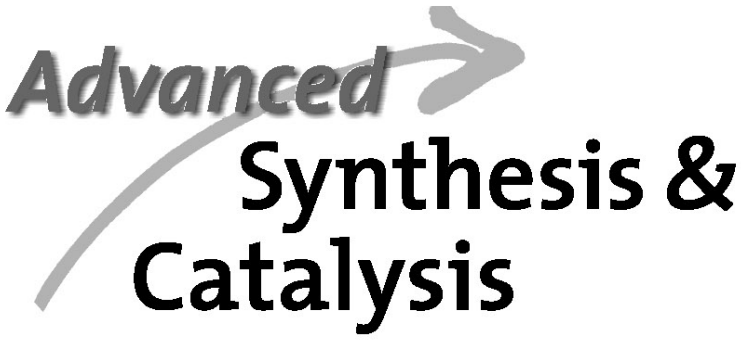

Supporting Information

Non-racemic halohydrins via biocatalytic hydrogen transfer-reduction of halo-ketones and one-pot cascade-reaction to enantiopure epoxide

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Supporting information

Chiral GC-Analytics

GC analysis was performed on a Varian 3800 GC (FID) using a Chrompack Chirasil-DEX CB (25 m x 0.32 mm x 0.25 µm, 1.0 bar H_2) column.

Compound	**Temperature program**	**t_{R1} [min]**	**t_{R2} [min]**
1-Chloro-2-octanone **1a**	100°C/0min-1.0°C/min-135°C/0min-15°C/min-170°C/1min	4.9	
1-Chloro-2-octanol **1b***	112°C/0min-0.5°C/min-116°C/0min-15°C/min-170°C/1min	4.8 (*R*)	5.6 (*S*)
1,2-Epoxyoctane **1c**	40°C/2min-2°C/min-50°C/10min-2°C/min-80°C10min-30°C/min-170°C/1min	19.2 (*R*)	19.6 (*S*)
? -Chloroacetophenone **2a**	112°C/0min-0.5°C/min-122°C/0min-15°C/min-170°C/1min	7.7	
2-Chloro-1-phenylethanol **2b***	112°C/0min-0.5°C/min-116°C/0min-15°C/min-170°C/1min	7.8 (*R*)	8.6 (*S*)
3-Chloro-1-phenyl-2-propanol **3b***	112°C/0min-0.5°C/min-116°C/0min-15°C/min-170°C/1min	9.8 (*R*)	10.0 (*S*)
Isopropyl 4-chloro-3-hydroxybutanoic acid ester **4b**	112°C/0min-0.5°C/min-116°C/0min-15°C/min-170°C/1min	5.3 (*R*)	5.5 (*S*)
3-Chlor-1-phenoxy-2-propanol **5b***	112°C/0min-0.5°C/min-116°C/0min-15°C/min-170°C/1min	11.4 (*R*)	11.6 (*S*)
1-Chloro-1-phenyl-2-propanone **6a**	112°C/0min-0.4°C/min-122°C/0min-15°C/min-170°C/1min	8.5	8.7
1-Chloro-1-phenyl-2-propanol **6b**	112°C/0min-0.4°C/min-122°C/0min-15°C/min-170°C/1min	11.2(*1R,2R*) 13.6 (*1R,2S*)	11.3 (*1S,2S*) 14.6 (*1S,2R*)

*measured as its acetyl derivative

Table S1. GC-Data, chiral.

Derivatization (acetylation): After removal of the organic solvent of the sample under reduced pressure, acetic anhydride (100 µL) and 4-dimethyl-aminopyridine DMAP (5 mg) were added. The mixture was shaken at room temperature for 30 min at 150 rpm in Eppendorf tubes. After addition of water (0.5 mL) and extraction with ethyl acetate (3 x 200 µL), the combined organic phase was dried (Na_2SO_4) and analyzed.

Achiral GC-Analytics

GC analysis was performed on a Varian 3800 GC (FID). The following columns were used: J&W Scientific Agilent Technologies HP-1 (30 m x 0.25 mm x 0.25 µm, 1.0 bar N_2) and CP 1301 (30 m x 0.25 mm x 0.25 µm, 1.0 bar N_2).

Compound	**Temperature program**	**Column**	**t_R [min]**
1-Chloro-2-octanone **1a**	100°C/0min-5°C/min-145°C/0min-30°C/min-270°C/0min	CP1301	5.9
1-Chloro-2-octanol **1b**	100°C/0min-5°C/min-145°C/0min-30°C/min-270°C/0min	CP1301	6.2
? -Chloroacetophenone **2a**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	7.7
2-Chloro-1-phenylethanol **2b**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	7.6
3-Chloro-1-phenyl-2-propanone **3a**	100°C/0min-15°C/min-270°C/2min	HP-1	10.1
3-Chloro-1-phenyl-2-propanol **3b**	100°C/0min-15°C/min-270°C/2min	HP-1	11.1
Isopropyl 4-chloro-acetoacetat **4a**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	7.9
Isopropyl 4-chloro-3-hydroxybutanoic acid ester **4b**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	6.4
3-Chloro-1-phenoxy-2-propanone **5a**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	9.0
3-Chloro-1-phenoxy-2-propanol **5b**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	9.2
1-Chloro-1-phenyl-2-propanone **6a**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	7.3
1-Chloro-1-phenyl-2-propanol **6b**	90°C/0min-5°C/min-120°C/0min-30°C/min-270°C/2min	CP1301	7.4

Table S2. GC-Data, achiral.