Supporting Information for

Highly Stereoselective Synthesis and Application of P-Chiral Ferrocenyl Bisphosphorus Ligands for Asymmetric Hydrogenation

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General Remarks

All reactions were performed in the argon-filled glovebox or under nitrogen using standard Schlenk techniques, unless otherwise noted. Solvents were dried with standard procedures and degassed with N₂. Column chromatography was performed using 200~400 mesh silica gel. Thin layer chromatography (TLC) was performed on EM reagents 0.25 mm silica 60-F plates. ¹H, ¹³C, ³¹P NMR spectrum were recorded on Bruker-400, with CDCl₃ as the solvent and tetramethylsilane (TMS) as the internal standard. Chemical shifts were reported in ppm, upfield to TMS (0.00 ppm) for and relative to CDCl₃ (7.26 ppm, 77.3 ppm) for ¹H NMR and ¹³C NMR. HPLC analysis was conducted on an Agilent 1260 Series instrument. GC analysis was carried out on SHIMADZU Lab Solution using chiral capillary columns. High resolution mass spectrum was obtained on Thermo LTQ XL Orbitrap. Unless otherwise noted, all reagents and solvents were purchased from commercial suppliers and used without further purification. Substrates 3a-3p were synthesized according to our previously developed method [¹]. The characterization data of compounds 4a-4p are as the same as those reported by our previous studies [¹].

Procedure for the synthesis of the ligands

General procedure for method A

To an oven dried Schlenk flask was added (S)-Ugi’s amine (10 mmol, 2.5715 g) and 20 mL of dry Et₂O under N₂ atmosphere. The resulting solution was cooled to -78 °C and t-BuLi (11 mmol, 1.5 M in pentane, 7.6 mL) was added carefully and dropwise. After the addition, the solution was allowed to warm to room temperature (rt) and stirred for 1.5 h. The Schlenk flask was cooled to -78 °C and PCl₃ (10 mmol, 1.0 mL) was added in one portion. The suspension was allowed to warm to rt and stirred for 1.5 h. The Schlenk flask was cooled to -78 °C and (2-(diphenyolphosphanyl)phenyl)lithium or (dicyclohexylphosphanyl)phenyl)-lithium (11 mmol, prepared by treating (2-bromophenyl)diphenyl-phosphane or (2-bromophenyl)dicyclohexylphosphane with n-BuLi in an 1:1:1 molar ratio under
-40 °C for 1.5 h in Et₂O) was added dropwise and the resulting suspension was allowed to warm to rt and stirred for 1 h. The Schlenk flask was cooled to -78 °C again and CH₃MgCl (3.0 M in Et₂O, 3.7 mL) or an aqueous solution of NaOH (15 wt%, 10 mL) was added dropwise. The resulting suspension was allowed to warm to rt and stirred for 3 h. Water (10 mL) was added into the Schlenk flask and the solution was stirred for 10 min. The organic phase was separated and the aqueous phase was extracted by ethyl acetate (50 mL X 3). The organic phases were combined, dried and concentrated under reduced pressure. The residue was purified by column chromatography to give the desired ligands as yellow solid.

**General procedure for method B**

Synthesis of the intermediate 2: To an oven dried Schlenk flask was added (S)-Ugi’s amine (10 mmol, 2.5715 g) and 20 mL of dry Et₂O under N₂ atmosphere. The resulting solution was cooled to -78 °C and t-BuLi (11 mmol, 1.5 M in pentane, 7.6 mL) was added carefully and dropwise. After the addition, the solution was allowed to warm to room temperature (rt) and stirred for 1.5 h. The Schlenk flask was cooled to -78 °C and PhPCl₂ (10 mmol, 1.79 g) was added in one portion. The suspension was allowed to warm to rt and stirred for 1.5 h. The Schlenk flask was cooled to -78 °C and (2-bromophenyl)magnesium chloride (11 mmol, prepared by treating 1-bromo-2-iodobenzene with i-PrMgCl in an 1:1.1 molar ratio under -40 °C for 1.0 h in Et₂O) was added dropwise and the resulting suspension was allowed to warm to rt and stirred for 3 h. Water (10 mL) was added into the Schlenk flask and the solution was stirred for 10 min. The organic phase was separated and the aqueous phase was extracted by ethyl acetate (50 mL X 3). The organic phases were combined, dried and concentrated under reduced pressure. The residue was purified by column chromatography to give the desired ligands as yellow solid.

**Synthesis of ligands L5, L9-L10 from intermediate 2**

To an oven dried Schlenk flask was added intermediate 2 (3.0 mmol, 1.56 g), TMEDA (N¹, N¹, N², N²-tetramethylethane-1, 2-diamine, 3.3 mmol, 383.5 mg) and 20 mL of dry Et₂O under N₂ atmosphere. The resulting solution was cooled to -78 °C and n-BuLi (3.3 mmol, 2.3 M, 1.4 mL) was added dropwise. The resulting solution
was stirred at -78 °C for 1 h. The corresponding phosphine chloride was added dropwise at -78 °C and the resulting solution was allowed to warm to rt and stirred for 3 h. Water (20 mL) was added into the Schlenk flask and the solution was stirred for 10 min. The organic phase was separated and the water phase was extracted by ethyl acetate (30 mL X 3). The organic phases were combined, dried and concentrated under reduced pressure. The residue was purified by column chromatography to give the desired ligands as yellow solid.

**Synthesis of ligand L11**

To an oven dried Schlenk flask was added (S)-Ugi’s amine (5 mmol, 1.2856 g) and 10 mL of dry Et₂O under N₂ atmosphere. The resulting solution was cooled to -78 °C and t-BuLi (5.5 mmol, 1.5 M in pentane, 3.8 mL) was added carefully and dropwise. After the addition, the solution was allowed to warm to room temperature (rt) and stirred for 1.5 h. The Schlenk flask was cooled to -78 °C and t-BuPCl₂ (10 mmol, 1.79 g) was added in one portion. The suspension was allowed to warm to rt and stirred for 1.5 h. The Schlenk flask was cooled to -78 °C and (2-(diphenylphosphanyl)phenyl)lithium (5.5 mmol, prepared by treating (2-bromophenyl)diphenylphosphane with n-BuLi in an 1:1.1 molar ratio under -40 °C for 1.5 h in Et₂O) was added dropwise and the resulting suspension was allowed to warm to rt and stirred for 3 h. Water (10 mL) was added into the Schlenk flask and the solution was stirred for 10 min. The organic phase was separated and the aqueous phase was extracted by ethyl acetate (50 mL X 3). The organic phases were combined, dried and concentrated under reduced pressure. The residue was purified by column chromatography to give ligand **L11** as yellow solid.

**General procedure for asymmetric hydrogenation**

In an argon-filled glove box, [Rh(NBD)₂]BF₄ (0.01 mmol) and Wudaphos (0.011 mmol) were dissolved in EtOH (1 mL) and stirred for 30 min. 0.1 mL of the resulting solution was transferred by syringe into the vials charged with different substrates (0.1 mmol for each). Additional EtOH was added to bring the total reaction volume to
1 mL. The vials were subsequently transferred into an autoclave which was charged with hydrogen (10 bar). The reaction was then stirred at rt for 12 h. The hydrogen gas was released slowly and carefully in a well-ventilated hood. The solution was passed through a short column of silica gel (eluent: EtOAc) to remove the metal complex and concentrated to give the hydrogenation products. The ee values were then determined by HPLC analysis on a chiral stationary phase.

**Characterization data of the ligands and intermediates**

![Chemical structure of L1](image)

**L1:** Yellow solid, m.p. = 125-127 °C, 58% yield. \( ^1 \text{H} \) NMR (400 MHz, CDCl₃): \( \delta \)
7.40 – 7.21 (m, 10H), 7.17 – 7.02 (m, 3H), 6.98 – 6.89 (m, 1H), 4.393 – 4.343 (m, 3H), 4.12 (s, 5H), 4.07 (dd, \( J = 6.7, 2.8 \) Hz, 1H), 1.66 (s, 6H), 1.30 (d, \( J = 4.5 \) Hz, 3H), 1.26 (d, \( J = 6.3 \) Hz, 3H) ppm; \( ^{13} \text{C} \) NMR (101 MHz, CDCl₃): \( \delta \) 134.14 (d, \( J = 19.5 \) Hz), 133.65 (d, \( J = 19.2 \) Hz), 133.33 (d, \( J = 6.6 \) Hz), 131.42 (d, \( J = 9.7 \) Hz), 128.38 (d, \( J = 3.0 \) Hz), 128.35 (d, \( J = 16.3 \) Hz), 128.22, 127.46, 77.52 (d, \( J = 52.7 \) Hz), 69.71, 69.59 (d, \( J = 4.9 \) Hz), 68.06 (d, \( J = 2.6 \) Hz), 56.85, 39.68, 12.70 (dd, \( J = 10.2, 1.8 \) Hz) ppm; \( ^{31} \text{P} \) NMR (162 MHz, CDCl₃): \( \delta \) -16.79 (d, \( J = 164.5 \) Hz), -50.76 (d, \( J = 164.1 \) Hz) ppm.

![Chemical structure of L3](image)

**L3:** Yellow solid, m.p. = 160-163 °C, 55% yield. \( ^1 \text{H} \) NMR (400 MHz, CDCl₃): \( \delta \)
7.43 – 7.35 (m, 1H), 7.13 (td, \( J = 7.4, 1.2 \) Hz, 1H), 7.04 (t, \( J = 7.5 \) Hz, 1H), 6.91 (dt, \( J = 6.5, 2.7 \) Hz, 1H), 4.43 (s, 1H), 4.40 (t, \( J = 2.3 \) Hz, 1H), 4.30 (s, 1H), 4.15 (s, 5H),
3.98 (dd, J = 6.7, 3.2 Hz, 1H), 2.09-1.82 (m, 2 H), 1.77 (s, 6H), 1.72-1.49 (m, 10H), 1.45-1.07 (m, 16H) ppm; $^{13}$C NMR (101 MHz, CDCl$_3$): $\delta$ 153.23 (dd, J = 31.9, 14.4 Hz), 137.77 (dd, J = 26.9, 14.9 Hz), 131.73, 131.14 (d, J = 8.9 Hz), 127.85, 126.43, 97.48 (d, J = 25.3 Hz), 78.08 (dd, J = 14.3, 12.0 Hz), 70.22 (dd, J = 4.6, 2.6 Hz), 69.68, 68.34, 60.44, 56.77 (d, J = 8.4 Hz), 40.31, 36.26 (dd, J = 13.8, 3.0 Hz), 33.97 (dd, J = 12.5, 5.1 Hz), 30.82 – 30.48 (m), 30.28 (d, J = 11.7 Hz), 28.72 (d, J = 5.6 Hz), 27.40 (dd, J = 7.5, 2.8 Hz), 27.34 (d, J = 41.4 Hz), 27.25, 26.49 (d, J = 7.2 Hz), 21.11, 14.24, 13.49 (dd, J = 10.1, 5.9 Hz), 11.81 ppm; $^{31}$P NMR (162 MHz, CDCl$_3$): $\delta$ -13.73 (d, J = 147.0 Hz), -48.37 (d, J = 147.1 Hz) ppm.

L8: Yellow solid, m.p. = 207-210 °C, 38% yield. [α]$_D$$^{20}$ = +151.6 (c 0.5, CHCl$_3$).

$^1$H NMR (400 MHz, CDCl$_3$): $\delta$ 8.58 (d, J = 517.9 Hz, 1H), 7.62 – 7.48 (m, 2H), 7.42 (t, J = 7.5 Hz, 1H), 7.32 (t, J = 7.2 Hz, 1H), 4.50 (s, 1H), 4.43 (s, 1H), 4.38 (d, J = 1.7 Hz, 1H), 4.34 (s, 5H), 4.05 (dd, J = 13.2, 6.6 Hz, 1H), 2.15 – 2.06 (m, 1H), 2.03 – 1.88 (m, 2H), 1.85 – 1.43 (m, 15H), 1.38 – 1.03 (m, 13H) ppm; $^{13}$C NMR (101 MHz, CDCl$_3$): $\delta$ 139.14 (dd, J = 23.4, 11.3 Hz), 132.51-132.15 (m), 130.05, 127.87 (d, J = 11.9 Hz), 74.16 (dd, J = 10.5, 4.6 Hz), 72.01, 70.89, 70.41, 70.35 (d, J = 11.7 Hz), 69.03 (d, J = 11.0 Hz), 57.40, 39.37, 35.59 (d, J = 14.3 Hz), 33.59 (d, J = 11.9 Hz), 30.43 (d, J = 14.1 Hz), 30.22, 30.06 (d, J = 7.6 Hz), 29.12 (d, J = 6.1 Hz), 27.53, 27.44 (d, J = 6.1 Hz), 27.00 (dd, J = 10.5, 6.4 Hz), 26.35 (d, J = 11.8 Hz), 8.77 ppm; $^{31}$P NMR (162 MHz, CDCl$_3$): $\delta$ 14.87 (d, J = 66.8 Hz), -14.29 (d, J = 66.6 Hz) ppm.
**L9:** Yellow solid, m.p. = 60-65 °C, 80% yield. $[\alpha]_{D}^{20} = +214.0$ (c 0.4, CHCl$_3$).

$^1$H NMR (400 MHz, CDCl$_3$): $\delta$ 7.62-7.59 (m, 2H), 7.38 – 7.37 (m, 3H), 7.21-7.20 (m, 4H), 4.39 (s, 1H), 4.20-4.13 (m, 5H), 3.87 (s, 1H), 3.59 (s, 1H), 1.93-1.55 (m, 18H), 1.30-1.06 (m, 12H), 0.89-0.82 (m, 2H) ppm; $^{13}$C NMR (101 MHz, CDCl$_3$): $\delta$ 140.92 (d, $J = 7.2$ Hz), 139.01 (d, $J = 9.4$ Hz), 135.28 (d, $J = 21.1$ Hz), 132.50 (d, $J = 18.9$ Hz), 128.89, 128.07 (d, $J = 7.5$ Hz), 127.51 (d, $J = 6.8$ Hz), 127.32, 77.15, 77.12, 74.47 (d, $J = 18.4$ Hz), 73.59 (d, $J = 4.1$ Hz), 73.46 (d, $J = 5.5$ Hz), 72.38, 71.66, 71.34, 71.12 (dd, $J = 13.4$, 3.5 Hz), 57.40 (d, $J = 6.3$ Hz), 39.03, 34.06 (d, $J = 12.5$ Hz), 33.27 (d, $J = 10.5$ Hz), 31.23 (d, $J = 14.6$ Hz), 30.85 (d, $J = 15.0$ Hz), 29.98 (d, $J = 11.0$ Hz), 29.68 (d, $J = 7.3$ Hz), 27.72-27.44 (m), 26.61 ppm; $^{31}$P NMR (162 MHz, CDCl$_3$): $\delta$ -7.99 (s), -23.44 (s) ppm. HRMS (ESI) calculated for C$_{38}$H$_{50}$NFeP$_2^+$ [M + H$^+$]: 638.2762; found: 638.2745.

![Image of L10](image-url)

**L10:** Yellow solid, m.p. = 113-118 °C, 43% yield. $[\alpha]_{D}^{20} = +179.0$ (c 0.2, CHCl$_3$). $^1$H NMR (400 MHz, CDCl$_3$): $\delta$ 7.61-7.57 (m, 2H), 7.35 – 7.34 (m, 3H), 7.19 – 7.18 (m, 5H), 4.38 (s, 1H), 4.22 – 4.15 (m, 5H), 3.85 (s, 1H), 3.67 (s, 1H), 1.75 (s, 6H), 1.26 – 1.25 (m, 3H), 1.13 (d, $J = 11.4$ Hz, 9H), 1.01 (d, $J = 11.1$ Hz, 9H) ppm; $^{13}$C NMR (101 MHz, CDCl$_3$): $\delta$ 140.95 (d, $J = 6.2$ Hz), 139.07 (d, $J = 9.6$ Hz), 135.43 (d, $J = 21.3$ Hz), 132.55 (d, $J = 19.0$ Hz), 128.98, 128.17 (d, $J = 7.5$ Hz), 127.57 (d, $J = 6.9$ Hz), 127.38, 77.50, 77.17, 75.78 (d, $J = 21.6$ Hz), 74.35 (d, $J = 5.7$ Hz), 72.90, 72.83, 72.52, 72.07, 71.45, 57.44, 39.03, 32.84 (dd, $J = 51.2$, 20.0 Hz), 30.96 (dd, $J = 63.7$, 13.2 Hz) ppm; $^{31}$P NMR (162 MHz, CDCl$_3$): $\delta$ 27.13 (s), -23.36 (s) ppm. HRMS (ESI) calculated for C$_{34}$H$_{46}$NFeP$_2^+$ [M + H$^+$]: 586.2449; found: 586.2435.
**L11**: Yellow solid, m.p. = 148-150 °C, 33% yield. $[\alpha]_D^{20} = -349.8$ (c 0.4, CHCl$_3$).

$^1$H NMR (400 MHz, CDCl$_3$): $\delta$ 7.47 – 7.39 (m, 2H), 7.36 – 7.30 (m, 3H), 7.31 – 7.22 (m, 6H), 7.19 – 7.13 (m, 1H), 7.10 – 7.04 (m, 2H), 4.54 (dd, $J = 2.3$, 1.2 Hz, 1H), 4.41 (s, 1H), 4.34 (t, $J = 2.3$ Hz, 1H), 4.19 (s, 5H), 2.62 (q, $J = 6.6$ Hz, 1H), 1.53 (s, 6H), 1.31 (d, $J = 11.8$ Hz, 9H), 1.22 (d, $J = 6.7$ Hz, 3H) ppm; $^{13}$C NMR (101 MHz, CDCl$_3$): $\delta$ 146.45 (dd, $J = 34.7$, 21.0 Hz), 143.52 (dd, $J = 32.0$, 11.3 Hz), 139.53 (dd, $J = 14.7$, 7.3 Hz), 138.72 (dd, $J = 14.9$, 3.0 Hz), 136.20 (dd, $J = 7.3$, 2.4 Hz), 134.82 (dd, $J = 6.6$, 1.9 Hz), 134.65 (d, $J = 20.4$ Hz), 133.44 (d, $J = 18.3$ Hz), 99.32 (d, $J = 16.6$ Hz), 76.59 (dd, $J = 23.6$, 9.2 Hz), 70.32, 69.85, 69.62 (d, $J = 3.0$ Hz), 67.18, 56.97 (d, $J = 4.9$ Hz), 42.20, 32.60 (d, $J = 16.0$ Hz), 30.05 (dd, $J = 12.9$, 3.1 Hz), 18.13 ppm; $^{31}$P NMR (162 MHz, CDCl$_3$): $\delta$ -9.77 (d, $J = 157.6$ Hz), -15.72 (d, $J = 157.5$ Hz) ppm.

HRMS (ESI) calculated for C$_{36}$H$_{42}$NFeP$_2$+ [M + H$^+$]: 606.2136; found: 606.2122.

**Methods for the determination of the ee for the asymmetric hydrogenation of the standard substrates**

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<th>Products</th>
<th>Methods</th>
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<tr>
<td>MeOOCC[•]COOMe</td>
<td>Determined by chiral GC analysis on Chiral $\beta$-dex 225 column. Conditions: Gasify room temperature = 250 °C, column temperature =</td>
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80-120 °C (increase the temperature at the rate of 2 °C/min), detector
temperature = 260 °C, N₂ flow rate = 1.0 mL/min, tᵣ = 13.8 min
(major), 14.1 min (minor).

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<td>Determined by chiral GC analysis on Chiral β-dex 225 column after esterification with CH₂N₂. Conditions: Gasify room temperature = 250 °C, column temperature = 80-120 °C (increase the temperature at the rate of 2 °C/min), detector temperature = 260 °C, N₂ flow rate = 1.0 mL/min, tᵣ = 13.8 min (major), 14.1 min (minor).</td>
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<td>COOMe</td>
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<td>COOMe</td>
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<td>COOH</td>
<td>Determined by chiral HPLC analysis on Chiralpak OJ-H column after esterification with CH₂N₂. Conditions: hexane/isopropanol = 99:1, flow rate = 1.0 mL/min, uv-vis detection at λ = 205 nm, tᵣ = 15.0 min (major), 18.9 min (minor).</td>
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HPLC and GC Spectra

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Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

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Additional Info : Peak(s) manually integrated

Area Percent Report

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Injection Volume : 5.000 ul

Acq. Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ(1-6)-95-5-1.OML-220NM-90MIN.M
Analysis Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ(1-6)-95-5-1.OML-220NM-90MIN.M (Sequence Method)
Last changed : 4/15/2016 7:56:48 AM by SYSTEM
Last changed : 4/18/2017 3:39:37 PM by SYSTEM (modified after loading)

Additional Info : Peak(s) manually integrated

VWD1 A, Wavelength=220 nm (E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\022-1101.D)

> 99% Conv.
92% ee

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

<table>
<thead>
<tr>
<th>#</th>
<th>Ret Time [min]</th>
<th>Width [min]</th>
<th>Area [mAU*sec]</th>
<th>Height [mAU]</th>
<th>Area [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>44.868</td>
<td>1.883</td>
<td>6079.22412</td>
<td>53.78193</td>
<td>95.8229</td>
</tr>
<tr>
<td>2</td>
<td>62.943</td>
<td>6.780</td>
<td>265.00641</td>
<td>6.51363e-1</td>
<td>4.1771</td>
</tr>
</tbody>
</table>

Totals : 6344.23053 54.44329

S21
### Area Percent Report

<table>
<thead>
<tr>
<th>Signal 1: DAD1 C, Sig=210,4 Ref=off</th>
<th>Peak RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>[min]</td>
<td>[min]</td>
<td>[mAU*]</td>
<td>[mAU]</td>
<td>$%$</td>
</tr>
<tr>
<td>1</td>
<td>12.631</td>
<td>0.3902</td>
<td>4539.92969</td>
<td>168.59048</td>
<td>48.7862</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>17.844</td>
<td>0.5741</td>
<td>4578.91699</td>
<td>114.60268</td>
<td>50.2138</td>
<td></td>
</tr>
</tbody>
</table>

Totals: 9118.84668 283.19316
Data File E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\026-0601.D
Sample Name: ccY-7-14-6

-----------------------------------------------------------------------------------
Acq. Operator : SYSTEM
Acq. Instrument : 1260NPLC-VWD
Location : Vial 26
Injection Date : 4/15/2016 11:11:26 AM
Inj : 1
Inj Volume : 5.000 µl
Acq. Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD=OJ(1=6)+95=5=1.0ML=220NM=45MIN.M
Last changed : 4/15/2016 7:56:48 AM by SYSTEM
Analysis Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD=OJ(1=6)+95=5=1.0ML=220NM=45MIN.M (Sequence Method)
Last changed : 4/18/2017 3:52:50 PM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

VWD1 A, Wavelength=220 nm (E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\026-0601.D)

4d
> 99% Conv. 95% ee

-----------------------------------------------------------------------------------
Area Percent Report
-----------------------------------------------------------------------------------
Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

<table>
<thead>
<tr>
<th>Peak RetTime Type Width</th>
<th>Area Height Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td># [min] [min] [mAU's]</td>
<td>[mAU] [--------]</td>
</tr>
<tr>
<td>1 12.946 BS 0.4296 1322.13086 43.61889 97.4081</td>
<td></td>
</tr>
<tr>
<td>2 16.962 MM 1.0393 35.18073 5.64145e-1 2.5919</td>
<td></td>
</tr>
</tbody>
</table>

Totals :
1357.31158 44.18303

523
Area Percent Report

Sorted By: Signal
Multiplier: 1.0000
Dilution: 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254,4 Ref-off

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11.038</td>
<td>BB</td>
<td>0.3783</td>
<td>1.07808e4</td>
<td>413.38116</td>
<td>50.0425</td>
</tr>
<tr>
<td>2</td>
<td>16.641</td>
<td>MM</td>
<td>0.6782</td>
<td>1.07625e4</td>
<td>264.50214</td>
<td>49.9575</td>
</tr>
</tbody>
</table>

Totals: 2.15432e4  677.89330
VWD1 A, Wavelength=220 nm (E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\027-0701.D)

*99% Conv. 97% ee*

**Area Percent Report**

**Sorted By**: Signal
**Multiplier**: 1.0000
**Dilution**: 1.0000

**Use Multiplier & Dilution Factor with ISTDs**

**Signal 1**: VWD1 A, Wavelength=220 nm

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area [min]</th>
<th>Height [mAU*s]</th>
<th>Area [mAU]</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.458</td>
<td>BB</td>
<td>0.3363</td>
<td>5161.07227</td>
<td>225.26790</td>
<td>98.3049</td>
<td>100.00</td>
</tr>
<tr>
<td>2</td>
<td>15.876</td>
<td>BB</td>
<td>0.6355</td>
<td>84.72330</td>
<td>1.83908</td>
<td>1.6151</td>
<td>1.62</td>
</tr>
</tbody>
</table>

**Totals**: 5245.79556 227.10698
Area Percent Report

Sorted By: Signal
Multiplier: 1.0000
Distillation: 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254,4 Ref-off

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19.351</td>
<td>BV</td>
<td>0.4696</td>
<td>6.243</td>
<td>51074</td>
<td>197.09644</td>
</tr>
<tr>
<td>2</td>
<td>21.461</td>
<td>VB</td>
<td>0.5925</td>
<td>6.447</td>
<td>99512</td>
<td>157.86610</td>
</tr>
</tbody>
</table>

Totals: 1.269156 354.96254
Data File E:\DATA\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\028-0801.D
Sample Name: ccy-7-14-8

Acq. Operator : SYSTEM
Acq. Instrument : 1260HPLC-VWD
Injection Date : 4/15/2016 12:42:59 PM
Inj : 1
Inj Volume : 5.000 μL
Acq. Method : E:\DATA\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ(1-6)-95-5-1.OML-220NM-45MIN.N
Last changed : 4/15/2016 7:56:48 AM by SYSTEM
Analysis Method : E:\DATA\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ(1-6)-95-5-1.OML-220NM-45MIN.N (Sequence Method)
Last changed : 4/18/2017 3:57:40 PM by SYSTEM (modified after loading)
Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type Width Area Height Area %
---|--------|--------|-------------|--------|--------|
1 18.888 MF 0.5942 2644.39453 74.16946 95.0676
2 21.276 FM 0.9066 137.39826 2.52218 4.9324

Totals : 2781.59279 76.69164

S27
Acq. Operator : SYSTEM
Seq. Line : 6
Acq. Instrument : 1260HPLC-DAD
Location : Vial 76
Injection Date : 12/23/2015 7:02:06 PM
Inj Volume : 5.000 µl
Inj : 1

Acq. Method : \E:\DATA\WSWWSW-1-33\WSW-1-33A 2015-12-23 15-11-27\DAD-OJ(1-6)-95-5-1.0ML-ALL-45MIN.M
Last changed : 12/23/2015 3:11:27 PM by SYSTEM
Analysis Method : \E:\DATA\WSWWSW-1-33\WSW-1-33A 2015-12-23 15-11-27\DAD-OJ(1-6)-95-5-1.0ML-ALL-45MIN.M (Sequence Method)
Last changed : 8/16/2016 4:09:26 PM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254,4 Ref=off (E:\DATA\WSWWSW-1-33\WSW-1-33A 2015-12-23 15-11-27076-0001.D)

<table>
<thead>
<tr>
<th>Peak Ret Time Type</th>
<th>Width</th>
<th>Area [mAU*s]</th>
<th>Height [mAU]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 18.847 BB</td>
<td>0.5248</td>
<td>8079.64014</td>
<td>222.82558</td>
</tr>
<tr>
<td>2 24.360 BB</td>
<td>0.7503</td>
<td>8013.15137</td>
<td>152.68410</td>
</tr>
</tbody>
</table>

Totals : 1.60928e4 375.60968
**Area Percent Report**

Sorted By: Signal  
Multiplier: 1.0000  
Dilution: 1.0000  
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

<table>
<thead>
<tr>
<th>Peak RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.852 BB</td>
<td>0.4895</td>
<td>5616.26758</td>
<td>163.09814</td>
<td>95.7370</td>
<td></td>
</tr>
<tr>
<td>25.354 BB</td>
<td>0.9541</td>
<td>250.08299</td>
<td>3.56212</td>
<td>4.2630</td>
<td></td>
</tr>
</tbody>
</table>

Totals: 5866.35046 166.66026
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254.4 Ref=off

<table>
<thead>
<tr>
<th>Peak RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>[min]</td>
<td>[min]</td>
<td>[mAU*s]</td>
<td>[mAU]</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>21.900</td>
<td>0.5987</td>
<td>1.97965e4</td>
<td>480.42813</td>
<td>50.3200</td>
</tr>
<tr>
<td>2</td>
<td>30.038</td>
<td>0.8950</td>
<td>1.95447e4</td>
<td>311.06342</td>
<td>49.6800</td>
</tr>
</tbody>
</table>

Totals : 3.93412e4 791.49155
Data File: E:\DATA\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\030-1001.D
Sample Name: ccny-7-14-10

Acq. Operator : SYSTEM  Seq. Line : 10
Acq. Instrument : 1260MDP=VWD  Location : Vial 30
Injection Date : 4/15/2016 2:14:32 PM  Injection : 1
Inj Volume : 5.000 µl
Acq. Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ(1-6)-95-5-1.OML-220NM-45MIN.N
Last changed : 4/15/2016 7:56:48 AM by SYSTEM
Analysis Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ(1-6)-95-5-1.OML-220NM-45MIN.N (Sequence Method)
Last changed : 4/18/2017 4:00:32 PM by SYSTEM (modified after loading)
Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: WVD1 A, Wavelength=220 nm

Peak RetTime Type Width Area Height Area %
# [min] [min] [mAU*sec] [mAU] [mAU]
---|------|-------|----------|--------|-------|
1 20.988 BB 0.7664 1487.04529 26.14192 98.5737
2 29.390 MM 1.6079 21.51709 2.23959e-1 1.4263

Totals : 1508.56238 26.36496
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 D, Sig=230,4 Ref-off

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime [min]</th>
<th>Type</th>
<th>Width [min]</th>
<th>Area [mAU*s]</th>
<th>Height [mAU]</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>42.885</td>
<td>MM</td>
<td>1.3541</td>
<td>9576.45215</td>
<td>117.87051</td>
<td>49.5795</td>
</tr>
<tr>
<td>2</td>
<td>68.448</td>
<td>BB</td>
<td>1.7557</td>
<td>9738.90039</td>
<td>65.84126</td>
<td>50.4205</td>
</tr>
</tbody>
</table>

Totals : 1.93154e4 183.71177
Area Percent Report

<table>
<thead>
<tr>
<th>Sorted By</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplier</td>
<td>1.0000</td>
</tr>
<tr>
<td>Dilution</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

<table>
<thead>
<tr>
<th>Peak RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>[min]</td>
<td>[min]</td>
<td>[mAU*s]</td>
<td>[mAU]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>41.478</td>
<td>55.555</td>
<td>6.89689e4</td>
<td>704.88763</td>
<td>97.1282</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>70.346</td>
<td>203.902</td>
<td>203.902</td>
<td>13.24218</td>
<td>2.6718</td>
<td></td>
</tr>
</tbody>
</table>

Totals: 7.10081e4 718.12982
Acq. Operator : SYSTEM
Seq. Line : 2
Acq. Instrument : 1260HPLC-DAD
Location : Vial 11
Injection Date : 1/2/2016 9:29:43 PM
Inj Volume : 5.000 µl
Inj : 1
Acq. Method : E:\DATA\WSW\WSW-1-40\WSW 2016-01-02 21-17-06\DAD-OJ(1-6)-95-5-1.0ML-ALL-45MIN.M
Last changed : 1/2/2016 9:17:06 PM by SYSTEM
Analysis Method : E:\DATA\WSW\WSW-1-40\WSW 2016-01-02 21-17-06\DAD-OJ(1-6)-95-5-1.0ML-ALL-45MIN.M (Sequence Method)
Last changed : 8/16/2016 4:42:44 PM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

---

Area Percent Report
---

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254,4 Ref=off

<table>
<thead>
<tr>
<th>Peak RetTime Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[min]</td>
<td>[mAU's]</td>
<td>[mAU]</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>11.394</td>
<td>BB</td>
<td>0.3196</td>
<td>8385.75000</td>
</tr>
<tr>
<td>2</td>
<td>16.766</td>
<td>BB</td>
<td>0.5895</td>
<td>8494.04297</td>
</tr>
</tbody>
</table>

Totals : 1.68798e4 600.83578
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: WWD1 A, Wavelength=220 nm

Peak RetTime Type Width Area Height Area
\# [min] [min] [mAU]\*u] [mAU] %
---|-----|--------|--------|--------|-----|
1 10.820 BV 0.3255 4133.81982 184.40584 97.4649
2 15.630 BD 0.6364 106.65100 2.48034 2.5151

Totals : 4240.47090 186.88618
Acq. Operator : SYSTEM Seq. Line : 10
Acq. Instrument : 1260HPLC-DAD Location : Vial 12
Injection Date : 1/2/2016 11:37:28 PM Inj : 1
  Inj Volume : 5.000 µl
Acq. Method : R:\DATA\WSW\WSW-1-40\WSW 2016-01-02 21-17-06\DAD-D0J(1-6)-95-5-1.0ML-ALL-45MIN.M
Last changed : 1/2/2016 9:17:06 PM by SYSTEM
Analysis Method : R:\DATA\WSW\WSW-1-40\WSW 2016-01-02 21-17-06\DAD-D0J(1-6)-95-5-1.0ML-ALL-45MIN.M (Sequence Method)
Last changed : 8/16/2016 4:42:44 PM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1,0000
Dilution : 1,0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254.4 Ref=off (E:\DATA\WSW\WSW-1-40\WSW 2016-01-02 21-17-06\012-1001.D)

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime</th>
<th>Type</th>
<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area</th>
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</thead>
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<tr>
<td></td>
<td>[min]</td>
<td></td>
<td>[min]</td>
<td>[mAU*s]</td>
<td>[mAU]</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>13.774</td>
<td>BB</td>
<td>0.3882</td>
<td>2.4290</td>
<td>919.49</td>
<td>49.75</td>
</tr>
<tr>
<td>2</td>
<td>26.226</td>
<td>BB</td>
<td>0.8077</td>
<td>2.4531</td>
<td>458.88</td>
<td>50.25</td>
</tr>
</tbody>
</table>

Totals : 4,88224e4 1378.38269
Data File: E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\024-0401.D
Sample Name: ccy-7-14-4

Acq. Operator : SYSTEM
Acq. Instrument : 1260HPLC-VWD
Seq. Line : 4
Location : Vial 24
Injection Date : 4/15/2016 9:39:54 AM
Inj : 1
Inj Volume : 5.000 µl
Acq. Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD=OJ(1-6)=95-5-1.
OML=220NM=45MIN.M
Last changed : 4/15/2016 7:56:48 AM by SYSTEM
Analysis Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD=OJ(1-6)=95-5-1.
OML=220NM=45MIN.M (Sequence Method)
Last changed : 4/18/2017 3:42:35 PM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type Width Area Height Area
# [min] [min] [mU*s] [mAU] %
1 13.136 BB 0.4003 7419.58691 265.28488 96.2201
2 23.656 BB 1.0521 291.47260 3.84622 3.7799

Totals :

7711.05951 269.13111

---

S37
Acq. Operator : SYSTEM  Seq. Line : 11
Acq. Instrument : 1260HPLC-DAD  Location : Vial 13
Injection Date : 1/3/2016 12:23:23 AM  Inj : 1
Inj Volume : 5.000 µl
Acq. Method : E:\DATA\WSW\WSW=1-40\WSW 2016-01-02 21-17-06\DAD-OJ(1-6)-95=5-1.0ML-ALL-45MIN.M
Last changed : 1/2/2016 9:17:06 PM by SYSTEM
Analysis Method : E:\DATA\WSW\WSW=1-40\WSW 2016-01-02 21-17-06\DAD-OJ(1-6)-95=5-1.0ML-ALL-45MIN.M (Sequence Method)
Last changed : 8/16/2016 4:47:52 PM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig=254,4 Ref=off

<table>
<thead>
<tr>
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<th>Width</th>
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<th>Height</th>
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<tbody>
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<td>1</td>
<td>6.685</td>
<td>VV</td>
<td>0.2141</td>
<td>5898.83398</td>
<td>409.42789</td>
<td>50.2353</td>
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<td>2</td>
<td>7.554</td>
<td>MM</td>
<td>0.2991</td>
<td>5843.56787</td>
<td>325.63580</td>
<td>49.7647</td>
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Totals : 1.17424e4 735.06369
Data File E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\025-0501.D
Sample Name: ccY-7-14-5

Acq. Operator : SYSTEM
Acq. Instrument : 1260 HPLC-VWD
Injection Date : 4/15/2016 10:25:40 AM
Injection : 1
Inj Volume : 5.000 µl
Acq. Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ\(1-6)\-95-5-1
OML=220NM-45MIN.M
Last changed : 4/15/2016 7:15:48 AM by SYSTEM
Analysis Method : E:\DATA\CCY\CCY-7-11-14\CCY-6-13-14 2016-04-15 07-56-48\VWD-OJ\(1-6)\-95-5-1
OML=220NM-45MIN.M (Sequence Method)
Last changed : 4/18/2017 3:51:12 AM by SYSTEM
(modified after loading)
Additional Info : Peak(s) manually integrated

---

Area Percent Report

---

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

<table>
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<th>Peak RetTime</th>
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<th>Area</th>
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<th>Area %</th>
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<tbody>
<tr>
<td>#</td>
<td>[min]</td>
<td>[min]</td>
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<td>[mAU]</td>
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<td>1</td>
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<td>0.2109</td>
<td>5805.45703</td>
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<td>2</td>
<td>7.313</td>
<td>0.4392</td>
<td>592.65094</td>
<td>18.72636</td>
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Totals : 6398.10797 426.94346
Data File E:\DATA\CCY\CCY-7-130-131\CCY-7-130-131 2016-07-16 15:36-28\030-0301.B
Sample Name: CCY-7-131-2

Acq. Operator : SYSTEM
Acq. Instrument : 1260HPLC-DAD
Injection Date : 7/16/2016 4:34:29 PM
Inj. : 1
Inj Volume : 5.000 µl

Acq. Method : E:\DATA\CCY\CCY-7-130-131\CCY-7-130-131 2016-07-16 15:36-28\DAD=0J(1-6)=99-1-1.0ML=5UL=45MIN=ALL.M
Last changed : 7/16/2016 4:56:46 PM by SYSTEM
(modified after loading)

Analysis Method : E:\DATA\CCY\CCY-7-130-131\CCY-7-130-131 2016-07-16 15:36-28\DAD=0J(1-6)=99-1-1.0ML=5UL=45MIN=ALL.M (Sequence Method)
Last changed : 9/3/2016 4:25:47 PM by SYSTEM
(modified after loading)

Additional Info : Peak(s) manually integrated

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISIDs

Signal 1: DAD B, Sig=210,4 Ref=off

Peak RetTime Type Width Area Height Area %
# [min] [min] [nAU*s] [nAU] %
---|-------|-------|--------|--------|--------|--------|-------|--------|
1   10.307 BB 0.2177  8224.67969 579.01904 49.9209
2   12.250 BB 0.2535  8250.75888 497.45221 50.0791

Totals : 1.6475e4 1076.47125
Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 C, Sig=210.4 Ref=360,100

<table>
<thead>
<tr>
<th>Peak</th>
<th>RetTime</th>
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<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.478</td>
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<td>0.2554</td>
<td>867.48572</td>
<td>48.75220</td>
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<td>2</td>
<td>12.290</td>
<td>BV</td>
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<td>97.3527</td>
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Totals : 3.27691e4 1485.44190

1260HPLC-DAD 6/29/2017 8:54:06 AM SYSTEM
Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 B, Sig-210,4 Ref-off

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime</th>
<th>Type</th>
<th>Width [min]</th>
<th>Area [mAU*s]</th>
<th>Height [mAU]</th>
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<tbody>
<tr>
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<tr>
<td>2</td>
<td>34.086</td>
<td>BB</td>
<td>0.7400</td>
<td>475.62005</td>
<td>56.0669</td>
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Totals : 1224.77640

1260HLC-DAD 9/3/2016 9:00:57 PM SYSTEM
Acq. Operator: SYSTEM  Seq. Line: 4
Acq. Instrument: 1260HFLC-DAD  Location: Vial 43
Injection Date: 6/29/2017 2:16:08 AM  Inj: 1
Injection Volume: 10.000 µl
Acq. Method: E:\DATA\WSW2-90\WSW2-90 2017-06-29 00-59-19\DAD-DJ(16)-99-1=10UL=1ML=30MIN.M
Last changed: 6/29/2017 12:59:19 AM by SYSTEM
Analysis Method: E:\DATA\WSW2-90\WSW2-90 2017-06-29 00-59-19\DAD-DJ(16)=99-1=10UL=1ML=30MIN.M [Sequence Method]
Last changed: 6/29/2017 9:06:07 AM by SYSTEM (modified after loading)
Additional Info: Peak(s) manually integrated

Area Percent Report

Sorted By: Signal
Multiplier: 1.0000
Dilution: 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 C, Sig=210.4 Ref=360.100 (E:\DATA\WSW2-90\WSW2-90 2017-06-29 00-59-19\DAD-DJ(16)-99-1=10UL=1ML=30MIN.M)

<table>
<thead>
<tr>
<th>#</th>
<th>RetTime</th>
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<th>Width</th>
<th>Area</th>
<th>Height</th>
<th>Area %</th>
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<td>557.25854</td>
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</tr>
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</table>

1260HFLC-DAD 6/29/2017 9:06:14 AM SYSTEM
References