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## Supporting Information

Olefin Epoxidations Using the Dicyclohexylcarbodiimide-H<sub>2</sub>O<sub>2</sub> System

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**Styrene Oxide.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron (centrifugal chromatography) to give a colorless liquid. The product was identified by comparing its NMR data with those in the literature<sup>8</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 2.76 (dd, 1H), 3.11 (dd, 1H), 3.83 (dd, 1H), 7.24-7.35 (m, 5H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 51.31, 52.50, 125.53, 128.20, 128.52, 137.63. Mass spectrum (EI, 70 eV): 120 (M<sup>+</sup>, 31.44), 91 (base peak), calcd for C<sub>8</sub>H<sub>8</sub>O: 120.15.

**α-Methylstyrene Oxide.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron to give a colorless liquid. The product was identified by comparing its NMR data with those in the literature<sup>8</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 1.73 (s, 3H), 2.81(d, 1H), 2.98 (d, 1H), 7.27-7.41 (m, 5H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 22.11, 56.98, 57.25, 125.43, 127.57, 128.45, 141.29. Mass spectrum (EI, 70 eV): 134 (M<sup>+</sup>, 18.72), 133 (base peak), calcd. for C<sub>9</sub>H<sub>10</sub>O: 134.18.

**trans-β-Methylstyrene Oxide.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron to give a colorless liquid. The

product was identified by comparing its NMR data with those in the literature<sup>9</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 1.45 (d, 3H), 3.01-3.07 (m, 1H), 3.5 (d, 1H), 7.25-7.37 (m, 5H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 18.32, 59.35, 59.85, 125.80, 128.25, 128.66, 137.99. Mass spectrum (EI, 70 eV): 134 (M<sup>+</sup>, 34.37), 90 (base peak), calcd. for C<sub>9</sub>H<sub>10</sub>O: 134.18.

**Cyclohexene Oxide.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron to give a colorless liquid. The product was identified by comparing its NMR data with those in the literature<sup>9</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 1.15-1.32 (m, 2H), 1.37-1.51 (m, 2H), 1.79-1.87 (m, 2H), 1.91-2.01 (m, 2H), 3.13 (m, 2H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 19.68, 24.68, 52.28. Mass spectrum (EI, 70 eV): 98 (M<sup>+</sup>, 2.43), 83 (base peak), calcd for C<sub>6</sub>H<sub>10</sub>O: 98.14

**1-Methyl-1-cyclohexene Oxide.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron to give a colorless liquid. The product was identified by comparing its NMR data with those in the literature<sup>10</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 1.10 (m, 2H), 1.33 (s, 3H), 1.34-1.50 (m, 2H), 1.64-1.74 (m, 2H), 1.85-1.96 (m, 2H), 2.97 (d, 1H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 19.82, 20.20, 24.09, 24.92, 30.04, 57.62, 59.64. Mass spectrum (EI, 70 eV): 112 (M<sup>+</sup>, 2.88), 97 (base peak), calcd. for C<sub>7</sub>H<sub>12</sub>O: 112.19.

**Ethyl *trans*-cinnamate Oxide.** The general procedure was followed to give a residue which was found to contain two products. The products were separated by chromatography on the Chromatotron to give two colorless liquids. One of these products was identified as methyl *trans*-cinnamate oxide, the product transesterified with solvent methanol, by comparing its NMR and mass spectral data with those in the

literature<sup>11</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 3.56 (d, 1H), 3.88 (s, 3H), 4.14 (d, 1H), 7.32-7.45 (m, 5H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 52.87, 56.90, 58.24, 125.9, 128.8, 129.2, 135.0, 168.7. Mass spectrum (EI, 70 eV): 178 (M<sup>+</sup>, 0.78), 121 (base peak), calcd. for C<sub>10</sub>H<sub>10</sub>O<sub>3</sub>: 178.19. The second product was identified as ethyl *trans* -cinnamate oxide by comparing its NMR and mass spectral data with those in the literature<sup>12</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 1.35 (t, 3H), 3.53 (d, 1H), 4.11 (d, 1H), 4.25-4.36 (m, 2H), 7.29-7.39 (m, 5H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 14.35, 56.93, 58.04, 61.90, 125.9, 128.7, 129.0, 135.1, 168.1. Mass spectrum (EI, 70 eV): 192 (M<sup>+</sup>, 1.55), 135 (base peak), calcd. for C<sub>11</sub>H<sub>12</sub>O<sub>3</sub>: 192.21. With ethanol solvent only the ethyl ester was present.

**α-Ionone Oxide.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron to give a colorless liquid. The Hetero Multi Bond Correlation (HMBC) NMR spectrum of this material shows a correlation between the carbonyl signal and two olefinic protons thus indicating that the oxirane ring is on the cyclohexane ring. Confirmation of this assignment comes from a comparison of NMR data with those in the literature<sup>13</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 0.75 (s, 3H), 0.93 (s, 3H), 0.9-1.6 (m, 2H), 1.25 (s, 3H), 1.80-2.1 (m, 2H), 2.05 (d, 1H), 2.30 (s, 3H), 3.1 (t, 1H), 6.08 (d, 1H), 6.72 (dd, 1H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 22.02, 24.33, 26.70, 27.79, 28.14, 28.73, 31.47, 52.69, 59.02, 59.71, 134.2, 146.5, 198.8. Mass spectrum (EI, 70 eV): 208 (M<sup>+</sup>, 0.782), 109 (base peak), calcd. for C<sub>13</sub>H<sub>20</sub>O<sub>2</sub>: 208.29.

**exo-2,3-Epoxybornane.** The general procedure was followed to give a residue which was chromatographed on the Chromatotron to give a colorless solid. The product

was identified by comparing its NMR data with those in the literature<sup>14</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 0.70 (d, 1H), 1.17-1.24 (m, 2H), 1.28-1.34 (m, 1H), 1.44-1.51 (m, 2H), 2.44 (br s, 2H), 3.05 (s, 2H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 25.36, 26.48, 36.87, 51.60. Mass spectrum (EI, 70 eV): 110 (M<sup>+</sup>, 3.20), 81 (base peak), calcd. for C<sub>7</sub>H<sub>10</sub>O: 110.15.

**Cyclododecene Epoxide (*cis* + *trans*).** The general procedure was followed to give a colorless liquid residue. The isomeric epoxide products could not be separated by preparative GLC. The mixture was collected and analyzed by NMR. The product mixture was identified by comparing its NMR data with those in the literature<sup>15</sup> and on the basis of the following data: <sup>1</sup>H NMR (CDCl<sub>3</sub>): δ 1.04-1.12 (m, 2H), 1.25-1.7 (m, 20H), 1.79-1.89 (m, 1H), 2.17-2.24 (m, 2H), 2.70-2.75 (m, 2H), 2.88-2.93 (m, 1H). <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 22.73, 23.74, 23.92, 24.16, 24.30, 24.36, 25.33, 25.84, 26.21, 26.94, 31.67, 58.33, 60.09. Mass spectrum (EI, 70 eV): 182 (M<sup>+</sup>, 0.11), 55 (base peak), calcd. for C<sub>12</sub>H<sub>22</sub>O: 182.31.

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