

Supplementary material

^1H and ^{13}C NMR data for compounds **4** – **6** and **7R** as well as spectra of compounds **1** – **3**

NMR data for 1D-4,5,6-tri-*O*-benzyl-2,3-dideoxy-*myo*-inositol (**4**):

δ_{H} (300 MHz, CDCl_3): 7.40-7.24 (m, 15H), 5.02 (d, $J = 11.3$ Hz, 1H), 4.99 (d, $J = 10.8$ Hz, 1H), 4.81 (d, $J = 10.7$ Hz, 1H), 4.72-4.61 (m, 3H), 3.57-3.44 (m, 3H), 3.29-3.21 (m, 1H), 2.37 (s, OH), 2.13-1.89 (m, 2H), 1.42-1.19 (m, 2H); δ_{C} (75 MHz, CDCl_3): 138.8, 138.7, 138.6, 128.8, 128.5, 128.1, 128.0, 127.8, 127.7, 86.2, 85.8, 81.6, 75.7, 75.7, 72.5, 72.1, 27.5, 26.4.

NMR data for 1D-2,4,5,6-tetra-*O*-benzyl-3-deoxy-*myo*-inositol (**5**):

δ_{H} (300 MHz, CDCl_3): 7.40-7.21 (m, 20H), 4.97-4.76 (m, 4H), 4.65 (d, $J = 11.6$ Hz, 1H), 4.53 (d, $J = 11.6$ Hz, 1H), 4.52-4.44 (m, 2H), 3.86-3.77 (m, 2H), 3.73 (t, $J = 9.3$ Hz, 1H), 3.57 (dd, $J = 9.5, 3.1$ Hz, 1H), 3.49 (t, $J = 9.2$ Hz, 1H), 2.42 (s, OH), 2.25 (dt, $J = 14.0, 4.3$ Hz, 1H), 1.35-1.24 (m, 1H); δ_{C} (75 MHz, CDCl_3): 138.8, 138.6, 138.3, 128.5, 128.1, 128.0, 128.0, 127.8, 127.7, 127.6, 85.7, 82.8, 77.1, 75.8, 75.7, 75.6, 74.9, 72.9, 71.8, 30.9.

NMR data for 1D-2,3,4,5,6-penta-*O*-benzyl-*myo*-inositol (**6**):

δ_{H} (300 MHz, CDCl_3): 7.40-7.03 (m, 25H), 4.98-4.54 (m, 10H), 4.06 (t, $J = 9.5$ Hz, 1H), 4.01 (t, $J = 2.4$ Hz, 1H), 3.81 (t, $J = 9.5$ Hz, 1H), 3.50-3.40 (m, 3H); δ_{C} (75 MHz,

CDCl₃): 138.9, 138.8, 138.8, 138.7, 138.4, 128.6, 128.5, 128.5, 128.4, 128.1, 128.1, 127.9, 127.9, 127.9, 127.8, 127.7, 127.7, 127.7, 127.6, 83.7, 82.3, 82.0, 81.2, 77.2, 75.9, 75.8, 75.6, 74.8, 73.1, 72.5.

NMR data for (1*R*,4*R*,5*S*,6*S*)-4,5,6-tris(benzyloxy)cyclohex-2-enol (7*R*):

δ_{H} (300 MHz, CDCl₃): 7.40-7.23 (m, 15H), 5.71 (ddd, $J = 10.3, 2.0, 1.8$ Hz, 1H), 5.64 (ddd, $J = 10.3, 1.7, 1.5$ Hz, 1H), 5.00 (d, $J = 11.4$ Hz, 1H), 4.89 (s, 2H), 4.70 (d, $J = 10.7$ Hz, 1H), 4.70 (s, 2H), 4.32-4.21 (m, 2H), 3.76 (dd, $J = 10.3, 7.5$ Hz, 1H), 3.51 (dd, $J = 10.2, 7.7$ Hz, 1H), 2.20 (s, OH); δ_{C} (75 MHz, CDCl₃): 138.6, 138.6, 138.3, 129.4, 128.7, 128.5, 128.5, 128.1, 128.0, 127.9, 127.8, 127.8, 127.0, 84.4, 83.4, 80.6, 75.4, 75.4, 72.4, 72.0.





