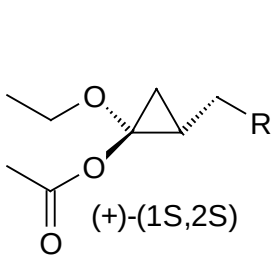
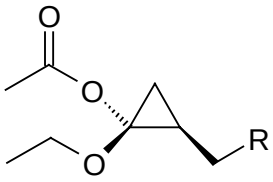
Supporting Information

General preparation of (+)-(1S,2S)- and (–)-(1R,2R)-*trans*-1-ethoxy-2-alkyl/aryl-cyclopropyl-acetates [(+)-5b-e, (–)-5b-e] – Kinetic resolution of the cyclopropylacetates (±)-5b-e



(+)-(1S,2S)



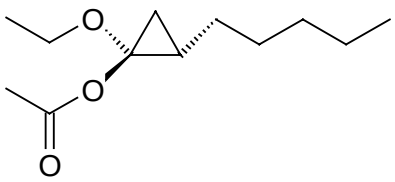
(–)-(1R,2R)

In a typical procedure, acetate, lipase, butanol and diisopropyl ether are combined and stirred at 40 °C. The reaction is monitored by GLC and stirring is continued until one enantiomer cannot be detected anymore.

Determination of the enantiomeric excess during the reaction: to 0.25 ml of the mixture 0.5 ml of hydrochloric acid (10 %) is added and extracted with 1 ml of *n*-hexane. The organic phase is dried over Na_2SO_4, filtered and 1 µl is detected by GLC.

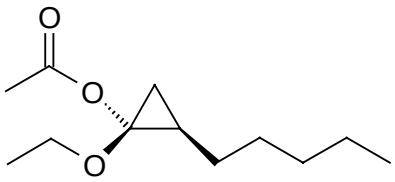
To stop the reaction, the mixture is poured on cold hydrochloric acid (10 %) and rapidly extracted with *n*-hexane. For better phase separation, the flask can be dipped into an ultrasonic bath. The combined organic phases are dried over Na_2SO_4, filtered and purified by column chromatography. The products can be obtained as colourless oils.

(+)-(1S,2S)-2-Pentyl-1-ethoxy-cyclopropan-1-ol acetate **(+)-5b**



450 mg (2.10 mmol) **(±)-5b**, butanol: 4.5 ml, lipase CALB: 450 mg; diisopropyl ether: 45 ml; reaction time: 11 d; yield: 185 mg (0.86 mmol; 84 %).

(–)-(1R,2R)-2-Pentyl-1-ethoxy-cyclopropan-1-ol acetate **(–)-5b**



60 mg (0.28 mmol) **(±)-5b**, butanol: 0.6 ml, lipase PCL: 60 mg, diisopropyl ether: 6 ml; reaction time: 18 d; yield: 21 mg (0.1 mmol; 70 %).

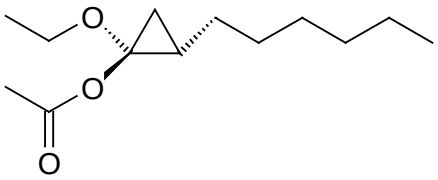
^{1}H-NMR ($CDCl_3$): δ [ppm] = 0.63 (t, *J* = 6.35 Hz, 1H, CH), 0.78 – 1.72 (m, 16H, 5xCH_2, 2xCH_3), 2.05 (s, 3H, CH_3), 3.60 – 3.88 (m, 2H, OCH_2).

^{13}C-NMR ($CDCl_3$): δ [ppm] = 14.47 (CH_3), 15.77 (CH_3), 17.19 (CH_2), 21.67 (CH_3), 22.98 (CH_2), 26.12 (CH), 28.23, 28.90, 32.08 (3xCH_2), 64.77 (OCH_2), 89.92 (C_q), 170.37 (C_q).

IR (KBr-pressling): $\tilde{\nu}$ [cm^{-1}] = 3028 – 2857, 1750, 1217, 1176.

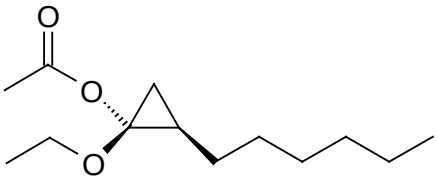
$C_{12}H_{22}O_3$ (214.30): calculated: C: 67.26 %, H 10.35 %, found: C: 67.22 %, H: 10.37 %.

(+)-(1S,2S)-2-Hexyl-1-ethoxy-cyclopropan-1-ol acetate **(+)-5c**



150 mg (0.66 mmol) **(±)-5c**, butanol: 1.5 ml, lipase CALB: 150 mg, diisopropyl ether: 15 ml; reaction time: 7 d; yield: 47 mg (0.21 mmol; 64 %).

(–)-(1R,2R)-2-Hexyl-1-ethoxy-cyclopropan-1-ol acetate **(–)-5c**



100 mg (0.44 mmol) **(±)-5c**, butanol: 1 ml, lipase PCL: 100 mg, diisopropyl ether: 10 ml; reaction time: 16 d; yield: 16 mg (0.07 mmol; 34 %).

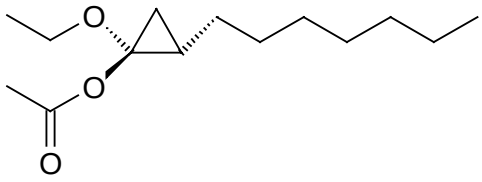
^{1}H-NMR ($CDCl_3$): δ [ppm] = 0.63 (t, *J* = 6.23 Hz, 1H, CH), 0.86 – 1.69 (m, 18H, 6xCH_2, 2xCH_3), 2.05 (s, 3H, CH_3), 3.60 – 3.88 (m, 2H, OCH_2).

^{13}C-NMR ($CDCl_3$): δ [ppm] = 14.48 (CH_3), 15.77 (CH_3), 17.20 (CH_2), 21.67 (CH_3), 23.03 (CH_2), 26.12 (CH), 28.28, 29.18, 29.54, 32.18 (4xCH_2), 64.78 (OCH_2), 89.93 (C_q), 170.35 (C_q).

IR (KBr-pressling): $\tilde{\nu}$ [cm^{-1}] = 3022 – 2862, 1750, 1222, 1170.

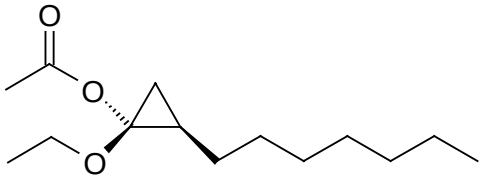
$C_{13}H_{24}O_3$ (228.33): calculated: C 68.38 %, H 10.59 %, found: C 68.50 %, H 10.78 %.

(+)-(1S,2S)-2-Heptyl-1-ethoxy-cyclopropan-1-ol acetate **(+)-5d**



400 mg (1.65 mmol) **(±)-5d**, butanol: 4 ml, lipase CALB: 400 mg, diisopropyl ether: 40 ml; reaction time: 4 d; yield: 171 mg (0.71 mmol; 86 %).

(–)-(1R,2R)-2-Heptyl-1-ethoxy-cyclopropan-1-ol acetate **(–)-5d**



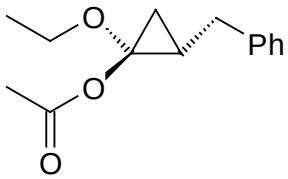
505 mg (2.08 mmol) **(±)-5d**, butanol: 5 ml, lipase PCL: 52 mg, diisopropyl ether: 50 ml; reaction time: 36 d; yield: 190 mg (0.78 mmol; 75 %).

^{1}H-NMR ($CDCl_3$): δ [ppm] = 0.63 (t, *J* = 6.33 Hz, 1H, CH), 0.86 – 0.92 (m, 3H, CH_3), 0.99 – 1.79 (m, 17H, 7xCH_2, CH_3), 2.05 (s, 3H, CH_3), 3.60 – 3.88 (m, 2H, OCH_2).

^{13}C-NMR ($CDCl_3$): δ [ppm] = 14.49 (CH_3), 15.78 (CH_3), 17.19 (CH_2), 21.67 (CH_3), 23.06 (CH_2), 26.12 (CH), 28.27, 29.23, 29.63, 29.84, 32.26 (5xCH_2), 64.77 (OCH_2), 89.92 (C_q), 170.34 (C_q).

IR (KBr-pressling): $\tilde{\nu}$ [cm^{-1}] = 3017 – 2851, 1755, 1207, 1165.

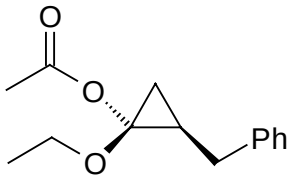
(+)-(1S,2S)-2-Benzyl-1-ethoxy-cyclopropan-1-ol acetate **(+)-5e**



710 mg (3.03 mmol) **(±-5e)**, butanol:7.1 ml, lipase CALB [1]:710 mg, diisopropyl ether: 71 ml; reaction time: 3 d; yield: 350 mg (1.49 mmol; 98 %).

[1] Lipase from *Candida antartica* Novozym 435, immobilised

(–)-(1R,2R)-2-Benzyl-1-ethoxy-cyclopropan-1-ol acetate **(–)-5e**



300 mg (1.35 mmol) **(±-5e)**, butanol: 3 ml, lipase PCL [2]: 300 mg, diisopropyl ether: 31 ml; reaction time: 7 d; yield: 82 mg (0.33 mmol; 52 %).

^{1}H-NMR ($CDCl_3$): δ [ppm] = 0.88 (t, *J* = 6.94 Hz, 1H, CH), 1.17 –1.33 (m, 5H, CH_2, CH_3), 2.08 (s, 3H, CH_3), 2.49 – 2.69 (dd, *J* = 8.69 Hz, *J* = 14.97 Hz, 1H, CH_2), 3.06 – 3.21 (dd, *J* = 5.67 Hz, *J* = 14.93 Hz, 1H, CH_2), 3.69 – 3.98 (m, 2H, OCH_2), 7.22 – 7.34 (m, 5H, 5xCH_{arom}).

^{13}C-NMR ($CDCl_3$): δ [ppm] = 15.84 (CH_3), 17.70 (CH_2), 21.65 (CH_3), 26.78 (CH), 34.19 (CH_2), 65.05 (OCH_2), 89.55 (C_q), 126.46, 127.52, 128.76, 128.89 (5xCH_{arom}), 141.24 (C_q), 170.32 (C_q).

IR (KBr-pressling): $\tilde{\nu}$ [cm^{-1}] = 3022 – 2851, 1750, 1217, 1160.

$C_{14}H_{18}O_3$ (234.30): calculated C: 71.77 %, H: 7.74 %, found: C: 71.80 %, H: 7.89 %.

[2] Lipase from *Pseudonomas cepacia* from Fluka, ~ 50 U/mg