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Formation of tetrazoles on diazocyclopropane generation

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7: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 1.29 (m, 4H, CH_2CH_2), 3.00 (br. s, 1H, OH), 3.16 (t, 2H, CH_2, J 5.8 Hz), 3.51 (tt, 1H, CH, J_{cis} 7.4 Hz, J_{trans} 4.3 Hz), 4.14 (t, 2H, CH_2O, J 5.8 Hz). ^{13}C NMR ($CDCl_3$, 75.5 MHz) δ: 6.9 (CH_2CH_2), 26.8 (CH_2), 28.1 (CH), 59.3 (MeO), 154.6 (C=N).

8: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 1.31 and 1.42 (2m, 2×2H, CH_2CH_2), 2.60 (br. s, 1H, OH), 3.12 (t, 2H, CH_2, J 6.1 Hz), 4.06 (t, 2H, CH_2O, J 6.1 Hz), 4.16 (tt, 1H, CH, J_{cis} 7.5 Hz, J_{trans} 4.5 Hz).

9: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 1.22 and 1.30 (2m, 2×2H, CH_2CH_2), 3.44 (t, 2H, CH_2, J 6.9 Hz), 3.51 (tt, 1H, CH, J_{cis} 7.6 Hz, J_{trans} 4.4 Hz), 4.81 (t, 2H, CH_2O, J 6.9 Hz), 7.40 (t, 2H, *m*-H, J 7.0 Hz), 7.58 (t, 1H, *p*-H, J 7.0 Hz), 7.97 (d, 2H, *o*-H, J 7.0 Hz). ^{13}C NMR ($CDCl_3$, 75.5 MHz) δ: 7.1 (CH_2CH_2), 23.7 (CH_2), 28.3 (CH), 61.3 (CH_2O), 128.5 (*o*-C), 129.6 (*m*-C), 131.0 (*i*-C), 133.5 (*p*-C), 153.6 (C=N), 166.3 (COO). Found (%): C, 60.17; H, 5.43; N, 21.82. Calc. for $C_{13}H_{14}N_4O_2$ (%): C, 60.45; H, 5.46; N, 21.69.

10: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 1.25 and 1.41 (2m, 2×2H, CH_2CH_2), 3.36 (t, 2H, CH_2, J 6.8 Hz), 4.19 (tt, 1H, CH, J_{cis} 7.5 Hz, J_{trans} 4.3 Hz), 4.69 (t, 2H, CH_2O, J 6.8 Hz), 7.50 (m, 3H, *m*-H and *p*-H), 8.01 (d, 2H, *o*-H, J 7.0 Hz). ^{13}C NMR ($CDCl_3$, 75.5 MHz) δ: 7.6 (CH_2CH_2), 25.7 (CH_2), 29.8 (CH), 62.4 (CH_2O), 128.4 (*o*-C), 129.7 (*m*-C), 132.4 (*i*-C), 133.1 (*p*-C), 152.2 (C=N), 163.0 (COO).

13: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 3.14 (t, 2H, CH_2, J 6.5 Hz), 3.30 (s, 3H, OMe), 3.84 (t, 2H, CH_2O, J 6.5 Hz), 7.55 (m, 5H, Ph). ^{13}C NMR ($CDCl_3$, 75.5 MHz) δ: 24.6 (CH_2), 58.9 (OMe), 69.6 (CH_2O), 125.3 (*o*-C), 129.8 (*m*-C), 130.4 (*p*-C), 133.9 (*i*-C), 155.3 (C=N).

14: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 3.27 (t, 2H, CH_2, J 6.8 Hz), 3.39 (s, 3H, OMe), 3.88 (t, 2H, CH_2O, J 6.8 Hz), 7.50 (m, 3H, *m*-H and *p*-H), 8.10 (d, 2H, *o*-H, J 7.3 Hz). ^{13}C NMR ($CDCl_3$, 75.5 MHz) δ: 26.5 (CH_2), 58.9 (OMe), 70.1 (CH_2O), 119.9 (*o*-C), 124.1 (*i*-C), 129.6 (*p*-C), 129.7 (*m*-C), 164.6 (C=N).

15: ^{1}H NMR ($CDCl_3$, 300 MHz) δ: 1.50 and 1.62 (2m, 2×2H, CH_2CH_2), 3.60 (s, 3H, OMe), 7.40 (m, 3H, *m*-H and *p*-H), 7.69 (d, 2H, *o*-H, J 7.4 Hz). ^{13}C NMR ($CDCl_3$, 75.5 MHz) δ: 19.1 (CH_2CH_2), 56.6 (OMe), 87.4 (C), 122.3 (*o*-C), 129.0 (*m*-C), 130.2 (*p*-C), 151.8 (*i*-C).