Supporting Information

for

Synthesis of Optically Active Tertiary Silanes via Pd-catalyzed Enantioselective Arylation of Secondary Silanes

Yu Kurihara, Michihiro Nishikawa, Yoshinori Yamanoi,* and Hiroshi Nishihara*

Department of Chemistry, School of Science, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan.

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1. Chemicals

(A) Asymmetric phosphoramidite ligands.

\((R,R)-1\) was purchased from Sigma-Aldrich. \((R,R)-2,1\) \((R,R)-3,1\) \((R,R)-4,2\) \((R,R)-5,3\) and \((R,R)-8^4\) were prepared according to the literature protocols.

\((R,R)-6\) and \((R,R)-7\) were prepared by the following method. Dichloro(dimethylamino)phosphine (640 μL, 5.5 mmol) was added to a solution of TADDOL derivative (5.5 mmol) and triethylamine (1.9 mL, 13.8 mmol) in THF (38 mL) at 0 °C. After stirring for 1 hour at 0 °C, the reaction mixture was allowed to warm to room temperature and stirred overnight. The reaction mixture was the quenched with water, extracted with dichloromethane three times, and dried over sodium sulfate. The solvent was evaporated under a reduced pressure and the resulting residue triturated with methanol. The pure compound was finally obtained by filtration.

\((1R,7R)-2,2,6,6\text{-tetra}(3,5\text{-diethylphenyl})-4\text{-dimethylamino}-9,9\text{-dimethyl-3,5,8,10-tetraoxa-4-phosphabicyclo[5.3.0]decane (}((R,R)-6)\)): Colorless powder. \([\alpha]_D^{24} = -75.0\) (c 0.99, CH₂Cl₂). Mp: 93.0–96.5 °C. \(^1\)H NMR (400 MHz, CDCl₃) δ 7.42 (s, 2H), 7.27 (s, 2H), 7.12 (s, 2H), 7.05 (s, 2H), 6.91 (s, 1H), 6.90 (s, 2H), 6.85 (s, 1H), 5.18 (dd, 1H, \(J = 8.9, 2.9\) Hz), 4.85 (d, 1H, \(J = 8.5\) Hz), 2.75 (s, 3H), 2.72 (s, 3H), 2.62–2.52 (m, 16H), 1.32 (s, 3H), 1.21–1.17 (m, 24H), 0.20 (s, 3H); \(^{13}\)C NMR (100 MHz, CDCl₃) δ 147.0 (Cq), 146.7 (Cq), 143.4 (CH), 143.0 (CH), 142.9 (CH), 142.5 (CH), 142.0 (Cq), 141.8 (Cq), 126.33 (Cq), 126.29 (Cq), 126.27 (Cq), 126.18 (Cq), 126.0 (CH), 125.9 (CH), 124.3 (CH), 124.1 (CH), 111.1 (Cq), 83.1 (CH), 82.8 (Cq), 81.7 (CH), 81.4 (Cq), 35.4 (CH₃), 35.2 (CH₃), 29.1 (CH₂), 28.94 (CH₂), 28.91 (CH₂), 27.6 (CH₃), 25.1 (CH₃), 15.9 (CH₃), 15.6 (CH₃), 15.3 (CH₂), 15.4 (CH₃). Anal: Calcd. for C₄₉H₆₆NO₄P: C, 77.03; H, 8.71; N, 1.83. Found: C, 76.81; H, 8.76; N, 1.70.

\((1R,7R)-2,2,6,6\text{-tetra}(3,5\text{-dimethoxyphenyl})-4\text{-dimethylamino}-9,9\text{-dimethyl-3,5,8,10-tetraoxa-4-phosphabicyclo[5.3.0]decane (}((R,R)-7)\)): Colorless cube. \([\alpha]_D^{24} = -88.4\) (c 1.01, CH₂Cl₂). Mp: 221.0–223.0 °C. \(^1\)H NMR (400 MHz, CDCl₃) δ 6.98 (d, 2H, \(J = 2.2\) Hz), 6.81 (d, 2H, \(J = 2.2\) Hz), 6.70 (d, 2H, \(J = 2.0\) Hz), 6.68 (d, 2H, \(J = 2.2\) Hz), 6.35–6.30 (m, 4H), 5.13 (dd, 1H, \(J = 8.5, 3.4\) Hz), 4.68 (d, 1H, \(J = 8.5\) Hz), 3.74 (s, 6H), 3.73 (s, 12H), 3.72 (s, 6H), 2.81 (s, 3H), 2.79 (s, 3H), 1.42 (s, 3H), 0.39 (s, 3H); \(^{13}\)C NMR (100 MHz, CDCl₃) δ 160.3 (CH), 160.0 (CH), 159.9 (CH), 159.6 (CH), 149.1 (Cq), 148.4 (Cq), 143.8 (Cq), 143.6 (Cq), 111.3 (Cq), 107.8 (CH), 107.1 (CH), 105.7 (CH), 105.6 (CH), 99.3 (Cq), 98.9 (Cq), 98.5 (Cq), 98.4 (Cq), 83.0 (CH), 82.6 (Cq), 81.1 (Cq), 81.0 (Cq), 55.3 (CH₃), 55.2 (CH₃), 55.1 (CH₃), 35.3 (CH₃), 27.7 (CH₃), 25.3 (CH₃). Anal: Calcd. for C₄₁H₆₆NO₁₂P: C, 76.81; H, 8.76; N, 1.70.

(B) Dihydrosilanes.

Methylphenylsilane was purchased from Sigma-Aldrich. Phenylpropylsilane, \(^5\) isopropylphenylsilane, \(^5\) t-butylphenylsilane, \(^6\) methyl(naphthalen-1-yl)silane, \(^6\) (naphthalen-1-yl)phenylsilane, \(^5\) and t-butylmethylsilane \(^7\) was prepared by modified literature protocols.

(C) Enantioselective Arylation.
Typical experimental procedure for palladium-catalyzed asymmetric arylation reaction at -40 °C.

A mixture of Pd_2(dba)_3 (23 mg, 0.025 mmol) and phosphoramidite ligand (0.075 mmol) was stirred in THF (2 mL) for 2 hours at room temperature. The reaction mixture was cooled to -40 °C and stirred for an additional 10 minutes. To the reaction mixture were added triethylamine (418 μL, 3.0 mmol), aryl iodide (1.0 mmol) and secondary silane (1.5 mmol). After stirring for 3-10 days at -40 °C, the reaction mixture was quenched with water, extracted with dichloromethane three times, and the extracts dried over sodium sulfate. The solvent was then evaporated under a reduced pressure and crude product purified by preparative TLC (silica gel). Enantiomeric excess of the arylated product was determined by HPLC analysis employing a chiral stationary phase.

A typical experimental procedure for palladium-catalyzed asymmetric arylation reaction at room temperature.

A mixture of Pd_2(dba)_3 (23 mg, 0.025 mmol) and phosphoramidite ligand (0.075 mmol) was stirred in THF (2 mL) for 2 hours at room temperature. Triethylamine (418 μL, 3.0 mmol), aryl iodide (1.0 mmol) and secondary silane (1.5 mmol) were added to the reaction mixture. After stirring for 2 days at room temperature, the reaction mixture was quenched with water, extracted with dichloromethane three times, and dried over sodium sulfate. The solvent was evaporated under a reduced pressure and purified by preparative TLC (silica gel). Enantiomeric excess of the product was determined by HPLC analysis employing a chiral stationary phase.

(2-methoxyphenyl)methylphenylsilane (9): Colorless oil. ^1^H NMR (400 MHz, CDCl_3) δ 7.61–7.58 (m, 2H), 7.40–7.32 (m, 5H), 6.94 (td, 2H, J = 7.3, 0.8 Hz), 6.84 (d, 1H, J = 8.1 Hz), 4.91 (q, 1H, J = 3.8 Hz), 3.78 (s, 3H), 0.61 (d, 3H, J = 3.9 Hz); ^13^C NMR (100 MHz, CDCl_3) δ 164.3 (C=q), 136.6 (CH), 135.9 (C=q), 134.8 (CH), 131.5 (CH), 129.1 (CH), 127.7 (CH), 123.7 (C=q), 120.6 (CH), 109.7 (CH), 55.2 (CH_3), -5.1 (CH_3). EI-MS m/z 228 (M'). HPLC (OJ-H, methanol, 1.0 mL/min) t_1 = 7.7 min (S) and t_2 = 8.6 min (R).

(3-methoxyphenyl)methylphenylsilane (10): Colorless oil. ^1^H NMR (400 MHz, CDCl_3) δ 7.57–7.55 (m, 2H), 7.39–7.34 (m, 3H), 7.31 (t, 1H, J = 7.7 Hz), 7.14 (d, 1H, J = 7.3 Hz), 7.09 (d, 1H, J = 2.7 Hz), 6.93 (dd, 1H, J = 2.7, 8.3 Hz), 4.92 (q, 1H, J = 3.8 Hz), 3.80 (s, 3H), 0.62 (d, 3H, J = 3.7 Hz); ^13^C NMR (100 MHz, CDCl_3) δ 159.0 (C=q), 136.9 (C=q), 135.2 (C=q), 134.8 (CH), 129.5 (CH), 129.2 (CH), 128.0 (CH), 127.1 (CH), 120.1 (CH), 114.9 (CH), 55.1 (CH_3), -5.0 (CH_3). EI-MS m/z 228 (M'). HPLC (OJ-H, methanol, 1.0 mL/min) t_1 = 9.6 min (-) and t_2 = 11.0 min (+).

(4-methoxyphenyl)methylphenylsilane (11): Colorless oil. ^1^H NMR (400 MHz, CDCl_3) δ 7.54 (d, 2H, J = 6.5 Hz), 7.48 (d, 2H, J = 8.6 Hz), 7.40–7.34 (m, 3H), 6.92 (d, 2H, J = 8.3 Hz), 4.92 (q, 1H, J = 3.7 Hz), 3.81 (s, 3H), 0.60 (d, 3H, J = 3.9 Hz); ^13^C NMR (100 MHz, CDCl_3) δ 160.8 (C=q), 136.3 (CH), 135.8 (C=q), 134.8 (CH), 129.4 (C=q), 127.9 (CH), 126.0 (C=q), 113.8 (CH), 55.0 (CH_3), -4.8 (CH_3). EI-MS m/z 228 (M'). HPLC (OJ-H, methanol, 1.0 mL/min) t_1 = 9.3 min (-) and t_2 = 10.2 min (+).

Methyl(2-methoxyphenyl)phenylsilane (12): Colorless oil. ^1^H NMR (400 MHz, CDCl_3) δ 7.53–7.51 (m, 2H), 7.48 (d, 1H, J = 7.3 Hz), 7.40–7.30 (m, 4H), 7.19 (t, 2H, J = 7.4 Hz), 5.03 (q, 1H, J = 3.8 Hz).
H NMR (400 MHz, CDCl₃) δ 7.53–7.48 (m, 2H), 7.39–7.31 (m, 4H), 7.14–7.08 (m, 2H), 5.01 (q, 1H, J = 3.9 Hz), 2.78–2.71 (m, 2H), 1.76–1.72 (m, 4H), 0.62 (d, 3H, J = 3.9 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 143.2 (C₆), 136.7 (C₅), 135.8 (C₄), 134.7 (CH), 134.2 (C₅), 133.4 (CH), 131.3 (CH), 129.3 (CH), 127.9 (CH), 125.0 (CH), 30.1 (CH₂), 30.0 (CH₂), 23.4 (CH₂), 22.8 (CH₂), -4.6 (CH₃). EI-MS m/z 252 (M⁺). Anal: Calcd for C₁₅H₁₈Si: C, 80.89; H, 7.99. Found: C, 80.92; H, 8.14. HPLC (OJ-H, methanol, 1.0 mL/min) t₁ = 7.7 min (+) and t₂ = 8.7 min (-).

**methyl(5,6,7,8-tetrahydro-naphthalen-1-yl)silane (15):** Colorless oil. ¹H NMR (400 MHz, CDCl₃) δ 7.53–7.51 (m, 2H), 7.37–7.31 (m, 4H), 7.14–7.08 (m, 2H), 5.01 (q, 1H, J = 3.9 Hz), 2.78–2.71 (m, 2H), 1.76–1.72 (m, 2H), 0.62 (d, 3H, J = 3.9 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 143.2 (C₆), 136.7 (C₅), 135.8 (C₄), 134.7 (CH), 134.2 (C₅), 133.4 (CH), 131.3 (CH), 129.3 (CH), 127.9 (CH), 125.0 (CH), 30.1 (CH₂), 30.0 (CH₂), 23.4 (CH₂), 22.8 (CH₂), -4.6 (CH₃). EI-MS m/z 252 (M⁺). Anal: Calcd for C₁₅H₁₈Si: C, 80.89; H, 7.99. Found: C, 80.92; H, 8.14. HPLC (OJ-H, methanol, 1.0 mL/min) t₁ = 7.7 min (+) and t₂ = 8.7 min (-).

**methyl(naphthalen-1-yl)silane (16):** Colorless solid. ¹H NMR (400 MHz, CDCl₃) δ 8.05 (d, 1H, J = 8.4 Hz), 7.91 (d, 1H, J = 8.3 Hz), 7.87 (d, 1H, J = 8.5 Hz), 7.74 (dd, 1H, J = 6.8, 1.2 Hz), 7.49–7.42 (m, 3H), 7.40–7.32 (m, 3H), 5.35 (q, 1H, J = 3.8 Hz), 0.76 (d, 3H, J = 3.9 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 137.1 (C₆), 135.3 (C₅), 135.2 (CH), 134.9 (CH), 133.3 (C₄), 133.2 (C₅), 130.5 (CH), 129.5 (CH), 128.9 (CH), 128.0 (CH), 127.9 (CH), 126.0 (CH), 125.6 (CH), 125.2 (CH), -4.5 (CH₃). EI-MS m/z 248 (M⁺). HPLC (OJ-H, methanol, 1.0 mL/min) t₁ = 11.3 min (R) and t₂ = 12.1 min (S).

**2-(2-methoxyphenyl)phenylpropylsilane (17):** Colorless oil. ¹H NMR (500 MHz, CDCl₃) δ 7.60 (dd, 2H, J = 7.5, 1.9 Hz), 7.41–7.32 (m, 5H), 6.93 (t, 1H, J = 7.3 Hz), 6.84 (d, 1H, J = 8.4 Hz), 4.81 (t, 1H, J = 3.8 Hz), 3.78 (s, 3H), 1.49–1.43 (m, 2H), 1.20–1.13 (m, 2H), 0.98 (t, 3H, J = 7.4 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 164.2 (C₆), 137.0 (CH), 135.4 (C₅), 135.1 (CH), 131.5 (CH), 129.1 (CH), 127.7 (CH), 123.1 (C₆), 120.6 (CH), 109.6 (CH), 55.1 (CH₂), 18.3 (CH₂), 17.8 (CH₂), 14.5 (CH₃). EI-MS m/z 256 (M⁺). Anal: Calcd. for C₁₆H₁₆O₃Si: C, 74.95; H, 7.86. Found: C, 74.74; H, 8.06. HPLC (OJ-H, methanol, 1.0 mL/min) t₁ = 5.6 min (+) and t₂ = 6.4 min (-).

**isopropyl(2-methoxyphenyl)phenylsilane (18):** Colorless oil. ¹H NMR (400 MHz, CDCl₃) δ 7.62 (dd, 2H, J = 7.2, 1.7 Hz), 7.45 (dd, 1H, J = 7.1, 1.5 Hz), 7.39–7.31 (m, 4H), 6.94 (t, 1H, J = 7.3 Hz), 2.37 (s, 3H), 0.64 (d, 3H, J = 3.9 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 144.2 (C₆), 135.7 (CH), 135.5 (C₅), 134.7 (CH), 133.9 (C₄), 129.9 (CH), 129.6 (CH), 129.3 (CH), 127.9 (CH), 125.1 (CH), 22.6 (CH₃), -4.8 (CH₃). EI-MS m/z 212 (M⁺). HPLC (OJ-H, methanol, 1.0 mL/min) t₁ = 8.3 min (S) and t₂ = 8.8 min (R).

**2,3-dimethylphenyl)methylphenylsilane (13):** Colorless oil. ¹H NMR (400 MHz, CDCl₃) δ 7.54–7.51 (m, 2H), 7.40–7.32 (m, 4H), 7.22 (d, 1H, J = 7.3 Hz), 7.12 (t, 1H, J = 7.3 Hz), 5.05 (q, 1H, J = 3.8 Hz), 2.29 (s, 3H), 2.27 (s, 3H), 0.63 (d, 3H, J = 3.9 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 142.6 (C₆), 136.4(C₅), 135.9 (C₄), 134.7 (CH), 134.0 (C₅), 133.7 (CH), 131.7 (CH), 129.3 (CH), 127.9 (CH), 125.3 (CH), 20.4 (CH₃), 19.7 (CH₃), -4.5 (CH₃). EI-MS m/z 226 (M⁺). Anal: Calcd for C₁₅H₁₈Si: C, 79.58; H, 8.01. Found: C, 79.43; H, 8.15. HPLC (OJ-H, methanol, 1.0 mL/min) t₁ = 7.5 min (+) and t₂ = 9.0 min (-).

**2,4-dimethylphenyl)methylphenylsilane (14):** Colorless oil. ¹H NMR (400 MHz, CDCl₃) δ 7.53–7.48 (m, 2H), 7.39–7.31 (m, 4H), 7.14–7.08 (m, 2H), 5.01 (q, 1H, J = 3.9 Hz), 2.33 (s, 3H), 2.32 (s, 3H), 0.62 (d, 3H, J = 3.9 Hz); ¹³C NMR (100 MHz, CDCl₃) δ 144.2 (C₆), 139.9 (C₅), 135.83 (CH), 135.79 (C₅), 134.7 (CH), 130.6 (CH), 130.3 (C₅), 129.3 (CH), 127.9 (CH), 125.9 (CH), 22.5 (CH₃), 21.3 (CH₂), -4.8 (CH₃). EI-MS m/z 226 (M⁺). Anal: Calcd for C₁₅H₁₈Si: C, 79.58; H, 8.01. Found: C, 79.49; H, 8.18. HPLC (OJ-H, hexane, 0.5 mL/min) t₁ = 17.9 min (-) and t₂ = 20.0 min (+).
6.84 (d, 1H, J = 8.2 Hz), 4.60 (d, 1H, J = 4.2 Hz), 3.78 (s, 3H), 1.61–1.56 (m, 1H), 1.08 (d, 3H, J = 7.4 Hz), 1.04 (d, 3H, J = 7.5 Hz); 13C NMR (100 MHz, CDCl3) δ 164.1 (Cq), 137.5 (CH), 135.4 (CH), 134.9 (Cq), 131.4 (CH), 129.0 (CH), 127.6 (CH), 122.8 (Cq), 120.6 (CH), 109.6 (CH), 55.0 (CH3), 18.8 (CH3), 18.7 (CH3), 11.6 (CH). EI-MS m/z 256 (M+). Anal: Calcd. for C18H18O5Si: C, 74.95; H, 7.86. Found: C, 74.85; H, 8.02. HPLC (OD-H, hexane, 1.0 mL/min) t1 = 8.2 min (+) and t2 = 8.2 min (-).

(2-methoxyphenyl)methyl(naphthalen-1-yl)silane (19): Colorless oil. 1H NMR (400 MHz, CDCl3) δ 8.12 (d, 1H, J = 7.6 Hz), 7.90 (d, 1H, J = 8.3 Hz), 7.86 (d, 1H, J = 7.3 Hz), 7.76 (d, 1H, J = 6.6 Hz), 7.49–7.42 (m, 3H), 7.37 (td, 1H, J = 7.3, 2.0 Hz), 7.28 (dd, 1H, J = 7.2, 1.8 Hz), 6.88 (t, 1H, J = 7.2 Hz), 6.86 (d, 1H, J = 8.1 Hz), 5.36 (q, 1H, J = 3.9 Hz), 3.77 (s, 3H), 0.75 (d, 3H, J = 3.9 Hz); 13C NMR (100 MHz, CDCl3) δ 164.3 (Cq), 137.2 (Cq), 136.8 (CH), 134.9 (CH), 133.9 (Cq), 133.1 (Cq), 131.5 (CH), 130.0 (CH), 128.7 (CH), 128.2 (CH), 125.8 (CH), 125.4 (CH), 125.2 (CH), 123.5 (Cq), 120.7 (CH), 109.7 (CH), 55.2 (CH3), -4.6 (CH3). EI-MS m/z 278 (M+). Anal: Calcd. For C19H14O5Si: C, 77.65; H, 6.52. Found: C, 77.42; H, 6.57. HPLC (OD-H, methanol, 1.0 mL/min) t1 = 7.1 min (S) and t2 = 10.3 min (R).

(2-methoxyphenyl)naphthylphenylsilane (20):8 Colorless solid. 1H NMR (400 MHz, CDCl3): δ 8.05 (d, 1H, J = 8.3 Hz), 7.91 (d, 1H, J = 8.0 Hz), 7.86 (d, 1H, J = 8.0 Hz), 7.60–7.56 (m, 3H), 7.47–7.32 (m, 7H), 7.26–7.24 (m, 1H), 6.91 (t, 2H, J = 7.7 Hz), 5.91 (s, 1H), 3.66 (s, 3H); 13C NMR (100 MHz, CDCl3) δ 164.5 (Cq), 137.9 (CH), 137.4 (Cq), 136.4 (CH), 135.8 (CH), 133.8 (Cq), 133.1 (Cq), 132.0 (CH), 131.8 (Cq), 130.3 (CH), 129.4 (CH), 128.7 (CH), 128.4 (CH), 127.8 (CH), 125.9 (CH), 125.5 (CH), 125.2 (CH), 121.6 (Cq), 120.8 (CH), 110.0 (CH), 55.3 (CH3). EI-MS m/z 340 (M+). HPLC (OD-H, methanol, 0.5 mL/min) t1 = 11.7 min and t2 = 12.7 min.

t-butylmethyl(2-methoxyphenyl)silane (21): Colorless oil. 1H NMR (400 MHz, CDCl3): δ 7.43 (dd, 1H, J = 1.7, 7.1 Hz), 7.37–7.33 (m, 1H), 6.94 (t, 1H, J = 7.2 Hz), 6.82 (d, 1H, J = 8.3 Hz), 4.13 (q, 1H, J = 3.7 Hz), 3.77 (s, 3H), 0.94 (s, 9H), 0.33 (d, 3H, J = 3.6 Hz); 13C NMR (100 MHz, CDCl3) δ 164.1 (Cq), 137.3 (CH), 131.0 (CH), 123.8 (Cq), 120.3 (CH), 109.5 (CH), 54.8 (CH3), 27.5 (CH3), 17.1 (Cq), -7.7 (CH3). EI-MS m/z 208 (M+). Anal: Calcd. For C12H20OSi: C, 69.17; H, 9.67. Found: C, 68.89; H, 9.70. HPLC (OD-H, methanol, 0.3 mL/min) t1 = 13.0 (+) min and t2 = 13.4 min (-).

2. References
4. Crystallographic data of (S)-19

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\( R_1 = \Sigma ||F_o^2|-|F_c^2||/\Sigma |F_o^2| (I>2\sigma(I)) \), \( wR_2 = [\Sigma (w(F_o^2-F_c^2)^2/\Sigma w(F_o^2)^2)]^{1/2} (I>2\sigma(I)) \), \( \text{GOF} = [\Sigma (w(F_o^2-F_c^2)^2/\Sigma (N-N_p)^2)]

S7
5. Copies of $^1\text{H}$ NMR spectra
Electronic Supplementary Material (ESI) for Chemical Communications
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Electronic Supplementary Material (ESI) for Chemical Communications
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6. Copies of $^{13}$C NMR spectra
\textsuperscript{13}C NMR, CDCl\textsubscript{3}, 100 MHz
$^{13}$C NMR, CDCl$_3$, 100 MHz

S$_2$H

CH$_3$Si

CH$_3$

(12)
$^{13}$C NMR, CDCl$_3$, 100 MHz

(13)
$^{13}$C NMR, CDCl$_3$, 100 MHz

(16)
7. Copies of HPLC charts

![HPLC chart with retention times and peaks labeled (S) and (R)]

Retention time (min)

![HPLC chart with retention times and peaks labeled racem and 61% ee]
Electronic Supplementary Material (ESI) for Chemical Communications
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Retention time (min)

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Retention time (min)

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<th>9.5</th>
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</thead>
</table>

(S)

(R)

58% ee

12

racemii

12
Retention time (min)

7 7.5 8 8.5 9 9.5 10

(13)

racemic

Retention time (min)

7 7.5 8 8.5 9 9.5 10

(13)

67%ee

(+) (-)

S42
Retention time (min)

racemic

$\text{CH}_3$

$\text{Si-H}$

$\text{CH}_3$

$\text{CH}_3$

(14)

53% ee

$\text{CH}_3$

$\text{Si-H}$

$\text{CH}_3$

$\text{CH}_3$

(14)

(-)

(+)
Si
\text{CH}_3
\text{CH}_3
(15)

racemi

Retention time [min]

7 7.5 8 8.5 9 9.5 10

Electronic Supplementary Material (ESI) for Chemical Communications
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\(-\)

(\text{15})

77\% ee

\text{(+)}

Retention time (min)

7 7.5 8 8.5 9 9.5 10
 retention time (min)
Electronic Supplementary Material (ESI) for Chemical Communications
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