Organocatalytic asymmetric synthesis of 3-difluoroalkyl 3-hydroxyoxindoles

Yun-Lin Liu* and Jian Zhou*ab

*a Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, East China Normal University, 3663N Zhongshan Road, Shanghai 200062, China, E-mail: jzhou@chem.ecnu.edu.cn
b State Key Laboratory of Elemento-organic Chemistry, Nankai University, Tianjin 300071, P. R. China.

Supporting Information
(Part III)

Content                                                                                         Page

HPLC spectra of product 8a-s and 13-16                                                          2-24
Electronic Supplementary Material (ESI) for Chemical Communications
This journal is © The Royal Society of Chemistry 2012
Electronic Supplementary Material (ESI) for Chemical Communications
This journal is © The Royal Society of Chemistry 2012
Electronic Supplementary Material (ESI) for Chemical Communications
This journal is © The Royal Society of Chemistry 2012

1502 ly-ly-052-1-ac-oz-75/25-230

Sample name: ly-ly-052-1-ac-oz-75/25-230
Injection Volume: 25.0
Injection Type: standard
Detector: UV
Waveform: 250
Control Program: Liu Yanlin
Bandwidth: n.a.
Quant. Method: ly
Detection Factor: 1.0000
Reproducibility: 501.716 19:56
Sample Weigh: 1.0000
Run Time (min): 15.55
Sample Amount: 1.0000

1503 ly-ly-052-1-asy-oz-75/25-230

Sample name: ly-ly-052-1-asy-oz-75/25-230
Injection Volume: 25.0
Injection Type: standard
Detector: UV
Waveform: 250
Control Program: Liu Yanlin
Bandwidth: n.a.
Quant. Method: ly
Detection Factor: 1.0000
Reproducibility: 501.716 19:57
Sample Weigh: 1.0000
Run Time (min): 15.49
Sample Amount: 1.0000

UV/IR spectra are provided for further analysis.
### Electronic Supplementary Material (ESI) for Chemical Communications

This journal is © The Royal Society of Chemistry 2012

---


<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Iyl-f-148-2-FAC-O2H-85/15-230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>standard</td>
</tr>
<tr>
<td>Volume</td>
<td>25.0</td>
</tr>
<tr>
<td>Waveband</td>
<td>250</td>
</tr>
</tbody>
</table>

**Chemical Structure:**

![Chemical Structure](image1)

**Retention Time:** 501.14±14.16

**Sample Weight:** 1.0300

**Sample Amount:** 1.0300

---

#### 1576 Iyl-isg-075-1-asy-O2-90/10-230

<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Iyl-isg-075-1-asy-O2-90/10-230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>standard</td>
</tr>
<tr>
<td>Volume</td>
<td>25.0</td>
</tr>
<tr>
<td>Waveband</td>
<td>250</td>
</tr>
</tbody>
</table>

**Chemical Structure:**

![Chemical Structure](image2)

**Retention Time:** 501.14±14.16

**Sample Weight:** 1.0300

**Sample Amount:** 1.0300

---

#### Retention Time Analysis

<table>
<thead>
<tr>
<th>No.</th>
<th>Ret. Time</th>
<th>Peak Name</th>
<th>Height</th>
<th>Area</th>
<th>Ret. Area</th>
<th>Amount Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13.47</td>
<td>n.a.</td>
<td>87.325</td>
<td>87.743</td>
<td>24.93</td>
<td>n.a. BMF</td>
</tr>
<tr>
<td>2</td>
<td>14.61</td>
<td>n.a.</td>
<td>83.993</td>
<td>84.120</td>
<td>24.97</td>
<td>n.a. BMF</td>
</tr>
</tbody>
</table>

**Total:** 186.348/87.971/0.22/0.00

---

#### Additional Analysis

<table>
<thead>
<tr>
<th>No.</th>
<th>Ret. Time</th>
<th>Peak Name</th>
<th>Height</th>
<th>Area</th>
<th>Ret. Area</th>
<th>Amount Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14.21</td>
<td>n.a.</td>
<td>66.690</td>
<td>67.400</td>
<td>23.02</td>
<td>n.a. EM</td>
</tr>
<tr>
<td>2</td>
<td>15.08</td>
<td>n.a.</td>
<td>265.025</td>
<td>267.861</td>
<td>94.97</td>
<td>n.a. WB</td>
</tr>
</tbody>
</table>

**Total:** 344.625/261.161/0.22/0.00

---

Chromatron 1.0.12 Build 2014 (13226)

---

---
Electronic Supplementary Material (ESI) for Chemical Communications
This journal is © The Royal Society of Chemistry 2012