Electronic Supplementary Information

Title:  An Alternative Synthesis of Bipyrenol: High-Yield Oxidative Coupling Reaction of Pyrene Derivative with Cu(BF$_4$)$_2$·nH$_2$O

Authors: Subas Rajbangshi and Ken-ichi Sugiura*

Organization: Department of Chemistry, Graduate School of Science and Engineering, Tokyo Metropolitan University, 1-1 Minami-Osawa, Hachi-Oji, Tokyo 192-0397, Japan
NMR Spectrum of 7 in CDCl₃ (500 MHz)
Expanded NMR Spectrum of 7 in CDCl₃ (500 MHz)

Legend
- Chemical Shift (ppm)
- Integral
- Spin Multiplicity
- Coupling Constant (Hz)

Chemical Shift / ppm

8.51 1H d 7.3
8.43 1H d 7.3
7.81 1H d 7.3
7.77 1H d 7.3
7.51 1H s 7.47
7.47 1H s 7.51
Expanded NMR Spectrum of 7 in CDCl₃ (500 MHz)

Legend
Chemical Shift (ppm)
Integral
Spin Multiplicity
Coupling Constant (Hz)

4.65
1H
ddd
10.7, 10.7, 4.4

Chemical Shift / ppm
4.8  4.75  4.7  4.65  4.6  4.55  4.5
Expanded NMR Spectrum of 7 in CDCl₃ (500 MHz)

Legend
Chemical Shift (ppm)
Integral
Spin Multiplicity
Coupling Constant (Hz)
Expanded NMR Spectrum of 7 in CDCl₃ (500 MHz)

Legend
Chemical Shift (ppm)
Integral
Spin Multiplicity
Coupling Constant (Hz)
Differential NOE Spectra of 7 in CDCl$_3$ (270 MHz)

irr. at 7.47 ppm
irr. at 7.51 ppm

Chemical Shift / ppm
Differential NOE Spectra of 7 in CDCl₃ (270 MHz)
Differential NOE Spectra of 7 in CDCl$_3$ (270 MHz)
$^1$H-$^1$H COSY of 7 in CDCl$_3$ (500 MHz)
Absorption Spectrum of 7 in CH₂Cl₂ (qualitative)
Calcd for C$_{31}$H$_{34}$O$_{5}$

m/z: 486.24 (100.0%), 487.24 (33.7%), 488.25 (5.6%), 488.24 (1.0%)
Compound 8
Legend

Chemical Shift (ppm)
Integral
Spin Multiplicity
Coupling Constant (Hz)

NMR Spectrum of 8 in CDCl$_3$ (500 MHz)
Expanded NMR Spectrum of 8 in CDCl$_3$ (500 MHz)

<table>
<thead>
<tr>
<th>Chemical Shift (ppm)</th>
<th>Integral</th>
<th>Spin Multiplicity</th>
<th>Coupling Constant (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.31</td>
<td>1H</td>
<td>d</td>
<td>2.3</td>
</tr>
<tr>
<td>7.98</td>
<td>1H</td>
<td>d</td>
<td>2.3</td>
</tr>
<tr>
<td>8.25</td>
<td>1H</td>
<td>d</td>
<td>8.6</td>
</tr>
<tr>
<td>8.05</td>
<td>1H</td>
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<td>8.05</td>
<td>1H</td>
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<td>2.3</td>
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<tr>
<td>7.98</td>
<td>1H</td>
<td>d</td>
<td>2.3</td>
</tr>
</tbody>
</table>
Expanded NMR Spectrum of 8 in CDCl₃ (500 MHz)

Legend
Chemical Shift (ppm)
Integral
Spin Multiplicity
Coupling Constant (Hz)
Expanded NMR Spectrum of 8 in CDCl₃ (500 MHz)

Legend
Chemical Shift (ppm)
Integral
Spin Multiplicity
Coupling Constant (Hz)

4.67
1H
ddd
10.7, 10.7, 4.4
Expanded NMR Spectrum of 8 in CDCl₃ (500 MHz)

Chemical Shift (ppm) | Integral | Spin Multiplicity | Coupling Constant (Hz)
--- | --- | --- | ---
2.07 | 1H septet, d | 6.9, 4.4 |
2.21 | 1H d, multiplet | 12.0 |

Legend

- Chemical Shift (ppm)
- Integral
- Spin Multiplicity
- Coupling Constant (Hz)
Expanded NMR Spectrum of 8 in CDCl₃ (500 MHz)
Absorption Spectrum of 8 in CH$_2$Cl$_2$ (qualitative)

Legend

<table>
<thead>
<tr>
<th>Wavelength (nm)</th>
<th>Absorbance</th>
</tr>
</thead>
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<tr>
<td>347</td>
<td>0.17</td>
</tr>
<tr>
<td>364</td>
<td>0.20</td>
</tr>
<tr>
<td>400</td>
<td>0.07</td>
</tr>
<tr>
<td>289 (shoulder)</td>
<td>0.24</td>
</tr>
<tr>
<td>300 (shoulder)</td>
<td>0.22</td>
</tr>
<tr>
<td>330 (shoulder)</td>
<td>0.08</td>
</tr>
<tr>
<td>435</td>
<td>0.08</td>
</tr>
</tbody>
</table>
APCI Mass Spectrum of 8

Calcd for C$_{31}$H$_{34}$O$_{5}$

m/z: 486.24 (100.0%), 487.24 (33.7%), 488.25 (5.6%), 488.24 (1.0%)