mg (69%); yellow waxy solid; Rf(15% AcOEt/hexane) 0.56; ¹H NMR (400 MHz, C₆D₆) δ 7.74 - 7.65 (m, 2H), 7.15 - 7.09 (m, 6H), 7.09-7.00 (m, 3H), 7.00 - 6.91 (m, 4H), 4.90 (t, J = 7.3 Hz, 1H), 3.37 (d, J = 7.3 Hz, 2H); ¹³C NMR (101 MHz, C₆D₆) δ 196.5, 144.5, 137.4, 132.3, 128.4, 128.2, 128.0, 127.9, 126.1, 45.9, 44.6; IR (film) ν: 3084, 3060, 3027, 2923, 1686, 750, 698 \text{ cm}^{-1}; \text{HRMS (ESI-TOF) } m/z \text{ calcd for C}_{21}\text{H}_{18}O [M+Na]+ 309.1255, \text{ found 309.1238.}

3-(4-methoxyphenyl)-1-phenylpropan-1-one (9n). This compound was synthesized according to the general procedure starting with 254.1 mg (1 mmol) of ester 7n. Yield: 27.4 mg (12%); colorless oil; Rf(15% AcOEt/hexane) 0.57; ¹H NMR (400 MHz, C₆D₆) δ 7.78 (d, J = 7.3 Hz, 2H), 7.16 - 7.10 (m, 1H), 7.00 (dd, J = 6.4, 2.3 Hz, 4H), 6.78 (dd, J = 8.7, 2.3 Hz, 2H), 3.34 (s, 3H), 3.04 - 2.92 (m, 2H), 2.90 - 2.79 (m, 2H); ¹³C NMR (101 MHz, C₆D₆) δ 197.7, 158.3, 137.2, 133.4, 132.3, 129.3, 128.9, 128.2, 125.3, 113.9, 54.4, 40.5, 29.2. The spectroscopic data in agreement with literature.¹⁷
(2R)-2-(6-methoxynaphthalen-2-yl)-5-(4-methoxyphenyl)-pentane-3-one (9v). This compound was synthesized according to the general procedure starting with 100 mg (0.29 mmol) of ester 7v. Yield: 16 mg (18%); white solid; mp = 116.1 °C; [α] +20.4 (c = 0.37, CDCl 3); R f (5% AcOEt/hexane) 0.63; 1H NMR (600 MHz, CDCl 3) δ 7.51 (dd, J = 8.8, 0.9 Hz, 1H), 7.45 (d, J = 8.8 Hz, 1H), 7.41 – 7.36 (m, 1H), 7.18 (dd, J = 8.8, 2.3 Hz, 2H), 6.90 (d, J = 2.3 Hz, 1H), 6.85 – 6.81 (m, 2H), 6.67 – 6.63 (m, 2H), 3.47 (q, J = 6.9 Hz, 1H), 3.37 (s, 3H), 3.28 (s, 3H), 2.87 – 2.80 (m, 1H), 2.79 – 2.73 (m, 1H), 2.54 (ddd, J = 17.3, 8.2, 6.6 Hz, 1H), 2.37 (dd, J = 17.3, 8.2 Hz, 1H), 1.43 (d, J = 6.9 Hz, 2H); 13C NMR (151 MHz, CDCl 3) δ 208.0, 158.1, 157.8, 135.9, 133.9, 133.1, 129.3, 129.2, 127.9, 127.6, 127.5, 126.6, 126.2, 119.1, 113.7, 105.5, 54.4, 54.3, 52.9, 42.7, 29.1, 17.4; IR (film) ν: 2931, 2904, 2834, 1708, 1604, 1509, 1483, 1454, 1389, 1244, 1173, 1031, 812 cm −1; HRMS (EI) m/z calcd for C 23 H 24 O 3 [M] + 348.1725, found 348.1729.

3,7-dimethyl-1-phenyl-3-vinyl-oct-6-en-1-one (14a). This compound was synthesized according to the general procedure starting with 258.2 mg (1 mmol) of ester 11a. Yield: 231.4 mg (90%), colorless oil; R f (5% AcOEt/hexane) 0.38; 1H NMR (400 MHz, CDCl 3) δ 7.97 – 7.86 (m, 2H), 7.56 – 7.49 (m, 1H), 7.47 – 7.40 (m, 2H), 5.89 (m, 1H), 5.13 – 5.05 (m, 1H), 5.01 – 4.91 (m, 2H), 3.07 – 2.91 (m, 2H), 2.00 – 1.87 (m, 2H), 1.65 (d, J = 1.3 Hz, 3H), 1.57 (d, J = 1.3 Hz, 3H), 1.56 – 1.50 (m, 2H), 1.18 (s, 3H); 13C NMR (101 MHz, CDCl 3) δ 199.4, 146.1, 138.5, 132.7, 131.3, 128.4, 128.1, 124.6, 111.8, 47.4, 40.7, 39.8, 25.6, 23.5, 23.0, 17.6. The spectroscopic data in agreement with literature. 18

Synthesis of protected Loureirin A 9w.

1-(4-tertbutyldimethylsilyloxyphenyl)-3-(2,4-dimethoxyphenyl)-propan-1-one (9w). This compound was synthesized according to the general procedure for direct ester - ketone formation starting with 402.2 mg (1 mmol) of ester 7w. Yield: 202 mg (52%); colorless oil; R f (50% AcOEt/hexane) 0.72; 1H NMR (600 MHz, CDCl 3) δ 7.92 – 7.89 (m, 2H), 7.10 (d, J = 8.2 Hz, 1H), 6.88 – 6.84 (m, 2H), 6.46 (d, J = 2.4 Hz, 1H), 6.42 (dd, J = 8.2, 2.4 Hz, 1H), 3.81 (s, 3H), 3.79 (s, 3H), 3.17 (t, J = 7.7 Hz, 2H), 2.97 (t, J = 7.7 Hz, 2H), 0.99 (s, 9H), 0.24 (s, 6H); 13C NMR (101 MHz, CDCl 3) δ 198.8, 160.0, 159.4, 158.3, 130.7, 130.3, 129.2, 127.4, 126.8, 119.8, 103.8, 98.5, 55.3, 55.2, 38.9, 25.6, 23.5, 18.2, -4.4; IR (film) ν: 2955, 2932, 2894, 2858, 1680, 1598, 1507, 1264, 1166, 911, 841, 808, 783 cm −1; HRMS (ESI) m/z calcd for C 23 H 32 O 4 SiNa [M+Na] + 423.1968, found 423.1976.

Synthesis of Loureirin A 13.

This compound was synthesized according to the literature procedure starting with 120.1 mg (0.3 mmol) of ketone 9w. Yield: 78.4 mg (91%); white solid; mp 134.7 °C; R f (20% AcOEt/hexane) 0.19; 1H NMR (400 MHz, CDCl 3) δ 7.96 – 7.85 (m, 2H), 7.26 (s, 1H), 7.07 (d, J = 8.1 Hz, 1H), 6.94 – 6.85 (m, 2H), 6.67 (bs, 1H), 6.48 – 6.35 (m, 2H), 3.78 (s, 6H), 3.21 – 3.14 (m, 2H), 3.02 – 2.91 (m, 2H); 13C NMR (101 MHz, CDCl 3) δ 199.8, 160.5, 159.5, 158.4, 130.8, 130.3, 129.9, 121.9, 115.4, 104.0, 98.6, 55.4, 55.2, 38.9, 25.5. The spectroscopic data in agreement with literature. 19
NMR spectra of esters 7a – 7w

benzhydrylacetate (7a)
benzhydryl propionate (7b)
benzhydryl octanoate (7c)
benzhydryl cyclohexanecarboxylate (7d)
benzydryl 4-methoxybenzoate (7e)
benzhydryl 4-methylbenzoate (7f)
benzhydryl biphenyl-4-carboxylate (7g)
diphenylmethyl benzoate (7h)
benzhydryl 2-chlorobenzoate (7i)
benzhydryl 2-iodobenzoate (7j)
benzhydryl 3-iodobenzoate (7k)
benzhydryl 4-trifluorobenzoate (7I)

19F NMR

8.25 8.47 7.94 7.76 7.74 7.72 7.69 7.67 7.65 7.63 7.36 7.35 7.33 7.32 7.28 7.26 7.14

2.00 1.94 1.85 0.94 0.49 1.02

9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5 -1.0
3,4-dimethoxybenzylbenzoate (7m)
4-methoxybenzylbenzoate (7n)

\[
\text{MeO} \quad \text{O} \quad \text{benzene ring}
\]
2,4,6-trimethylbenzylbenzoate (7o)
1-phenylethyl benzoate (7p)
4-methylbenzylbenzoate (7q)
2-(trimethylsilanyl)ethyl benzoate (7r)
benzyloxymethyl benzoate (7s)
1-adamantyl benzoate (7t)
(2S,5R)-1-benzoyl-2-(1-methylethyl)-5-methylcyclohexan-1-ol (7u)
(R)-naproxen 4-methoxybenzyl ester (7v)
2,4-dimethoxybenzyl 4-hydroxybenzoate (substrate for compound 7w synthesis)
2,4-dimethoxybenzyl 4-((tert-butyldimethylsilyl)oxy)benzoate (7w)
NMR spectra of esters 11a-11c
geranyl benzoate (11a)
benzoic acid pin-2-en-10-yl ester (11b)
geranyl propionate (11c)
NMR spectra of alkenes 10a-10v
(3-methylbut-3-ene-1,1-diyl)dibenzene (10a)
(3-ethylbut-3-ene-1,1-diyl)dibenzene (10b)
2-(2,2-diphenyl)ethyl-nonan-1-en (10c)
4,4-diphenyl-2-cyclohexyl-1-butene (10d)
4,4-diphenyl-2-(4-methoxyphenyl)-1-butene (10e)
4,4-diphenyl-2-(4-methylphenyl)-1-butene (10f)
4,4-diphenyl-2-biphenyl-1-butene (10g)
2,4,4-triphenyl-1-butene (10h)
4,4-diphenyl-2-(2-chlorophenyl)-1-butene (10i)
4,4-diphenyl-2-(2-iodophenyl)-1-butene (10j)
4,4-diphenyl-2-(3-iodophenyl)-1-butene (10k)
4,4-diphenyl-2-(4-trifluorophenyl)-1-butene (101)
2-phenyl-4-(3,4-dimethoxyphenyl)-1-butene (10m)
2-phenyl-4-(4-methoxyphenyl)-1-butene (10n)
2-phenyl-4-(2,4,6-trimethylphenyl)-1-butene (10o)
2,4-diphenyl-1-pentene (10p)
2-phenyl-4-(4-methylphenyl)-1-butene (10q)
2-phenyl-5-trimethylsilyl-1-penetene (10r)
2-phenyl-5-benzyloxy-1-butene (10s)
3-adamantane-2-phenyl-1-propen (10t)
(4S)-4-(6-methoxynaphthalen-2-yl)-3-methylidenepentane-1-(4-methoxyphenyl) (10v)
NMR spectra of alkenes 12a-d

(4-ethenyl-4,8-dimethylnona-1,7-dien-2-yl)benzene (12a)
2-phenyl-3-(6,6-dimethyl-2-methylidenebicyclo[3.1.1]hept-3-yl)prop-1-en (12b)
6-ethenyl-2,6-dimethyl-8-methyldenedec-2-ene (12c)
2-[(1E,3E,5E)-7-ethenyl-3,7-dimethyl-9-methyldeneundeca-1,3,5-trien-1-yl]-1,3,3-trimethylcyclohexene (12d)
NMR spectra of ketones 9a, 9h, 9n, 9v, 14a

4,4-diphenylbutan-2-one (9a)
1,3,3-triphenylpropan-1-one (9h)
3-(4-methoxyphenyl)-1-phenylpropan-1-one (9n)
(2R)-2-(6-methoxynaphthalen-2-yl)-5-(4-methoxyphenyl)-pentane-3-one (9v)
3,7-dimethyl-1-phenyl-3-vinyl-6-en-1-one (14a)
NMR spectra of protected Loureirin A

1-(4-tertbutyldimethyloxymethylphenyl)-3-(2,4-dimethoxyphenyl)-propan-1-one (9w)
NMR spectra of Loureirin A 13
REFERENCES


