Supplementary Material

Concise Asymmetric Syntheses of (S)-ethyl 4-methyloctanoate and its Acid: Aggregation Pheromones of Rhinoceros Beetles of the Genus *Oryctes*

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Table of contents

1. General experimental S2
2. $^1$H and $^{13}$C spectra for compound 9 S3
3. $^1$H and $^{13}$C spectra for compound 1a S4
4. $^1$H and $^{13}$C spectra for compound 2a S5
5. HPLC of reduced product of intermediate 8 S6
Materials and methods

All reactions were carried out under argon or nitrogen in oven-dried glassware using standard glass syringes and septa. The solvents and chemicals were purchased from Merck and Sigma Aldrich chemical company. Solvents and reagents were purified and dried by standard methods prior to use. Progress of the reactions was monitored by TLC using precoated aluminium plates of Merck kieselgel 60 F254. Column chromatography was performed on silica gel (60-120 and 100-200 mesh) using a mixture of n-hexane and ethyl acetate. Optical rotations were measured on automatic polarimeter AA-65. $^1$H and $^{13}$C NMR spectra were recorded in CDCl$_3$ (unless otherwise mentioned) on JEOL ECS operating at 400 and 100 MHz, respectively. Chemical shifts are reported in δ (ppm), referenced to TMS. HRMS were recorded on Agilent 6530 Accurate-Mass Q-TOF using Electron Spray Ionization. IR spectra were recorded on Agilent resolution Pro 600 FT-IR spectrometer, fitted with a beam condensing ATR accessory.
$^1$H NMR (400 MHz, CDCl$_3$/TMS)

$^{13}$C NMR (100 MHz, CDCl$_3$)
$^1$H NMR (400 MHz, CDCl$_3$/TMS)

$^{13}$C NMR (100 MHz, CDCl$_3$)
\[^1^H\text{NMR (400 MHz, CDCl}_3/\text{TMS)}\]

\[^{13}\text{C NMR (100 MHz, CDCl}_3)\]
### D-7000 HPLC System Manager Report

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**Reported:** 03/16/18 03:25 PM  
**Processed:** 03/16/18 03:25 PM

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**Processing Method:** cal  
**System/acquisition:** SyS 1  
**Application:** HPLC  
**Sample Name:** R2 (Chiral)  
**Injection from this vial:** 1 of 1  
**Sample Description:** PET: ETOH(99:1)

#### Chrom Type: HPLC Channel: 1

![HPLC Chromatogram]

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<td>19.88</td>
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**Total Area:** 17127349  
**100.000**

**Peak rejection level:** 0

![Chemical Structure]

**Project Leader:** Dr. TRIPATHI P.K  
**Column:** Chiralpak IB (250 mm x 4.6mm)  
**Mobile Phase:** Petether: EtoH(99:01)  
**Wavelength:** 220nm  
**Flow:** 1.0 ml/min.  
**Inject vol:** 2ul
D-7000 HPLC System Manager Report

Analyzed: 03/16/18 02:29 PM
Data Path: C:\WIN32APP\HSM\HPLC\DATA\0093\Series:0093
Processing Method: cal
System(acquisition): Sys 1
Application: HPLC
Sample Name: R2 (Chiral)
Injection from this vial: 1 of 1
Sample Description: PET:ETOH(99:1)

Chrom Type: HPLC Channel: 1

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