Supplementary Material

Synthesis of New N-Norbornylimide Substituted Amide Derivatives: Their Reductive Heck and Domino Heck Reactions

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Table of Contents

1. List of the all synthesized compound structure (Table S1) \textsuperscript{S2}
2. FTIR, \textsuperscript{1}H NMR, \textsuperscript{13}C NMR, HRMS (or GC-MS) spectra of all compounds \textsuperscript{S4}
Table S1. List of the synthesized compound structure.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Compound Name</th>
<th>Compound Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2-(4-Azabicyclo[2.2.1]hept-8-ene-3-endo,5-endo-dicarboximide-4-yl)-3-methyl pentanoyl chloride</td>
<td><img src="image1.png" alt="Structure 1" /></td>
</tr>
<tr>
<td>5</td>
<td>N-4-Azabicyclo[2.2.1]hept-8-ene-3-endo,5-endo-dicarboximide-4-yl 2-(4-azabicyclo[2.2.1]hept-8-ene-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide</td>
<td><img src="image2.png" alt="Structure 2" /></td>
</tr>
<tr>
<td>6a</td>
<td>N-[8-Phenyl-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl] 2-(8-phenyl-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide</td>
<td><img src="image3.png" alt="Structure 3" /></td>
</tr>
<tr>
<td>6b</td>
<td>N-[8-(4-chlorophenyl)-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl] 2-(8-(4-chlorophenyl)-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide</td>
<td><img src="image4.png" alt="Structure 4" /></td>
</tr>
<tr>
<td>6c</td>
<td>N-[8-Morpholino-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl] 2-(8-morpholino-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide</td>
<td><img src="image5.png" alt="Structure 5" /></td>
</tr>
<tr>
<td>6d</td>
<td>N-[8-(2-thienyl)-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl] 2-(8-(2-thienyl)-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide</td>
<td><img src="image6.png" alt="Structure 6" /></td>
</tr>
</tbody>
</table>
$N$-[8-{3-bromomethylphenyl}-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl] 2-{8-{3-bromomethylphenyl}-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl}-3-methylpentanamide

$N$-[8-phenyl-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl]-2-(4-azabicyclo[2.2.1]hept-8-ene-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide

8-{3,4-difluorophenyl}-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide

$N$-[9-phenylethynl-8-phenyl-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl]-2-(4-azabicyclo[2.2.1]hept-8-ene-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide

$N$-[9-phenylethynl-8-(4-chlorophenyl)-4-azabicyclo[2.2.1]heptane-3-endo,5-endo-dicarboximide-4-yl]-2-(4-azabicyclo[2.2.1]hept-8-ene-3-endo,5-endo-dicarboximide-4-yl)-3-methylpentanamide
**Figure S1.** FTIR Spectrum of Compound 4 (ATR).

**Figure S2.** $^1$H NMR Spectrum of Compound 4 (CDCl$_3$).
Figure S3. APT Spectrum of Compound 4 (CDCl$_3$).

Figure S4. GC-MS Spectrum of Compound 4.
Figure S5. FTIR Spectrum of Compound 5 (ATR).

Figure S6. $^1$H NMR Spectrum of Compound 5 (CDCl$_3$).
Figure S7. APT Spectrum of Compound 5 (CDCl₃).

Figure S8. QToF Spectrum of Compound 5.
Figure S9. FTIR Spectrum of Compound 6a (ATR).

Figure S10. $^1$H NMR Spectrum of Compound 6a (CDCl$_3$).
**Figure S11.** APT Spectrum of Compound 6a (CDCl₃).

**Figure S12.** QTof Spectrum of Compound 6a.
Figure S13. FTIR Spectrum of Compound 6b (ATR).

Figure S14. $^1$H NMR Spectrum of Compound 6b (CDCl$_3$).
Figure S15. APT Spectrum of Compound 6b (CDCl₃).

Figure S16. QTof Spectrum of Compound 6b.
Figure S17. FTIR Spectrum of Compound 6c (ATR).

Figure S18. $^1$H NMR Spectrum of Compound 6c (CDCl$_3$).
Figure S19. APT Spectrum of Compound 6c (CDCl₃).

Figure S20. QTof Spectrum of Compound 6c.
Figure S21. FTIR Spectrum of Compound 6d (ATR).

Figure S22. $^1$H NMR Spectrum of Compound 6d (CDCl$_3$).
Figure S23. APT Spectrum of Compound 6d (CDCl₃).

Figure S24. QTof Spectrum of Compound 6d.
**Figure S25.** FTIR Spectrum of Compound 6e (ATR).

**Figure S26.** \(^1\)H NMR Spectrum of Compound 6e (CDCl\(_3\)).
Figure S27. APT Spectrum of Compound 6e (CDCl₃).

Figure S28. QTof Spectrum of Compound 6e.
Figure S29. FTIR Spectrum of Compound 7a (ATR).

Figure S30. $^1$H NMR Spectrum of Compound 7a (CDCl$_3$).
Figure S31. APT Spectrum of Compound 7a (CDCl$_3$).

Figure S32. QTof Spectrum of Compound 7a.
Figure S33. FTIR Spectrum of Compound 8 (ATR).

Figure S34. $^1$H NMR Spectrum of Compound 8 (CDCl₃).
Figure S35. APT Spectrum of Compound 8 (CDCl₃).

Figure S36. GC-MS Spectrum of Compound 8.
Figure S37. FTIR Spectrum of Compound 9a (ATR).

Figure S38. $^1$H NMR Spectrum of Compound 9a (CDCl$_3$).
**Figure S39.** APT Spectrum of Compound 9a (CDCl₃).

**Figure S40.** QTof Spectrum of Compound 9a.
Figure S41. FTIR Spectrum of Compound 9b (ATR).

Figure S42. $^1$H NMR Spectrum of Compound 9b (CDCl$_3$).
Figure S43. APT Spectrum of Compound 9b (CDCl₃).

Figure S44. QTof Spectrum of Compound 9b.