

Copper Catalysed Azide-Alkyne Cycloaddition (CuAAC) in Liquid Ammonia

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Product Characterisation and NMR spectra

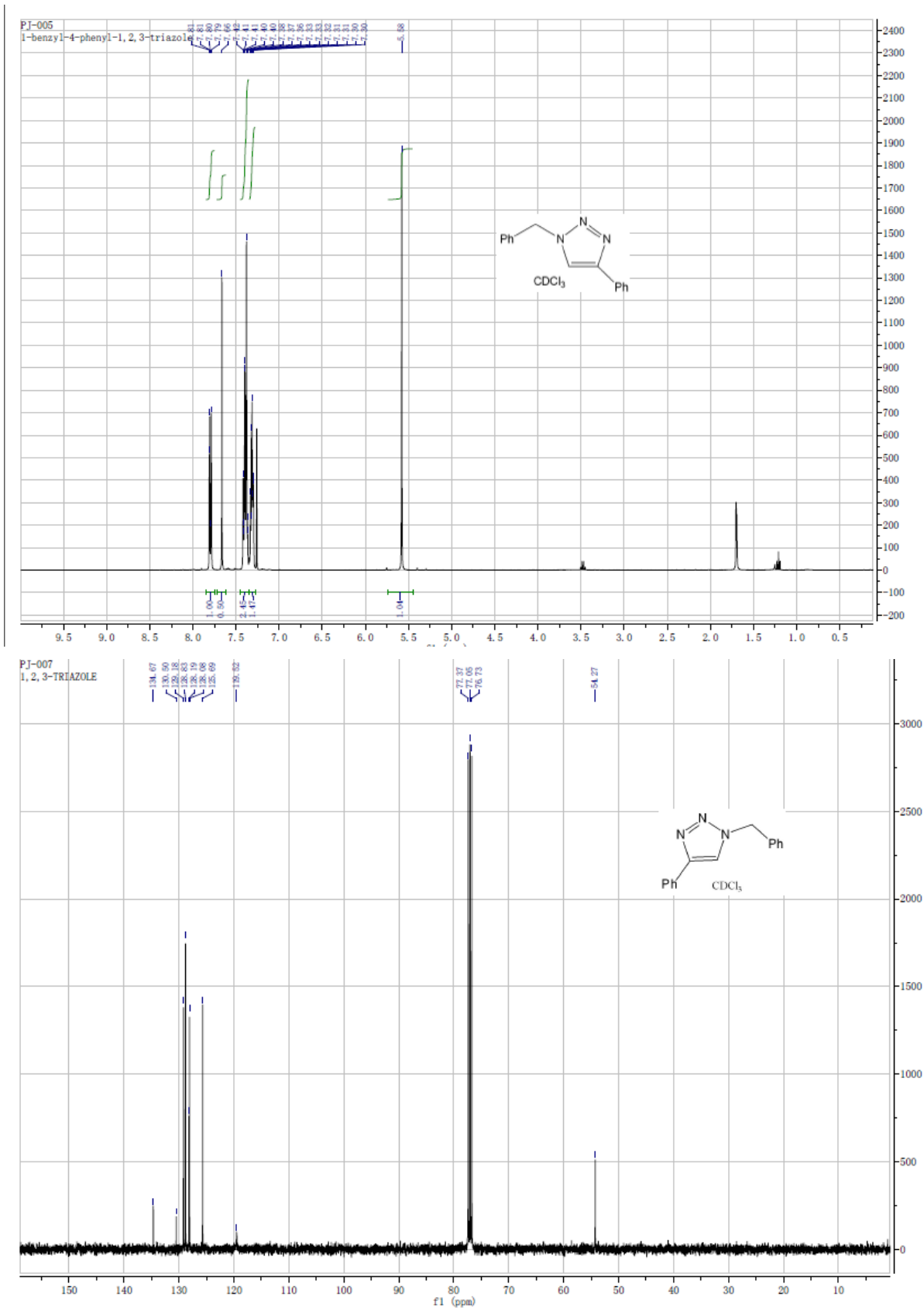
1-Benzyl-4-phenyl-1*H*-1,2,3-triazole. White needle crystal: ¹H NMR (400 MHz, CDCl₃): δ 7.80 (d, 2H), 7.66 (s, 1H), 7.42-7.30 (m, 7H), 5.58 (s, 2H); ¹³C NMR (100 MHz, CDCl₃): δ 148.0, 134.7, 130.5, 129.2, 128.8, 128.2, 128.0, 125.7, 119.5, 54.3.^{S1}

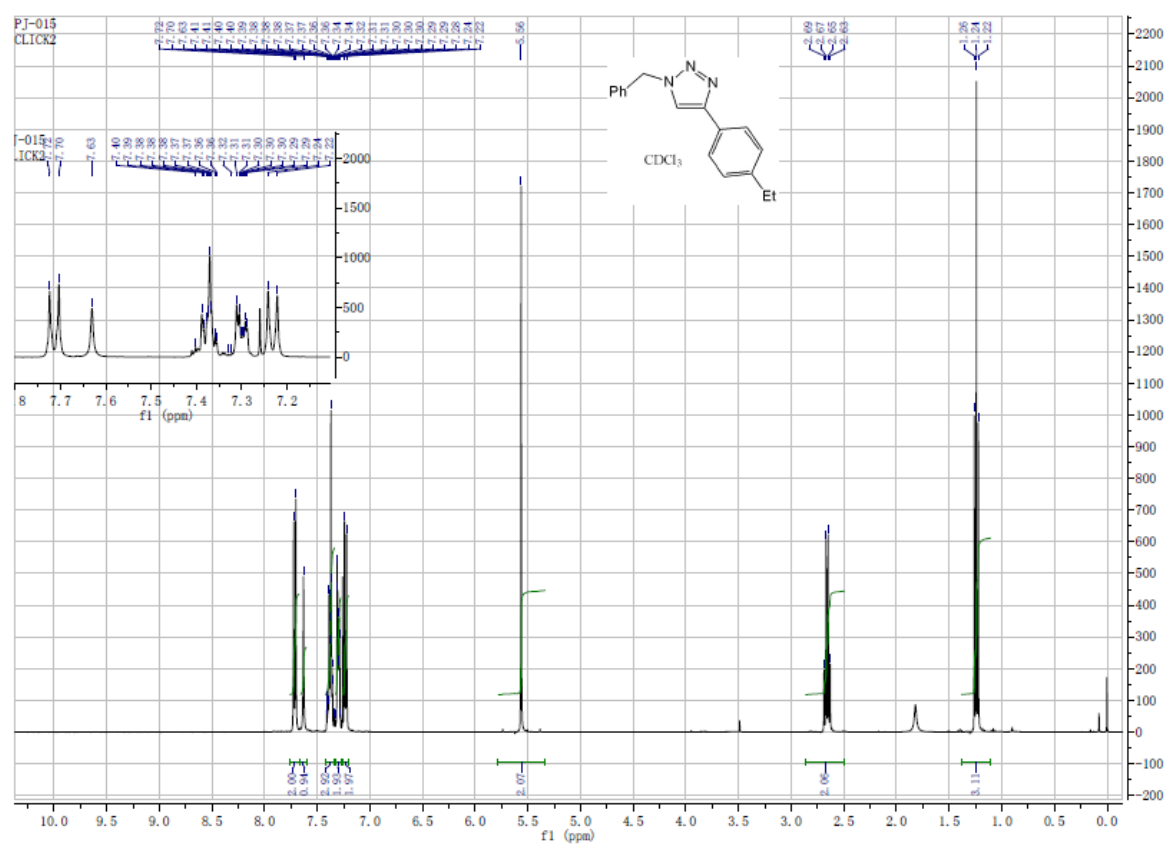
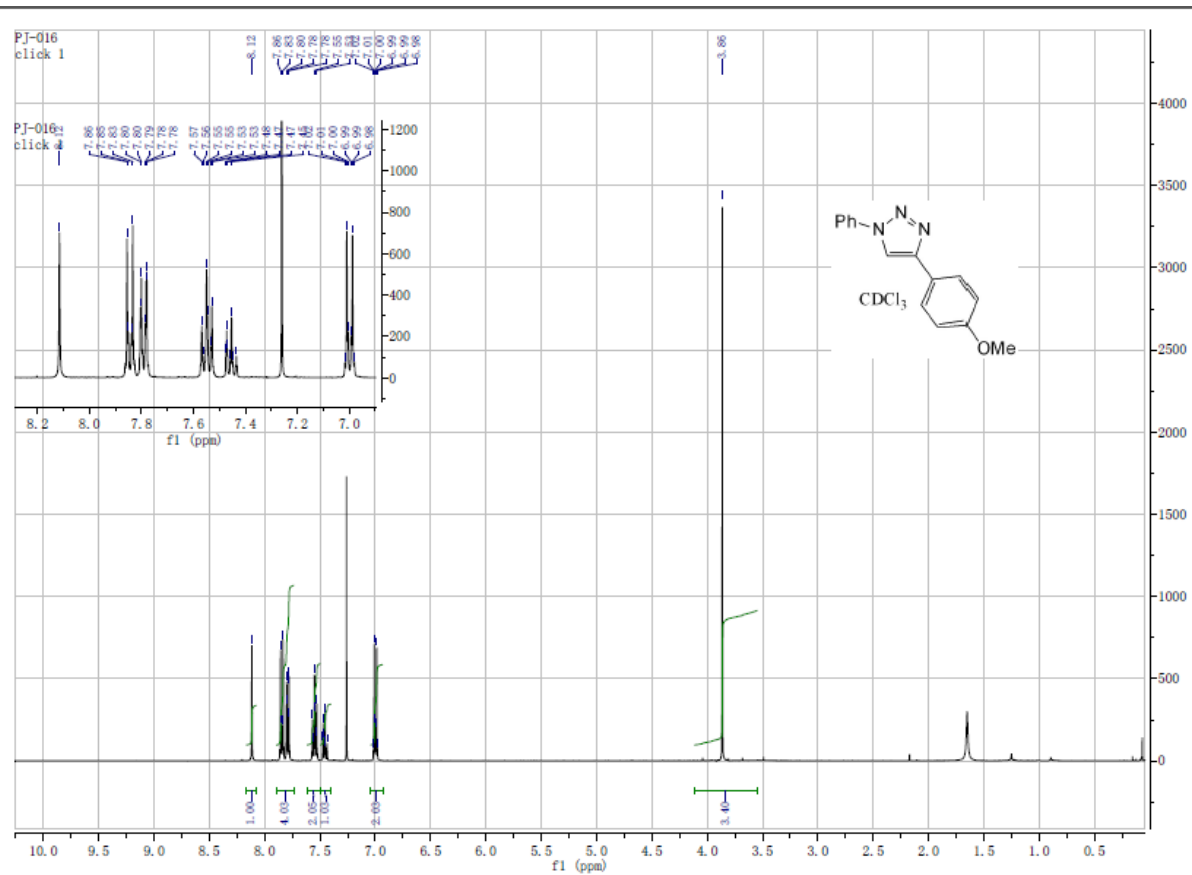
1,4-Diphenyl-1*H*-1,2,3-triazole. White solid: ¹H NMR (400 MHz, CDCl₃): δ 8.20 (s, 1H), 7.93-7.91 (d, 2H), 7.81-7.79 (d, 2H), 7.57-7.37 (m, 5H); ¹³C NMR (100 MHz, CDCl₃): δ 148.6, 137.2, 130.2, 129.8, 128.8, 128.6, 128.4, 127.8, 125.8, 120.5.^{S2}

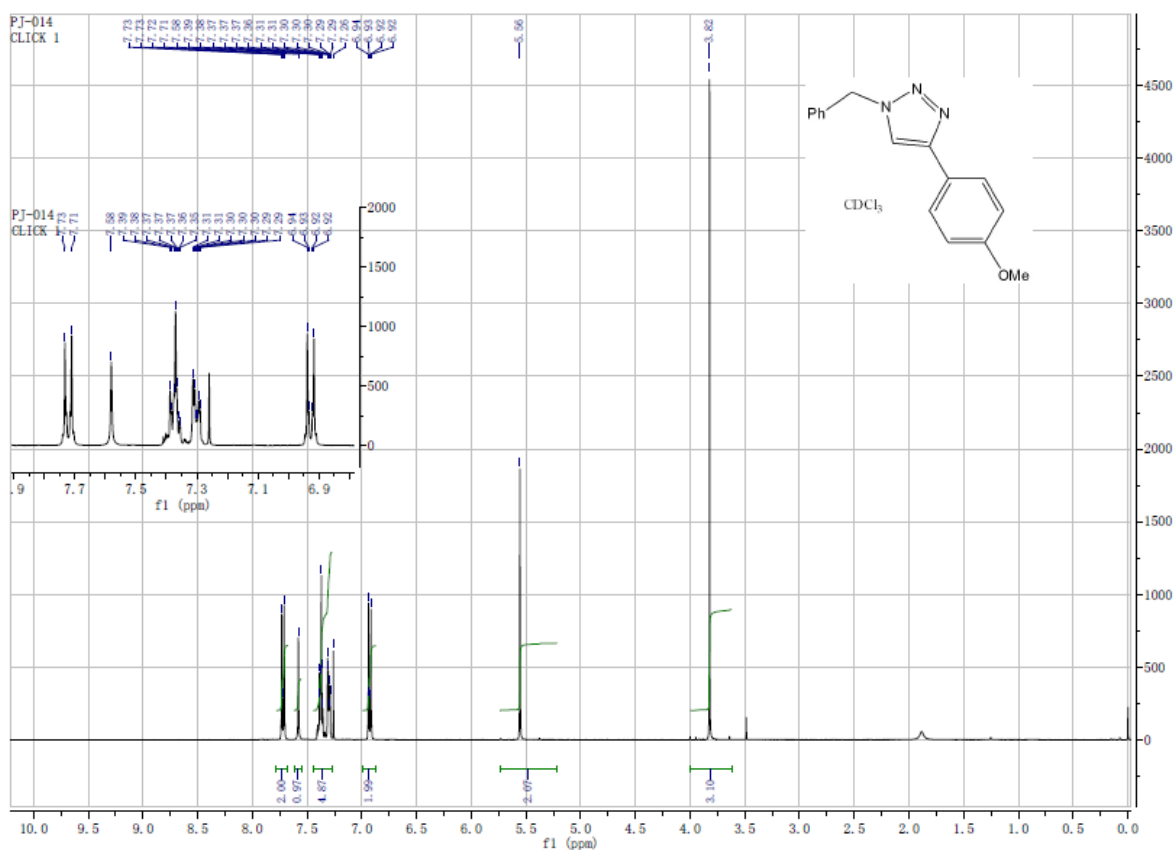
1-Benzyl-4-(4'-methoxyphenyl)-1*H*-1,2,3-triazole. White solid: ¹H NMR (400 MHz, CDCl₃): δ 7.73-7.71 (m, 2H), 7.58 (s, 1H), 7.39-7.29 (m, 5H), 6.94-6.92 (d, 2H), 5.56 (s, 2H), 3.82 (s, 3H); ¹³C NMR (100 MHz, CDCl₃): δ 159.7, 148.3, 134.9, 129.3, 129.1, 127.1, 123.6, 128.0, 118.8, 114.4, 55.4, 54.2.^{S3}

1-Benzyl-4-(4-ethylphenyl)-1*H*-1,2,3-triazole. White solid: ¹H NMR (400 MHz, CDCl₃): δ 7.71 (d, 2H), 7.63 (s, 1H), 7.40-7.36 (m, 3H), 7.32-7.30 (m, 2H), 7.29-7.22 (m, 2H), 5.56 (s, 2H), 2.66 (q, 2H), 1.24 (t, 3H); ¹³C NMR (100 MHz, CDCl₃): δ 148.2, 144.5, 134.8, 131.8, 129.2, 128.8, 128.2, 128.0, 125.8, 54.1, 28.6, 15.4.^{S3}

1-Benzyl-4-pentyl-1*H*-1,2,3-triazole. White solid: ¹H NMR (400 MHz, CDCl₃): δ 7.29-7.24 (m, 3H), 7.17-7.15 (m, 2H), 7.12 (s, 1H), 5.39 (s, 2H), 2.59 (t, 2H), 1.57-1.53 (m, 2H), 1.24-1.21 (m, 4H), 0.79 (t, 3H); ¹³C NMR (100 MHz, CDCl₃): δ 148.6, 134.7, 128.6, 128.4, 128.2, 127.6, 120.4, 53.7, 31.2, 28.9, 25.5, 22.2, 13.8.^{S4}







References

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- [S2] J. Yan and L. Wang, *Synthesis* 2010, 447–452.
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