Supporting Information for

Syntheses and synthetic applications of stannylated allylic alcohols

Uli Kazmaier, Simon Lucas, Manuela Klein*

Institut für Organische Chemie, Universität des Saarlandes, D-66123 Saarbrücken, Germany.

E-mail: u.kazmaier@mx.uni-saarland.de

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General Experimental Methods

All reactions were carried out in oven-dried glassware (100°C) under argon. All solvents were dried before use. THF was distilled from LiAlH₄ and stored over molecular sieves. The products were purified by flash chromatography on silica gel. Mixtures of EtOAc and hexanes were generally used as eluents, 1% NEt₃ was added for the purification of the stannanes. TLC: commercially precoated Polygram[®] SIL-G/UV 254 plates. Visualization was accomplished with UV-light and KMnO₄ solution. Melting points are uncorrected. Selected signals in the NMR spectra for the minor isomers are extracted from the spectra of the isomeric mixture. Elemental analyses were carried out at the department of chemistry, University of Saarbrücken.

Analytical and detailed NMR-data of compounds 13-17

(*E/Z*)-1-Phenyl-4-tributylstannylbut-2-en-1-ol (13a): According to the general procedure for hydrostannations **13a** was obtained from allenol **12a** (198 mg, 1.50 mmol) as a colorless liquid (463 mg, 1.06 mmol, 71%) and a 2:3 (*E/Z*)-mixture. (*Z*)-**13a**: ¹H NMR (500 MHz, CDCl₃): δ = 0.82–0.89 (m, 15H, 1-H, 4-H), 1.22–1.30 (m, 6H, 3-H), 1.41–1.47 (m, 6H, 2-H), 1.74 (m, 2H, 5-H), 1.77 (d, ³J_{OH,8} = 3.5 Hz, 1H, OH), 5.37 (m, 1H, 7-H), 5.50 (dd, ³J_{8,7} = 8.5 Hz, ³J_{8,OH} = 3.5 Hz, 1H, 8-H), 5.75 (m, 1H, 6-H), 7.22–7.40 (m, 5H, 10-H, 11-H, 12-H); ¹³C NMR (125 MHz, CDCl₃): δ = 9.4 (t, C-1), 11.3 (t, C-5), 13.7 (q, C-4), 27.3 (t, C-3), 29.1 (t, C-2), 69.5 (d, C-8), 126.1 (d, C-6), 126.4 (d, C-10), 127.8 (d, C-12), 128.4 (d, C-11), 132.1 (d, C-7), 144.2 (s, C-9); (*E*)-**13a** (selected signals): ¹H NMR (500 MHz, CDCl₃): δ = 5.12 (dd, ³J_{8,7} = 7.4 Hz, ³J_{8,OH} = 3.5 Hz, 1H, 8-H), 5.46 (dd, ³J_{7,6} = 15.0 Hz, ³J_{7,8} = 7.4 Hz, ⁴J_{7,Sn} = 37.5 Hz, 1H, 7-H), 5.85 (dt, ³J_{6,7} = 15.0 Hz, ³J_{6,5} = 8.8 Hz, ³J_{6,Sn} = 49.8 Hz, 1H, 6-H); ¹³C NMR (125 MHz, CDCl₃): δ = 9.3 (t, C-1), 13.6 (q, C-4), 14.5 (t, C-5), 29.0 (t, C-2), 75.6 (d, C-8), 126.0 (d, C-6), 128.3 (d, C-11), 133.0 (d, C-7), 144.0 (s, C-9); HRMS (CI): calcd. for C₁₈H₂₉O¹²⁰Sn [M-Bu]⁺ 381.1186; found 381.1213.

(*E/Z*)-1-(4-Methylphenyl)-4-tributylstannylbut-2-en-1-ol (13b): According to the general procedure for hydrostannations **13b** was obtained from allenol **12b** (50 mg, 0.50 mmol) as a colorless liquid (176 mg, 0.39 mmol, 78%) and a 1:1 (*E/Z*)-mixture. As a side product **14b** was obtained in ~ 5% yield. (*E*)-**13b**: ¹H NMR (500 MHz, CDCl₃): δ = 0.81–0.88 (m, 15H, 1-H, 4-H), 1.23–1.30 (m, 6H, 3-H), 1.40–1.49 (m, 6H, 2-H), 1.69 (d, ³J_{OH,8} = 3.5 Hz, 1H, OH), 1.72–1.91 (m, 2H, 5-H), 2.32 (s, 3H, 13-H), 5.08 (dd, ³J_{8,7} = 7.3 Hz, ³J_{8,OH} = 3.5 Hz, 1H, 8-H), 5.46 (dd, ³J_{7,6} = 15.8 Hz, ³J_{7,8} = 7.3 Hz, 1H, 7-H), 5.85 (ddt, ³J_{6,7} = 15.8 Hz, ³J_{6,5} = 8.5 Hz, ⁴J_{6,8} = 0.6 Hz, ³J_{6,Sn} = 50.1 Hz, 1H, 6-H), 7.11–7.28 (m, 4H, 10-H, 11-H); ¹³C NMR (125 MHz, CDCl₃): δ = 9.3 (t, C-1), 13.7 (q, C-4), 14.4 (t, C-5), 21.1 (q, C-13), 27.3 (t, C-3), 29.1 (t, C-2), 75.6 (d, C-8), 125.9 (d, C-10), 126.5 (d, C-6), 129.0 (d, C-11), 131.8 (d, C-7), 136.8 (s, C-12), 141.0 (s, C-9); (*Z*)-**13b** (selected signals): ¹H NMR (500

MHz, CDCl₃): δ = 1.65 (d, $^3J_{\text{OH},8}$ = 3.5 Hz, 1H, OH), 5.36 (m, 1H, 7-H), 5.46 (m, 1H, 8-H), 5.73 (m, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl₃): δ = 9.4 (t, C-1), 11.3 (t, C-5), 69.5 (d, C-8), 126.1 (d, C-10), 127.9 (d, C-6), 129.1 (d, C-11), 132.7 (d, C-7), 137.0 (s, C-12), 141.3 (s, C-9); HRMS (CI): calcd. for C₁₉H₃₁O¹²⁰Sn [M-Bu]⁺ 395.1371; found 395.1368.

(*E/Z*)-1-(2-Methoxyphenyl)-4-tributylstannylbut-2-en-1-ol (13c): According to the general procedure for hydrostannations **13c** was obtained from allenol **12c** (88 mg, 0.50 mmol) as a colorless liquid (146 mg, 0.31 mmol, 62%) and a 2:5:1 *E/Z*/diene-mixture. (*Z*)-**13c**: ^1H NMR (500 MHz, CDCl₃): δ = 0.82–0.89 (m, 15H, 1-H, 4-H), 1.23–1.31 (m, 6H, 3-H), 1.39–1.48 (m, 6H, 2-H), 1.80 (m, 2H, 5-H), 2.69 (d, $^3J_{\text{OH},8}$ = 5.4 Hz, 1H, OH), 3.84 (s, 3H, 15-H), 5.48 (dd, $^3J_{7,6}$ = 10.4 Hz, $^3J_{7,8}$ = 8.5 Hz, 1H, 7-H), 5.67 (dd, $^3J_{8,7}$ = 8.5 Hz, $^3J_{8,\text{OH}}$ = 5.4 Hz, 1H, 8-H), 5.74 (m, 1H, 6-H), 6.87 (m, 13-H), 6.93 (m, 11-H), 7.23 (m, 12-H), 7.31 (m, 10-H); ^{13}C NMR (125 MHz, CDCl₃): δ = 9.3 (t, C-1), 11.3 (t, C-5), 13.7 (q, C-4), 27.3 (t, C-3), 29.1 (t, C-2), 55.3 (q, C-15), 66.6 (d, C-8), 110.6 (d, C-13), 120.8 (d, C-11), 125.2 (d, C-10), 127.4 (d, C-6), 128.4 (d, C-12), 128.6 (s, C-9), 131.5 (d, C-7), 156.9 (s, C-14); (*E*)-**13c** (selected signals): ^1H NMR (500 MHz, CDCl₃): δ = 2.62 (d, $^3J_{\text{OH},8}$ = 6.0 Hz, 1H, OH), 3.85 (s, 3H, 15-H), 5.30 (m, 1H, 8-H), 5.56 (dd, $^3J_{7,6}$ = 15.1 Hz, $^3J_{7,8}$ = 6.9 Hz, 1H, 7-H), 5.80 (m, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl₃): δ = 9.2 (t, C-1), 14.4 (t, C-5), 29.0 (t, C-2), 55.4 (q, C-15), 72.1 (d, C-8), 110.5 (d, C-13), 120.7 (d, C-11), 127.2 (d, C-6), 128.2 (d, C-12), 130.2 (s, C-9), 132.0 (d, C-7), 156.5 (s, C-14); HRMS (CI): calcd. for C₁₉H₃₁O₂¹²⁰Sn [M-Bu]⁺ 411.1389; found 411.1367.

(*Z*)-4-Tributylstannyl-1-(2,4,6-trimethoxy-phenyl)-but-2-en-1-ol (13d): According to the general procedure for hydrostannations (*Z*)-**13d** was obtained from allenol **12d** (83 mg, 0.40 mmol) at 55 °C as the only allylstannane isomer (42 mg, 0.08 mmol, 20%) besides the elimination product **14d** (32 mg, 0.22 mmol, 43%) and the regioisomer **15d** (39 mg, 0.07 mmol, 19%). (*Z*)-**13d**: ^1H NMR (500 MHz, CDCl₃): δ = 0.80–0.88 (m, 15H, 1-H, 4-H), 1.23–1.31 (m, 6H, 3-H), 1.40–1.55 (m, 6H, 2-H), 1.59 (m, 2H, 5-H), 3.24 (d, $^3J_{\text{OH},8}$ = 11.0 Hz, 1H, OH), 3.79–3.83 (m, 9H, 13-H, 14-H), 5.55–5.68 (m, 2H, 6-H, 8-H), 6.17 (m, 1H, 7-H), 6.11 (s, 2H, 11-H); ^{13}C NMR (125 MHz, CDCl₃): δ = 9.1 (t, C-1), 9.8 (t, C-5), 13.7 (q, C-4), 27.8 (t, C-3), 29.0 (t, C-2), 55.2 (q, C-14), 55.5 (q, C-13), 63.0 (d, C-8), 90.7 (d, C-11), 90.9 (s, C-9), 127.1 (d, C-6), 130.0 (d, C-7), 158.2 (s, C-12), 160.1 (s, C-10); HRMS (FAB⁺): calcd. for C₂₅H₄₅O₄Sn [M+H]⁺ 529.2340; found 529.2360.

(*E/Z*)-1-(2-Bromophenyl)-4-tributylstannylbut-2-en-1-ol (13e): According to the general procedure for hydrostannations **13e** was obtained from allenol **12e** (128 mg, 0.57 mmol) as a colorless liquid (253 mg, 0.49 mmol, 86%) and a 4:3 (*E/Z*)-mixture. (*E*)-**13e**: ^1H NMR (500 MHz, CDCl₃): δ = 0.80–0.89 (m, 15H, 1-H, 4-H), 1.21–1.30 (m, 6H, 3-H), 1.39–1.48 (m, 6H, 2-H), 1.73

(m, 1H, OH), 1.92 (m, 2H, 5-H), 5.37 (m, 1H, 7-H), 5.48 (m, 1H, 8-H), 5.90 (m, 1H, 6-H), 7.10 (m, 1H, 10-H), 7.31 (m, 1H, 12-H), 7.50 (m, 1H, 11-H), 7.56 (m, 1H, 13-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.5 (t, C-1), 13.6 (q, C-4), 14.6 (t, C-5), 27.3 (t, C-3), 29.0 (t, C-2), 74.1 (d, C-8), 122.3 (s, C-14), 124.7 (d, C-12), 127.5 (d, C-10), 128.3 (d, C-6), 128.5 (d, C-11), 132.6 (d, C-13), 133.9 (d, C-7), 142.8 (d, C-9); (*Z*)-**13e** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 5.34 (m, 1H, 7-H), 5.78 (m, 1H, 6-H), 5.82 (m, 1H, 8-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.3 (t, C-1), 11.9 (t, C-5), 13.7 (q, C-4), 29.1 (t, C-2), 69.1 (d, C-8), 122.7 (s, C-14), 124.6 (d, C-12), 127.6 (d, C-10), 127.8 (d, C-6), 128.8 (d, C-11), 132.8 (d, C-13), 133.2 (d, C-7), 143.1 (s, C-9); HRMS (CI): calcd. for $\text{C}_{22}\text{H}_{37}^{79}\text{BrO}^{120}\text{Sn} [\text{M}]^+$ 516.1013; found 516.1031; calcd. for $\text{C}_{18}\text{H}_{28}^{79}\text{BrO}^{120}\text{Sn} [\text{M-Bu}]^+$ 459.0337; found 459.0341; $\text{C}_{22}\text{H}_{37}\text{BrOSn}$ (516.13): calcd. C 51.20, H 7.23; found C 50.88, H 6.96.

(*E/Z*)-1-(2-Chloro-phenyl)-4-tributylstannyl-but-2-en-1-ol (13f): According to the general procedure for hydrostannations **13f** was obtained from allenol **12f** (83 mg, 0.50 mmol) as a colorless liquid (159 mg, 0.34 mmol, 68%) and a 1:1 (*E/Z*)-mixture. (*Z*)-**13f**: ^1H NMR (500 MHz, CDCl_3): δ = 0.80–0.88 (m, 15H, 1-H, 4-H), 1.23–1.31 (m, 6H, 3-H), 1.40–1.55 (m, 6H, 2-H), 1.70–1.88 (m, 3H, 5-H, OH), 5.30 (dd, $^3J_{7,6}$ = 10.4 Hz, $^3J_{7,8}$ = 8.8 Hz, $^4J_{7,\text{Sn}}$ = 38.8 Hz, 1H, 7-H) 5.47 (m, 1H, 8-H), 5.76 (m, 1H, 6-H), 7.29–7.33 (m, 4H, 10-H, 11-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.4 (t, C-1), 11.3 (t, C-5), 13.6 (q, C-4), 27.3 (t, C-3), 29.0 (t, C-2), 68.8 (d, C-8), 125.6 (d, C-6), 127.2 (d, C-10), 127.3 (d, C-11), 132.5 (s, C-12), 132.7 (d, C-7), 142.3 (s, C-9); (*E*)-**13f** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 5.09 (m, 1H, 8-H), 5.46 (dd, $^3J_{7,6}$ = 14.8 Hz, $^3J_{7,8}$ = 7.3 Hz, $^4J_{7,\text{Sn}}$ = 41.9 Hz, 1H, 7-H), 5.84 (m, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 14.5 (t, C-5), 75.0 (d, C-8), 127.2 (d, C-6), 132.8 (d, C-7); $\text{C}_{22}\text{H}_{37}\text{ClOSn}$ (471.70): calcd. C 56.01, H 7.91; found C 55.97, H 7.99.

(*E/Z*)-1-(2,6-Dichloro-phenyl)-4-tributylstannyl-but-2-en-1-ol (13g): According to the general procedure for hydrostannations **13g** was obtained from allenol **12g** (109 mg, 0.50 mmol) as a colorless liquid (169 mg, 0.33 mmol, 67%) and a 1:2 (*E/Z*)-mixture. (*Z*)-**13k**: ^1H NMR (500 MHz, CDCl_3): δ = 0.80–0.88 (m, 15H, 1-H, 4-H), 1.23–1.31 (m, 6H, 3-H), 1.40–1.55 (m, 6H, 2-H), 1.92 (m, 2H, 5-H), 2.63 (d, $^3J_{\text{OH},8}$ = 8.8 Hz, 1H, OH), 5.70–5.89 (m, 2H, 6-H, 7-H) 6.17 (m, 1H, 8-H), 7.25–7.36 (m, 3H, 11-H, 12-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 8.1 (t, C-1), 13.6 (q, C-4), 14.7 (t, C-5), 27.2 (t, C-3), 29.0 (t, C-2), 67.8 (d, C-8), 123.0 (d, C-6), 129.1 (2d, C-11, C-12), 134.1 (d,s, C-7, C-10), 138.4 (s, C-9); (*E*)-**13k** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 1.74 (m, 2H, 5-H), 2.90 (d, $^3J_{\text{OH},8}$ = 9.8 Hz, 1H, OH); ^{13}C NMR (125 MHz, CDCl_3): δ = 14.7 (t, C-5), 72.9 (d, C-8); $\text{C}_{22}\text{H}_{36}\text{Cl}_2\text{OSn}$ (506.14): calcd. C 52.21, H 7.17; found C 52.33, H 7.24.

(*E/Z*)-1-(2-Nitro-phenyl)-4-tributylstannyl-but-2-en-1-ol (13h): According to the general procedure for hydrostannations **13h** was obtained from allenol **12h** (156 mg, 0.80 mmol) as a yellow

liquid (297 mg, 0.60 mmol, 76%) and a 1:1 (*E/Z*)-mixture. (*E*)-**13h**: ^1H NMR (500 MHz, CDCl_3): δ = 0.78–0.88 (m, 15H, 1-H, 4-H), 1.23–1.32 (m, 6H, 3-H), 1.40–1.55 (m, 6H, 2-H), 1.65–1.91 (m, 2H, 5-H), 2.19 (d, $^3J_{\text{OH},8}$ = 4.0 Hz, 1H, OH), 5.45 (dd, $^3J_{7,6}$ = 15.2 Hz, $^3J_{7,8}$ = 7.0 Hz, $^4J_{7,\text{Sn}}$ = 41.1 Hz, 1H, 7-H), 5.91 (m, 1H, 6-H), 5.97 (m, 1H, 8-H), 7.37–7.89 (m, 4H, 11-H, 12-H, 13-H, 14-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.4 (t, C-1), 13.6 (q, C-4), 14.6 (t, C-5), 27.3 (t, C-3), 29.1 (t, C-2), 70.5 (d, C-8), 124.4 (d, C-6), 125.1 (d, C-11), 128.3 (d, C-12), 128.8 (d, C-7), 133.2 (d, C-14), 134.5 (d, C-13), 138.9 (s, C-9), 148.3 (s, C-10); (*Z*)-**13h** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 5.35 (dd, $^3J_{7,6}$ = 9.4 Hz, $^3J_{7,8}$ = 9.4 Hz, $^4J_{7,\text{Sn}}$ = 38.7 Hz, 1H, 7-H), 5.71 (m, 1H, 8-H), 5.82 (dt, $^3J_{6,5}$ = 9.8 Hz, $^3J_{6,7}$ = 9.4 Hz, $^3J_{6,\text{Sn}}$ = 49.3 Hz, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 11.6 (t, C-5), 65.6 (d, C-8), 123.4 (d, C-6), 127.9 (d, C-7); $\text{C}_{22}\text{H}_{37}\text{NO}_3\text{Sn}$ (482.25): calcd. C 54.79, H 7.73, N 2.90; found C 54.78, H 7.71, N 2.80.

(*E/Z*)-**1-(4-Nitrophenyl)-4-tributylstannylbut-2-en-1-ol (13i)**: According to the general procedure for hydrostannations **13i** was obtained from allenol **12i** (133 mg, 0.69 mmol) as a yellow liquid (218 mg, 0.58 mmol, 84%) and a 4:3 (*E/Z*)-mixture. (*E*)-**13i**: ^1H NMR (500 MHz, CDCl_3): δ = 0.81–0.90 (m, 15H, 1-H, 4-H), 1.22–1.31 (m, 6H, 3-H), 1.40–1.49 (m, 6H, 2-H), 1.74–1.96 (m, 3H, 5-H, OH), 5.21 (dd, $^3J_{8,7}$ = 7.8 Hz, $^3J_{8,\text{OH}}$ = 3.1 Hz, 1H, 8-H), 5.35 (dd, $^3J_{7,6}$ = 14.9 Hz, $^3J_{7,8}$ = 7.8 Hz, $^4J_{7,\text{Sn}}$ = 41.7 Hz, 1H, 7-H), 5.93 (dt, $^3J_{6,7}$ = 14.9 Hz, $^3J_{6,5}$ = 8.5 Hz, $^3J_{6,\text{Sn}}$ = 49.7 Hz, 1H, 6-H), 7.50 (d, $^3J_{10,11}$ = 8.6 Hz, 2H, 10-H), 8.16 (d, $^3J_{11,10}$ = 8.6 Hz, 2H, 11-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.4 (t, C-1), 13.6 (q, C-4), 14.7 (t, C-5), 27.3 (t, C-3), 29.1 (t, C-2), 75.0 (d, C-8), 123.5 (d, C-11), 126.4 (d, C-6), 126.6 (d, C-10), 135.2 (d, C-7), 147.0 (s, C-9), 151.1 (s, C-12); (*Z*)-**13i** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 5.25 (m, 1H, 7-H), 5.60 (dd, $^3J_{8,7}$ = 8.8 Hz, $^3J_{8,\text{OH}}$ = 3.4 Hz, 1H, 8-H), 5.84 (m, 1H, 6-H), 7.55 (d, $^3J_{10,11}$ = 8.6 Hz, 2H, 10-H), 8.17 (d, $^3J_{11,10}$ = 8.6 Hz, 2H, 11-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.5 (t, C-1), 11.5 (t, C-5), 68.6 (d, C-8), 123.6 (d, C-11), 124.9 (d, C-6), 126.7 (d, C-10), 134.0 (d, C-7), 151.4 (s, C-12); HRMS (CI): calcd. for $\text{C}_{22}\text{H}_{36}\text{NO}_3^{120}\text{Sn} [\text{M}]^+$ 482.1695; found 482.1706; calcd. for $\text{C}_{18}\text{H}_{27}\text{NO}_3^{120}\text{Sn} [\text{M-Bu}]^+$ 425.1005; found 425.1009; $\text{C}_{22}\text{H}_{37}\text{NO}_3\text{Sn}$ (482.24): calcd. C 54.80, H 7.73, N 2.90; found C 54.79, H 7.68, N 3.22.

(*E/Z*)-**1-Phenyl-5-tributylstannylpent-3-en-2-ol (13k)**: According to the general procedure for hydrostannations **13k** was obtained from allenol **12k** (218 mg, 1.36 mmol) as a colorless liquid (883 mg, 1.96 mmol, 68%) and a 2:3 (*E/Z*)-mixture. (*Z*)-**13k**: ^1H NMR (500 MHz, CDCl_3): δ = 0.81–0.90 (m, 15H, 1-H, 4-H), 1.25–1.32 (m, 6H, 3-H), 1.40 (d, $^3J_{\text{OH},8}$ = 3.8 Hz, 1H, OH), 1.42–1.50 (m, 6H, 2-H), 1.67–1.80 (m, 2H, 5-H), 2.79 (m, 2H, 9-H), 4.63 (m, 1H, 8-H), 5.71 (m, 1H, 7-H), 5.68 (m, 1H, 6-H), 7.20–7.31 (m, 5H, 11-H, 12-H, 13-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.4 (t, C-1), 11.2 (t, C-5), 13.7 (q, C-4), 27.3 (t, C-3), 29.1 (t, C-2), 44.0 (t, C-9), 68.3 (d, C-8), 126.4 (d, C-6), 127.2 (d, C-11), 128.4 (d, C-13), 129.6 (d, C-12), 132.1 (d, C-7), 138.3 (s, C-10); (*E*)-**13k** (selected signals):

^1H NMR (500 MHz, CDCl_3): δ = 4.26 (m, 1H, 8-H), 5.33 (dd, $^3J_{7,6}$ = 15.1 Hz, $^3J_{7,8}$ = 7.3 Hz, $^4J_{7,\text{Sn}}$ = 41.6 Hz, 1H, 7-H), 5.80 (dt, $^3J_{6,7}$ = 15.1 Hz, $^3J_{6,5}$ = 8.8 Hz, $^3J_{6,\text{Sn}}$ = 54.2 Hz, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.2 (t, C-1), 14.3 (t, C-5), 44.4 (t, C-9), 74.2 (d, C-8), 125.9 (d, C-11), 126.3 (d, C-6), 129.5 (d, C-12), 132.6 (d, C-7), 138.4 (s, C-10); HRMS (CI): calcd. for $\text{C}_{19}\text{H}_{31}\text{O}^{120}\text{Sn}$ $[\text{M-Bu}]^+$ 395.1371; found 395.1384.

(*E/Z*)-6-Methyl-1-tributylstannylhept-2-en-4-ol (13l): According to the general procedure for hydrostannations **13l** was obtained from allenol **12l** (190 mg, 1.51 mmol) as a colorless liquid (398 mg, 0.96 mmol, 63%) and a 3:5 (*E/Z*)-mixture. (*Z*)-**13l**: ^1H NMR (500 MHz, CDCl_3): δ = 0.84–0.94 (m, 21H, 1-H, 4-H, 11-H), 1.17 (bs, 1H, OH), 1.21 (m, 1H, 9-H), 1.25–1.33 (m, 6H, 3-H), 1.41–1.53 (m, 7H, 2-H, 9'-H), 1.64–1.83 (m, 3H, 5-H, 10-H), 4.49 (m, 1H, 8-H), 5.09 (dd, $^3J_{7,6}$ = 10.4 Hz, $^3J_{7,8}$ = 8.8 Hz, 1H, 7-H), 5.63 (m, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.3 (t, C-1), 11.1 (t, C-5), 13.7 (q, C-4), 22.7 (2q, C-11), 23.4 (d, C-10), 27.3 (t, C-3), 29.1 (t, C-2), 46.7 (t, C-9), 65.5 (d, C-8), 127.6 (d, C-6), 131.4 (d, C-7); (*E*)-**13l** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 4.06 (m, 1H, 8-H), 5.24 (dddd, $^3J_{7,6}$ = 15.1 Hz, $^3J_{7,8}$ = 7.9 Hz, $^4J_{7,5'}$ = 0.9 Hz, $^4J_{7,5}$ = 1.3 Hz, 1H, 7-H), 5.78 (dtd, $^3J_{6,7}$ = 15.1 Hz, $^3J_{6,5}$ = 8.8 Hz, $^4J_{6,8}$ = 0.6 Hz, $^3J_{6,\text{Sn}}$ = 49.5 Hz, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.2 (t, C-4), 14.2 (t, C-5), 72.0 (d, C-8), 128.7 (d, C-6), 132.2 (d, C-7); HRMS (CI): calcd. for $\text{C}_{16}\text{H}_{33}\text{O}^{120}\text{Sn}$ $[\text{M-Bu}]^+$ 361.1535; found 361.1544.

(*E/Z*)-1-(Cyclohex-3-en-1-yl)-4-tributylstannylbut-2-en-1-ol (13m): According to the general procedure for hydrostannations **13m** was obtained from allenol **12m** (225 mg, 1.50 mmol) as a colorless liquid (512 mg, 1.13 mmol, 75%) and a 2:3 diastereomeric (*E/Z*)-mixture. (*Z*)-**13m**: ^1H NMR (500 MHz, CDCl_3): δ = 0.84–0.93 (m, 15H, 1-H, 4-H), 1.18 (m, 1H, OH), 1.27–1.33 (m, 6H, 3-H), 1.44–1.51 (m, 6H, 2-H), 1.65 (m, 1H, 14-H), 1.63–2.18 (m, 8H, 5-H, 9-H, 10-H, 13-H, 14'-H), 3.80 (m, 1H, 8-H), 5.29 (m, 1H, 7-H), 5.65–5.69 (m, 2H, 11-H, 12-H), 5.78 (m, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.4 (t, C-1), 11.3 (t, C-5), 13.7 (q, C-4), 24.8 (t, C-14), 24.9 (t, C-14'), 25.1 (t, C-13), 27.3 (t, C-3), 27.5 (t, C-10), 27.9 (t, C-10'), 29.1 (t, C-2), 40.0 (d, C-9), 40.2 (d, C-9'), 70.5 (d, C-8), 71.1 (d, C-8'), 125.4 (d, C-11), 125.5 (d, C-11'), 126.4 (d, C-6), 126.5 (d, C-6'), 127.1 (d, C-12), 127.2 (d, C-12'), 132.7 (d, C-7), 132.8 (d, C-7'); (*E*)-**13m** (selected signals): ^1H NMR (500 MHz, CDCl_3): δ = 4.23 (m, 1H, 8-H), 5.15 (m, 1H, 7-H), 5.73 (m, 1H, 6-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 9.3 (t, C-1), 14.4 (t, C-5), 24.4 (t, C-13), 24.7 (t, C-14), 24.8 (t, C-14'), 27.3 (t, C-3), 27.7 (t, C-10), 27.9 (t, C-10'), 29.1 (t, C-2), 39.8 (d, C-9), 39.9 (d, C-9'), 77.5 (d, C-8), 77.7 (d, C-8'), 126.2 (d, C-6), 126.6 (d, C-11), 126.7 (d, C-11'), 126.8 (d, C-12), 126.9 (d, C-12'), 133.4 (d, C-7), 133.7 (d, C-7'); HRMS (CI): calcd. for $\text{C}_{18}\text{H}_{33}\text{OSn}$ $[\text{M-Bu}]^+$ 385.1469; found 385.1471.

1-Phenylbuta-1,3-diene (14a):¹ Diene **14a** was obtained as side product in the hydrostannation of allenol **12a** at higher temperatures. ¹H NMR (500 MHz, CDCl₃): δ = 5.17 (dd, ³J_{1(trans),2} = 10.1 Hz, ²J_{1(trans),1(cis)} = 0.6 Hz, 1H, 1-H_{trans}), 5.33 (dd, ³J_{1(cis),2} = 17.7 Hz, ²J_{1(cis),1(trans)} = 0.6 Hz, 1H, 1-H_{cis}), 6.50 (m, 1H, 2-H), 6.56 (d, ³J_{4,3} = 15.6 Hz, 1H, 4-H), 6.78 (dd, ³J_{3,4} = 15.6 Hz, ³J_{3,2} = 10.4 Hz, 1H, 3-H), 7.23 (m, 1H, 8-H), 7.31 (m, 2H, 7-H), 7.40 (m, 2H, 6-H); ¹³C NMR (125 MHz, CDCl₃): δ = 117.6 (t, C-1), 126.4 (d, C-8), 127.6 (d, C-3), 128.6 (d, C-6, C-7), 129.6 (d, C-4), 132.9 (d, C-2), 137.2 (s, C-5).

3-Tributylstannanyl-1-(2,4,6-trimethoxy-phenyl)-but-3-en-1-ol (15d): The vinylstannane **15d** was obtained as a side product in the hydrostannation of allene **12d**. ¹H NMR (500 MHz, CDCl₃): δ = 0.80–0.88 (m, 15H, 1-H, 4-H), 1.23–1.31 (m, 6H, 2-H), 1.40–1.55 (m, 6H, 4-H), 2.52 (m, 1H, 7-H_a), 2.82 (m, 1H, 7-H_b), 3.45 (d, ³J_{OH,8} = 11.3 Hz, 1H, OH), 3.79–3.83 (m, 9H, 13-H, 14-H), 5.01 (m, 1H, 8-H), 5.20 (dm, ³J_{5a,Sn} = 61.8 Hz, 1H, 5-H_a), 5.71 (dm, ³J_{5b,Sn} = 143.5 Hz, 1H, 5-H_b), 6.11 (s, 2H, 11-H); ¹³C NMR (125 MHz, CDCl₃): δ = 8.4 (t, C-1), 11.1 (q, C-4), 27.4 (t, C-3), 29.2 (t, C-2), 49.0 (t, C-7), 55.2 (q, C-13), 55.7 (q, C-14), 67.3 (d, C-8), 90.7 (d, C-11), 90.9 (s, C-9), 126.9 (t, C-5), 153.1 (s, C-6), 158.2 (s, C-12), 160.1 (s, C-10); HRMS (FAB⁺): calcd. for C₂₅H₄₅O₄Sn [M+H] 529.2340; found 529.2360.

(E)-4-Iodo-1-phenylbut-2-en-1-ol (16a): ¹H NMR (500 MHz, CDCl₃): δ = 2.00 (d, ³J_{OH,4} = 3.8 Hz, 1H, OH), 3.88 (d, ³J_{1,2} = 8.2 Hz, 2H, 1-H), 5.20 (m, 1H, 4-H), 5.88 (dd, ³J_{3,2} = 15.3 Hz, ³J_{3,4} = 6.0 Hz, 1H, 3-H), 6.04 (dtd, ³J_{2,3} = 15.3 Hz, ³J_{2,1} = 8.2 Hz, ⁴J_{2,4} = 0.9 Hz, 1H, 2-H), 7.22–7.40 (m, 5H, 6-H, 7-H, 8-H); ¹³C NMR (125 MHz, CDCl₃): δ = 4.4 (t, C-1), 73.8 (d, C-4), 126.3 (d, C-2), 127.9 (s, C-6, C-8), 128.7 (d, C-7), 135.5 (d, C-3), 142.3 (s, C-5).

(E)-4-Iodo-1-(2-nitro-phenyl)-but-2-en-1-ol (16h): According to the preparation of **16a** iodide **16h** was obtained from allylstannane **13h** (48 mg, 0.10 mmol) and iodine (40 mg, 0.20 mmol) as a rather unstable yellow liquid (20 mg, 0.07 mmol) and as a single isomer. ¹H NMR (500 MHz, CDCl₃): δ = 2.60 (d, ³J_{OH,4} = 4.4 Hz, 1H, OH), 3.86 (d, ³J_{1,2} = 7.9 Hz, 2H, 1-H), 5.80 (m, 1H, 4-H), 5.89 (dd, ³J_{3,2} = 15.1 Hz, ³J_{3,4} = 5.4 Hz, 1H, 3-H), 6.11 (m, 1H, 2-H), 7.43–8.12 (m, 4H, 7-H, 8-H, 9-H, 10-H); ¹³C NMR (125 MHz, CDCl₃): δ = 3.9 (t, C-1), 68.7 (d, C-4), 124.6 (d, C-7), 128.6 (d, C-2), 128.7 (d, C-8), 129.6 (d, C-9), 133.1 (d, C-3), 133.7 (d, C-10), 137.3 (s, C-5), 148.1 (s, C-6).

(E)-4-Iodo-1-(4-nitrophenyl)-but-2-en-1-ol (16i): According to the preparation of **16a** iodide **16i** was obtained from allylstannane **13i** (270 mg, 0.56 mmol) and iodine (152 mg, 0.60 mmol) as a rather unstable yellow liquid (112 mg, 0.35 mmol, 63%) and as a single isomer. ¹H NMR (500 MHz,

¹ Lebel, H.; Paquet, V. *J. Am. Chem. Soc.* **2004**, *126*, 320–328.

CDCl₃): δ = 2.18 (bs, 1H, OH), 3.86 (d, $^3J_{1,2}$ = 8.2 Hz, 2H, 1-H), 5.32 (d, $^3J_{4,3}$ = 6.5 Hz, 1H, 4-H), 5.80 (dd, $^3J_{3,2}$ = 15.1 Hz, $^3J_{3,4}$ = 6.5 Hz, 1H, 3-H), 6.09 (dt, $^3J_{2,3}$ = 15.1 Hz, $^3J_{2,1}$ = 8.2 Hz, 1H, 2-H), 7.52 (m, 2H, 6-H), 8.20 (m, 2H, 7-H); ¹³C NMR (125 MHz, CDCl₃): δ = 3.3 (t, C-1), 73.1 (d, C-4), 123.8 (d, C-7), 126.9 (d, C-6), 130.4 (d, C-2), 134.1 (d, C-3), 147.5 (s, C-5), 149.2 (s, C-8).

cis/trans-2-(4-Methylphenyl)-3-vinyloxiran (17b): According to the general procedure for vinyl epoxide formation **17b** was obtained from stannane **13b** (990 mg, 2.19 mmol), iodine (583 mg, 2.30 mmol) and NaH (106 mg, 4.40 mmol) as a colorless liquid (168 mg, 1.05 mmol, 48%) and a 1:3 *cis/trans*-mixture. *trans*-**17b**: ¹H NMR (500 MHz, CDCl₃): δ = 3.24 (s, 3H, 9-H), 3.34 (dd, $^3J_{3,2}$ = 7.3 Hz, $^3J_{3,4}$ = 1.8 Hz, 1H, 3-H), 3.73 (d, $^3J_{4,3}$ = 1.8 Hz, 1H, 4-H), 5.32 (dd, $^3J_{1(trans),2}$ = 10.4 Hz, $^2J_{1(trans),1(cis)}$ = 0.9 Hz, 1H, 1-H_{trans}), 5.50 (dd, $^3J_{1(cis),2}$ = 17.4 Hz, $^2J_{1(cis),1(trans)}$ = 0.9 Hz, 1H, 1-H_{cis}), 5.72 (ddd, $^3J_{2,1(cis)}$ = 17.4 Hz, $^3J_{2,1(trans)}$ = 10.4 Hz, $^3J_{2,3}$ = 7.3 Hz, 1H, 2-H), 7.14–7.24 (m, 4H, 6-H, 7-H); ¹³C NMR (125 MHz, CDCl₃): δ = 21.2 (q, C-9), 60.2 (d, C-4), 62.8 (d, C-3), 119.4 (t, C-1), 125.4 (d, C-7), 129.2 (d, C-6), 132.2 (s, C-8), 135.2 (d, C-2), 138.0 (s, C-5); *cis*-**17b**: ¹H NMR (500 MHz, CDCl₃): δ = 3.24 (s, 3H, 9-H), 3.63 (dd, $^3J_{3,2}$ = 8.2 Hz, $^3J_{3,4}$ = 4.3 Hz, 1H, 3-H), 4.20 (d, $^3J_{4,3}$ = 4.3 Hz, 1H, 4-H), 5.26 (dd, $^3J_{1(trans),2}$ = 10.4 Hz, $^2J_{1(trans),1(cis)}$ = 1.8 Hz, 1H, 1-H_{trans}), 5.40 (ddd, $^3J_{2,1(cis)}$ = 17.1 Hz, $^3J_{2,1(trans)}$ = 10.4 Hz, $^3J_{2,3}$ = 8.2 Hz, 1H, 2-H), 5.53 (dd, $^3J_{1(cis),2}$ = 17.1 Hz, $^2J_{1(cis),1(trans)}$ = 1.8 Hz, 1H, 1-H_{cis}), 7.14–7.24 (m, 4H, 6-H, 7-H); ¹³C NMR (125 MHz, CDCl₃): δ = 21.2 (q, C-9), 58.8 (d, C-4), 59.8 (d, C-3), 121.7 (t, C-1), 126.3 (d, C-7), 128.8 (d, C-6), 132.0 (s, C-8), 135.9 (d, C-2), 137.4 (s, C-5); HRMS (CI): calcd. for C₁₁H₁₃O [M+H]⁺ 161.0968; found 161.0967.

cis/trans-2-(2-Methoxyphenyl)-3-vinyloxiran (17c): According to the general procedure for vinyl epoxide formation **17c** was obtained from stannane **13c** (905 mg, 1.94 mmol), iodine (515 mg, 2.03 mmol) and NaH (93 mg, 3.88 mmol) as a colorless liquid (226 mg, 1.28 mmol, 66%) and a 1:2 *cis/trans*-mixture. *trans*-**17c**: ¹H NMR (500 MHz, CDCl₃): δ = 3.29 (dd, $^3J_{3,2}$ = 7.3 Hz, $^3J_{3,4}$ = 1.8 Hz, 1H, 3-H), 3.85 (s, 3H, 11-H), 4.15 (d, $^3J_{4,3}$ = 1.8 Hz, 1H, 4-H), 5.34 (dd, $^3J_{1(trans),2}$ = 10.4 Hz, $^2J_{1(trans),1(cis)}$ = 1.8 Hz, 1H, 1-H_{trans}), 5.53 (d, $^3J_{1(cis),2}$ = 17.4 Hz, 1H, 1-H_{cis}), 5.78 (ddd, $^3J_{2,1(cis)}$ = 17.4 Hz, $^3J_{2,1(trans)}$ = 10.4 Hz, $^3J_{2,3}$ = 7.3 Hz, 1H, 2-H), 6.87 (m, 1H, 7-H), 6.96 (m, 1H, 9-H), 7.18 (dd, $^3J_{6,7}$ = 9.1 Hz, $^4J_{6,8}$ = 1.8 Hz, 1H, 6-H), 7.27 (m, 1H, 8-H); ¹³C NMR (125 MHz, CDCl₃): δ = 55.3 (q, C-11), 55.8 (d, C-4), 62.3 (d, C-3), 110.1 (d, C-9), 119.3 (t, C-1), 120.6 (d, C-7), 124.9 (d, C-6), 128.6 (s, C-5), 128.8 (d, C-8), 135.4 (d, C-2), 157.9 (s, C-10); *cis*-**17c**: ¹H NMR (500 MHz, CDCl₃): δ = 3.72 (dd, $^3J_{3,2}$ = 8.2 Hz, $^3J_{3,4}$ = 4.3 Hz, 1H, 3-H), 3.83 (s, 3H, 11-H), 4.38 (d, $^3J_{4,3}$ = 4.3 Hz, 1H, 4-H), 5.24 (dd, $^3J_{1(trans),2}$ = 11.0 Hz, $^2J_{1(trans),1(cis)}$ = 1.2 Hz, 1H, 1-H_{trans}), 5.36 (ddd, $^3J_{2,1(cis)}$ = 17.4 Hz, $^3J_{2,1(trans)}$ = 11.0 Hz, $^3J_{2,3}$ = 8.2 Hz, 1H, 2-H), 5.53 (d, $^3J_{1(cis),2}$ = 17.4 Hz, 1H, 1-H_{cis}), 6.87 (m, 1H, 7-H), 6.96 (m, 1H, 9-H), 7.27 (m, 1H, 8-H), 7.33 (dd, $^3J_{6,7}$ = 7.3 Hz, $^4J_{6,8}$ = 1.2 Hz, 1H, 6-H); ¹³C NMR (125 MHz, CDCl₃): δ = 55.3 (q, C-11), 56.0 (d, C-4), 59.3 (d, C-3), 109.9 (d, C-9), 120.0 (t, C-1),

121.3 (d, C-7), 125.5 (d, C-6), 127.1 (d, C-8), 127.6 (s, C-5), 132.3 (d, C-2), 157.8 (s, C-10); HRMS (CI): calcd. for $C_{11}H_{12}O_2$ $[M+H]^+$ 177.0917; found 177.0916.

cis/trans-2-(2-Bromophenyl)-3-vinyloxiran (17e): According to the general procedure for vinyl epoxide formation **17e** was obtained from stannane **13e** (740 mg, 1.43 mmol), iodine (382 mg, 1.51 mmol) and NaH (67 mg, 2.86 mmol) as a colorless liquid (228 mg, 1.02 mmol, 71%) and a 1:2 *cis/trans*-mixture. **trans-17e**: 1H NMR (500 MHz, $CDCl_3$): δ = 3.25 (dd, $^3J_{3,2}$ = 7.3 Hz, $^3J_{3,4}$ = 1.9 Hz, 1H, 3-H), 4.09 (d, $^3J_{4,3}$ = 1.9 Hz, 1H, 4-H), 5.41 (d, $^3J_{1(trans),2}$ = 10.4 Hz, 1-H_{trans}), 5.59 (d, $^3J_{1(cis),2}$ = 17.0 Hz, 1H, 1-H_{cis}), 5.82 (ddd, $^3J_{2,1(cis)}$ = 17.0 Hz, $^3J_{2,1(trans)}$ = 10.4 Hz, $^3J_{2,3}$ = 7.3 Hz, 1H, 2-H), 7.17–7.57 (m, 4H, 7-H, 8-H, 9-H, 10-H); ^{13}C NMR (125 MHz, $CDCl_3$): δ = 59.9 (d, C-4), 62.2 (d, C-3), 120.2 (t, C-1), 122.4 (s, C-6), 126.1 (d, C-8), 127.6 (d, C-10), 129.2 (d, C-9), 131.4 (s, C-5), 132.2 (d, C-7), 134.6 (d, C-2); **cis-17e**: 1H NMR (500 MHz, $CDCl_3$): δ = 3.18 (dd, $^3J_{3,2}$ = 5.6 Hz, $^3J_{3,4}$ = 4.1 Hz, 1H, 3-H), 4.32 (d, $^3J_{4,3}$ = 4.1 Hz, 1H, 4-H), 5.26 (m, 2H, 1-H_{trans}, 2-H), 5.57 (d, $^3J_{1(cis),2}$ = 18.0 Hz, 1H, 1-H_{cis}), 7.17–7.57 (m, 4H, 7-H, 8-H, 9-H, 10-H); ^{13}C NMR (125 MHz, $CDCl_3$): δ = 59.3 (d, C-4), 69.4 (d, C-3), 121.9 (t, C-1), 122.2 (s, C-6), 126.9 (d, C-8), 128.4 (d, C-10), 129.1 (d, C-9), 131.5 (s, C-5), 132.0 (d, C-7), 136.6 (d, C-2); HRMS (CI): calcd. for $C_{10}H_{10}^{79}BrO$ $[M+H]^+$ 224.9915; found 224.9896.

trans-2-(4-Nitrophenyl)-3-vinyloxiran (17i): According to the general procedure for vinyl epoxide formation **17i** was obtained from stannane **13i** (270 mg, 0.56 mmol), iodine (152 mg, 0.60 mmol) and NaH (27 mg, 1.12 mmol) as pale yellow crystals (56 mg, 0.29 mmol, 52%) and as a single stereoisomer; mp. 54–56°C, **trans-17i**: 1H NMR (500 MHz, $CDCl_3$): δ = 3.33 (dd, $^3J_{3,2}$ = 7.6 Hz, $^3J_{3,4}$ = 1.9 Hz, 1H, 3-H), 3.85 (d, $^3J_{4,3}$ = 1.9 Hz, 1H, 4-H), 5.38 (d, $^3J_{1(trans),2}$ = 10.4 Hz, 1H, 1-H_{trans}), 5.55 (d, $^3J_{1(cis),2}$ = 17.0 Hz, 1H, 1-H_{cis}), 5.72 (ddd, $^3J_{2,1(cis)}$ = 17.0 Hz, $^3J_{2,1(trans)}$ = 10.4 Hz, $^3J_{2,3}$ = 7.6 Hz, 1H, 2-H), 7.44 (d, $^3J_{6,7}$ = 8.8 Hz, 1H, 6-H), 8.19 (d, $^3J_{7,6}$ = 8.8 Hz, 1H, 7-H); ^{13}C NMR (125 MHz, $CDCl_3$): δ = 59.1 (d, C-4), 63.3 (d, C-3), 120.6 (t, C-1), 123.8 (d, C-7), 126.2 (d, C-6), 134.1 (d, C-2), 144.5 (s, C-5), 147.8 (s, C-8); HRMS (CI): calcd. for $C_{10}H_9NO_3$ $[M+H]^+$ 192.0658; found 192.0659; $C_{10}H_9NO_3$ (191.18): calcd. C 62.82, H 4.74, N 7.33; found C 62.97, H 4.91, N 7.15.

trans-2-Phenylmethyl-3-vinyloxiran (17k): According to the general procedure for vinyl epoxide formation **17k** was obtained from stannane **13k** (385 mg, 0.85 mmol), iodine (228 mg, 0.90 mmol) and NaH (48 mg, 2.00 mmol) as a colorless liquid (97 mg, 0.60 mmol, 72%) and as a single stereoisomer; **trans-17k**: 1H NMR (500 MHz, $CDCl_3$): δ = 2.80–2.84 (m, 2H, 5-H, 5'-H), 2.99 (ddd, $^3J_{4,5}$ = 5.7 Hz, $^3J_{4,5'}$ = 5.3 Hz, $^3J_{4,3}$ = 1.9 Hz, 1H, 4-H), 3.09 (dd, $^3J_{3,2}$ = 7.3 Hz, $^3J_{3,4}$ = 1.9 Hz, 1H, 3-H), 5.17 (dd, $^3J_{1(trans),2}$ = 9.8 Hz, $^2J_{1(trans),1(cis)}$ = 0.6 Hz, 1H, 1-H_{trans}), 5.38 (dd, $^3J_{1(cis),2}$ = 17.2 Hz, $^2J_{1(cis),1(trans)}$ = 0.6 Hz, 1H, 1-H_{cis}), 5.51 (ddd, $^3J_{2,1(cis)}$ = 17.2 Hz, $^3J_{2,1(trans)}$ = 9.8 Hz, $^3J_{2,3}$ = 7.3 Hz, 1H,

2-H), 7.13–7.25 (m, 5H, 7-H, 8-H, 9-H); ^{13}C NMR (125 MHz, CDCl_3): δ = 28.2 (t, C-5), 58.5 (d, C-4), 60.3 (d, C-3), 119.2 (t, C-1), 126.6 (d, C-7), 128.5 (d, C-9), 128.9 (d, C-8), 135.4 (d, C-2), 137.0 (s, C-6); HRMS (CI): calcd. for $\text{C}_{11}\text{H}_{13}\text{O}$ $[\text{M}+\text{H}]^+$ 161.0953; found 161.0960.