Supporting Information for:

**Base Catalyzed Selective Esterification of Alcohols with Unactivated Esters**

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CONTENTS

1 General experimental details and materials

2 Optimization of the reaction conditions

3 General procedure for base catalyzed selective esterification of alcohols

4 Experimental characterization data for products

5 Gram scale experiment and cyclic reaction experiments

6 Mechanistic investigations

7 Copies for $^1$H NMR and $^{13}$C NMR of the products
1. General experiment details and materials

Experimental: All reactions and manipulations with air sensitive compounds being present were performed under dry argon (Ar) or nitrogen (N₂), using Schlenk and glove box techniques. Non-halogenated solvents were dried over sodium benzophenone, 2-methyltetrahydrofuran (2-Me-THF) was dried over calcium hydride, and halogenated solvents were dried over P₂O₅. Deuterated solvents were bought from Cambridge Isotope Laboratories, distilled accordingly, and stored over molecular sieves (3 Å). Other chemicals were purchased from commercial vendors and used without further purification. NMR spectra were collected on a Varian INOVA 300 MHz spectrometer. Chemical shifts (δ) are reported in ppm relative to residual solvent signal. Coupling constants (J) are given in Hz (coupling patterns: s: singlet, s_br: broad singlet, d: doublet, t: triplet, q: quartet, m: multiplet). GC analyses were carried out using an Agilent Technologies 6890N system equipped with a Machinery-Nagel (MN) Optima 5 HT column (30 m, 320 µm, 0.25 µm) or an Agilent Technologies 6850 system equipped with a MN Optima 17 column (30 m, 320 µm, 0.25 µm). GC/MS analyses were carried out on an Agilent 7890A/MSD 5975C system equipped with a HP-5MS column (30 m, 320 µm, 0.25 µm). Gas mixtures were analyzed using an Agilent Technologies 6890N equipped with a TCD and an Agilent special plot and molsieve capillary column (30 m, 320 µm, 0.25 µm). Elemental analyses were performed using the Elementar Vario EL III. MN silica gel 60 (0.040 – 0.063 mm particle size) was used for flash column chromatography.
2. Optimization of the reaction conditions

Closed system:

\[
\text{1d} + \text{2a} \xrightarrow{\text{base}} \text{3aa} + \text{Ph} \]

Using a nitrogen-filled glove box, an oven-dried pressure tube (38 mL volume) was charged with a magnetic stirring bar, base, tert-butyl acetate (1d), 1-phenylethan-1-ol (2a) and solvent. Then the seal tube was closed tightly with a teflon cap, removed from the glove box and immersed into a pre-heated oil bath (design temperature). After design time the reaction was cooled, a small aliquot of the organic phase was analyzed by GC or GC-MS to monitor product formation. The 3aa yield was determined by GC analysis relative to the 2a with n-hexadecane as internal standard. Purification of the remainder by column chromatography on silica gel gave the corresponding product 3aa in the reported yield.
Table S1. The amount of base $t$-BuONa loading screening $^a$

$$
\begin{array}{ccc}
\text{Entry} & t$-\text{BuONa (mol %)} & 3\text{aa} (\%) \\
1 & 0 & <5 \\
2 & 1 & 97 \\
3 & 2 & 98 \\
4 & 5 & 96 \\
5 & 10 & 88 \\
6 & 20 & 86 \\
7 & 30 & 74 \\
8 & 40 & 56 \\
9 & 50 & 49 \\
10 & 60 & 34 \\
11 & 80 & 15 \\
12 & 100 & 13 \\
13 & 120 & 12 \\
\end{array}
$$

$^a$ Reaction conditions: $t$-BuONa (x mol %), 1d (2 mmol, 267 µL), 2a (1 mmol, 121 µL), THF (2 mL), 120 °C (extern temperature), N$_2$, 23 h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard.

Table S2. The react time screening $^a$

$$
\begin{array}{ccc}
\text{Entry} & t (h) & 3\text{aa} (\%) \\
1 & 0 & 4 \\
2 & 1 & 96 \\
3 & 2 & 96 \\
4 & 4 & 97 \\
5 & 23 & 98 \\
\end{array}
$$

$^a$ Reaction conditions: $t$-BuONa (2 mol%), 1d (2 mmol, 267 µL), 2a (1 mmol, 121 µL), THF (2 mL), 120 °C (extern temperature), N$_2$, x h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard.
Table S3. The amount of THF loading screening

<table>
<thead>
<tr>
<th>Entry</th>
<th>THF (mL)</th>
<th>3aa (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>2.8</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>96</td>
</tr>
<tr>
<td>3</td>
<td>1.0</td>
<td>93</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
<td>94</td>
</tr>
<tr>
<td>5</td>
<td>2.0</td>
<td>96</td>
</tr>
<tr>
<td>6</td>
<td>3.0</td>
<td>93</td>
</tr>
</tbody>
</table>

*Reaction conditions: t-BuONa (2 mol%), 1d (2 mmol, 267 µL), 2a (1 mmol, 121 µL), THF (x mL), 120 °C (extern temperature), N₂, 1 h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard.

Table S4. The different of solvent screening

<table>
<thead>
<tr>
<th>Entry</th>
<th>Solvent (0.5 mL)</th>
<th>3aa (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>THF</td>
<td>96</td>
</tr>
<tr>
<td>2</td>
<td>2-MeTHF</td>
<td>96</td>
</tr>
<tr>
<td>3</td>
<td>Toluene</td>
<td>&gt;99</td>
</tr>
<tr>
<td>4</td>
<td>t-BuOH</td>
<td>79</td>
</tr>
<tr>
<td>5</td>
<td>Diglyme</td>
<td>92</td>
</tr>
<tr>
<td>6</td>
<td>1,4-dioxane</td>
<td>98</td>
</tr>
<tr>
<td>7</td>
<td>DMAc</td>
<td>91</td>
</tr>
<tr>
<td>8</td>
<td>Pyridine</td>
<td>94</td>
</tr>
</tbody>
</table>

*Reaction conditions: t-BuONa (2 mol%), 1d (2 mmol, 267 µL), 2a (1 mmol, 121 µL), solvent (0.5 mL), 120 °C (extern temperature), N₂, 1 h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard.
Table S5. The reaction temperature screening $^a$

![Chemical structure]

<table>
<thead>
<tr>
<th>Entry</th>
<th>T ($^\circ$C)</th>
<th>3aa (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>rt</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>60</td>
<td>90</td>
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<tr>
<td>4</td>
<td>80</td>
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<td>5</td>
<td>100</td>
<td>&gt;99</td>
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<tr>
<td>6</td>
<td>120</td>
<td>&gt;99</td>
</tr>
</tbody>
</table>

$^a$ Reaction conditions: t-BuONa (2 mol%), 1d (2 mmol, 267 µL), 2a (1 mmol, 121 µL), toluene (0.5 mL), T $^\circ$C (extern temperature), N$_2$, 1 h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard.

Table S6. The ratio of substrates screening $^a$

![Chemical structure]

<table>
<thead>
<tr>
<th>Entry</th>
<th>1a</th>
<th>2a</th>
<th>3aa (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0</td>
<td>1.0</td>
<td>66</td>
</tr>
<tr>
<td>2</td>
<td>1.2</td>
<td>1.0</td>
<td>74</td>
</tr>
<tr>
<td>3</td>
<td>1.5</td>
<td>1.0</td>
<td>97</td>
</tr>
<tr>
<td>4</td>
<td>2.0</td>
<td>1.0</td>
<td>99</td>
</tr>
<tr>
<td>5</td>
<td>1.0</td>
<td>1.5</td>
<td>34</td>
</tr>
<tr>
<td>6</td>
<td>1.0</td>
<td>2.0</td>
<td>24</td>
</tr>
</tbody>
</table>

$^a$ Reaction conditions: t-BuONa (2 mol%), 1d (x mmol), 2a (x mmol), toluene (0.5 mL), 100 $^\circ$C (extern temperature), N$_2$, 1 h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard.
Table S7: The different base screening $^a$

<table>
<thead>
<tr>
<th>Entry</th>
<th>Base</th>
<th>3aa (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Et$_3$N</td>
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</tr>
<tr>
<td>2</td>
<td>($i$-Pr)$_2$NH</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Pyridine</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Na$_2$CO$_3$</td>
<td>&lt;5</td>
</tr>
<tr>
<td>5</td>
<td>K$_2$CO$_3$</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Cs$_2$CO$_3$</td>
<td>&lt;5</td>
</tr>
<tr>
<td>7</td>
<td>NaOAc</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>KOAc</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>KHCO$_3$</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>K$_3$PO$_4$</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>NaOCH$_2$CH$_3$</td>
<td>16</td>
</tr>
<tr>
<td>12</td>
<td>$t$-BuOLi</td>
<td>94</td>
</tr>
<tr>
<td>13</td>
<td>$t$-BuONa</td>
<td>99(0)$^b$</td>
</tr>
<tr>
<td>14</td>
<td>$t$-BuOK</td>
<td>99</td>
</tr>
<tr>
<td>15</td>
<td>$t$-BuOCs</td>
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<tr>
<td>16</td>
<td>LiOH</td>
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<td>17</td>
<td>NaOH</td>
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</tr>
<tr>
<td>18</td>
<td>KOH</td>
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</tr>
<tr>
<td>19</td>
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<tr>
<td>20</td>
<td>NaHDMS</td>
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</tr>
<tr>
<td>21</td>
<td>KHDMs</td>
<td>61</td>
</tr>
<tr>
<td>22</td>
<td>KH</td>
<td>94</td>
</tr>
<tr>
<td>23</td>
<td>$t$-BuONa</td>
<td>31$^c$</td>
</tr>
</tbody>
</table>

$^a$ Reaction conditions: base (2 mol%), 1d (2 mmol, 267 µL), 2a (1 mmol, 121 µL), toluene (0.5 mL), 100 °C (extern temperature), N$_2$, 1 h. Yield of 3aa determined by GC-analysis using n-hexadecane as internal standard. $^b$ H$_2$O (10 mol%). $^c$ Air
Table S8: Investigated of the different esters $^a$

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R'</th>
<th>Ph</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>1a-j</td>
<td>1a</td>
<td>1b</td>
<td>1c</td>
<td>1d</td>
</tr>
<tr>
<td>3aa, 12%</td>
<td>3aa, 19%</td>
<td>3aa, 79%</td>
<td>3aa, 99%</td>
<td>3aa, 93%</td>
</tr>
</tbody>
</table>

$^a$ General conditions: 1a-j (1.2 mmol), 2a (1 mmol), t-BuONa (2 mol%), toluene (0.5 mL), 100 °C (extern temperature), N₂, 1 h. Yield of 3aa or 4aa determined by GC-analysis using n-dodecane as internal standard.

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (50 mL volume) was charged with a magnetic stirring bar, t-BuONa (2 mol%), ester (1), alcohol (2a) and toluene (0.5 mL). Then the tube was closed tightly with a teflon cap and immersed into a pre-heated oil bath (100 °C). After design time the reaction was cooled, a small aliquot of the organic phase was analyzed by GC or GC-MS to monitor product formation. Purification of the remainder by column chromatography on silica gel gave the corresponding product 3 or 4 in the reported yield.
3. General procedure for base catalyzed selective acetylation of alcohols

![Chemical Reaction]

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (50 mL volume) was charged with a magnetic stirring bar, \( t\)-BuONa (2 mol%), ester (1), alcohol (2) and toluene (0.5 mL). Then the tube was closed tightly with a teflon cap and immersed into a pre-heated oil bath (100 °C). After an hour the reaction was cooled, a small aliquot of the organic phase was analyzed by GC or GC-MS to monitor product formation. Purification of the remainder by column chromatography on silica gel gave the corresponding product 3 or 4 in the reported yield.
4. Experimental characterization data for products 3 or 4

1-Phenylethyl acetate (3aa): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 157 mg, 96% yield. \( ^1 \)H NMR (300 MHz, CDCl\(_3\)) \( \delta \) 7.56 – 7.50 (m, 4H), 7.50 – 7.40 (m, 1H), 6.06 (dd, \( J = 12.6, 6.2 \) Hz, 1H), 2.24 (s, 3H), 1.71 (d, \( J = 6.5 \) Hz, 3H). \( ^{13} \)C NMR (100 MHz, CDCl\(_3\)) \( \delta \) 170.2, 141.6, 128.4, 127.8, 126.0, 72.2, 22.1, 21.3. Elemental analysis calcd for C\(_{10}\)H\(_{12}\)O\(_2\) (M: 164.08) [%]: C, 73.15; H, 7.37; found: C, 73.45; H, 7.87. CAS Registry Number: 93-92-5.

1-(4-Iodophenyl)ethyl acetate (3ab): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 272 mg, 97% yield. \( ^1 \)H NMR (300 MHz, CDCl\(_3\)) \( \delta \) 7.66 (d, \( J = 8.2 \) Hz, 2H), 7.10 (d, \( J = 8.4 \) Hz, 2H), 5.80 (q, \( J = 6.6 \) Hz, 1H), 2.06 (s, 3H), 1.50 (d, \( J = 6.4 \) Hz, 3H). \( ^{13} \)C NMR (100 MHz, CDCl\(_3\)) \( \delta \) 167.0, 141.2, 137.4, 127.9, 93.3, 71.5, 22.0, 21.2. Elemental analysis calcd for C\(_{10}\)H\(_{11}\)IO\(_2\) (M: 289.98) [%]: C, 41.40; H, 3.82; found: C, 41.56; H, 3.92. CAS Registry Number: 90888-02-1.

1-(4-Chlorophenyl)ethyl acetate (3ac): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 182 mg, 92% yield. \( ^1 \)H NMR (300 MHz, CDCl\(_3\)) \( \delta \) 7.96 – 7.79 (m, 4H), 6.40 (q, \( J = 6.6 \) Hz, 1H), 2.62 (s, 3H), 2.07 (d, \( J = 6.6 \) Hz, 3H). \( ^{13} \)C NMR (100 MHz, CDCl\(_3\)) \( \delta \) 170.1, 140.1, 133.5, 128.6, 127.4, 71.5, 22.1, 21.2. Elemental analysis calcd for C\(_{10}\)H\(_{11}\)ClO\(_2\) (M: 198.04) [%]: C, 60.46; H, 5.58; found: C, 60.78; H, 5.79. CAS Registry Number: 19759-43-4.

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1-(3-Chlorophenyl)ethyl acetate (3ad): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 178 mg, 90% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 9.69 (d, $J = 2.5$ Hz, 1H), 9.62 – 9.52 (m, 3H), 8.17 (q, $J = 6.6$ Hz, 1H), 4.42 (s, 3H), 3.85 (d, $J = 6.6$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.0, 143.7, 134.3, 129.7, 127.9, 126.1, 124.2, 71.4, 21.1. Elemental analysis calcd for C$_{10}$H$_{11}$ClO$_2$ (M: 198.04) [%]: C, 60.46; H, 5.58; found: C, 60.72; H, 5.56. CAS Registry Number: 19759-26-3.

1-(4-Fluorophenyl)ethyl acetate (3ae): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 167 mg, 92% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.54 – 7.17 (m, 2H), 7.21 – 6.82 (m, 2H), 6.06 – 5.64 (m, 1H), 2.08 (s, 3H), 1.53 (d, $J = 6.6$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.2, 163.9, 160.6, 137.4, 127.9, 127.8, 115.4, 115.1, 71.6, 22.1, 21.2. Elemental analysis calcd for C$_{10}$H$_{11}$FO$_2$ (M: 182.07) [%]: C, 65.92; H, 6.09; found: C, 65.72; H, 6.59. CAS Registry Number: 2928-12-3.

1-(p-Tolyl)ethyl acetate (3af): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 158 mg, 89% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.32 (d, $J = 8.0$ Hz, 2H), 7.22 (d, $J = 7.9$ Hz, 2H), 5.92 (q, $J = 6.6$ Hz, 1H), 2.40 (s, 3H), 2.11 (s, 3H), 1.59 (d, $J = 6.6$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.2, 138.6, 137.5, 129.0, 126.0, 72.1, 22.0, 21.3, 21.0. Elemental analysis calcd for C$_{11}$H$_{14}$O$_2$ (M: 178.10) [%]: C, 74.13; H, 7.92; found: C, 74.25; H, 7.99. CAS Registry Number: 19759-40-1.

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1-(4-Methoxyphenyl)ethyl acetate (3ag): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 178 mg, 92% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.34 (d, J = 8.8 Hz, 2H), 6.92 (d, J = 8.7 Hz, 2H), 5.90 (q, J = 6.6 Hz, 1H), 3.83 (s, 3H), 2.09 (s, 3H), 1.57 (d, J = 6.4 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.4, 159.3, 133.8, 127.6, 113.8, 72.0, 55.2, 22.0, 21.4. Elemental analysis calcd for C$_{11}$H$_{14}$O$_3$ (M: 194.09) [%]: C, 68.02; H, 7.27; found: C, 68.21; H, 7.34. CAS Registry Number: 945-89-1.

1-(Pyridin-2-yl)ethyl acetate (3ah): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 153 mg, 93% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.54 (d, J = 4.9 Hz, 1H), 7.63 (td, J = 7.7, 1.7 Hz, 1H), 7.40 – 7.20 (m, 1H), 7.15 (dd, J = 7.5, 4.9 Hz, 1H), 5.87 (q, J = 6.7 Hz, 1H), 2.08 (s, 3H), 1.55 (d, J = 6.7 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.1, 160.1, 149.1, 136.7, 122.6, 120.3, 72.9, 21.1, 20.6. Elemental analysis calcd for C$_9$H$_{11}$NO$_2$ (M: 165.08) [%]: C, 65.44; H, 6.71; N, 8.48; found: C, 65.72; H, 6.88; N, 8.69. CAS Registry Number: 2555-01-3.

1-(Thiophen-2-yl)ethyl acetate (3ai): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 149 mg, 88% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.37 – 7.22 (m, 1H), 7.17 – 7.06 (m, 1H), 7.05 – 6.92 (m, 1H), 6.21 (q, J = 6.6 Hz, 1H), 2.09 (s, 3H), 1.68 (d, J = 6.5 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.2, 144.5, 126.6, 125.3, 125.2, 67.6, 22.1, 21.3. Elemental analysis calcd for C$_8$H$_{10}$O$_2$S (M: 170.04) [%]: C, 56.45; H, 5.92; found: C, 56.77; H, 5.68. CAS Registry Number: 22426-23-9.

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1-Phenylpropyl acetate (3aj): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 158 mg, 89% yield. \textsuperscript{1}H NMR (300 MHz, CDCl\textsubscript{3}) \( \delta \) 7.45 – 7.35 (m, 4H), 7.37 – 7.30 (m, 1H), 5.73 (t, \( J = 6.9 \) Hz, 1H), 2.12 (s, 3H), 2.01 – 1.82 (m, 2H), 0.94 (t, \( J = 7.4 \) Hz, 3H). \textsuperscript{13}C NMR (100 MHz, CDCl\textsubscript{3}) \( \delta \) 170.2, 140.4, 128.3, 128.2, 127.7, 126.4, 77.4, 29.2, 21.1, 9.8. \textbf{Elemental analysis} calcd for C\textsubscript{11}H\textsubscript{14}O\textsubscript{2} (M: 178.10) [%]: C, 74.13; H, 7.92; found: C, 74.46; H, 7.85. CAS Registry Number: 2114-29-6.

1-Phenylpentyl acetate (3ak): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 162 mg, 79% yield. \textsuperscript{1}H NMR (300 MHz, CDCl\textsubscript{3}) \( \delta \) 7.40 (d, \( J = 4.3 \) Hz, 4H), 7.37 – 7.30 (m, 1H), 5.82 (t, \( J = 7.0 \) Hz, 1H), 2.11 (d, \( J = 1.4 \) Hz, 3H), 2.05 – 1.93 (m, 1H), 1.90 – 1.80 (m, 1H), 1.44 – 1.27 (m, 4H), 0.95 (dd, \( J = 7.1, 6.0 \) Hz, 3H). \textsuperscript{13}C NMR (100 MHz, CDCl\textsubscript{3}) \( \delta \) 170.1, 140.7, 128.2, 127.6, 126.3, 75.9, 35.9, 27.5, 22.3, 21.0, 13.7. \textbf{Elemental analysis} calcd for C\textsubscript{13}H\textsubscript{18}O\textsubscript{2} (M: 206.13) [%]: C, 75.69; H, 8.80; found: C, 75.78; H, 8.75. CAS Registry Number: 38488-01-6.

Benzhydryl acetate (3al): The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 171mg, 76% yield. \textsuperscript{1}H NMR (300 MHz, CDCl\textsubscript{3}) \( \delta \) 7.48 – 7.35 (m, 10H), 6.99 (s, 1H), 2.25 (s, 3H). \textsuperscript{13}C NMR (100 MHz, CDCl\textsubscript{3}) \( \delta \) 169.9, 140.1, 128.4, 127.8, 127.0, 77.4, 21.2. \textbf{Elemental analysis} calcd for C\textsubscript{15}H\textsubscript{14}O\textsubscript{2} (M: 226.10) [%]: C, 79.62; H, 6.24; found: C, 79.72; H, 6.31. CAS Registry Number: 954-67-6.

**1-Phenylpropan-2-yl benzoate (3am):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 220 mg, 92% yield. **¹H NMR** (300 MHz, CDCl₃) δ 8.16 – 8.01 (m, 2H), 7.60 (dd, J = 10.8, 4.0 Hz, 1H), 7.47 (dd, J = 8.0, 7.5 Hz, 2H), 7.39 – 7.20 (m, 5H), 5.42 (dd, J = 12.6, 6.4 Hz, 1H), 3.13 (dd, J = 13.6, 6.5 Hz, 1H), 2.95 (dd, J = 13.6, 6.5 Hz, 1H), 1.39 (d, J = 6.2 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃) δ 166.0, 137.5, 132.7, 130.7, 129.8, 128.5, 126.5, 72.1, 42.3, 19.5. **Elemental analysis** calcd for C₁₆H₁₆O₂ (M: 240.12 [%]): C, 79.97; H, 6.71; found: C, 79.65; H, 6.82. CAS Registry Number: 2114-33-2.

**Hexan-2-yl benzoate (3an):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 175 mg, 85% yield. **¹H NMR** (300 MHz, CDCl₃) δ 8.09 – 7.96 (m, 2H), 7.60 – 7.51 (m, 1H), 7.49 – 7.39 (m, 2H), 5.27 – 5.07 (m, 1H), 1.80 – 1.69 (m, 1H), 1.61 (t, J = 5.1 Hz, 1H), 1.34 (dd, J = 6.2, 0.4 Hz, 7H), 0.91 (dd, J = 7.9, 6.0 Hz, 3H). **¹³C NMR** (100 MHz, CDCl₃) δ 166.2, 132.7, 130.9, 129.5, 128.3, 71.7, 35.8, 27.6, 22.6, 20.1, 14.0. **Elemental analysis** calcd for C₁₃H₁₈O₂ (M: 206.13 [%]): C, 75.69; H, 8.80; found: C, 75.72; H, 8.63. CAS Registry Number: 5953-49-1.

**1-Cyclopropylethyl benzoate (3ao):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 167 mg, 88% yield. **¹H NMR** (300 MHz, CDCl₃) δ 8.06 (dd, J = 5.2, 3.8 Hz, 2H), 7.60 – 7.36 (m, 3H), 4.61 (dq, J = 8.3, 6.3 Hz, 1H), 1.43 (d, J = 6.2 Hz, 3H), 1.12 (ddt, J = 10.3, 8.0, 4.1 Hz, 1H), 0.52 (ddt, J = 12.8, 9.6, 3.6 Hz, 3H), 0.38 – 0.26 (m, 1H). **¹³C NMR** (100 MHz, CDCl₃) δ 166.2, 132.7, 130.9, 129.6, 128.3, 75.7, 20.0, 16.5, 3.7, 2.5. **Elemental analysis** calcd for C₁₂H₁₄O₂ (M: 190.10 [%]): C, 75.76; H, 7.42; found: C, 75.82; H, 7.53. CAS Registry Number: 91495-78-2.

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S14
Hex-5-en-2-yl benzoate (3ap): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 146 mg, 72% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.09 (d, $J = 8.3$ Hz, 2H), 7.59 (t, $J = 7.4$ Hz, 1H), 7.47 (t, $J = 6.9$ Hz, 2H), 5.87 (ddt, $J = 16.8$, 10.2, 6.6 Hz, 1H), 5.22 (dd, $J = 12.6$, 6.4 Hz, 1H), 5.04 (dd, $J = 15.9$, 14.5 Hz, 1H), 2.21 (dd, $J = 6.7$, 1.5 Hz, 2H), 1.90 (dd, $J = 14.1$, 7.4 Hz, 1H), 1.82 – 1.70 (m, 1H), 1.40 (d, $J = 6.3$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.1, 137.7, 132.7, 130.8, 129.5, 128.2, 115.0, 71.0, 35.2, 29.7, 20.0. Elemental analysis calcd for C$_{13}$H$_{16}$O$_2$ (M: 204.12) [%]: C, 76.44; H, 7.90; found: C, 76.64; H, 7.68. CAS Registry Number: 54844-25-6.

6-Methylhept-5-en-2-yl benzoate (3aq): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 215 mg, 93% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.05 (dd, $J = 8.3$, 1.2 Hz, 2H), 7.60 – 7.49 (m, 1H), 7.46 – 7.39 (m, 2H), 5.14 (ddd, $J = 8.7$, 6.3, 3.6 Hz, 2H), 2.10 (q, $J = 7.4$ Hz, 2H), 1.80 (dd, $J = 13.8$, 7.4 Hz, 1H), 1.68 – 1.63 (m, 4H), 1.57 (s, 3H), 1.35 (d, $J = 6.3$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.2, 132.7, 132.2, 130.9, 129.5, 128.3, 123.5, 71.4, 36.1, 25.7, 24.1, 20.1, 17.6. Elemental analysis calcd for C$_{15}$H$_{20}$O$_2$ (M: 232.15) [%]: C, 77.55; H, 8.68; found: C, 77.69; H, 8.72. CAS Registry Number: 131225-69-9.

Cyclopentyl benzoate (3ar):$^{12}$ The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 155 mg, 82% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.03 (d, $J = 7.1$ Hz, 2H), 7.58 – 7.48 (m, 1H), 7.42 (t, $J = 7.7$ Hz, 2H), 5.51 – 5.31 (m, 1H), 1.97 (dt, $J = 10.3$, 5.0 Hz, 2H), 1.82 (t, $J = 12.5$ Hz, 4H), 1.72 – 1.58 (m, 2H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.3, 132.6, 130.8, 129.4, 128.2, 77.6, 32.7, 23.7. Elemental analysis calcd for C$_{12}$H$_{14}$O$_2$ (M: 190.10) [%]: C, 75.76; H, 7.42; found: C, 75.89; H, 7.67. CAS Registry Number: 32651-38-0.

Cyclohexyl benzoate (3a): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 177 mg, 87% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.05 (d, J = 7.5 Hz, 2H), 7.54 (t, J = 7.3 Hz, 1H), 7.43 (t, J = 7.5 Hz, 2H), 5.20 – 4.86 (m, 1H), 1.93 (d, J = 2.7 Hz, 2H), 1.84 – 1.74 (m, 2H), 1.65 – 1.54 (m, 3H), 1.50 – 1.32 (m, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.0, 132.7, 131.0, 129.5, 128.3, 73.0, 31.6, 25.5, 23.7. Elemental analysis calcd for C$_{13}$H$_{16}$O$_2$ (M: 204.12) [%]: C, 76.44; H, 7.90; found: C, 76.84; H, 7.60. CAS Registry Number: 2412-73-9.

Cycloheptyl benzoate (3at): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 185 mg, 85% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.05 (d, J = 7.1 Hz, 2H), 7.54 (t, J = 7.3 Hz, 1H), 7.43 (t, J = 7.2 Hz, 2H), 5.21 (dd, J = 7.5, 4.0 Hz, 1H), 2.00 (d, J = 7.4 Hz, 2H), 1.88 – 1.69 (m, 4H), 1.58 (d, J = 23.5 Hz, 6H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 174.2, 132.6, 129.5, 128.3, 75.6, 33.9, 28.4, 23.0. Elemental analysis calcd for C$_{14}$H$_{18}$O$_2$ (M: 218.13) [%]: C, 77.03; H, 8.31; found: C, 77.26; H, 8.42. CAS Registry Number: 1256568-15-6.

1,3-Diphenylpropan-2-yl benzoate (3au): The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 271 mg, 86% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.08 – 7.95 (m, 2H), 7.64 – 7.53 (m, 1H), 7.46 (dd, J = 11.5, 4.2 Hz, 2H), 7.38 – 7.20 (m, 10H), 5.72 – 5.50 (m, 1H), 3.12 – 2.96 (m, 4H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 165.9, 137.4, 132.8, 130.4, 129.5, 129.5, 128.4, 128.3, 126.5, 76.0, 39.8. Elemental analysis calcd for C$_{22}$H$_{20}$O$_2$ (M: 316.15) [%]: C, 83.52; H, 6.37; found: C, 83.68; H, 6.42. CAS Registry Number: 556568-15-6.

**Pentan-3-yl benzoate (3av):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 167 mg, 87% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.07 (d, $J = 7.8$ Hz, 2H), 7.54 (t, $J = 7.3$ Hz, 1H), 7.43 (t, $J = 7.5$ Hz, 2H), 5.03 (p, $J = 6.1$ Hz, 1H), 1.70 (dd, $J = 14.2$, 7.1 Hz, 4H), 0.96 (t, $J = 7.4$ Hz, 6H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.4, 132.6, 130.8, 129.4, 128.2, 77.4, 26.5, 9.6. **Elemental analysis** calcd for C$_{12}$H$_{16}$O$_2$ (M: 192.12) [%]: C, 74.97; H, 8.39; found: C, 74.59; H, 8.29. CAS Registry Number: 5436-54-4.

**Nonan-5-yl benzoate (3aw):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 213 mg, 86% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.06 (d, $J = 8.0$ Hz, 2H), 7.55 (t, $J = 7.3$ Hz, 1H), 7.44 (t, $J = 7.6$ Hz, 2H), 5.14 (p, $J = 6.1$ Hz, 1H), 1.67 (s, 4H), 1.35 (d, $J = 2.7$ Hz, 8H), 0.90 (d, $J = 6.2$ Hz, 6H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.4, 132.6, 129.5, 128.3, 75.0, 33.9, 27.5, 22.6, 14.0. **Elemental analysis** calcd for C$_{16}$H$_{24}$O$_2$ (M: 248.18) [%]: C, 77.38; H, 9.74; found: C, 77.42; H, 9.94. CAS Registry Number: 131426-42-1.

**(1R,2S,5R)-2-Isopropyl-5-methylcyclohexyl benzoate (3ax):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 189 mg, 73% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.06 (d, $J = 6.8$ Hz, 2H), 7.64 – 7.31 (m, 3H), 4.95 (t, $J = 10.4$ Hz, 1H), 2.14 (d, $J = 10.1$ Hz, 1H), 1.98 (s, 1H), 1.73 (d, $J = 10.6$ Hz, 2H), 1.58 (d, $J = 10.1$ Hz, 2H), 1.20 – 1.06 (m, 2H), 0.93 (d, $J = 5.6$ Hz, 6H), 0.80 (d, $J = 6.1$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 166.1, 132.6, 130.8, 129.5, 128.2, 74.7, 47.2, 40.9, 34.3, 31.4, 26.4, 23.6, 22.0, 20.7, 16.5. **Elemental analysis** calcd for C$_{17}$H$_{24}$O$_2$ (M: 260.18) [%]: C, 78.42; H, 9.29; found: C, 78.67; H, 9.38. CAS Registry Number: 6284-35-1.

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1-(4-Methoxyphenyl)ethyl benzoate (3ga): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 233 mg, 91% yield. $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 8.07 (d, $J$ = 7.7 Hz, 2H), 7.55 (t, $J$ = 6.8 Hz, 1H), 7.42 (dd, $J$ = 14.2, 7.9 Hz, 4H), 6.90 (d, $J$ = 8.4 Hz, 2H), 6.11 (q, $J$ = 6.4 Hz, 1H), 3.81 (s, 3H), 1.67 (d, $J$ = 6.4 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) $\delta$ 165.8, 159.2, 133.8, 132.8, 130.6, 129.6, 128.2, 127.5, 113.8, 72.6, 55.2, 22.1. Elemental analysis calcd for C$_{16}$H$_{16}$O$_3$ (M: 256.11) [%]: C, 74.98; H, 6.29; found: C, 74.76; H, 6.38. CAS Registry Number: 19771-09-6.

1-(4-Methoxyphenyl)ethyl 4-methylbenzoate (3gb):

The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 253 mg, 94% yield. $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 7.96 (d, $J$ = 7.8 Hz, 2H), 7.39 (d, $J$ = 8.3 Hz, 2H), 7.23 (d, $J$ = 7.8 Hz, 2H), 6.90 (d, $J$ = 8.3 Hz, 2H), 6.10 (q, $J$ = 6.5 Hz, 1H), 3.80 (s, 3H), 2.40 (s, 3H), 1.66 (d, $J$ = 6.5 Hz, 4H). $^{13}$C NMR (100 MHz, CDCl$_3$) $\delta$ 169.0, 159.0, 143.2, 133.6, 129.5, 128.8, 127.4, 113.7, 72.3, 55.1, 22.1, 21.5. Elemental analysis calcd for C$_{17}$H$_{18}$O$_3$ (M: 270.13) [%]: C, 75.53; H, 6.71; found: C, 75.48; H, 6.62.

1-(4-Methoxyphenyl)ethyl 3-methylbenzoate (3gc)

The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 240 mg, 89% yield. $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 7.92 (d, $J$ = 7.7 Hz, 2H), 7.56 (d, $J$ = 7.6 Hz, 2H), 7.38 (d, $J$ = 8.1 Hz, 2H), 6.90 (d, $J$ = 8.0 Hz, 2H), 6.09 (q, $J$ = 6.6 Hz, 1H), 3.80 (d, $J$ = 0.7 Hz, 3H), 1.66 (d, $J$ = 6.5 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) $\delta$ 165.1, 159.3, 133.5, 131.6, 131.1, 129.5, 127.9, 127.5, 113.9, 73.0, 55.2, 22.0, 21.7. Elemental analysis calcd for C$_{17}$H$_{18}$O$_3$ (M: 270.13) [%]: C, 75.53; H, 6.71; found: C, 75.69; H, 6.68.

1-(4-Methoxyphenyl)ethyl 4-methoxybenzoate (3gd): The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 263 mg, 92% yield. \[^1\text{H NMR}\] (300 MHz, CDCl\textsubscript{3}) \(\delta\) 8.03 (d, \(J = 9.0\) Hz, 2H), 7.39 (d, \(J = 8.6\) Hz, 2H), 6.94 – 6.87 (m, 4H), 6.08 (q, \(J = 6.6\) Hz, 1H), 3.85 (s, 3H), 3.80 (s, 3H), 1.65 (d, \(J = 6.6\) Hz, 3H). \[^{13}\text{C NMR}\] (100 MHz, CDCl\textsubscript{3}) \(\delta\) 165.6, 163.3, 159.2, 134.1, 131.7, 127.5, 123.1, 113.9, 113.6, 72.3, 55.4, 55.3, 22.3. **Elemental analysis** calcd for C\textsubscript{17}H\textsubscript{18}O\textsubscript{4} (M: 286.12) [%]: C, 71.31; H, 6.34; found: C, 71.42; H, 6.55.

1-(4-Methoxyphenyl)ethyl 4-fluorobenzoate (3ge): The title compound was prepared according to the general procedure and purified by flash chromatography to give the colorless oil, 227 mg, 83% yield. \[^1\text{H NMR}\] (300 MHz, CDCl\textsubscript{3}) \(\delta\) 8.09 (dd, \(J = 8.9, 5.5\) Hz, 2H), 7.40 (d, \(J = 8.7\) Hz, 2H), 7.10 (dd, \(J = 9.4, 8.0\) Hz, 2H), 6.92 (d, \(J = 8.7\) Hz, 2H), 6.11 (q, \(J = 6.6\) Hz, 1H). \[^{13}\text{C NMR}\] (100 MHz, CDCl\textsubscript{3}) \(\delta\) 167.3, 164.8, 163.9, 159.3, 133.6, 132.1, 132.0, 127.5, 126.8, 126.8, 115.5, 115.2, 113.8, 72.8, 55.2, 22.0. **Elemental analysis** calcd for C\textsubscript{16}H\textsubscript{15}FO\textsubscript{3} (M: 274.10) [%]: C, 70.06; H, 5.51; found: C, 70.22; H, 5.41.

1-(4-Methoxyphenyl)ethyl 4-chlorobenzoate (3gf): The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 240 mg, 83% yield. \[^1\text{H NMR}\] (300 MHz, CDCl\textsubscript{3}) \(\delta\) 8.00 (d, \(J = 8.1\) Hz, 2H), 7.52 – 7.31 (m, 4H), 6.91 (d, \(J = 8.2\) Hz, 2H), 6.85 (s, 1H), 6.10 (q, \(J = 6.4\) Hz, 1H), 3.81 (s, 3H), 1.67 (d, \(J = 6.4\) Hz, 3H). \[^{13}\text{C NMR}\] (100 MHz, CDCl\textsubscript{3}) \(\delta\) 164.9, 159.3, 139.2, 133.5, 131.0, 129.0, 128.6, 127.5, 113.9, 73.0, 55.2, 22.0. **Elemental analysis** calcd for C\textsubscript{16}H\textsubscript{15}ClO\textsubscript{3} (M: 290.07) [%]: C, 66.10; H, 5.20; found: C, 66.42; H, 5.34.
1-(4-Methoxyphenyl)ethyl 4-bromobenzoate (3gg):

The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 260 mg, 78% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.92 (d, $J = 7.7$ Hz, 2H), 7.56 (d, $J = 7.6$ Hz, 2H), 7.38 (d, $J = 8.1$ Hz, 2H), 6.90 (d, $J = 8.0$ Hz, 2H), 6.09 (q, $J = 6.6$ Hz, 1H), 3.80 (d, $J = 0.7$ Hz, 3H), 1.66 (d, $J = 6.5$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 165.1, 159.3, 133.5, 131.6, 131.1, 129.5, 127.9, 127.5, 113.9, 73.0, 55.2, 22.0, 21.7. **Elemental analysis** calcd for C$_{16}$H$_{15}$BrO$_3$ (M: 334.02) [%]: C, 57.33; H, 4.51; found: C, 57.33; H, 4.51.

1-(4-Methoxyphenyl)ethyl 4-iodobenzoate (3gh)

The title compound was prepared according to the general procedure and purified by flash column chromatography to give a white solid, 282 mg, 74% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.90 – 7.63 (m, 4H), 7.37 (d, $J = 8.5$ Hz, 2H), 6.90 (d, $J = 8.6$ Hz, 2H), 6.19 – 5.95 (m, 1H), 3.80 (s, 3H), 1.65 (d, $J = 6.5$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 165.3, 159.4, 137.6, 133.5, 131.1, 130.1, 127.6, 113.9, 100.6, 73.0, 55.3, 22.1. **Elemental analysis** calcd for C$_{16}$H$_{15}$IO$_3$ (M: 382.01) [%]: C, 50.28; H, 3.96; found: C, 50.32; H, 3.78.

1-(4-Methoxyphenyl)ethyl furan-2-carboxylate (3gi):

The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 223 mg, 91% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.56 (s, 1H), 7.37 (d, $J = 8.6$ Hz, 2H), 7.18 (d, $J = 3.3$ Hz, 1H), 6.89 (d, $J = 8.4$ Hz, 2H), 6.49 (s, 1H), 6.09 (q, $J = 6.5$ Hz, 1H), 3.80 (s, 3H), 1.65 (d, $J = 6.6$ Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 146.2, 127.7, 117.8, 113.9, 111.7, 72.6, 55.3, 22.0. **Elemental analysis** calcd for C$_{14}$H$_{14}$O$_4$ (M: 246.09) [%]: C, 68.28; H, 5.73; found: C, 68.31; H, 5.75.
1-(4-Methoxyphenyl)ethyl thiophene-2-carboxylate (3gj): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 233 mg, 89% yield. $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 7.93 – 7.72 (m, 1H), 7.53 (d, $J$ = 4.9 Hz, 1H), 7.40 (d, $J$ = 8.6 Hz, 2H), 7.08 (t, $J$ = 4.3 Hz, 1H), 6.92 (d, $J$ = 8.5 Hz, 2H), 6.09 (q, $J$ = 6.5 Hz, 1H), 3.80 (s, 3H), 1.67 (d, $J$ = 6.6 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) $\delta$ 161.4, 159.2, 134.2, 133.5, 133.2, 132.2, 127.6, 127.4, 113.8, 72.8, 55.1, 22.1. Elemental analysis calcd for C$_{14}$H$_{14}$O$_3$S (M: 262.07) [%]: C, 64.10; H, 5.38; found: C, 64.17; H, 5.42.

1-(4-Methoxyphenyl)ethyl propionate (3gk): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 189 mg, 91% yield. $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 7.22 (d, $J$ = 7.3 Hz, 2H), 6.80 (d, $J$ = 7.1 Hz, 2H), 5.78 (q, $J$ = 6.6 Hz, 1H), 3.71 (s, 3H), 2.25 (q, $J$ = 7.5 Hz, 2H), 1.44 (d, $J$ = 6.5 Hz, 3H), 1.04 (t, $J$ = 7.6 Hz, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) $\delta$ 133.8, 127.4, 113.6, 71.6, 55.1, 27.8, 21.9, 8.9. Elemental analysis calcd for C$_{12}$H$_{16}$O$_3$ (M: 208.11) [%]: C, 69.21; H, 7.74; found: C, 69.32; H, 7.85. CAS Registry Number: 35279-24-4.

1-(4-Methoxyphenyl)ethyl cyclopropanecarboxylate (3gl): The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 193 mg, 88% yield. $^1$H NMR (300 MHz, CDCl$_3$) $\delta$ 7.30 (d, $J$ = 8.7 Hz, 2H), 6.88 (d, $J$ = 8.8 Hz, 2H), 5.86 (q, $J$ = 6.6 Hz, 1H), 3.80 (s, 3H), 1.67 – 1.56 (m, 1H), 1.53 (d, $J$ = 6.6 Hz, 3H), 1.05 – 0.94 (m, 2H), 0.88 – 0.78 (m, 2H). $^{13}$C NMR (100 MHz, CDCl$_3$) $\delta$ 174.1, 159.1, 133.8, 127.4, 113.7, 71.84, 55.2, 22.0, 13.1, 8.3, 8.3. Elemental analysis calcd for C$_{13}$H$_{16}$O$_3$ (M: 220.11) [%]: C, 70.89; H, 7.32; found: C, 70.78; H, 7.25.

S21
**Benzyl acetate (4dm):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 178 mg, 81% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 7.46 – 7.28 (m, 5H), 5.12 (s, 2H), 2.11 (s, 3H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.8, 135.9, 128.5, 128.2, 66.3, 21.0. **Elemental analysis** calcd for C$_9$H$_{10}$O$_2$ (M: 150.18) [%]: C, 71.98; H, 6.71; found: C, 71.72; H, 6.82.

**Benzyl benzoate (4jo):** The title compound was prepared according to the general procedure and purified by flash column chromatography to give the colorless oil, 178 mg, 83% yield. $^1$H NMR (300 MHz, CDCl$_3$) δ 8.12 – 8.08 (m, 2H), 7.64 – 7.51 (m, 1H), 7.49 – 7.40 (m, 6.8 Hz, 7H), 5.40 (s, 2H). $^{13}$C NMR (100 MHz, CDCl$_3$) δ 170.9, 133.0, 130.1, 129.7, 128.6, 128.3, 128.2, 128.1, 66.7. **Elemental analysis** calcd for C$_{14}$H$_{12}$O$_2$ (M: 212.08) [%]: C, 79.23; H, 5.70; found: C, 79.12; H, 5.82. CAS Registry Number: 19759-26-3.
5. Gram scale experiment and recycle reaction experiment

5.1 Gram scale experiment

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (100 mL volume) was charged with a magnetic stirring bar, t-BuONa (2 mol%, 0.4 mmol), 1d (40 mmol), 2a (20 mmol) and toluene (5.0 mL). The tube was sealed, taken out of the glove box and a reflux condenser was attached under argon stream. The mixture was heated at 100 °C (oil bath) for 12 hours under inert atmosphere in an open system. After cooling, a small aliquot of the organic phase was analyzed by GC to monitor product formation. Then the corresponding reaction mixture was purified by flash column chromatography on a silica gel column (pentane/ethyl ether = 50/1) to give the desired product 3aa in 83 % yield (2.72 g).

5.2 Recycle reaction experiment

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (38 mL volume) was charged with a magnetic stirring bar, t-BuONa (2 mol%), 1d (2 mmol), 2a (1.0 mmol) and toluene (0.5 mL). The tube was sealed, taken out of the glove box and a reflux condenser was attached under argon stream. The mixture was heated at 100 °C (oil bath) for an hour under inert atmosphere in an open system. A small aliquot of the organic phase was analyzed by GC to monitor product 3aa formation. Then 1d (2 mmol), 2a (1.0 mmol) and toluene (0.5 mL) were added and continued to react for another an hour under inert atmosphere in an open system. A small aliquot of the organic phase was analyzed by GC to monitor product 3aa formation. Repeat this process seven times.

<table>
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<tr>
<th>Reaction Numbers</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>3aa Yield (%)</td>
<td>96</td>
<td>94</td>
<td>95</td>
<td>93</td>
<td>90</td>
<td>91</td>
<td>89</td>
</tr>
</tbody>
</table>
6. Mechanistic investigations

6.1 Synthesis of complex Na-I

\[
\begin{align*}
\text{Ph}_2\text{C}-\text{OH} + \text{t-BuONa} & \quad \xrightarrow{\text{Toluene} \, 100^\circ\text{C}, \, 1 \, \text{h}} \quad \left[\text{Ph}_2\text{C}-\text{O-Na}\right]_6 \\
\text{2I} (1.1 \text{ eq.}) & \quad \text{Na-I, 44%}
\end{align*}
\]

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (50 mL volume) was charged with a magnetic stirring bar, \(\text{t-BuONa} \) (1.0 mmol, 96 mg), \(\text{2I} \) (1.1 mmol, 202 mg) and toluene (5.0 mL). The tube was sealed, taken out of the glove box and a reflux condenser was attached under argon stream. The mixture was heated at 100 °C (oil bath) for an hour under inert atmosphere in an open system. After cooling, the solvent was removed in vacuum and the residue recrystallized two times from cyclopentane to give white crystals \(\text{Na-I} \) in 44 % yield. \(^1\text{H NMR}\) (300 MHz, THF-\(d_8\)) \(\delta\) 7.46-7.32 (m, 4H), 7.24-7.10 (m, 4H), 7.08-7.00 (m, 2H), 6.05 (s, 1H). \(^{13}\text{C NMR}\) (100 MHz, THF-\(d_8\)) \(\delta\) 153.4, 125.5, 124.3, 122.7, 78.9. \textbf{Elemental analysis} calcd for \(\text{C}_{13}\text{H}_{11}\text{NaO} \) (M: 206.07) [%]: C, 75.72; H, 5.38; found: C, 75.32; H, 5.49.\(^{17}\)

\[
\begin{align*}
\text{Ph}_2\text{C}-\text{OH} + \text{t-BuONa} & \quad \xrightarrow{\text{Toluene} \, rt, \, 12 \, \text{h}} \quad \left[\text{Ph}_2\text{C}-\text{O-Na}\right]_6 + \text{OH} \\
\text{2I} (1.1 \text{ eq.}) & \quad \text{Na-I, <5%} \quad \text{Recovered 96%}
\end{align*}
\]

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (50 mL volume) was charged with a magnetic stirring bar, \(\text{t-BuONa} \) (1.0 mmol, 96 mg), \(\text{2I} \) (1.1 mmol, 202 mg) and toluene (5.0 mL). The tube was sealed, taken out of the glove box and a reflux condenser was attached under argon stream. The mixture was stirred at room temperature for an hour under inert atmosphere in an open system. Then \(\text{2I} \) was recovered in 96% yield by flash column chromatography on a silica gel column.

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (50 mL volume) was charged with a magnetic stirring bar, **Na-I** (0.083 mmol), **1d** (1.0 mmol) and toluene (0.5 mL). The tube was sealed, taken out of the glove box and a reflux condenser was attached under argon stream. The mixture was heated at 100 °C (oil bath) for an hour under inert atmosphere in an open system. After cooling, the corresponding reaction mixture was purified by flash column chromatography on a silica gel column (pentane/ethyl ether = 20/1) to give the desired product **3al** in 67 % yield.

Using a nitrogen-filled glove box, an oven-dried Schlenk tube (50 mL volume) was charged with a magnetic stirring bar, **Na-I** (0.5 mol%, 0.005 mmol), **1d** (2 mmol), **2l** (1.0 mmol) and toluene (0.5 mL). The tube was sealed, taken out of the glove box and a reflux condenser was attached under argon stream. The mixture was heated at 100 °C (oil bath) for an hour under inert atmosphere in an open system. After cooling, the corresponding reaction mixture was purified by flash column chromatography on a silica gel column (pentane/ethyl ether = 20/1) to give the desired product **3al** in 62 % yield.
6.2 $^1$H NMR investigations

**Scheme 3** Selected part of $^1$H NMR spectra of Ph$_2$CHOH with t-BuONa: (I) Ph$_2$CHOH in THF-$d_8$, (II) Ph$_2$CHOH and t-BuONa, (III) Na-I in THF-$d_8$, (IV) Ph$_2$CHOC(O)CH$_3$ in THF-$d_8$, (V) Ph$_2$CHOH, t-BuONa and 1d, (VI) Ph$_2$CHOH, t-BuONa and 1d after 5 min at 100 °C, (VI) Ph$_2$CHOH, t-BuONa and 1d after 1 h at 100 °C.

**II:** Using a nitrogen-filled glove box, in a Young NMR tube, Ph$_2$CHOH (0.12 mmol), t-BuONa (30 mol%, 0.03 mmol) and THF-$d_8$ (0.5 mL) were mixed. The tube was sealed, taken out of the glove box and analyzed by NMR. $^1$H NMR spectroscopy showed the presence of the characteristic peak at 5.81 ppm of CH and 4.74 ppm of OH.

**V:** Using a nitrogen-filled glove box, in a Young NMR tube, Ph$_2$CHOH (0.12 mmol), t-BuONa (30 mol%, 0.03 mmol), 1d (0.1 mmol) and THF-$d_8$ (0.5 mL) were mixed. The tube was sealed, taken out of the glove box and analyzed by NMR. $^1$H NMR spectroscopy showed the presence of the characteristic peak at 5.81 ppm of CH and 4.69 ppm of OH.

**VI:** Using a nitrogen-filled glove box, in a Young NMR tube, Ph$_2$CHOH (0.12 mmol), t-BuONa (30 mol%, 0.03 mmol), 1d (0.1 mmol) and THF-$d_8$ (0.5 mL) were mixed. The tube was sealed, taken out of the glove box. The mixture was heated at 100 °C (oil bath) for 5 min and analyzed by NMR. $^1$H NMR spectroscopy showed the
presence of the characteristic peak at 6.92 ppm of CH of product and 5.96 ppm of CH of Ph₂CHONa.

**VII:** Using a nitrogen-filled glove box, in a Young NMR tube, Ph₂CHOH (0.12 mmol), t-BuONa (30 mol%, 0.03 mmol), 1d (0.1 mmol) and THF-$d_8$ (0.5 mL) were mixed. The tube was sealed, taken out of the glove box. The mixture was heated at 100 °C (oil bath) for an hour and analyzed by NMR. $^1$H NMR spectroscopy showed the presence of the characteristic peak at 6.90 ppm of CH of product and 5.97 ppm of CH of Ph₂CHONa.

7. Copies for $^1$H NMR and $^{13}$C NMR of the products
ZGY-X180616-2

Chemical Shift (ppm)

12.0 11.0 10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 1.0 0.0

3.28 3.17 2.0949 1.6908 1.6689

1.03 1.01 1.03 1.00 2.0949 1.6908 1.6689

3ai
ZGY-X180616-2

-170.2
-144.5
126.6
125.3
125.2
77.5
77.1
76.7
76.6
22.1
21.3

3ai

Chemical Shift (ppm)
ZGY-X180626-1

-166.0  132.7  131.0  129.5  128.3  77.5  77.0  76.6  73.0

3as

Chemical Shift (ppm)
ZGY-X180630-2

[Chemical Shifts and Spectrogram]
ZGY-X180630-1

$^{13}C$ NMR spectrum of compound 3ax.

Chemical Shift (ppm)

-166.1106
132.6290 130.8016 129.4991 128.2314
77.4995 76.9999 76.9922 76.9402
74.7462 74.4297 74.2397 74.0256
47.2332 40.9294 34.2707 31.3947
29.4489 26.4852 23.5852 22.0256
20.7420 16.4991

S75