Supporting Information

Ag(I)/Sec-Amine-Amidphos-Catalyzed *Endo*-stereoselective Synthesis of Fully Substituted Pyrrolidines via 1,3-Dipolar Cycloaddition Based on Azomethine Ylides

Haifei Wang¹, Chen Zhang¹, Jialin Liu¹, Xinluo Song¹, and Haiyun Jiang²,*¹

¹College of Life Science and Chemistry, Hunan University of Technology, Zhuzhou 412007, P. R. of China; ²College of Packaging and Materials Engineering, Hunan University of Technology, Zhuzhou 412007, P. R. of China; E-mail:jhyun@163.com

Table of Contents

1. Copies of NMR Spectra---------------------------------------------------------------------------------S2
2. Copies of HPLC Chromatographs------------------------------------------------------------------------S10
1. Copies of NMR Spectra
1a

1b
2. Copies of HPLC Chromatographs

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-phenylpyrrolidine-2,3,4-tricarboxylate (4aa)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(p-tolyl)pyrrolidine-2,3,4-tricarboxylate (4ab)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(4-methoxyphenyl)pyrrolidine-2,3,4-tricarboxylate (4ac)
(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(4-fluorophenyl)pyrrolidine-2,3,4-tricarboxylate (4ad)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(4-chlorophenyl)pyrrolidine-2,3,4-tricarboxylate (4ae)

(2S,3R,4S,5R)-3,4-Diethyl 2-Methyl 5-(3,4-Dichlorophenyl)-pyrrolidine-2,3,4-tricarboxylate
(4af)$^{10c}$

$\text{EtO}_2\text{C} - \text{CO}_2\text{Et} - \text{Cl}$

$\text{CO}_2\text{Me}$

4af

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(2-chlorophenyl)pyrrolidine-2,3,4-tricarboxylate (4ag)

$\text{EtO}_2\text{C} - \text{CO}_2\text{Et} - \text{Cl}$

$\text{CO}_2\text{Me}$

4ag

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(4-bromophenyl)pyrrolidine-2,3,4-tricarboxylate (4ah)

$\text{EtO}_2\text{C} - \text{CO}_2\text{Et} - \text{Br}$

$\text{CO}_2\text{Me}$

4ah
(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(naphthalen-1-yl)pyrrolidine-2,3,4-tricarboxylate (4ai)

![Chemical structure of 4ai]

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(naphthalen-2-yl)pyrrolidine-2,3,4-tricarboxylate (4aj)

![Chemical structure of 4aj]
(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(furan-2-yl)pyrrolidine-2,3,4-tricarboxylate (4ak)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(thiophen-2-yl)pyrrolidine-2,3,4-tricarboxylate (4al)
(2S,3R,4S,5R)-3,4-diethyl 2-methyl 2-methyl-5-phenylpyrrolidine-2,3,4-tricarboxylate (4am)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 2-methyl-5-(p-tolyl)pyrrolidine-2,3,4-tricarboxylate (4an)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 5-(4-chlorophenyl)-2-methylpyrrolidine-2,3,4-tricarboxylate (4ao)
(2S,3R,4S,5R)-3,4-diethyl-2-methyl-5-(4-bromophenyl)-2-methylpyrrolidine-2,3,4-tricarboxylate (4ap)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 2-methyl-5-(naphthalen-2-yl)pyrrolidine-2,3,4-tricarboxylate (4aq)

(2S,3R,4S,5R)-3,4-diethyl 2-methyl 2-benzyl-5-phenylpyrrolidine-2,3,4-tricarboxylate (4ar)
(2S,3R,4S,5R)-trimethyl 5-phenylpyrrolidine-2,3,4-tricarboxylate (4ba)

(2S,3S,4S,5R)-trimethyl 5-phenylpyrrolidine-2,3,4-tricarboxylate (4ca)
<table>
<thead>
<tr>
<th>#</th>
<th>[min]</th>
<th>[min]</th>
<th>[nAUs]</th>
<th>[nAU]</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15.670</td>
<td>0.5504</td>
<td>8994.5028</td>
<td>279.04410</td>
<td>50.2492</td>
</tr>
<tr>
<td>2</td>
<td>28.653</td>
<td>1.0370</td>
<td>2295.43750</td>
<td>147.0147</td>
<td>49.7508</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#</th>
<th>[min]</th>
<th>[min]</th>
<th>[nAUs]</th>
<th>[nAU]</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15.714</td>
<td>0.5797</td>
<td>2.90838e+4</td>
<td>1026.5567</td>
<td>65.1856</td>
</tr>
<tr>
<td>2</td>
<td>28.652</td>
<td>1.0409</td>
<td>2.9739e+4</td>
<td>302.79379</td>
<td>34.8144</td>
</tr>
</tbody>
</table>