Supporting Information

Highly Enantioselective Asymmetric Alkynylation of Aldehydes Catalyzed by a New Oxazolidine-Titanium Complex

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Copy of HRMS, $^1$H, $^{13}$C NMR and IR Spectra for Ligands

Figure-1: HRMS spectrum of ligand 2a

C$_{16}$H$_{15}$NO

calculated: 237.1154  
found: 237.1165

Figure-2: HRMS spectrum of ligand 2b

C$_{17}$H$_{17}$NO

calculated: 267.1259  
found: 267.1248
Figure-3: HRMS spectrum of ligand 2c

XUZHOU-2 90 (4.007) Cm (85.90-(70.74+272.280))

\[
\begin{align*}
C_{16}H_{14}NOCl \\
\text{calculated: 271.0764} \\
\text{found: 271.0753}
\end{align*}
\]

Figure-4: HRMS spectrum of ligand 2d

XUZHOU-3 64 (1.083) Cm (52.06-(62.25-177.196))

\[
\begin{align*}
C_{20}H_{17}NO \\
\text{calculated: 287.1310} \\
\text{found: 287.1304}
\end{align*}
\]
Figure-5: $^1$H NMR spectra of ligand 2a

Figure-6: $^1$H NMR spectra of ligand 2b
Figure-7: $^1$H NMR spectra of ligand 2c

Figure-8: $^1$H NMR spectra of ligand 2d
Figure-9: $^{13}$C NMR NMR spectra of ligand 2a

Figure-10: $^{13}$C NMR NMR spectra of ligand 2b
Figure-11: $^{13}$C NMR NMR spectra of ligand 2c

Figure-12: $^{13}$C NMR NMR spectra of ligand 2d
Figure-13: IR spectra of ligand 2a

Figure-14: IR spectra of ligand 2b
Figure-15: IR spectra of ligand 2c

Figure-16: IR spectra of ligand 2d
Copies of $^1$H, $^{13}$C NMR for Products
Copies of the HPLC Data

**Empower2**

**SAMPLE INFORMATION**

- **Sample Name:** ks-6
- **Sample Type:** Unknown
- **Visit:** 805
- **Injection #:** 8
- **Injection Volume:** 20.00 ul
- **Run Time:** 18.0 Minutes
- **Date Acquired:** 2007-7-10 13:24:47 CST
- **Date Processed:** 2007-7-10 13:44:29 CST

**Auto-Scaled Chromatogram**

**Peak Results**

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Date Acquired: 2007-9-13 10:43:41 CST
Date Processed: 2007-9-13 11:00:52 CST

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Page: 1 of 2

Date Printed: 2007-9-13 11:01:24 PRC
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**Auto-Scaled Chromatogram**

![Chromatogram Image]

**Peak Results**

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**Page:** 1 of 2  
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Run Time: 11.0 Minutes
Date Acquired: 2007-7-10 10:48:06 CST
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Sample Set Name: szx
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Proc. Chnl. Descr.: PDA 254.0 nm

Auto-Scaled Chromatogram

Peak Results

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Cl OH

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Page: 1 of 2
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**Auto-Scaled Chromatogram**

**Peak Results**

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**Page:** 1 of 2  
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Empower 2

Sample Information

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Date Processed: 2007-7-13 14:32:40 CST

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Auto-Scaled Chromatogram

Peak Results

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Report Method: szx
Report Method ID 4118
Page: 1 of 2
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