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Supporting Information Available: Characterization data and experimental pocedures of **2a**, **2b**, **2e**, **2f**, ***syn*-2h**, **2i-2k** (3 pages).

General procedure of iodoaziridination: To tosylamide **1a** (212 mg, 1 mmol) in toluene (5 mL) was added *t*-BuOK (168 mg, 1.5 mmol) under argon atmosphere at rt. After the mixture was stirred for 30 min, I_2 (762 mg, 3 mmol) was added, and then the reaction mixture was stirred for 15 min at rt. The mixture was poured into aqueous $Na_2S_2O_3$ solution and extracted with AcOEt. The AcOEt extracts were washed with brine, dried over $MgSO_4$, and evaporated to dryness. Purification of the residue by column chromatography (hexane / EtOAc= 9) gave **2a** (317 mg, 94 %).

***N*-Tosyl iodomethylaziridine (2a). 2a**: colorless solid; mp 36 °C; IR (KBr) 1325, 1160 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.84 (2H, d, J = 8.4 Hz), 7.36 (2H, d, J = 8.4 Hz), 2.99-3.14 (3H, m), 2.83 (1H, d, J = 6.6 Hz), 2.45 (3H, s), 2.17 (1H, d, J = 3.7 Hz); ^{13}C-NMR ($CDCl_3$) δ 144.8, 134.4, 129.7, 128.2, 41.0, 36.1, 21.6, 2.3; MS (*m/z*) 337 (M^+), 210; Anal. Calcd for $C_{10}H_{12}INO_2S$: C, 35.62; H, 3.59; N, 4.15. Found; C, 35.66; H, 3.78; N, 4.11.

***N*-Mesyl iodomethylaziridine (2b). 2b** was prepared from **1b** (68 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave **2b** (59 mg, 45 %). **2b**: colorless solid; mp 46.0 °C; IR (KBr) 1312, 1160 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 3.18 (3H, s), 3.00-3.29 (3H, m), 2.85 (1H, d, J = 6.3 Hz), 2.24 (1H, d, J = 3.4 Hz); ^{13}C-NMR ($CDCl_3$) δ 41.2, 40.1, 35.6, 2.8; MS (*m/z*) 261 (M^+), 182; Anal. Calcd for $C_4H_8INO_2S$: C, 18.40; H, 3.09; N, 5.36. Found; C, 18.46; H, 3.30; N, 5.40.

***N*-Tosyl 1-iodomethy-1-methylaziridine (2e). 2e** was prepared from **1e** (113 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave **2e** (159 mg, 90 %). **2e**: colorless solid; mp 76.5 °C; IR (KBr) 1316, 1158 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.83 (2H, d, J = 8.4 Hz), 7.33 (2H, d, J = 8.4 Hz), 3.33 (1H, d, J = 11.0 Hz), 3.31 (1H, d, J = 11.0 Hz), 2.77 (1H, s), 2.44 (3H, s), 2.40 (1H, s), 1.81 (3H, s);

^{13}C-NMR ($CDCl_3$) δ 144.2, 137.1, 129.5, 127.5, 49.5, 42.8, 21.6, 18.4, 12.0; MS (*m/z*) 351 (M^+), 224; Anal. Calcd for $C_{12}H_{14}INO_2S$: C, 37.60; H, 4.02; N, 3.99. Found; C, 37.77; H, 4.12; N, 4.01.

***N*-Tosyl 1,2-imino-3-iodo-3-methylbutene (2f).** **2f** was prepared from **1f** (120 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave **2f** (135 mg, 74 %). **2f**: colorless solid; mp 63 °C; IR (KBr) 1326, 1161 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.84 (2H, d, *J* = 8.2 Hz), 7.35 (2H, d, *J* = 8.2 Hz), 3.22 (1H, dd, *J* = 4.6, 7.0 Hz), 2.71 (1H, d, *J* = 7.0 Hz), 2.45 (3H, s), 2.33 (1H, d, *J* = 4.6 Hz), 1.76 (3H, s), 1.70 (3H, s); ^{13}C-NMR ($CDCl_3$) δ 144.8, 134.3, 129.7, 128.3, 51.2, 40.4, 35.2, 32.6, 31.4, 21.7; MS (*m/z*) 366 (M^++1), 238; Anal. Calcd for $C_{12}H_{16}INO_2S$: C, 39.46; H, 4.42; N, 3.84. Found; C, 39.67; H, 4.38; N, 3.89.

(2*R,3*R**)-*N*-Tosyl 1,2-imino-3-iodo-4-benzyloxybutane (*syn*-2h).** ***syn*-2h** was prepared from ***Z*-1h** (166 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave ***syn*-2h** (179 mg, 78 %). ***syn*-2h:** colorless solid; mp 74.5 °C; IR (KBr) 1327, 1162 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.86 (2H, d, *J* = 8.3 Hz), 7.27-7.39 (7H, m), 4.52 (2H, s), 3.59-3.80 (3H, m), 3.03 (1H, ddd, *J* = 4.1, 6.9, 7.8 Hz), 2.90 (1H, d, *J* = 6.9 Hz), 2.44 (3H, s), 2.37 (1H, d, *J* = 4.1 Hz); ^{13}C-NMR ($CDCl_3$) δ 144.8, 137.3, 134.3, 129.5, 128.5, 128.4, 127.8, 127.5, 73.2, 73.0, 44.1, 36.1, 27.0, 21.6; MS (*m/z*) 458 (M^++1), 330; Anal. Calcd for $C_{18}H_{20}INO_3S$: C, 47.27; H, 4.41; N, 3.06. Found; C, 47.17; H, 4.55; N, 3.03.

(1*R,2*R**,3*R**)-*N*-Tosyl 1,2-imino-3-iodocyclopentane (2i).** **2i** was prepared from **1i** (118 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave **2i** (165 mg, 92 %). **2i:** colorless solid; mp 121 °C; IR (KBr) 1320, 1154 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.79 (2H, d, *J* = 8.4 Hz), 7.34 (2H, d, *J* = 8.4 Hz), 4.28 (1H, d, *J* = 5.0 Hz), 3.74 (1H, d, *J* = 4.3 Hz), 3.50 (1H, brd, *J* = 4.3 Hz), 2.45 (3H, s), 1.80-2.08 (4H, m); ^{13}C-NMR ($CDCl_3$) δ 144.6, 135.0, 129.7, 127.6, 51.0,

46.4, 31.9, 24.8, 21.6; MS (*m/z*) 364 (M^++1), 236; Anal. Calcd for $C_{12}H_{14}INO_2S$: C, 39.68; H, 3.88; N, 3.85. Found; C, 39.69; H, 4.13; N, 3.98.

(1*R,2*R**,3*R**)-*N*-Tosyl 1,2-imino-3-iodocycloheptane (2j).** **2j** was prepared from **1j** (132 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave **2j** (185 mg, 95 %). **2j:** colorless solid; mp 114 °C; IR (KBr) 1320, 1155 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.81 (2H, d, *J* = 8.3 Hz), 7.34 (2H, d, *J* = 8.3 Hz), 4.57 (1H, dt, *J* = 2.0, 5.7 Hz), 3.36 (1H, dd, *J* = 5.7, 7.6 Hz), 3.09 (1H, ddd, *J* = 2.7, 5.2, 7.6 Hz), 2.45 (3H, s), 1.38-1.97 (8H, m); ^{13}C-NMR ($CDCl_3$) δ 144.5, 135.0, 129.7, 127.7, 49.8, 46.2, 35.4, 31.3, 28.6, 26.5, 24.2, 21.6; MS (*m/z*) 392 (M^++1), 264; Anal. Calcd for $C_{14}H_{18}INO_2S$: C, 42.98; H, 4.63; N, 3.58. Found; C, 43.09; H, 4.70; N, 3.67.

(1*R,2*R**,3*R**)-*N*-Tosyl 1,2-imino-3-iodocyclohexane (2k).** **2k** was prepared from **1k** (126 mg, 0.5 mmol) in accordance with general procedure of iodoaziridination. Purification of the residue by column chromatography (hexane / EtOAc = 9) gave **2k** (118 mg, 63 %). **2k:** colorless solid; mp 63 °C; IR (KBr) 1324, 1159 cm^{-1}; ^{1}H-NMR ($CDCl_3$) δ 7.79 (2H, d, *J* = 8.5 Hz), 7.35 (2H, d, *J* = 8.5 Hz), 4.45 (1H, brt, *J* = 4.0 Hz), 3.46 (1H, d, *J* = 6.1 Hz), 3.09 (1H, t, *J* = 6.1 Hz), 2.46 (3H, s), 1.33-2.01 (6H, m); ^{13}C-NMR ($CDCl_3$) δ 144.5, 135.0, 129.8, 127.7, 45.9, 40.0, 29.7, 24.7, 21.6, 21.3, 17.5; MS (*m/z*) 378 (M^++1), 250; Anal. Calcd for $C_{13}H_{16}INO_2S$: C, 41.39; H, 4.27; N, 3.71. Found; C, 41.55; H, 4.40; N, 3.71.