

SILVER (I) –CARBENE COMPLEXES / IONIC LIQUIDS: NOVEL N- HETEROCYCLIC CARBENE
DELIVERY AGENTS FOR ORGANOCATALYTIC TRANSFORMATIONS

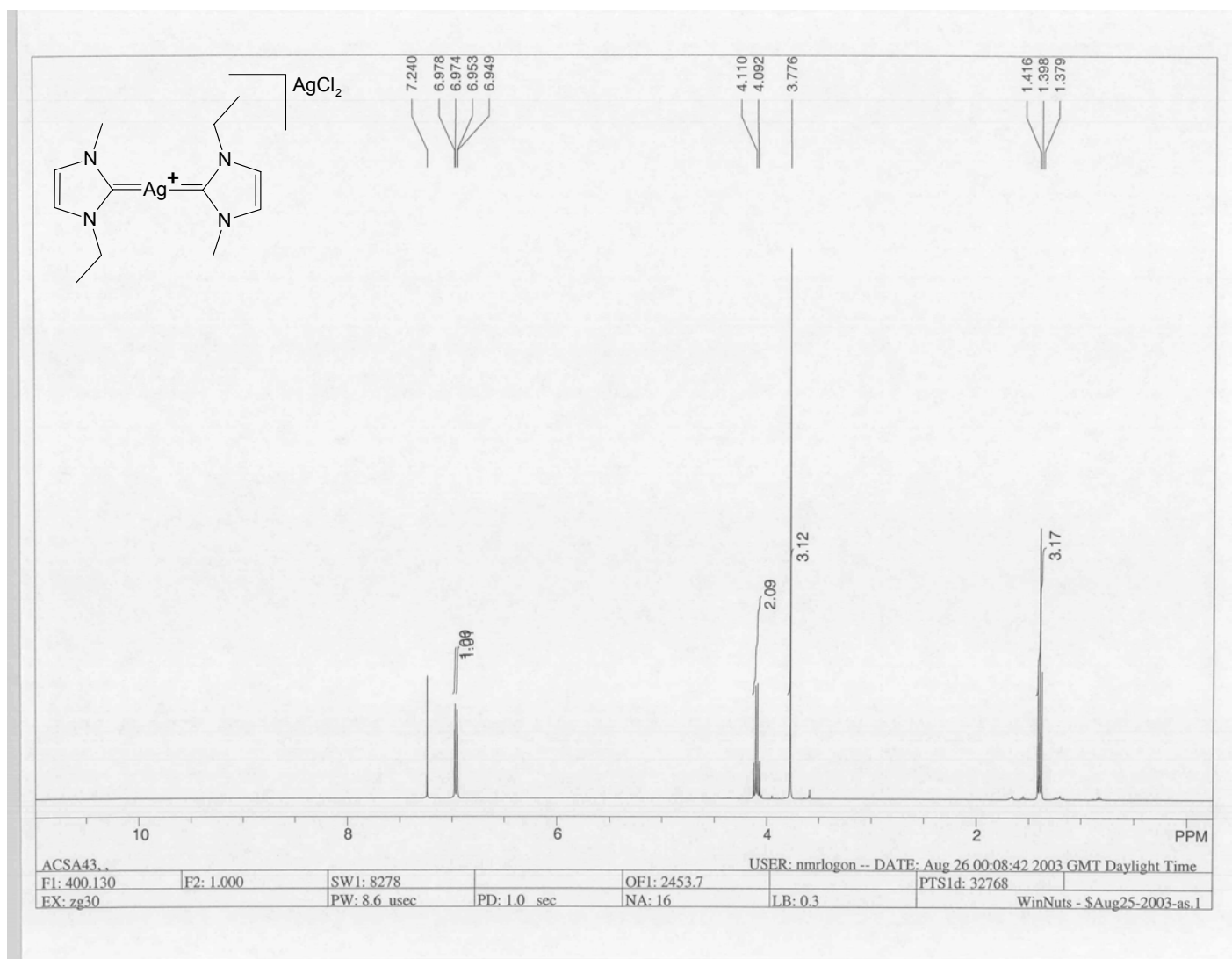
Alan C. Sentman, Szilárd Csihony, Robert M. Waymouth^{}, and James L. Hedrick^{*}*

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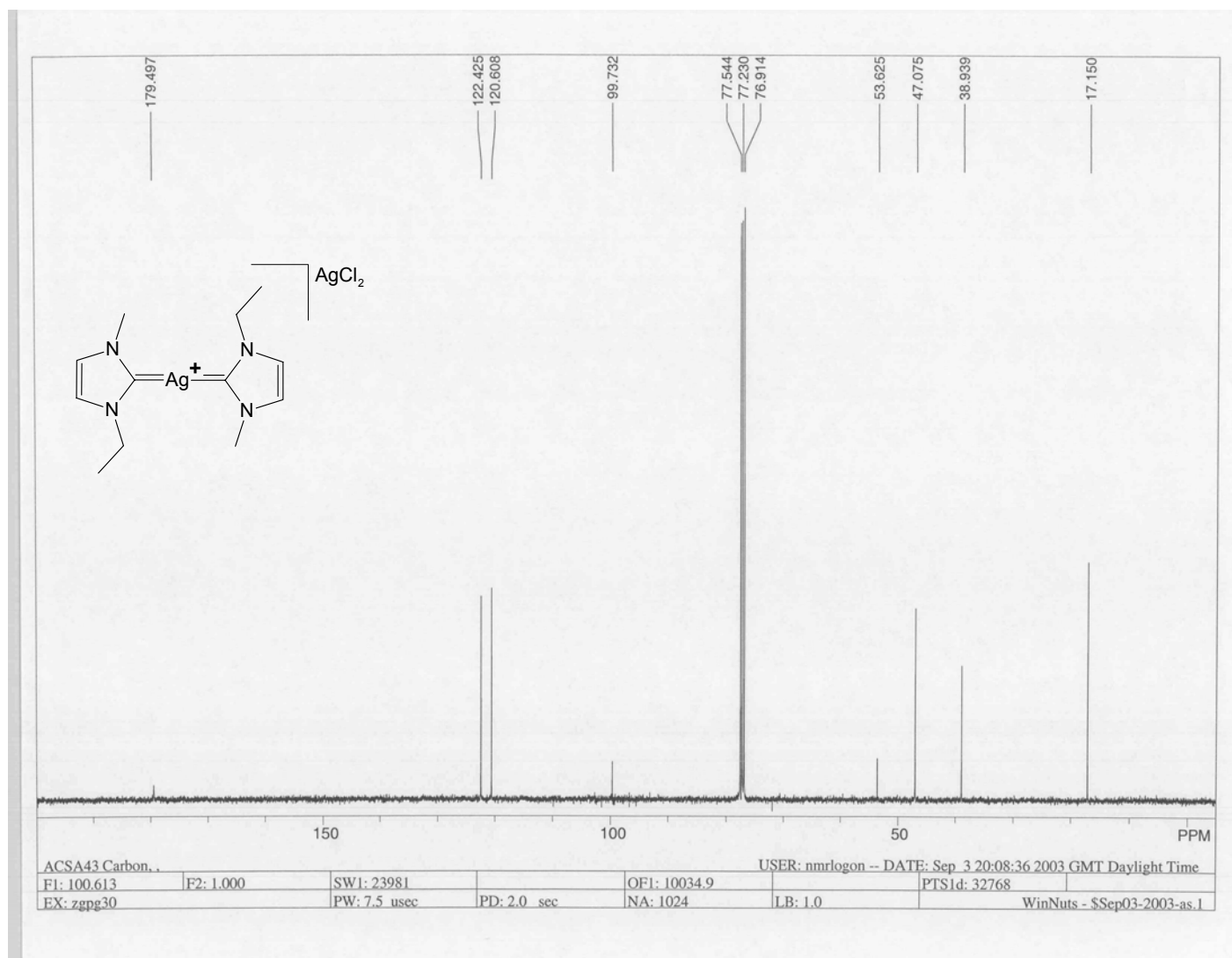
Materials. L-lactide was purchased from Purac and recrystallized from toluene three times prior to use. 1,3-bis(2,4,6-trimethylphenyl)imidazolium chloride and 1,3-bis(2,6-diisopropylphenyl)imidazolium chloride were prepared according to literature procedures.⁹

[1,3-bis-(2,3,4-trimethylphenyl)-imidazol-2-ylidene] silver chloride. 1,3-bis-(2,3,4-trimethylphenyl)-1-*H*-imidazolium chloride (0.595g, 1.75 mmol) was dissolved in 100 mL CH₂Cl₂, and silver(I) oxide (0.202 g, 0.873 mmol) added to the stirring solution. The mixture was stirred for 48 h, filtered, and the product precipitated in n-pentane. (0.4717 g, 60 %) No further purification was necessary. ¹H NMR (CDCl₃): δ= 2.07 (s, 6H), 2.36 (s, 3H), 7.01 (s, 2H), 7.16 (s, 2H). ¹³C NMR (CDCl₃): δ= 18.06, 21.49, 123.05, 123.12, 139.96, 134.98, 140.15. MS calcd for C₄₂H₄₈AgN₄⁺: 715.30. Found: 715.4

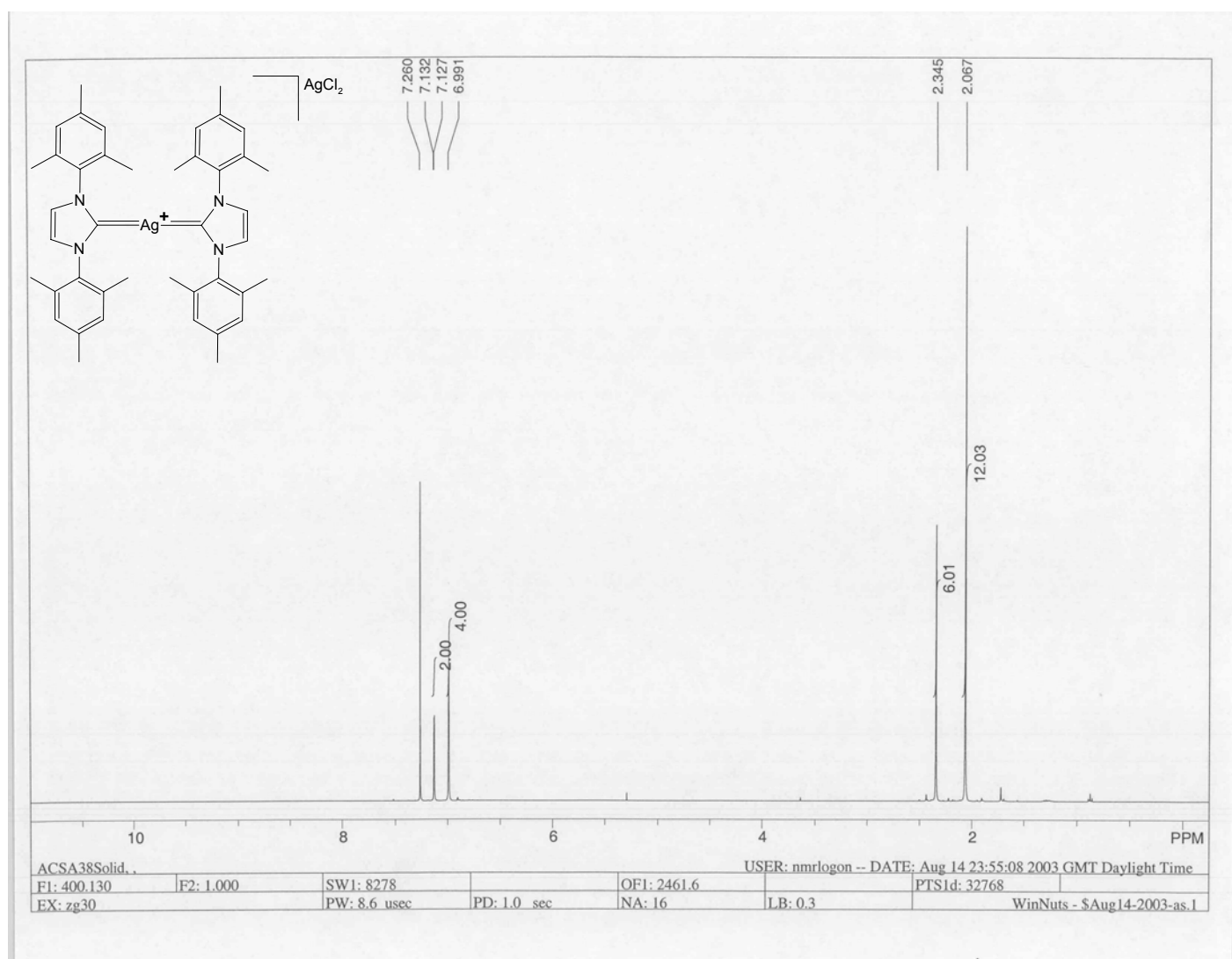
[1,3-bis-(2,4-diisopropylphenyl)-imidazol-2-ylidene] silver chloride. 1,3-bis-(2,4-diisopropylphenyl)-1-*H*-imidazolium chloride (0.350g, 0.824 mmol) was dissolved in 15 mL CH₂Cl₂, and silver(I) oxide (0.0955 g, 0.412 mmol) added to the stirring solution. The mixture was stirred for 48 h, filtered, and the product precipitated in n-pentane. (0.3781 g, 86 %) No further purification was necessary. ¹H NMR (CDCl₃): δ= 1.21 (d, 12H), 1.26 (d, 12H), 2.53 (sept, 4H), 6.97 (d, 1H), 7.21 (s, 4H), 7.29 (d, 8H), 7.49 (t, 4H). ¹³C NMR (CDCl₃): δ= 24.41, 25.14, 29.09, 123.98, 124.06, 124.74, 131.15, 134.91, 145.93. MS calcd for C₅₄H₇₂AgN₄⁺: 883.48. Found: 883.5.



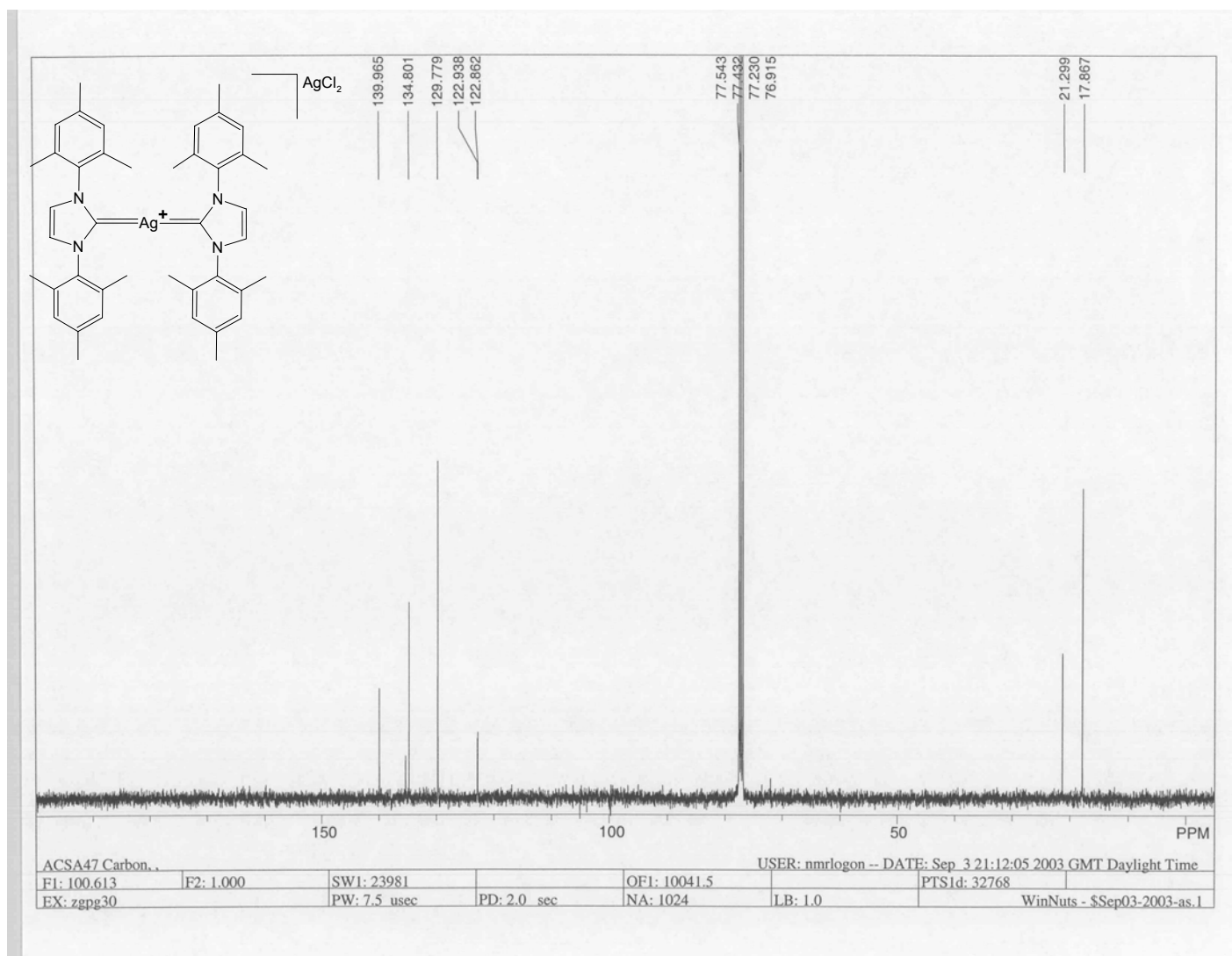
S1: ^1H NMR of compound **1a**.



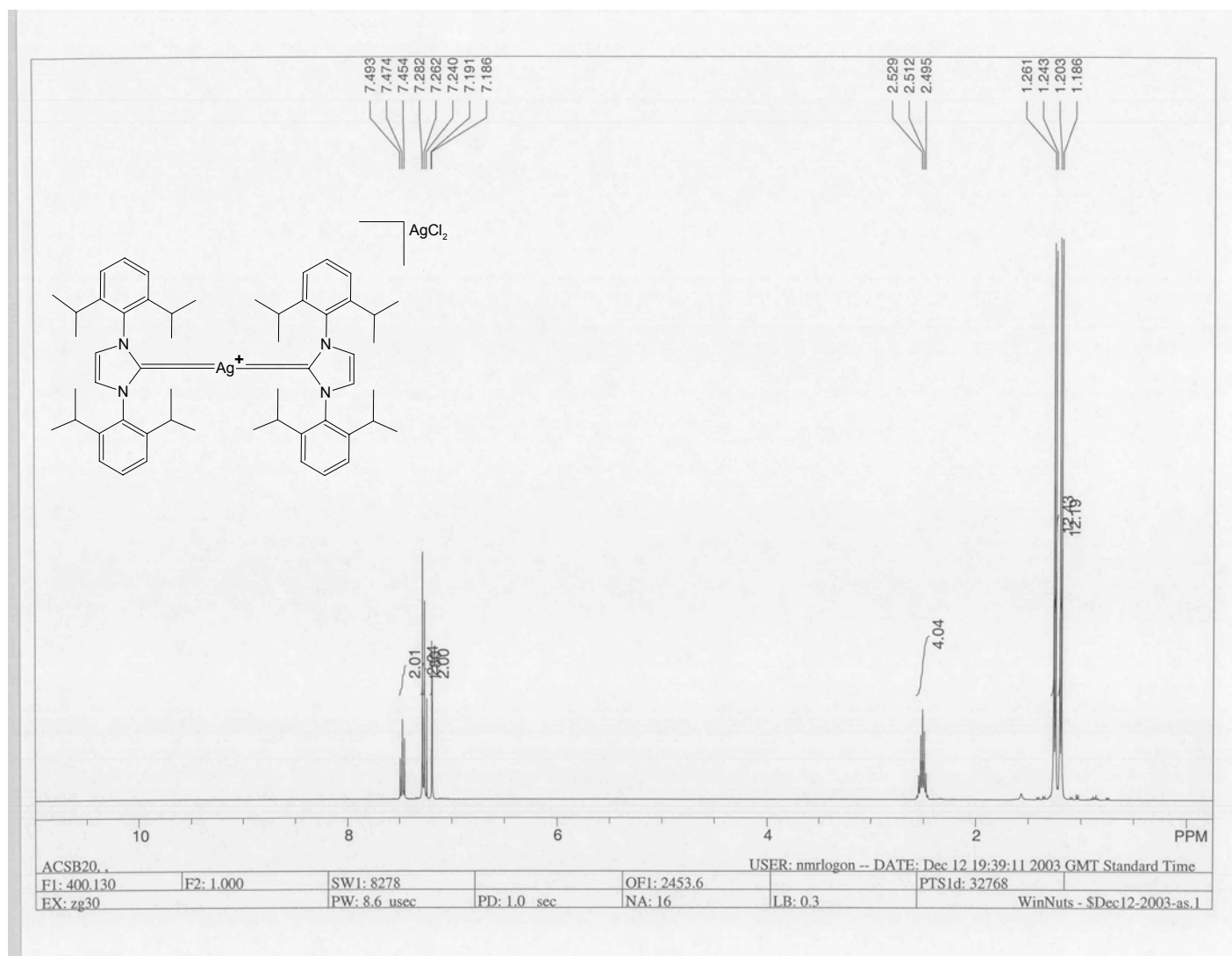
S2: ^{13}C NMR of compound **1a**.



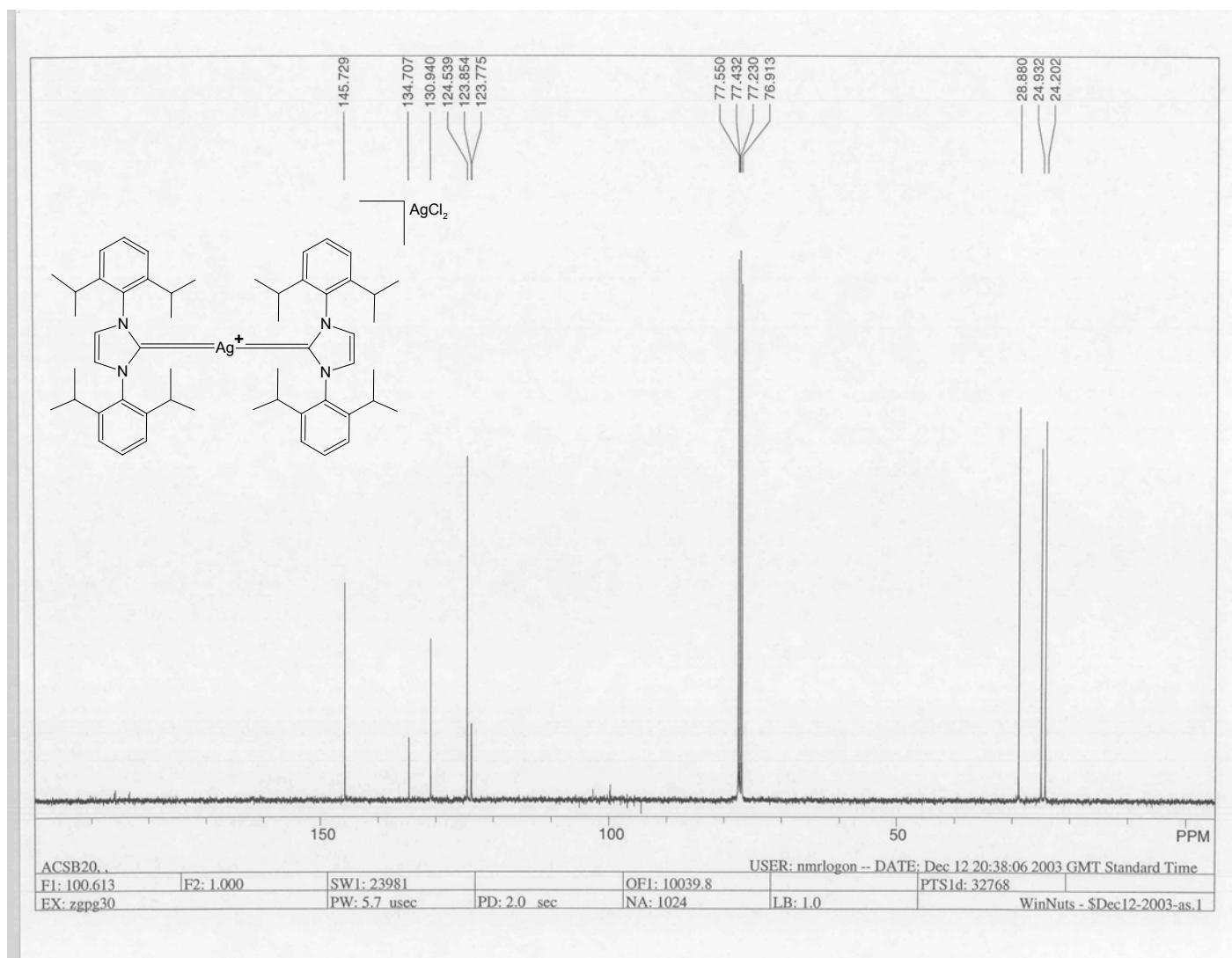
S3: ¹H NMR of compound **1b**.



S4: ^{13}C NMR of compound **1b**.



S5: ^1H NMR of compound **1c**.



6. ¹³C NMR of compound 1c.