

Supplementary Material for:

Semisynthetic derivatives of selected Amaryllidaceae alkaloids as a new class of antimycobacterial agents

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Figure S1. ESI-HRMS spectrum of 6-*O*-benzoylgalanthamine (**1a**)

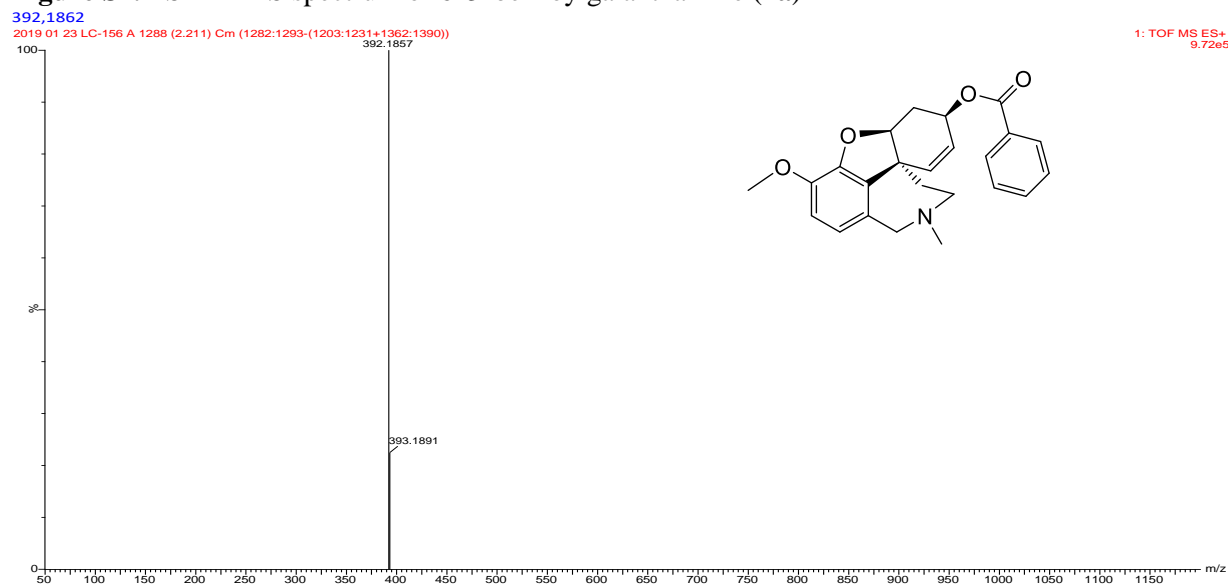


Figure S2. ^1H NMR spectrum of 6-*O*-benzoylgalanthamine (**1a**) in CDCl_3

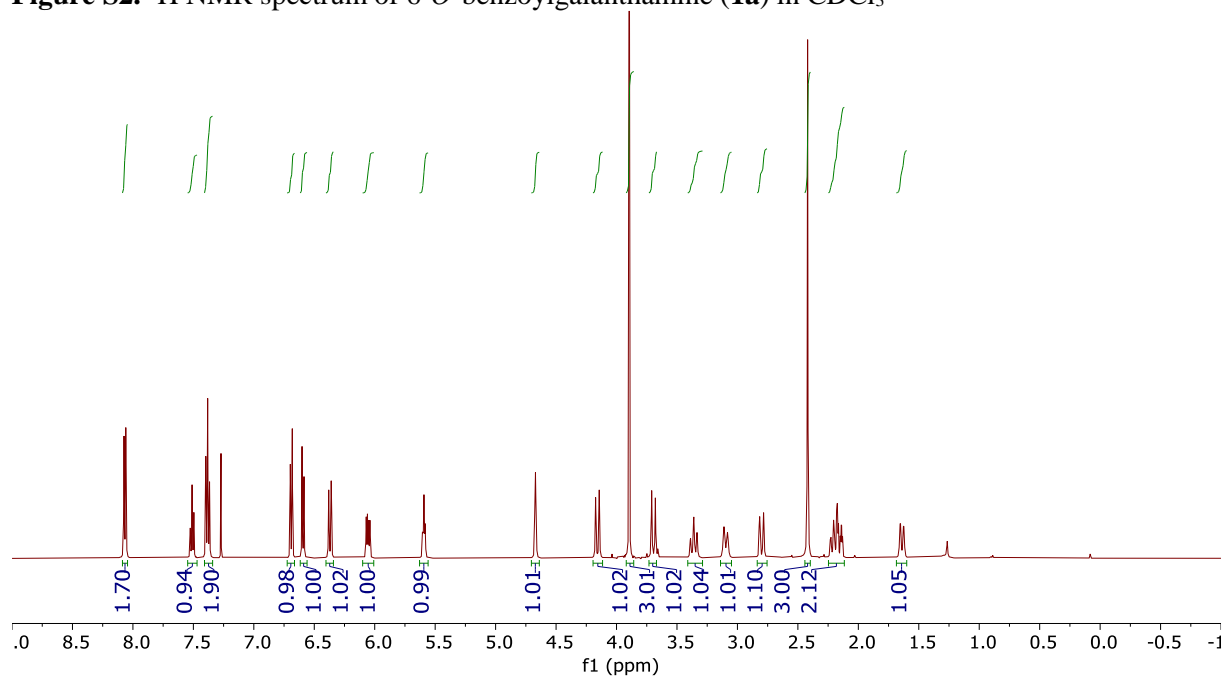


Figure S3. ^{13}C NMR spectrum of 6-*O*-benzoylgalanthamine (**1a**) in CDCl_3

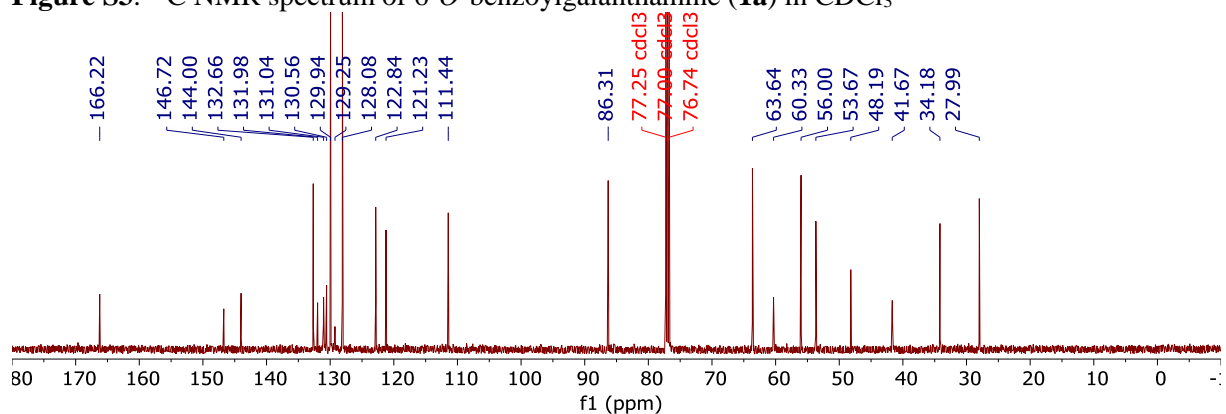


Figure S4. ESI-HRMS spectrum of 6-*O*-(2-methylbenzoyl)galanthamine (**1b**)

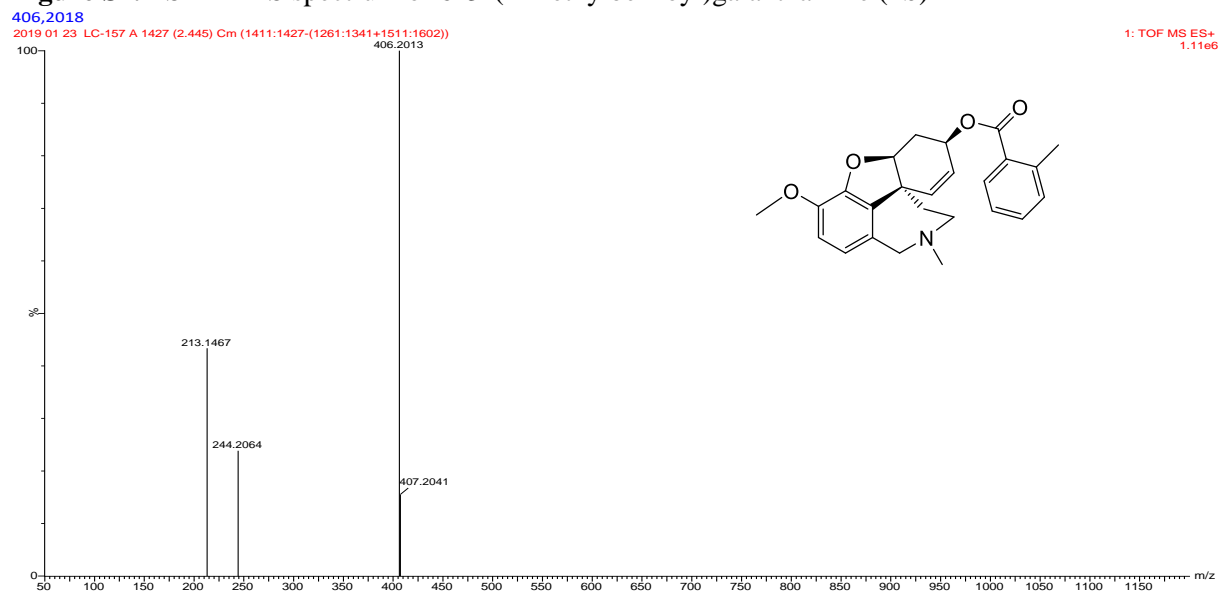


Figure S5. ^1H NMR spectrum of 6-*O*-(2-methylbenzoyl)galanthamine (**1b**) in CDCl_3

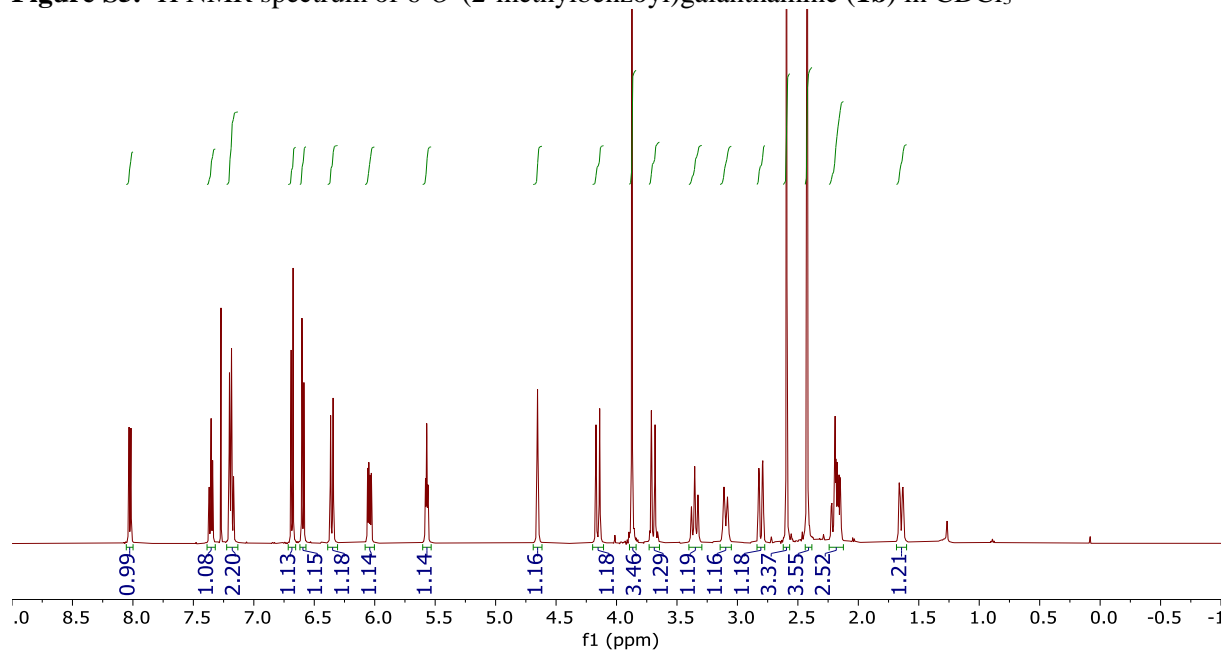


Figure S6. ^{13}C NMR spectrum of 6-*O*-(2-methylbenzoyl)galanthamine (**1b**) in CDCl_3

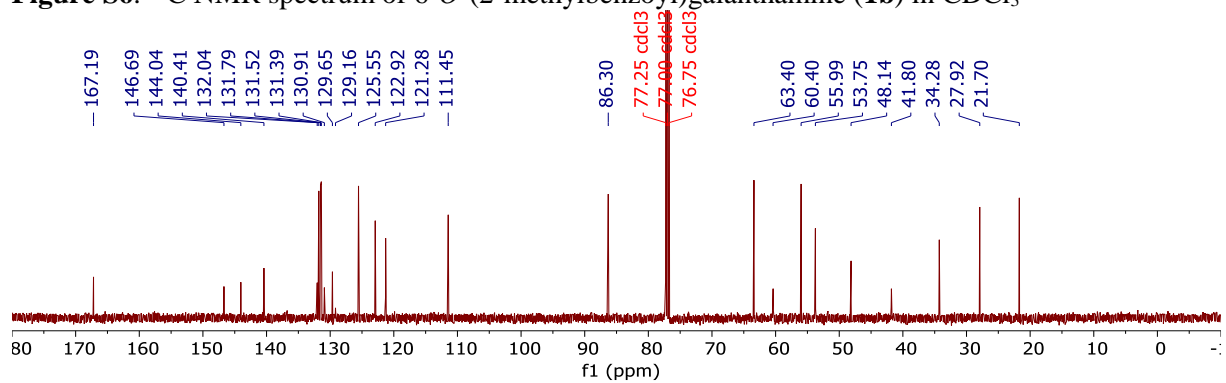


Figure S7. ESI-HRMS spectrum of 6-*O*-(3-methylbenzoyl)galanthamine (**1c**)

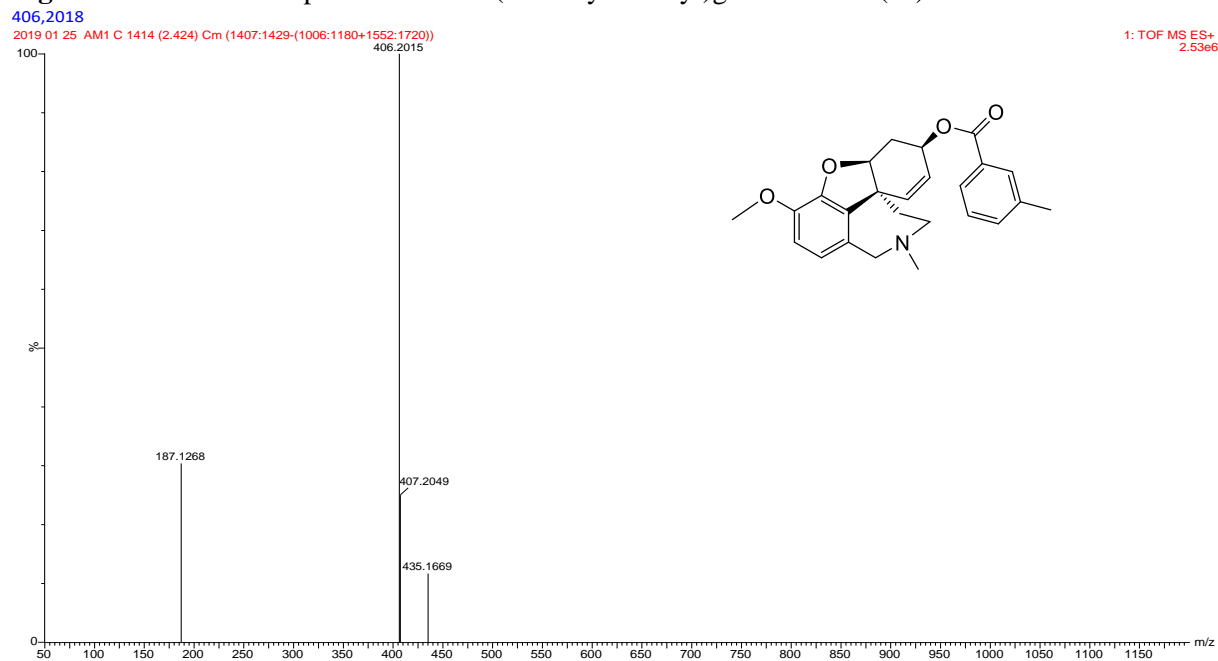


Figure S8. ^1H NMR spectrum of 6-*O*-(3-methylbenzoyl)galanthamine (**1c**) in CDCl_3

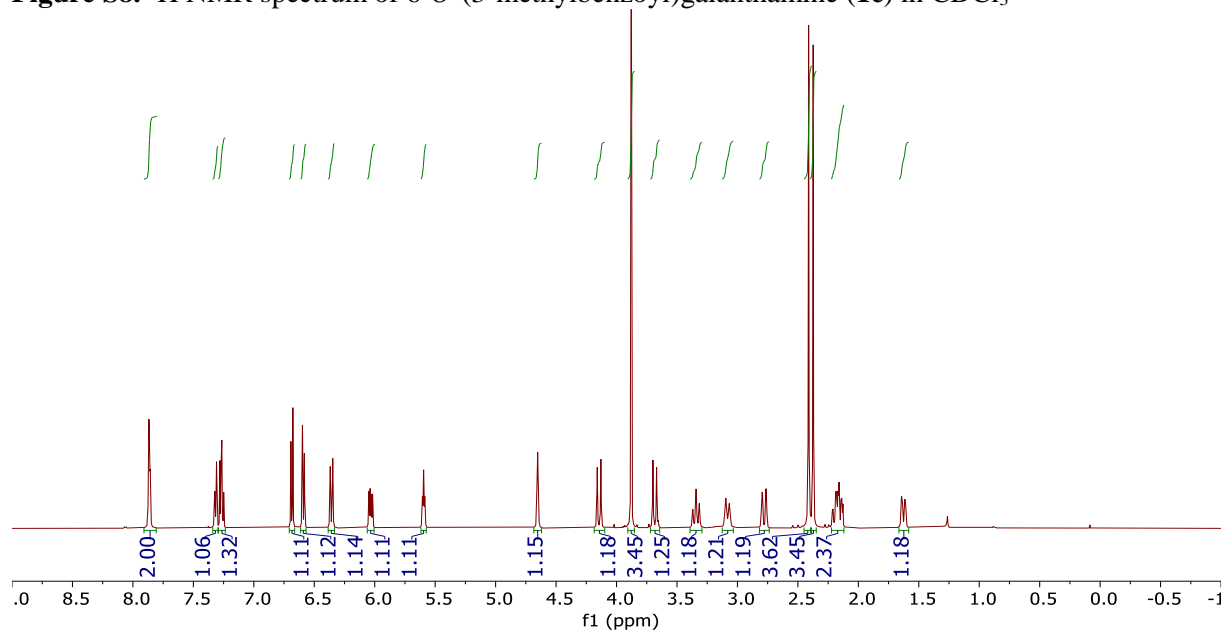


Figure S9. ^{13}C NMR spectrum of 6-*O*-(3-methylbenzoyl)galanthamine (**1c**) in CDCl_3

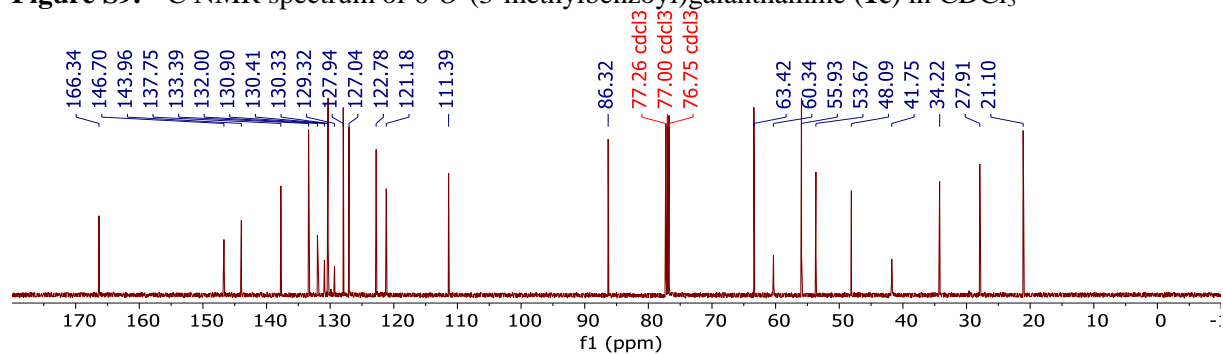


Figure S10. ESI-HRMS spectrum of 6-*O*-(4-methylbenzoyl)galanthamine (**1d**)

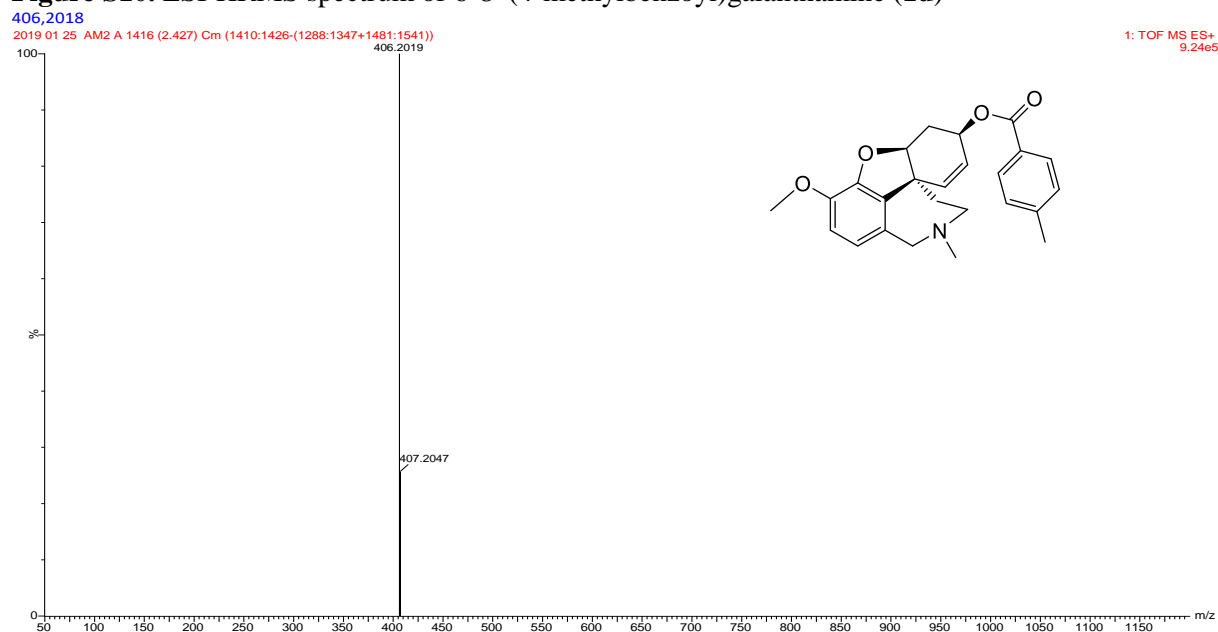


Figure S11. ^1H NMR spectrum of 6-*O*-(4-methylbenzoyl)galanthamine (**1d**) in CDCl_3

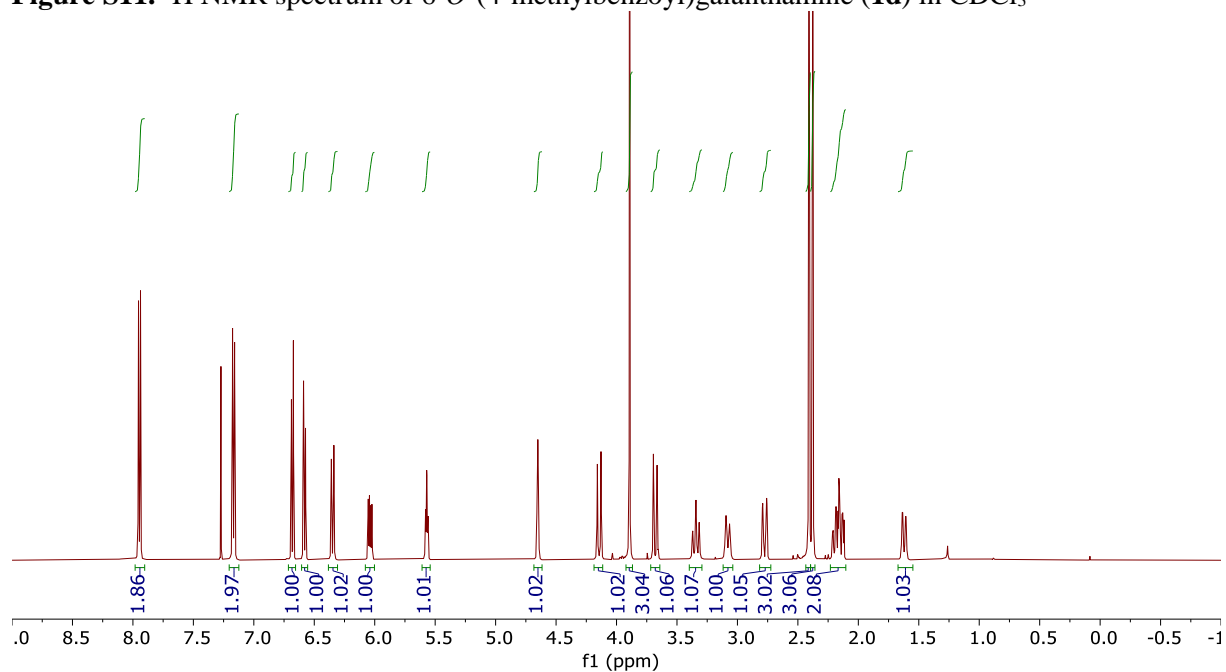


Figure S12. ^{13}C NMR spectrum of 6-*O*-(4-methylbenzoyl)galanthamine (**1d**) in CDCl_3

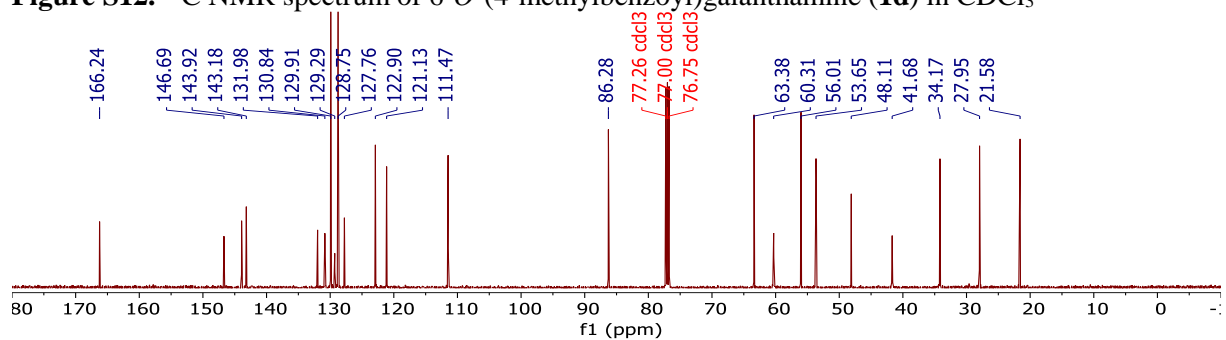


Figure S13. ESI-HRMS spectrum of 6-*O*-(2,3-dimethylbenzoyl)galanthamine (**1e**)

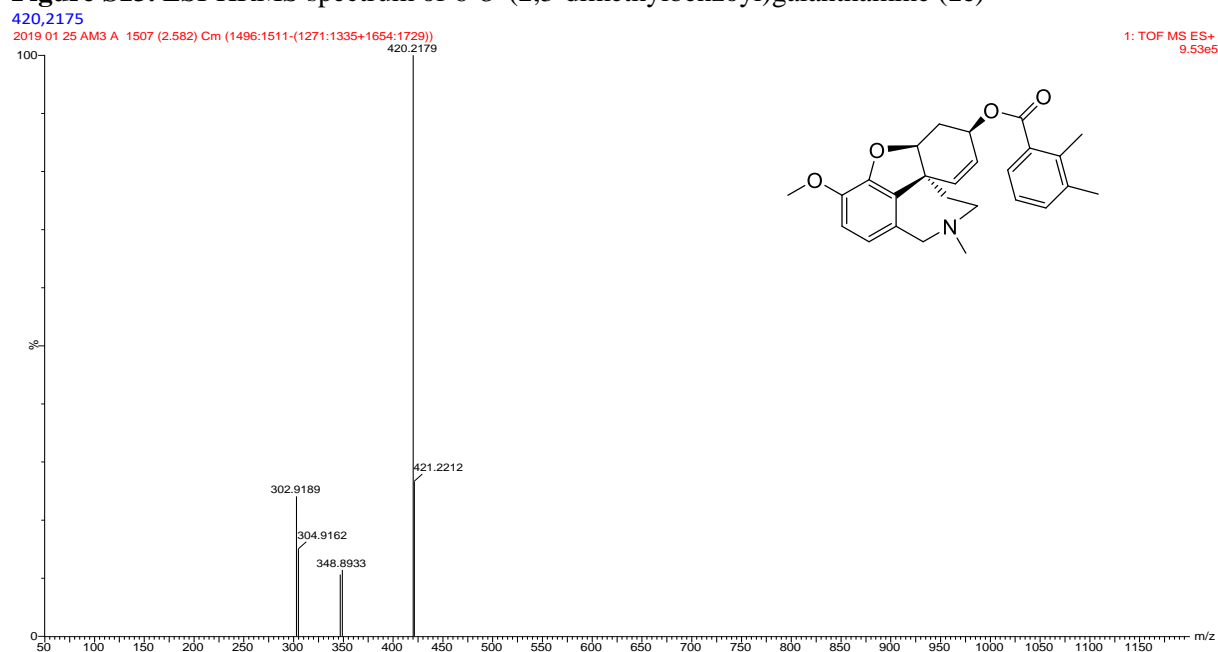


Figure S14. ^1H NMR spectrum of 6-*O*-(2,3-dimethylbenzoyl)galanthamine (**1e**) in CDCl_3

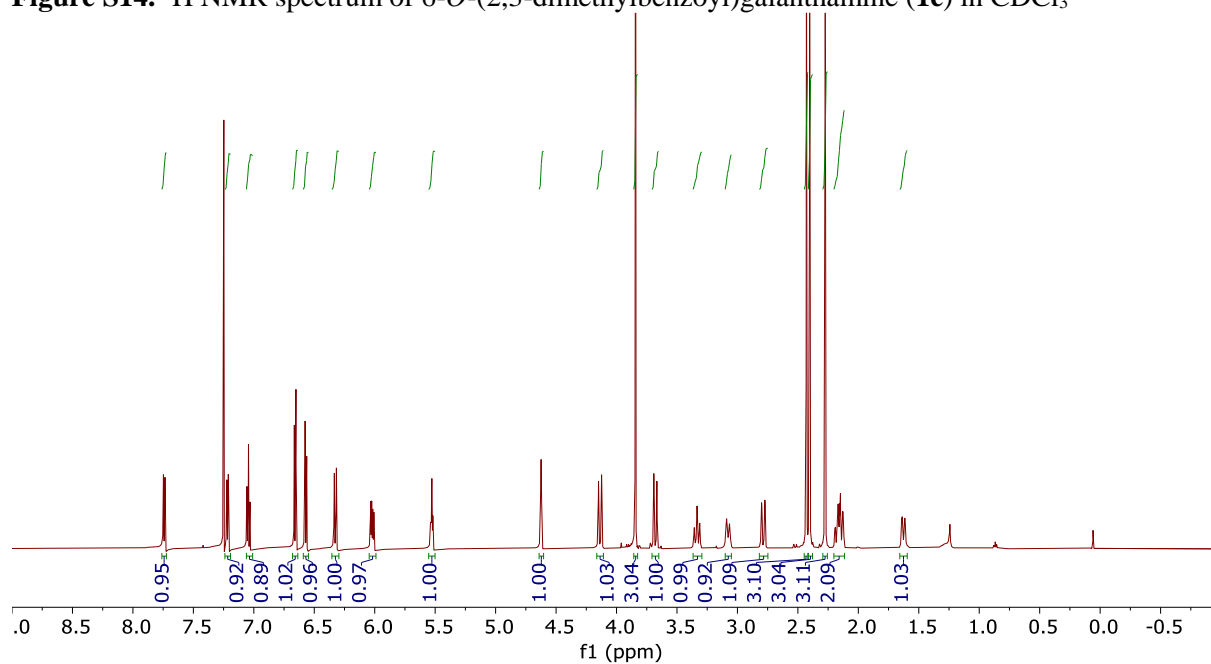


Figure S15. ^{13}C NMR spectrum of 6-*O*-(2,3-dimethylbenzoyl)galanthamine (**1e**) in CDCl_3

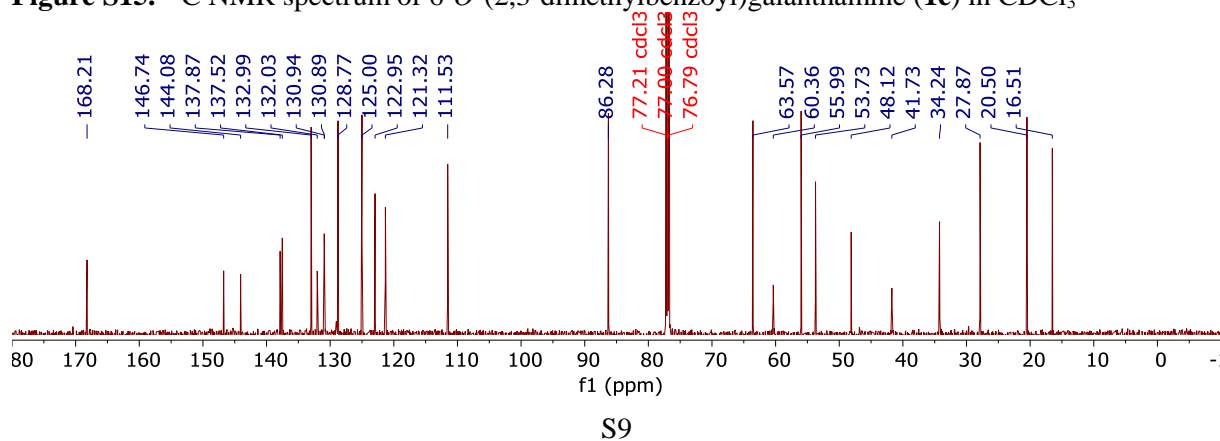


Figure S16. ESI-HRMS spectrum of 6-*O*-(3,5-dimethylbenzoyl)galanthamine (**1f**)

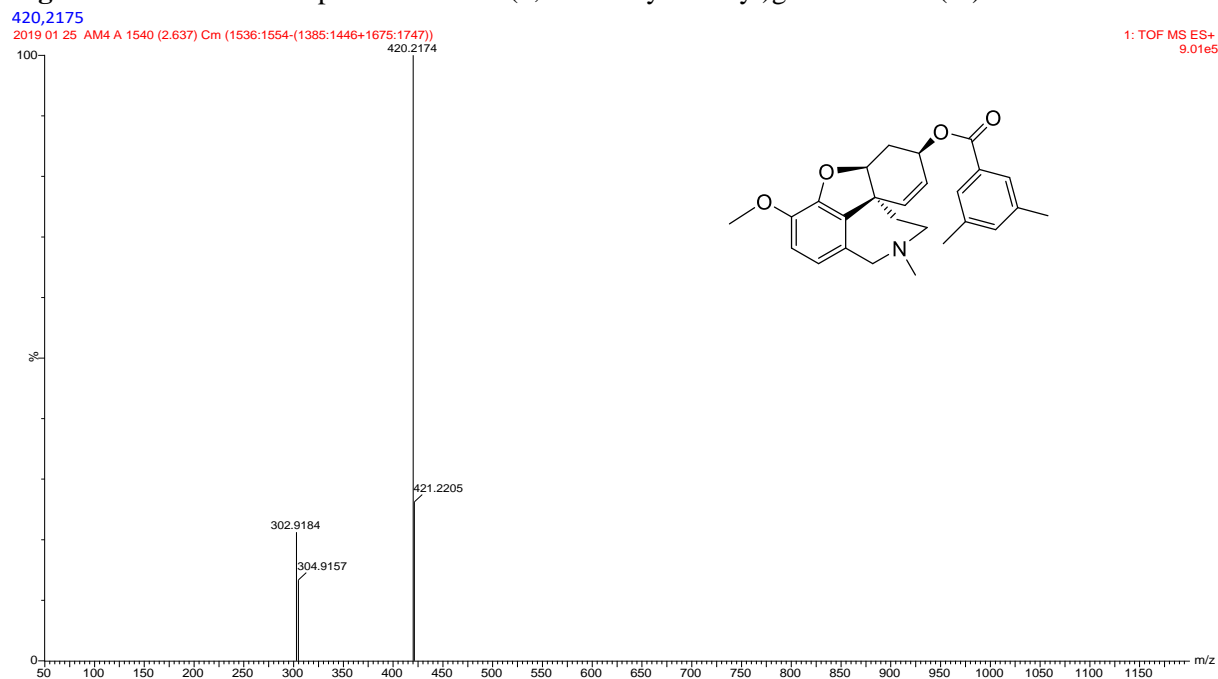


Figure S17. ¹H NMR spectrum of 6-*O*-(3,5-dimethylbenzoyl)galanthamine (**1f**) in CDCl₃

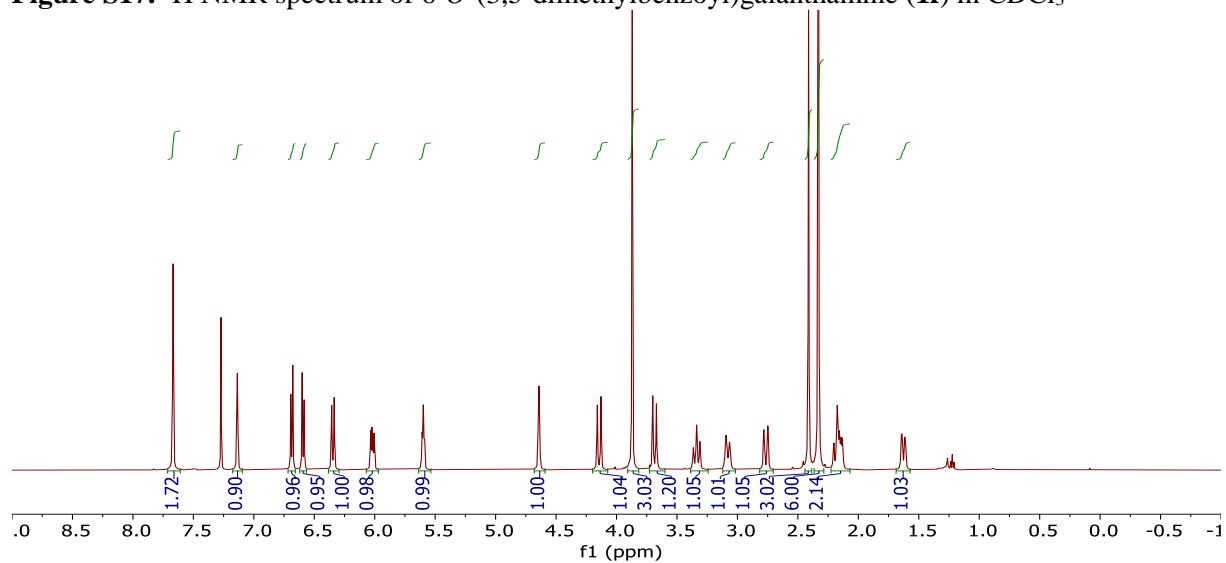


Figure S18. ¹³C NMR spectrum of 6-*O*-(3,5-dimethylbenzoyl)galanthamine (**1f**) in CDCl₃

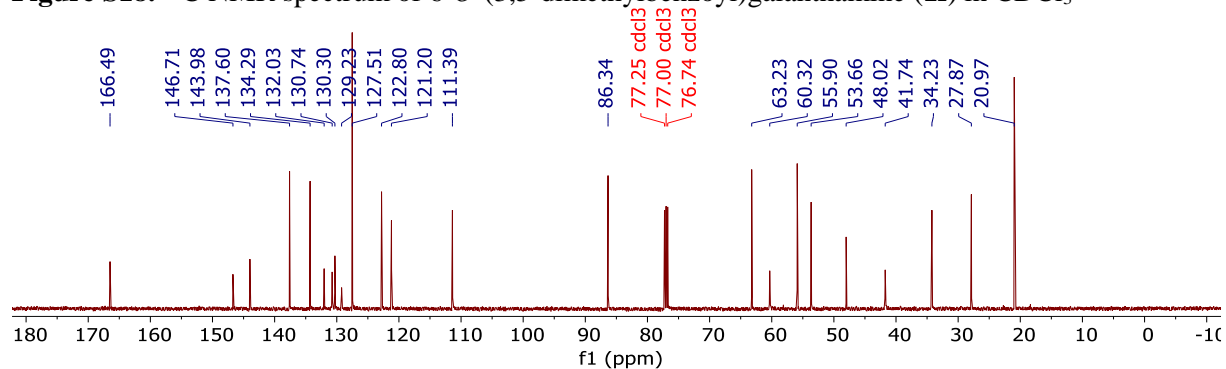


Figure S19. ESI-HRMS spectrum of 6-*O*-(2,4,6-trimethylbenzoyl)galanthamine (**1g**)

434.2326

2021 01 12 AM 37A 1583 (2.729) Cm (1571:1609-[1465:1535+1678:1738])

1: TOF MS ES+
2.34e6

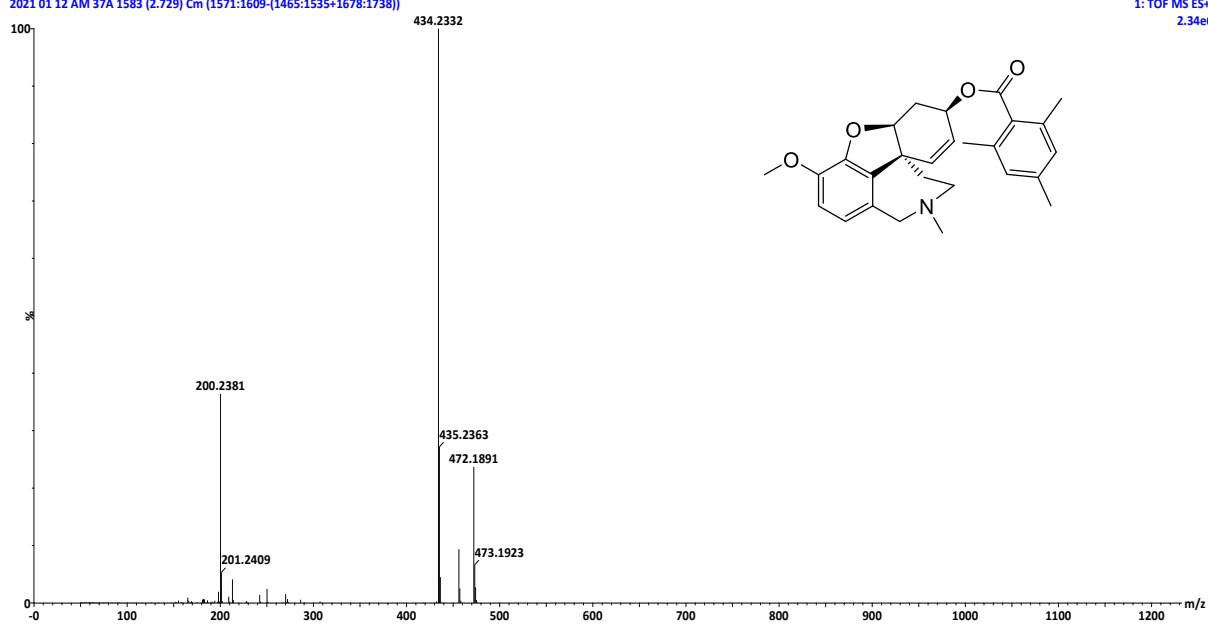


Figure S20. ^1H NMR spectrum of 6-*O*-(2,4,6-trimethylbenzoyl)galanthamine (**1g**) in CDCl_3

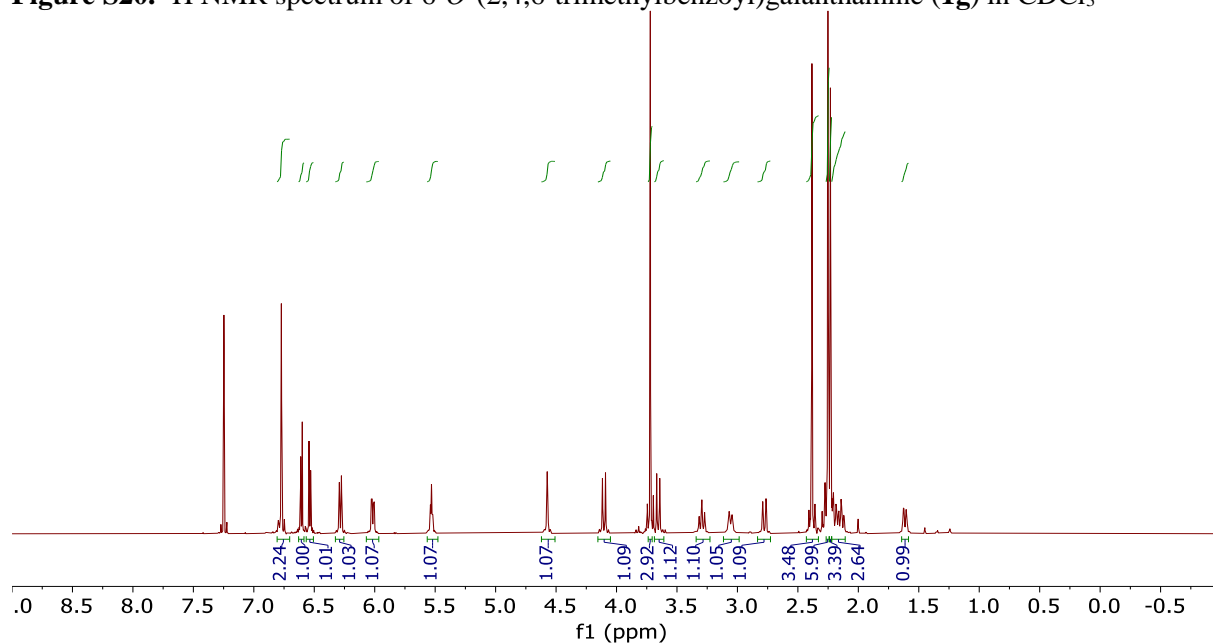


Figure S21. ^{13}C NMR spectrum of 6-*O*-(2,4,6-trimethylbenzoyl)galanthamine (**1g**) in CDCl_3

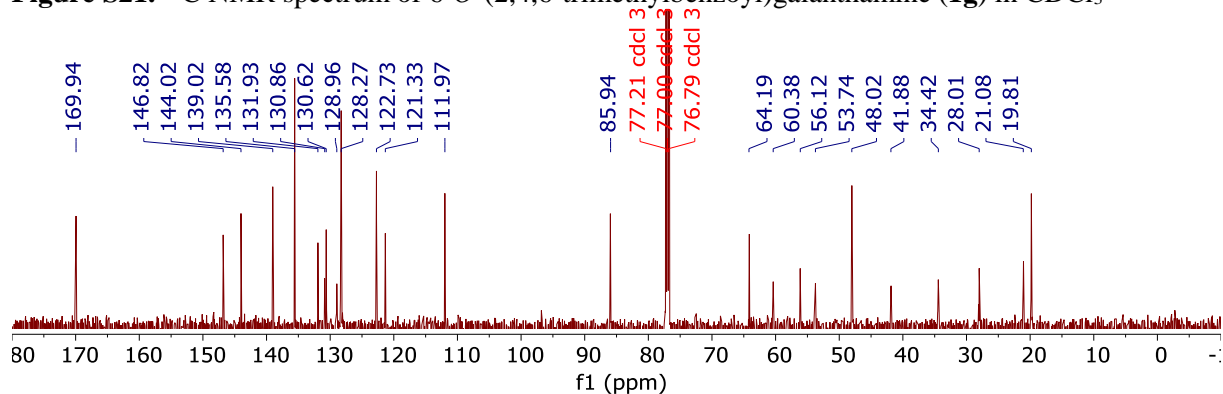


Figure S22. ESI-HRMS spectrum of 6-*O*-(4-*tert*-butylbenzoyl)galanthamine (**1h**)

448.2482

2021 01 12 AM 36A 1752 (3.019) Cm (1737:1787-(1546:1604+1888:1946))

1: TOF MS ES+
4.95e6

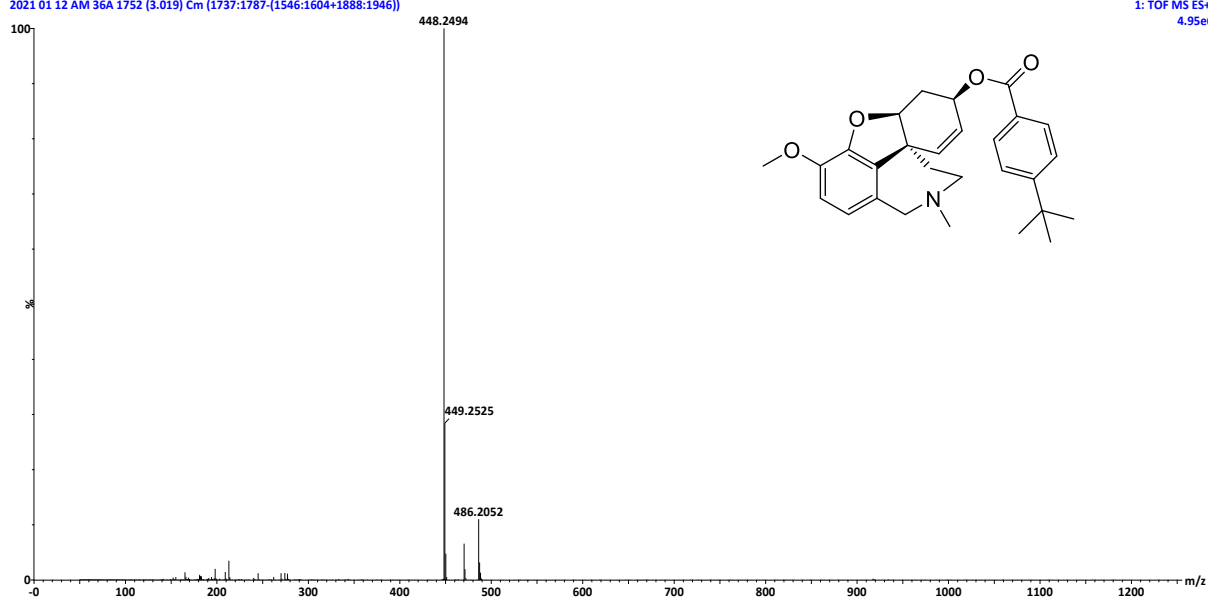


Figure S23. ^1H NMR spectrum of 6-*O*-(4-*tert*-butylbenzoyl)galanthamine (**1h**) in CDCl_3

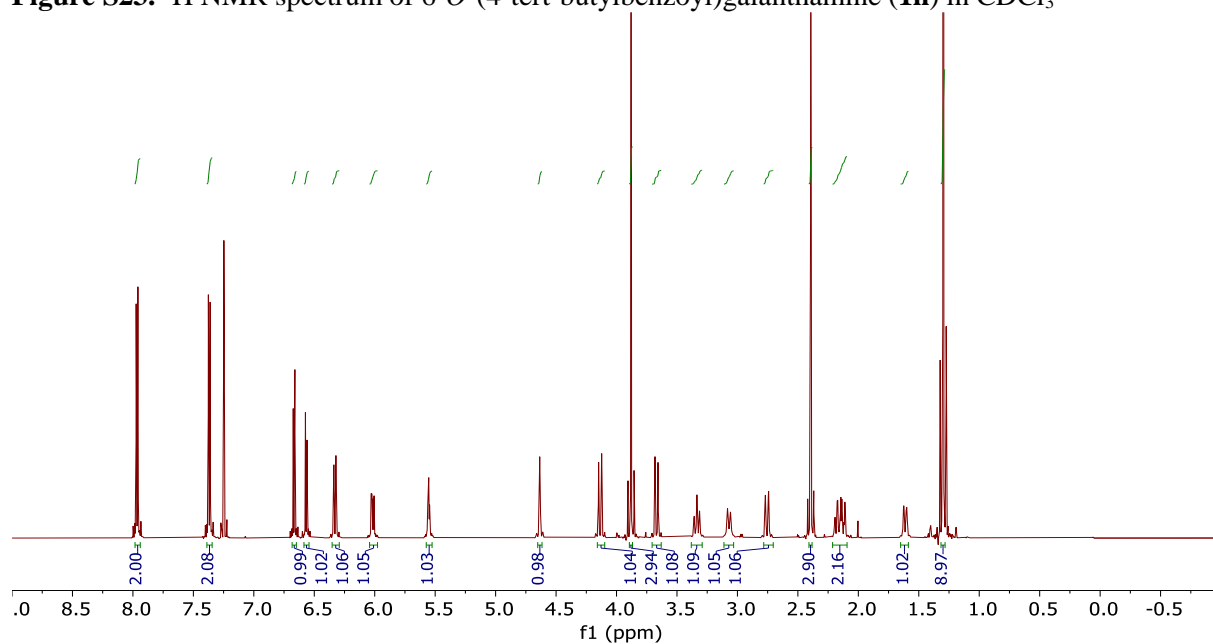


Figure S24. ^{13}C NMR spectrum of 6-*O*-(4-*tert*-butylbenzoyl)galanthamine (**1h**) in CDCl_3

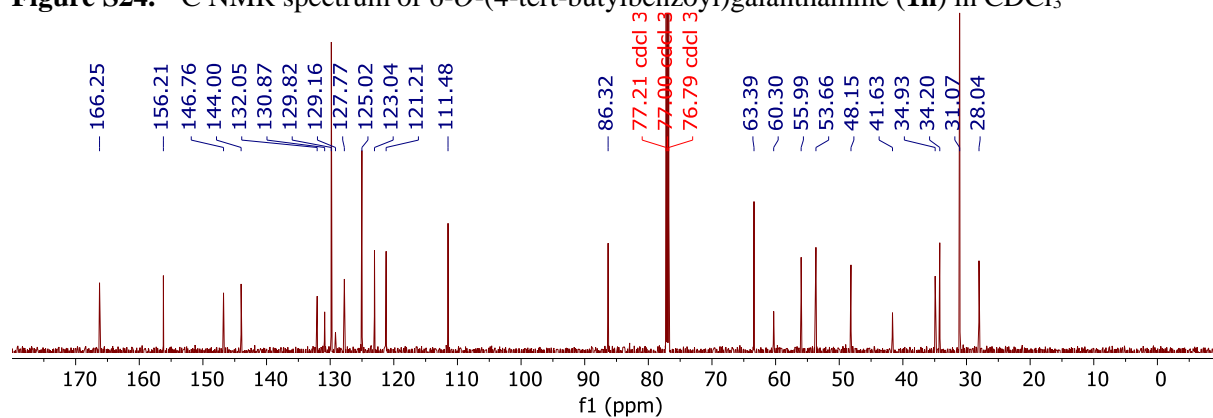


Figure S25. ESI-HRMS spectrum of 6-*O*-(4-butylbenzoyl)galanthamine (**1i**)

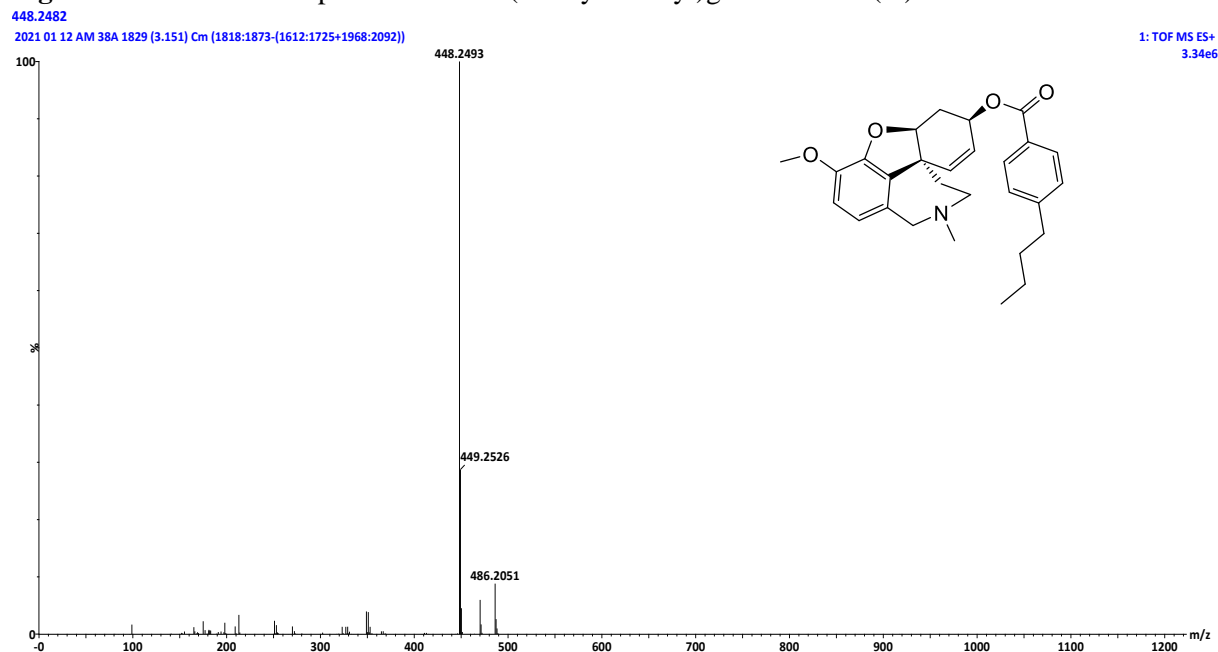


Figure S26. ^1H NMR spectrum of 6-*O*-(4-butylbenzoyl)galanthamine (**1i**) in CDCl_3

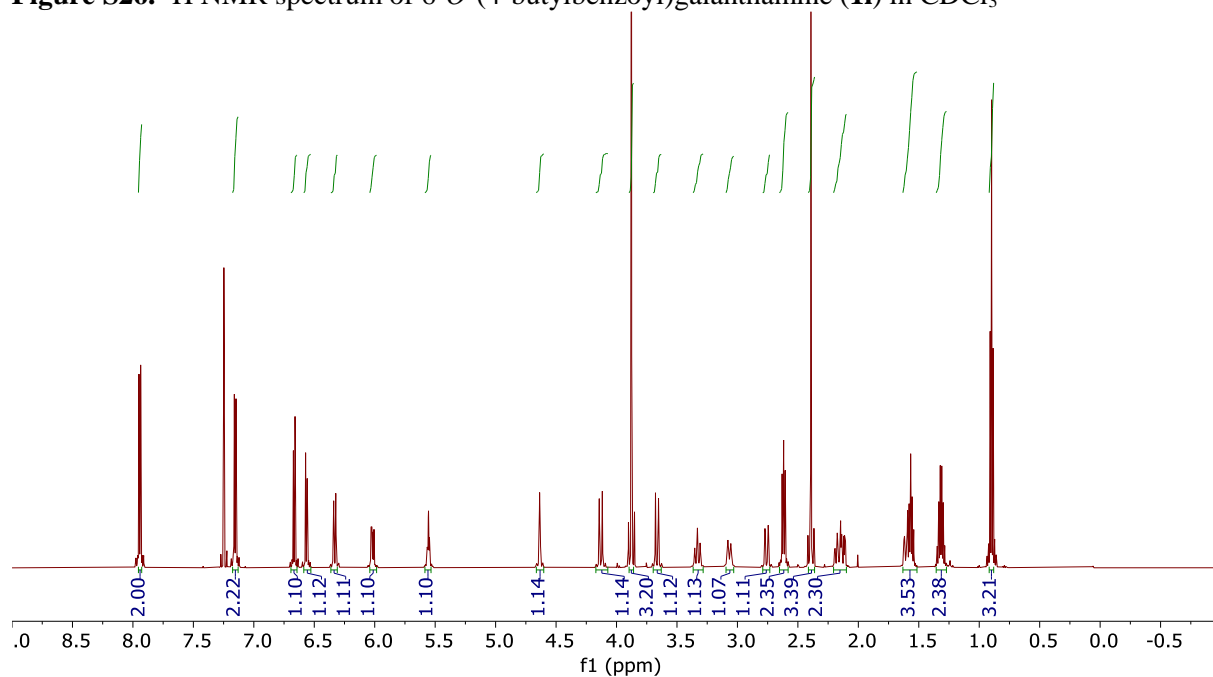


Figure S27. ^{13}C NMR spectrum of 6-*O*-(4-butylbenzoyl)galanthamine (**1i**) in CDCl_3

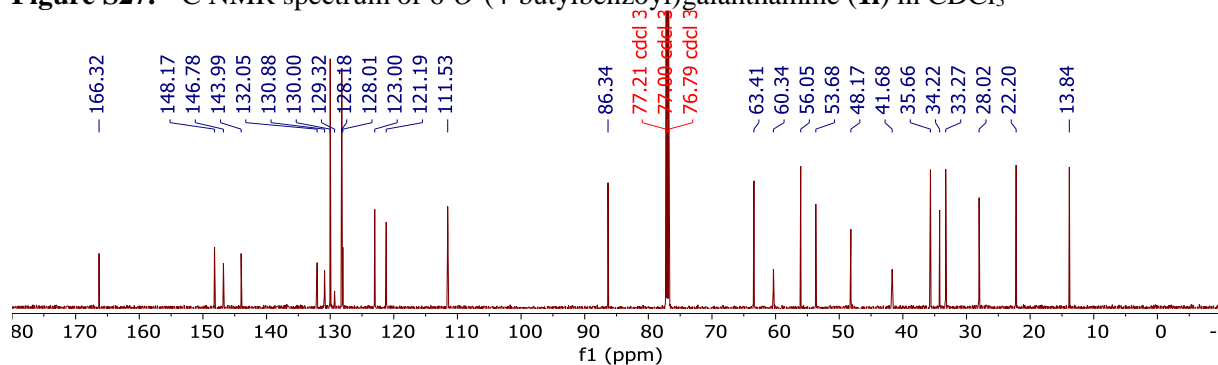


Figure S28. ESI-HRMS spectrum of 6-*O*-(2-methoxybenzoyl)galanthamine (**1j**)

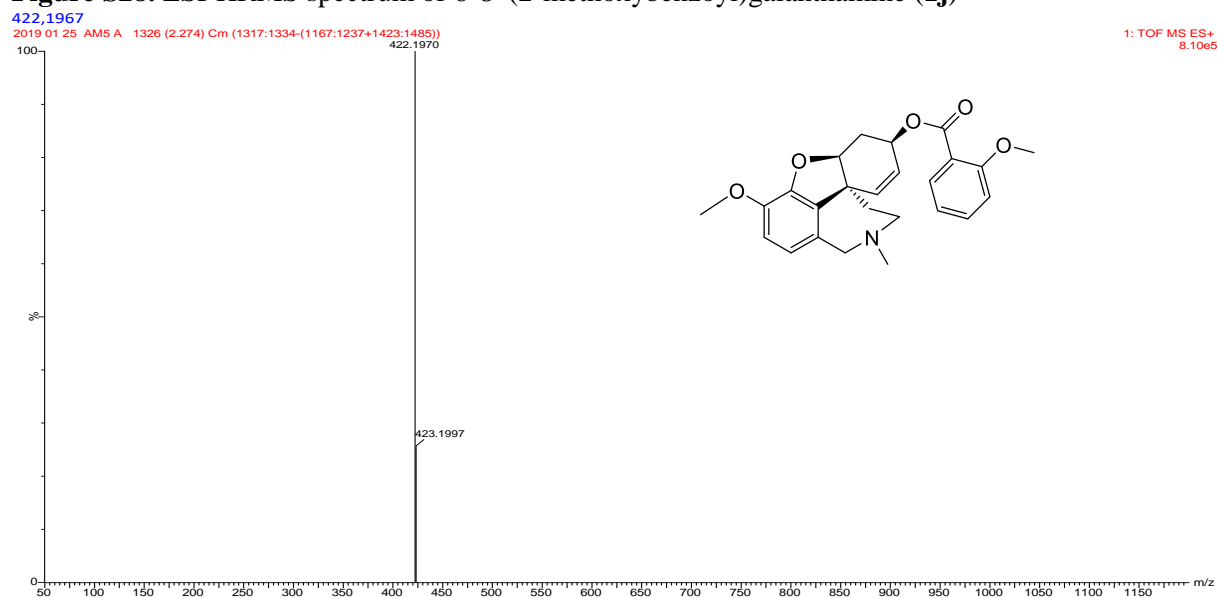


Figure S29. ^1H NMR spectrum of 6-*O*-(2-methoxybenzoyl)galanthamine (**1j**) in CDCl_3

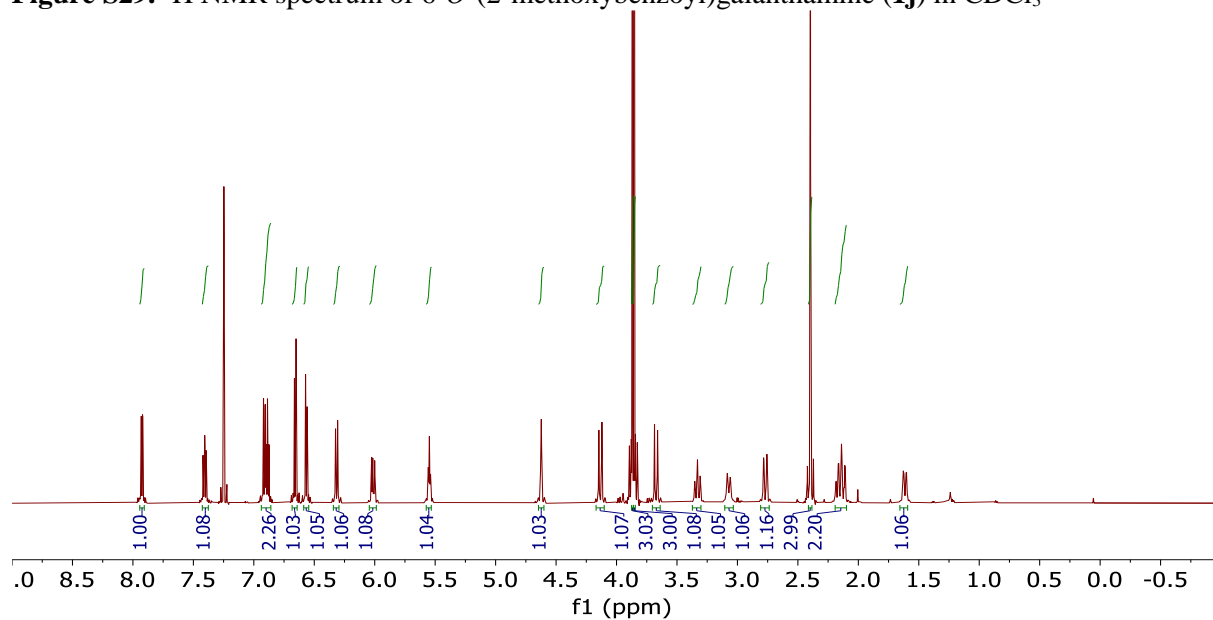


Figure S30. ^{13}C NMR spectrum of 6-*O*-(2-methoxybenzoyl)galanthamine (**1j**) in CDCl_3

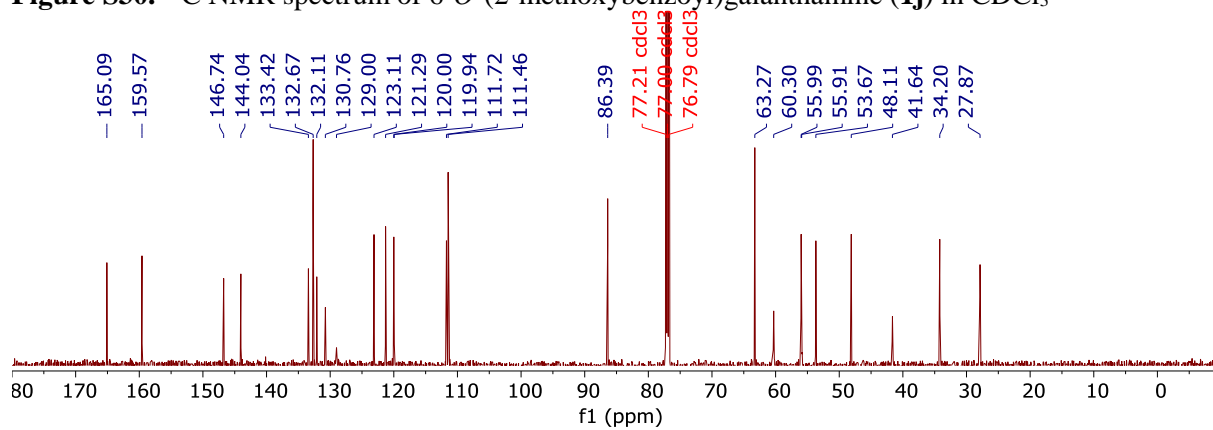


Figure S31. ESI-HRMS spectrum of 6-*O*-(3-methoxybenzoyl)galanthamine (**1k**)

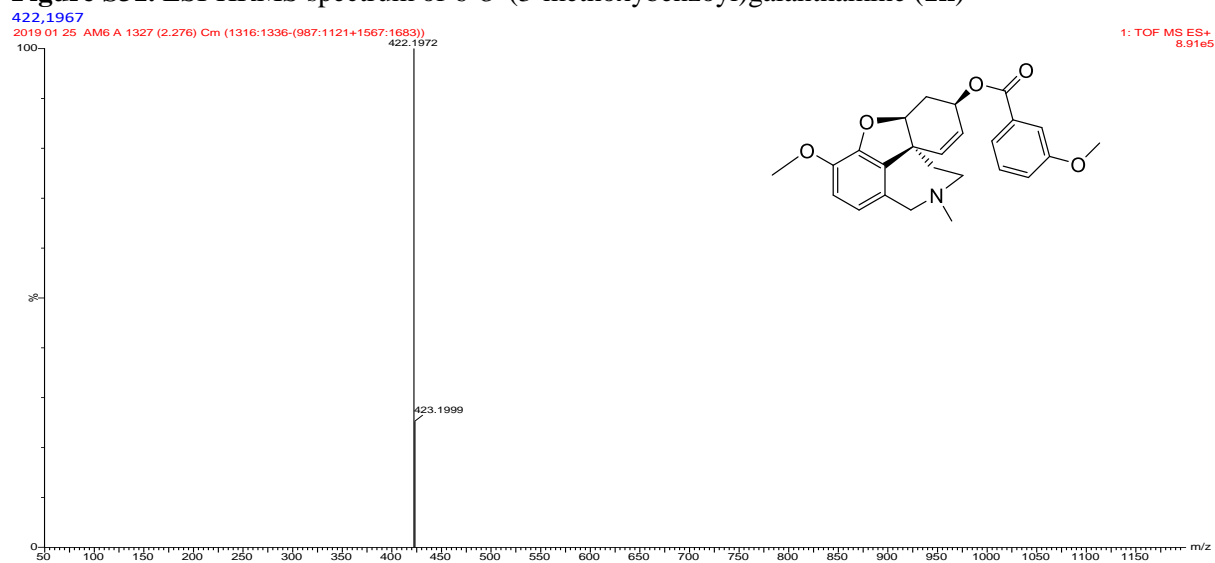


Figure S32. ^1H NMR spectrum of 6-*O*-(3-methoxybenzoyl)galanthamine (**1k**) in CDCl_3

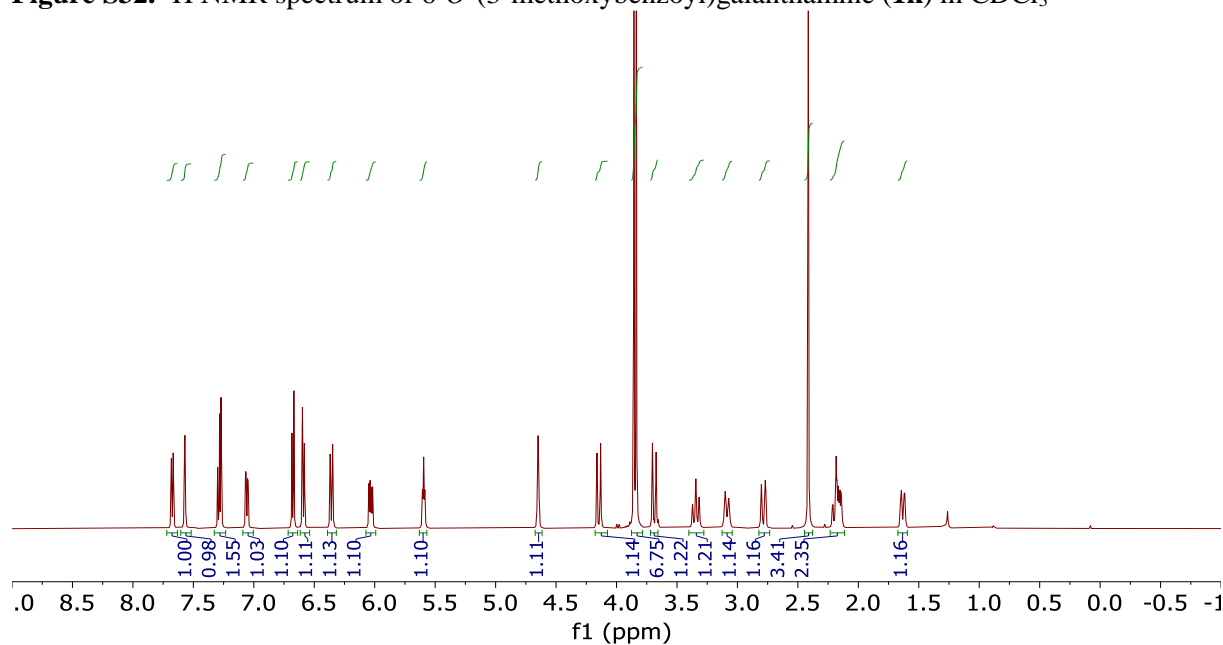


Figure S33. ^{13}C NMR spectrum of 6-*O*-(3-methoxybenzoyl)galanthamine (**1k**) in CDCl_3

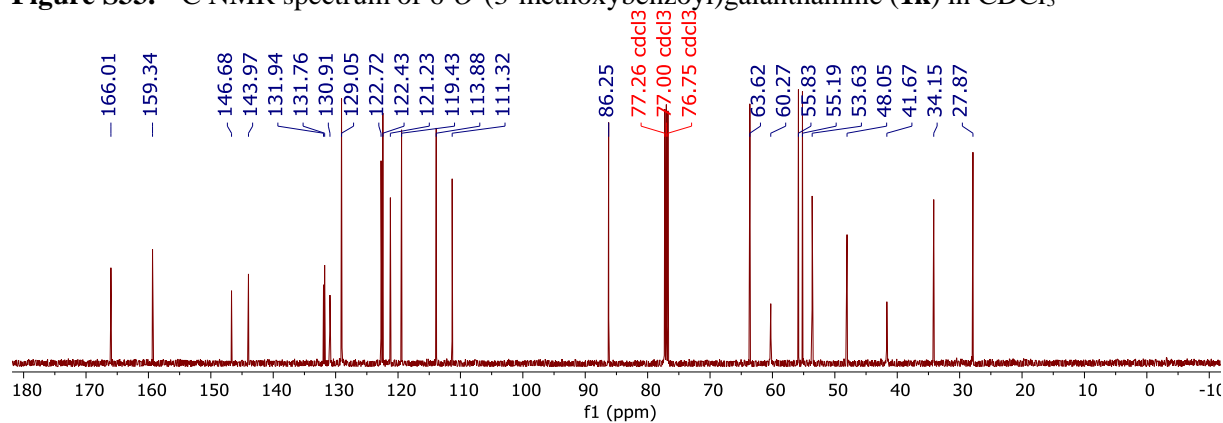


Figure S34. ESI-HRMS spectrum of 6-*O*-(4-methoxybenzoyl)galanthamine (**11**)

422.1967

2019 01 25 AM7 A 1296 (2.224) Cm (1294:1308-(1185:1233+1413:1454))

1: TOF MS ES+
6.07e5

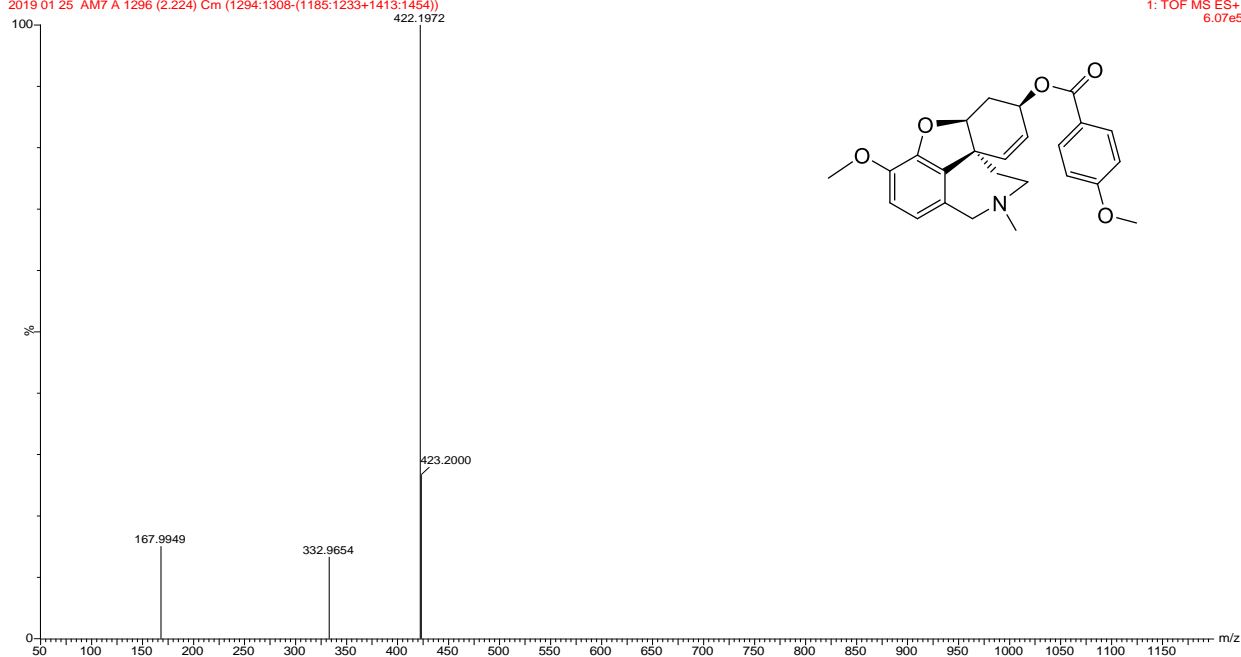


Figure S35. ¹H NMR spectrum of 6-*O*-(4-methoxybenzoyl)galanthamine (**11**) in CDCl₃

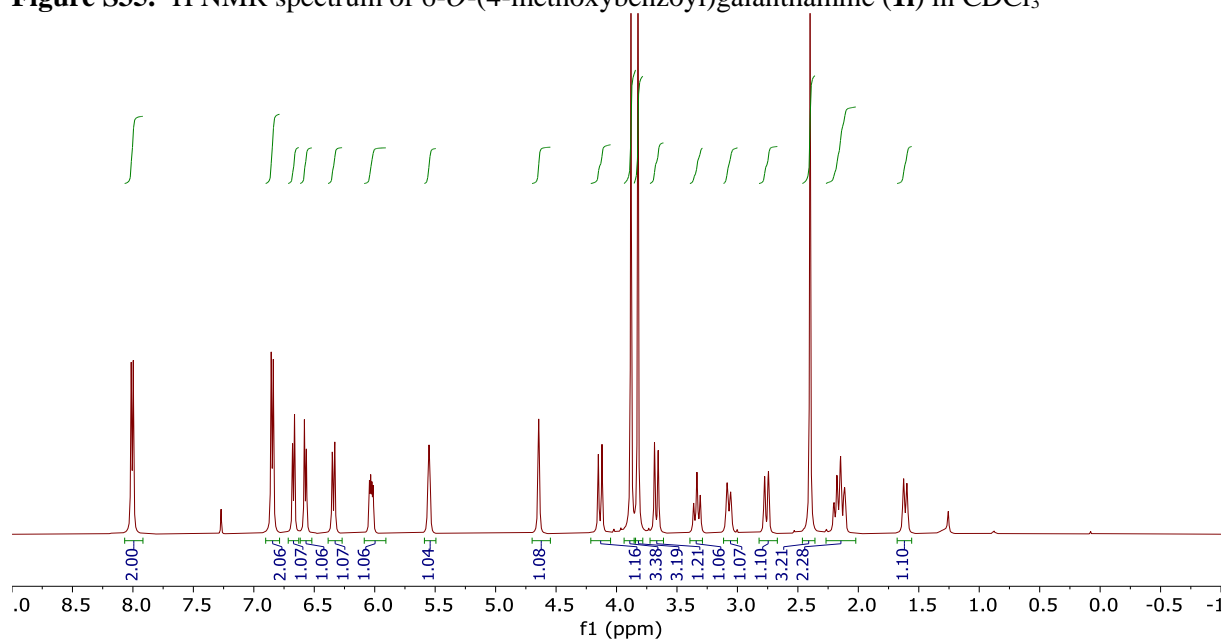


Figure S36. ¹³C NMR spectrum of 6-*O*-(4-methoxybenzoyl)galanthamine (**11**) in CDCl₃

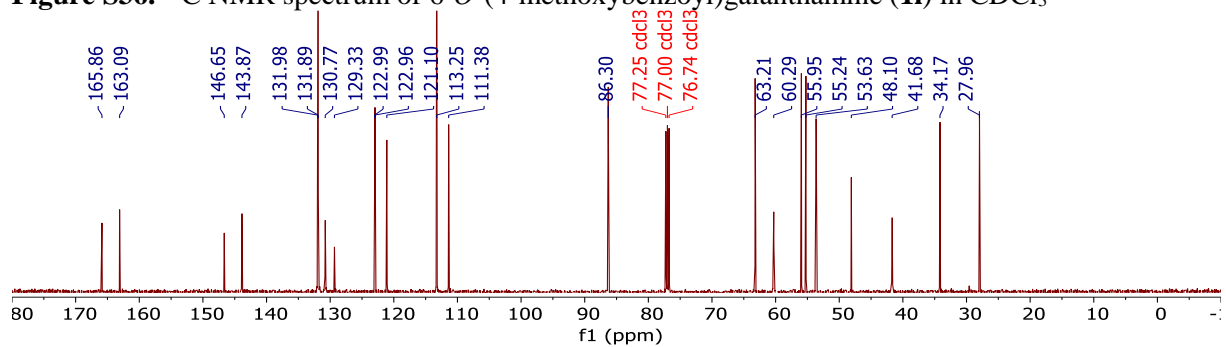


Figure S37. ESI-HRMS spectrum of 6-*O*-(3,4-dimethoxybenzoyl)galanthamine (**1m**)

452,2073

2019 01 25 AM9 A 1163 (1.995) Cm (1163:1179-(863:946+1415:1492))

1: TOF MS ES+
5.41e5

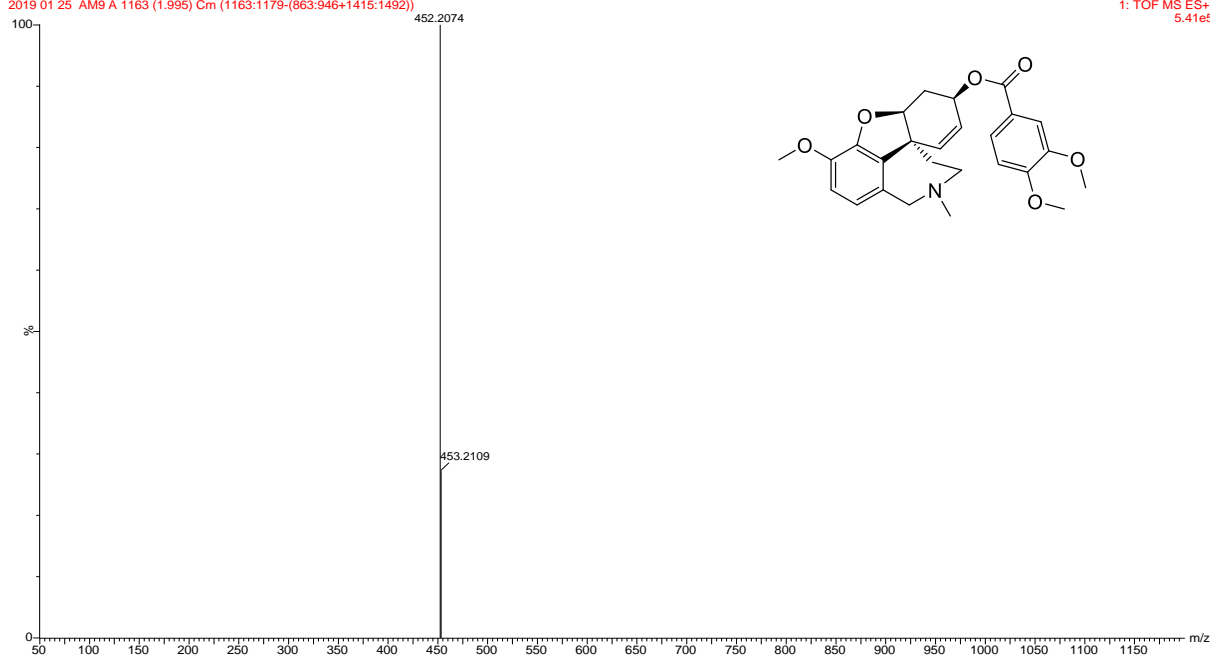


Figure S38. ^1H NMR spectrum of 6-*O*-(3,4-dimethoxybenzoyl)galanthamine (**1m**) in CDCl_3

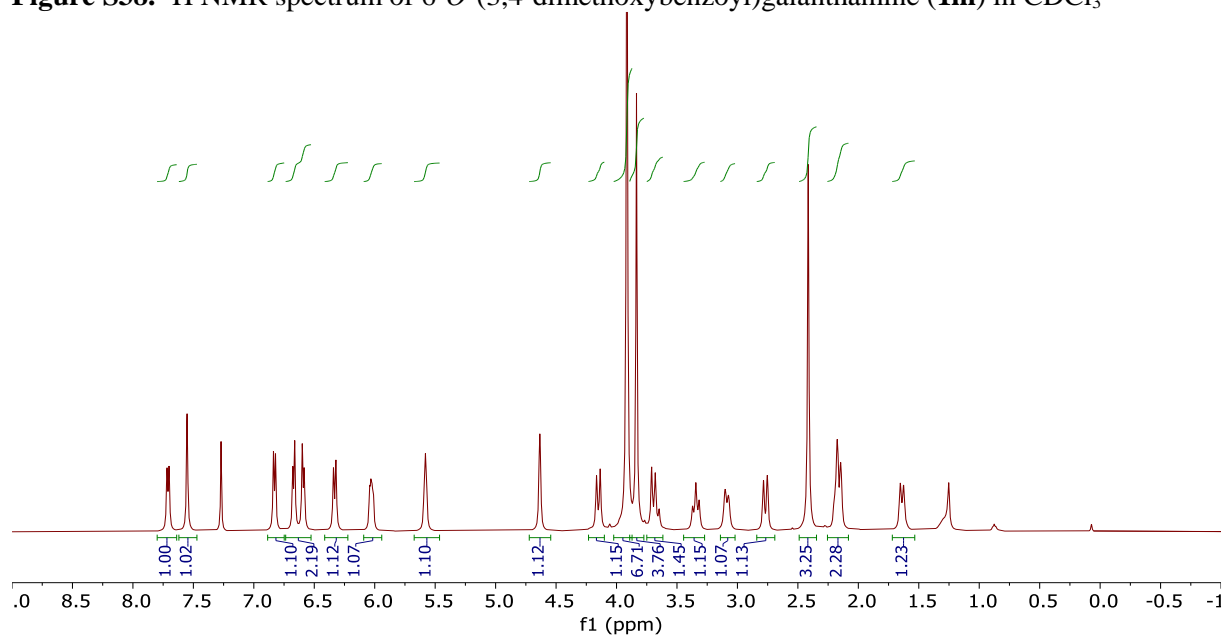


Figure S39. ^{13}C NMR spectrum of 6-*O*-(3,4-dimethoxybenzoyl)galanthamine (**1m**) in CDCl_3

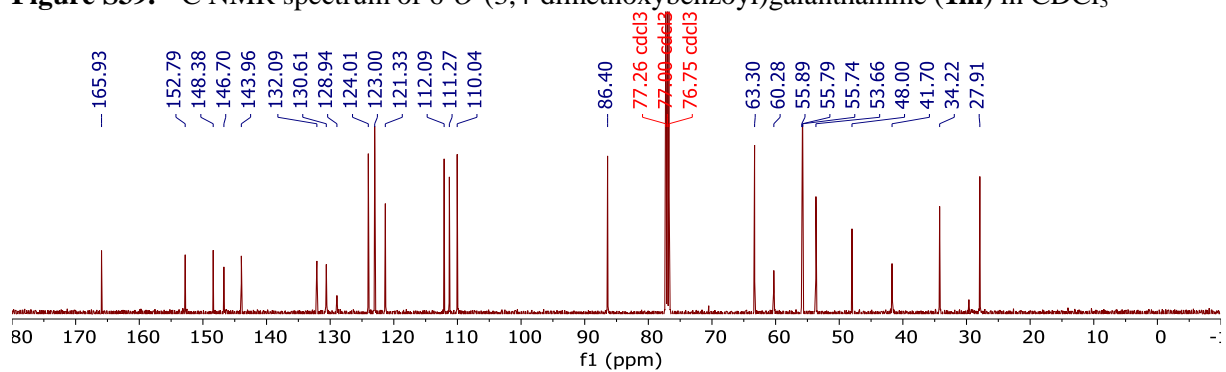


Figure S40. ESI-HRMS spectrum of 6-*O*-(3,5-dimethoxybenzoyl)galanthamine (**1n**)

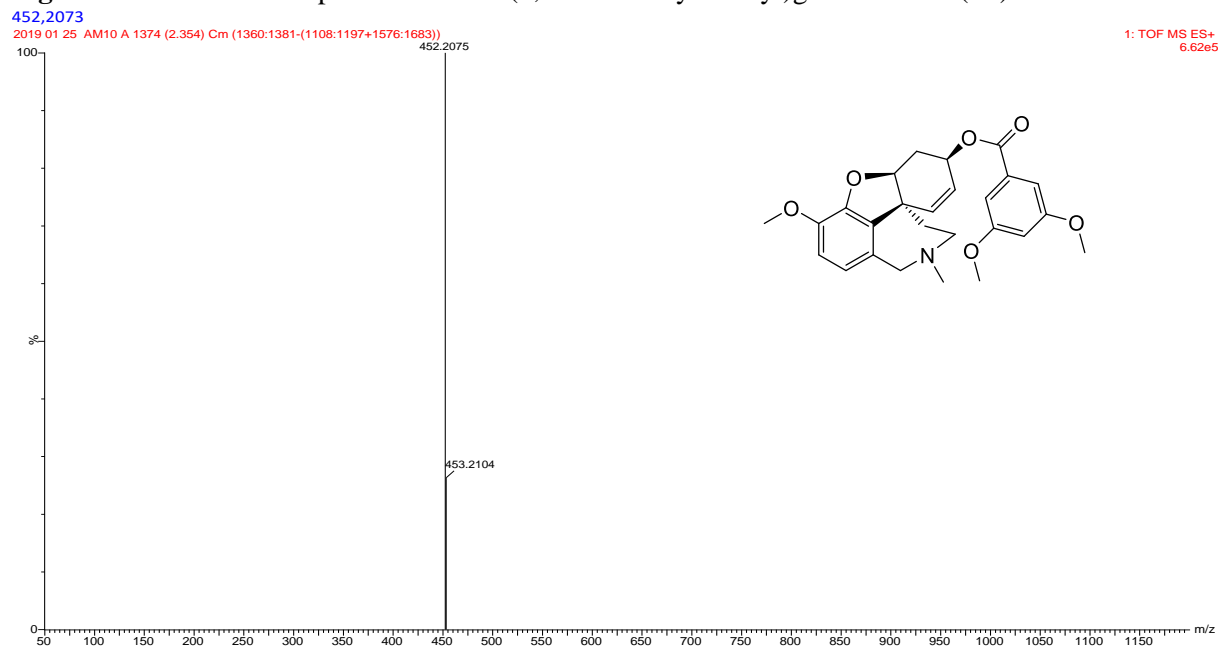


Figure S41. ^1H NMR spectrum of 6-*O*-(3,5-dimethoxybenzoyl)galanthamine (**1n**) in CDCl_3

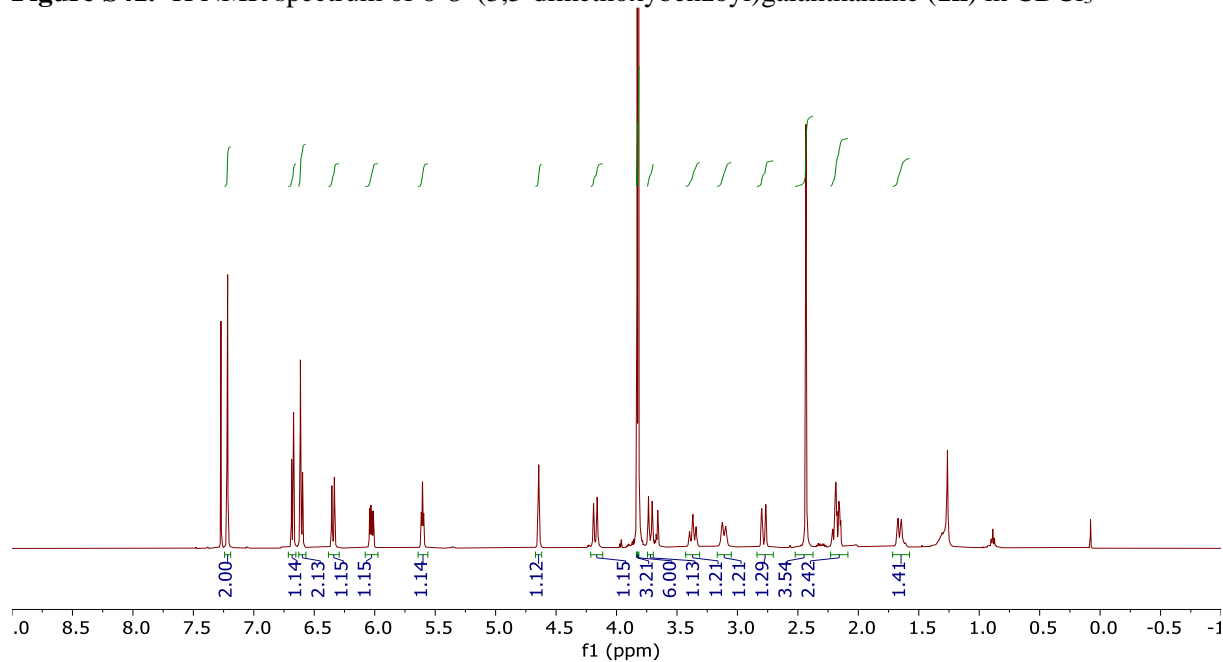


Figure S42. ^{13}C NMR spectrum of 6-*O*-(3,5-dimethoxybenzoyl)galanthamine (**1n**) in CDCl_3

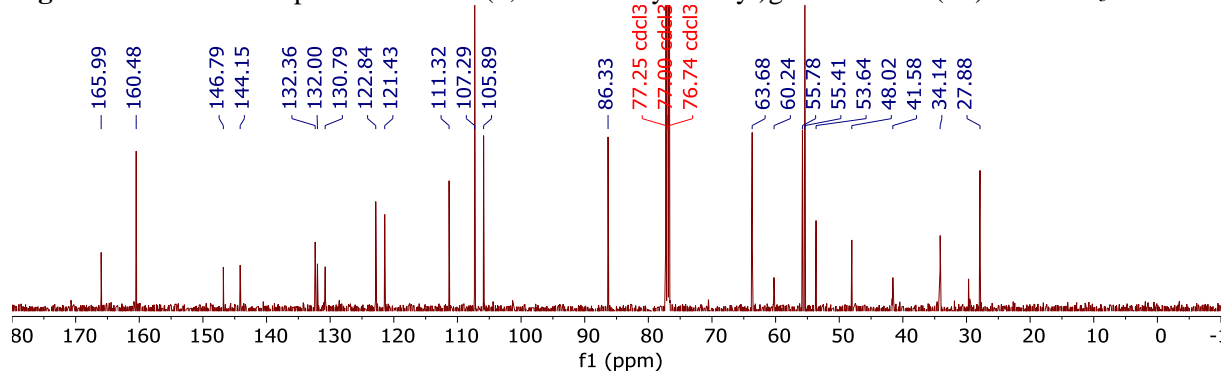


Figure S43. ESI-HRMS spectrum of 6-*O*-(3,4,5-trimethoxybenzoyl)galanthamine (**1o**)

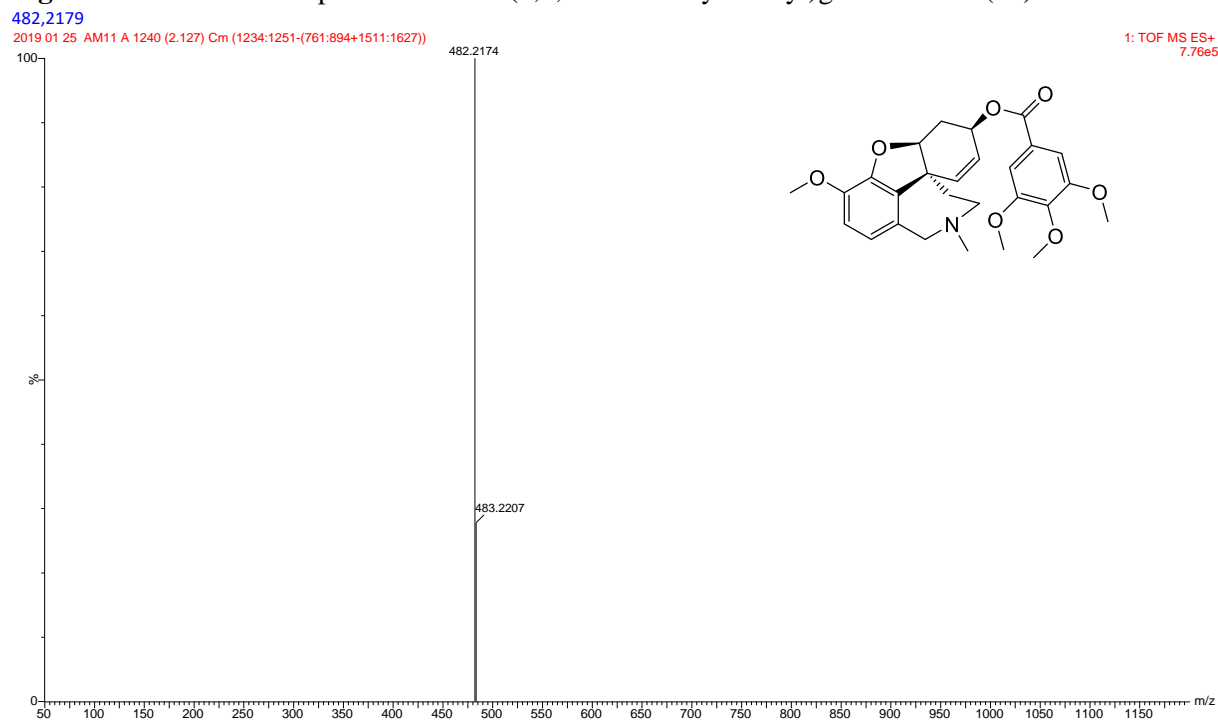


Figure S44. ^1H NMR spectrum of 6-*O*-(3,4,5-trimethoxybenzoyl)galanthamine (**1o**) in CDCl_3

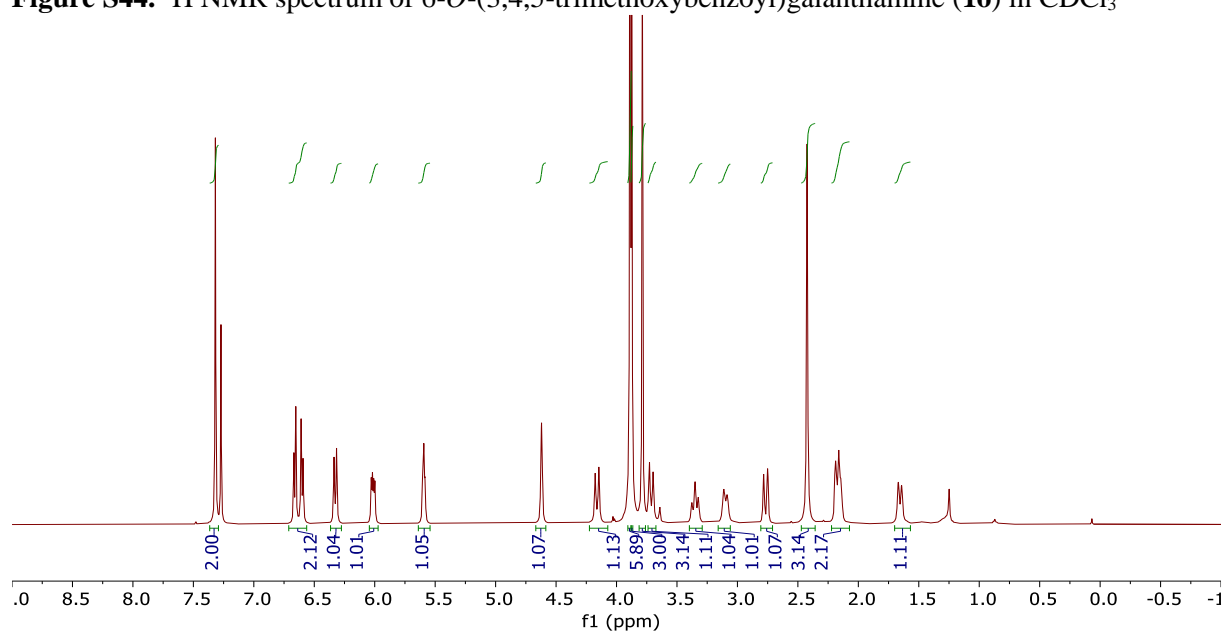


Figure S45. ^{13}C NMR spectrum of 6-*O*-(3,4,5-trimethoxybenzoyl)galanthamine (**1o**) in CDCl_3

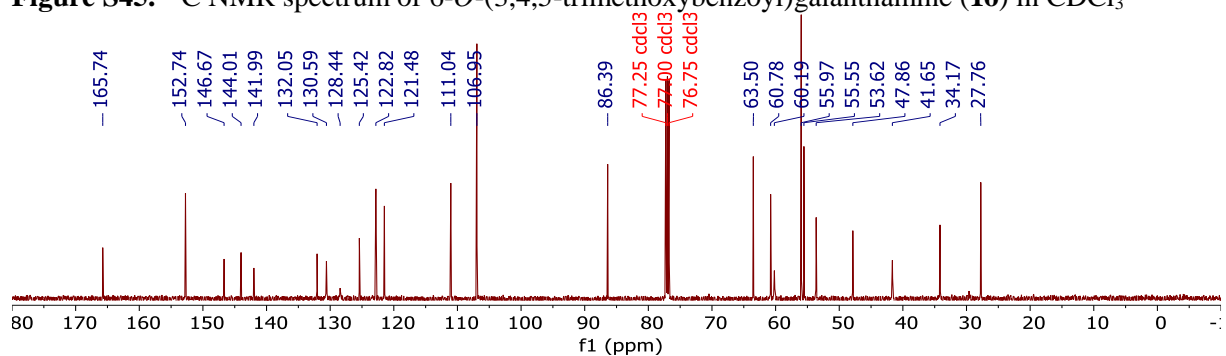


Figure S46. ESI-HRMS spectrum of 6-*O*-(3,5-diethoxybenzoyl)galanthamine (**1p**)

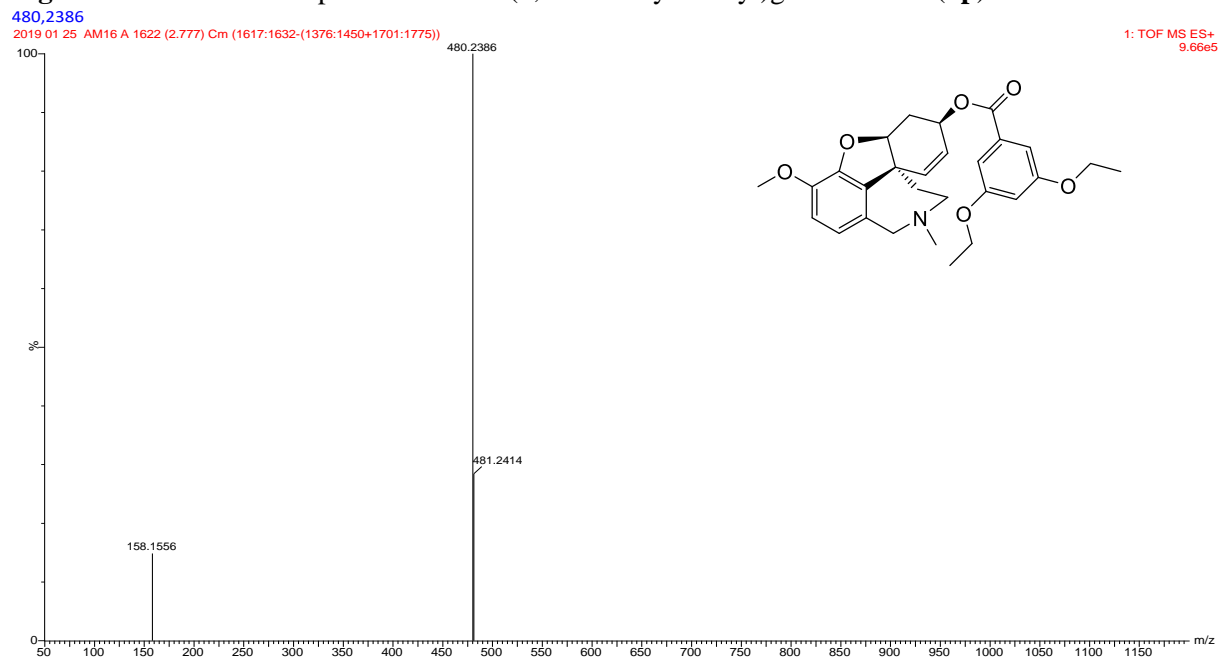


Figure S47. ^1H NMR spectrum of 6-*O*-(3,5-diethoxybenzoyl)galanthamine (**1p**) in CDCl_3

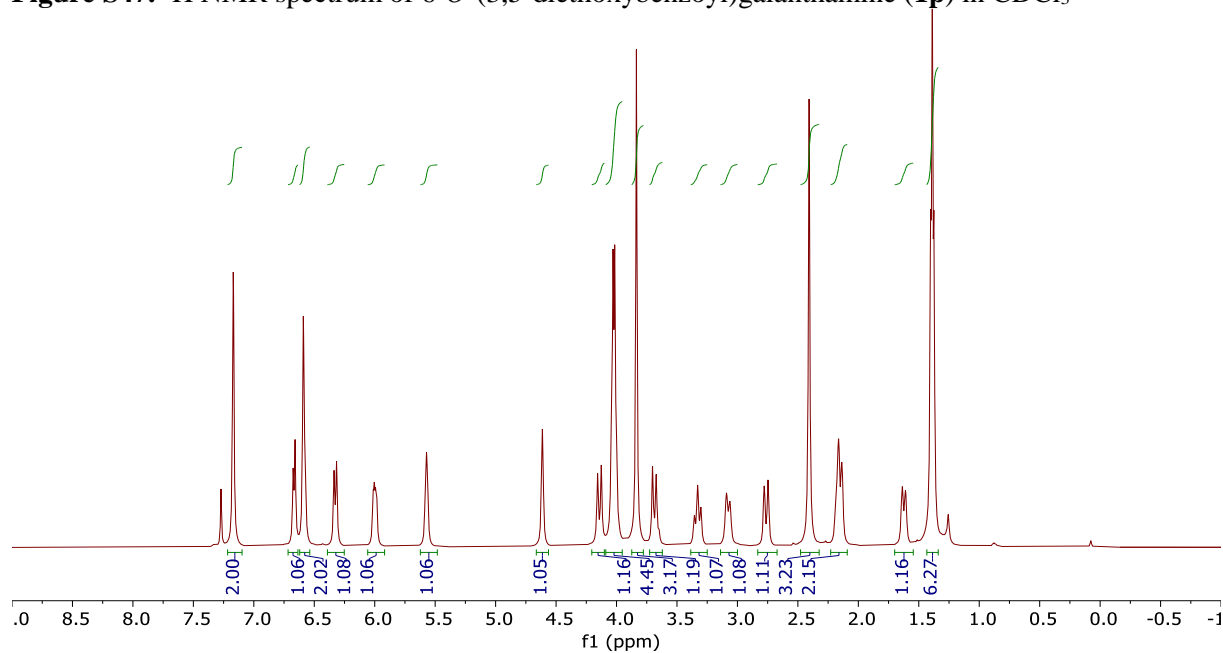


Figure S48. ^{13}C NMR spectrum of 6-*O*-(3,5-diethoxybenzoyl)galanthamine (**1p**) in CDCl_3

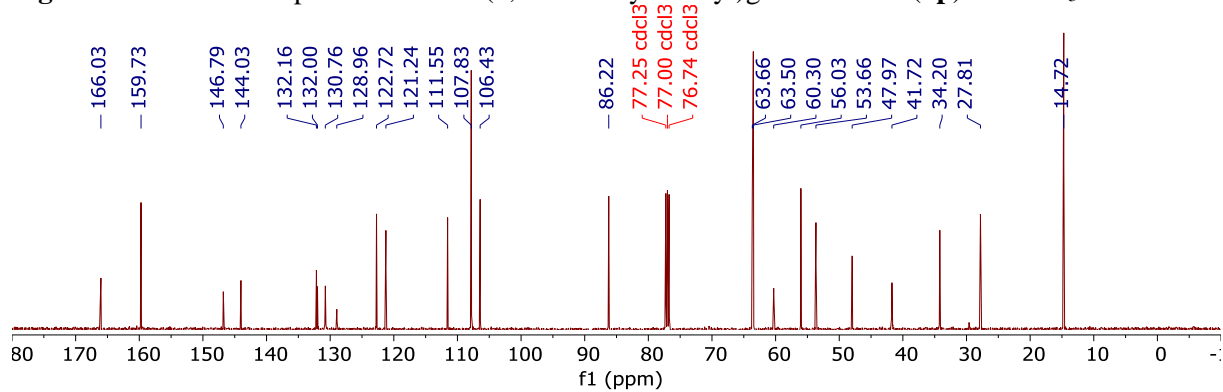


Figure S49. ESI-HRMS spectrum of 6-*O*-(1-naphtoyl)galanthamine (**1q**)

478.1780

2021 01 12 AM 21A 1551 (2.672) Cm (1540:1590-(1377:1464+1658:1786))

1: TOF MS ES+
3.33e6

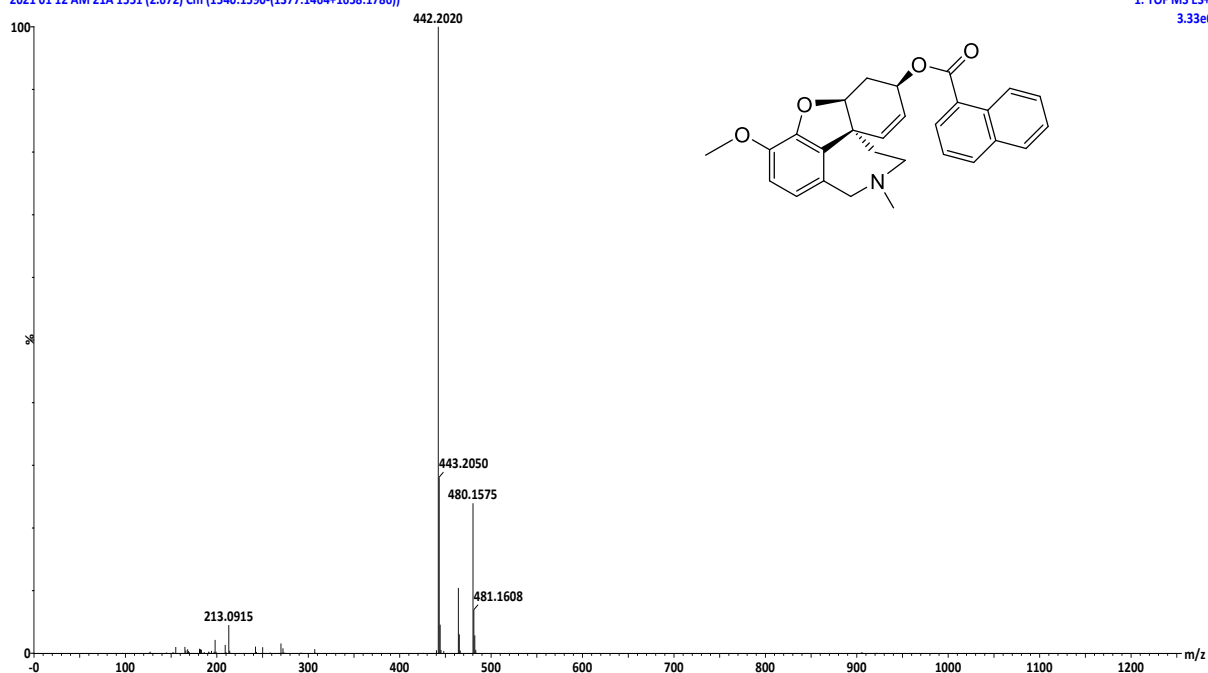


Figure S50. ¹H NMR spectrum of 6-*O*-(1-naphtoyl)galanthamine (**1q**) in CDCl₃

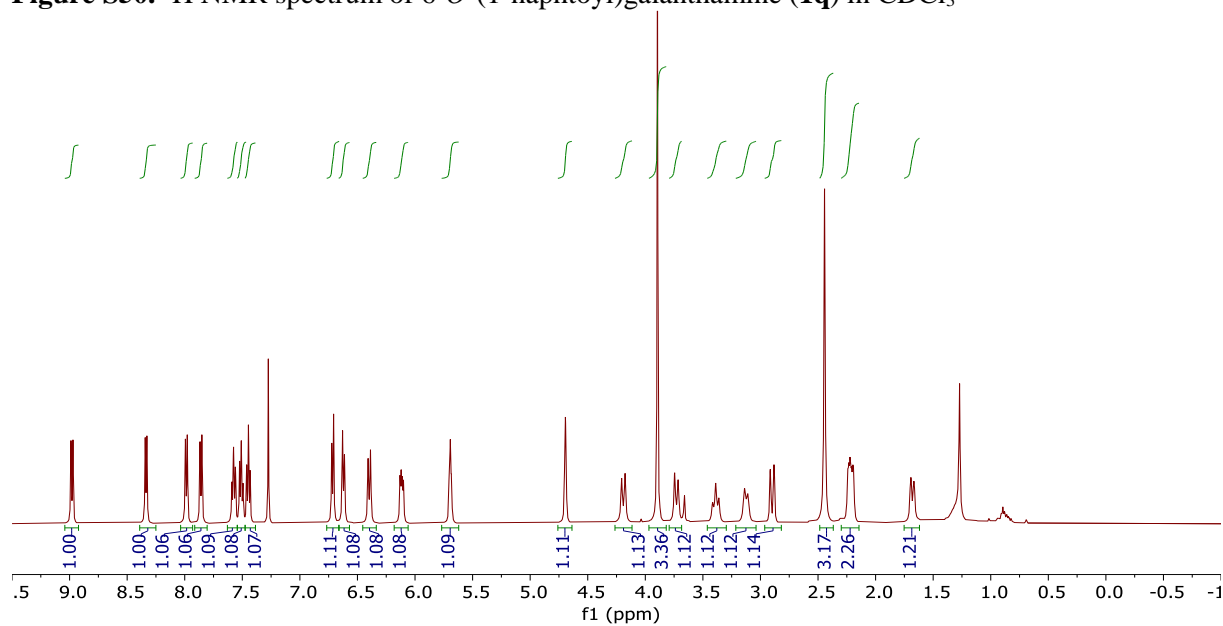


Figure S51. ¹³C NMR spectrum of 6-*O*-(1-naphtoyl)galanthamine (**1q**) in CDCl₃

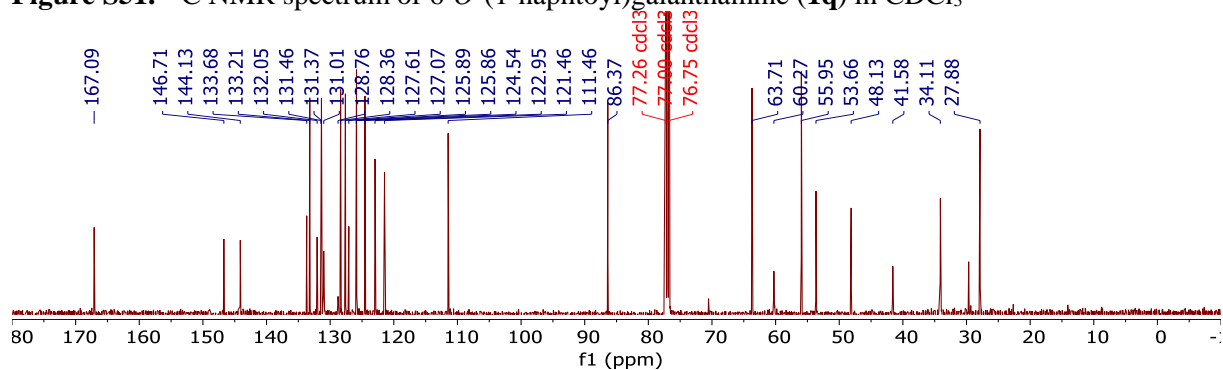


Figure S52. ESI-HRMS spectrum of 6-*O*-(2-naphtoyl)galanthamine (**1r**)

478.1780

2021 01 12 AM 20A 1559 (2.686) Cm (1546:1586-(1378:1464+1667:1753))

1: TOF MS ES+
3.24e6

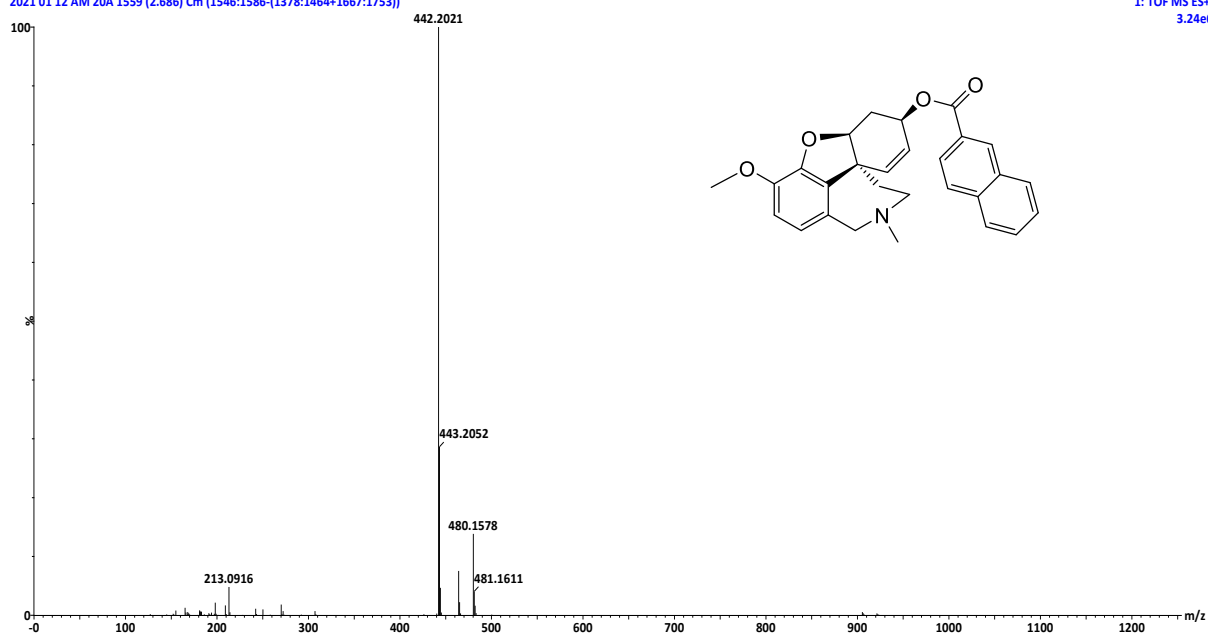


Figure S53. ^1H NMR spectrum of 6-*O*-(2-naphtoyl)galanthamine (**1r**) in CDCl_3

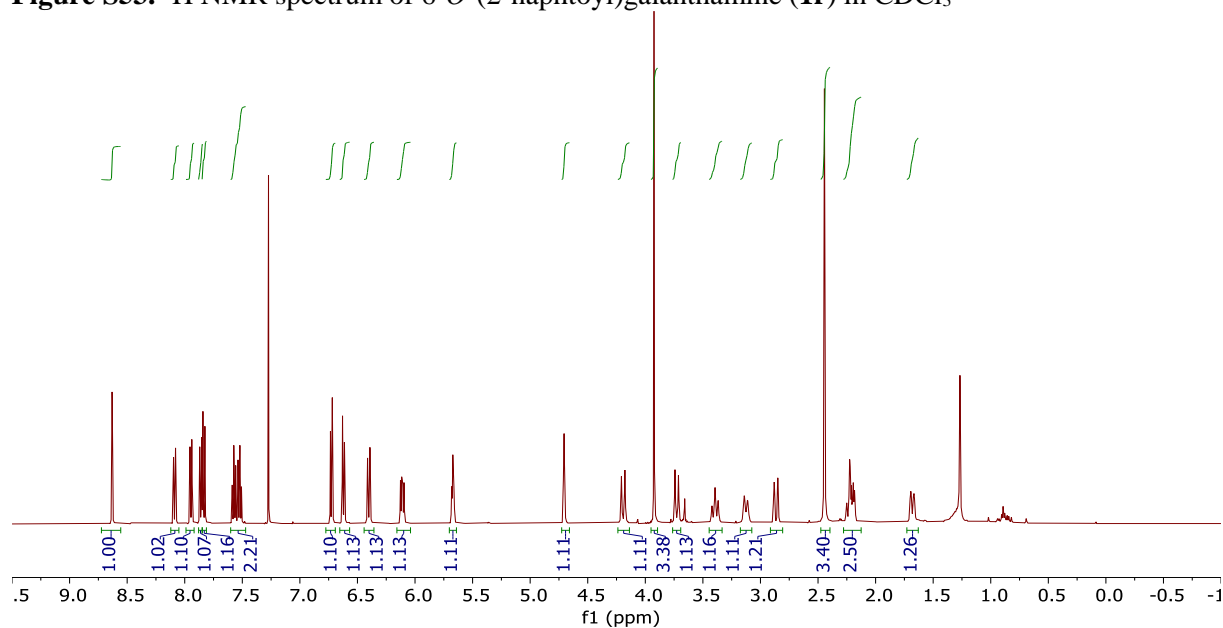


Figure S54. ^{13}C NMR spectrum of 6-*O*-(2-naphtoyl)galanthamine (**1r**) in CDCl_3

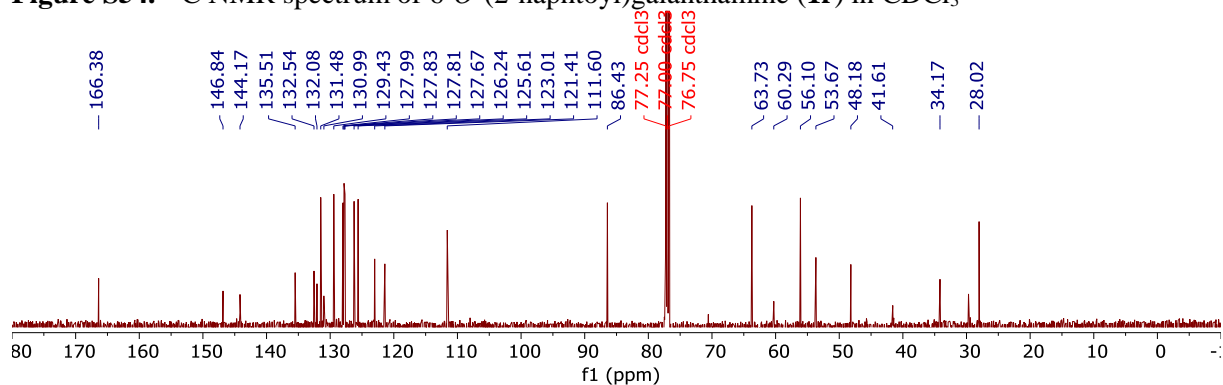


Figure S55. ESI-HRMS spectrum of 6-*O*-(2-furoyl)galanthamine (**1s**)

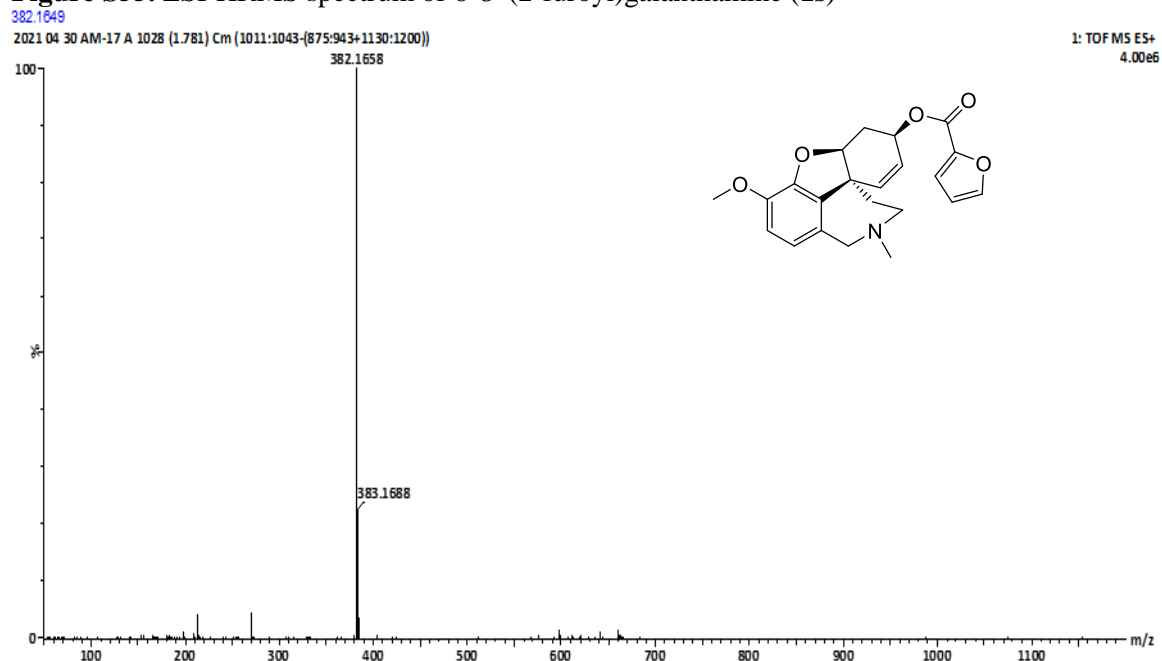


Figure S56. ^1H NMR spectrum of 6-*O*-(2-furoyl)galanthamine (**1s**) in CDCl_3

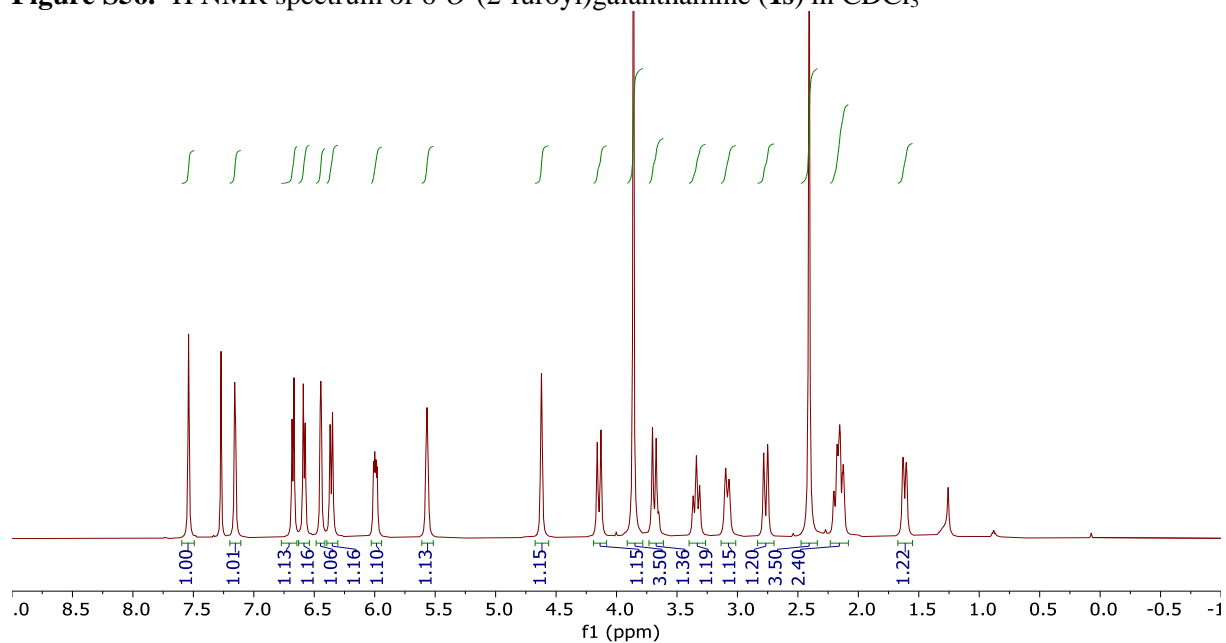


Figure S57. ^{13}C NMR spectrum of 6-*O*-(2-furoyl)galanthamine (**1s**) in CDCl_3

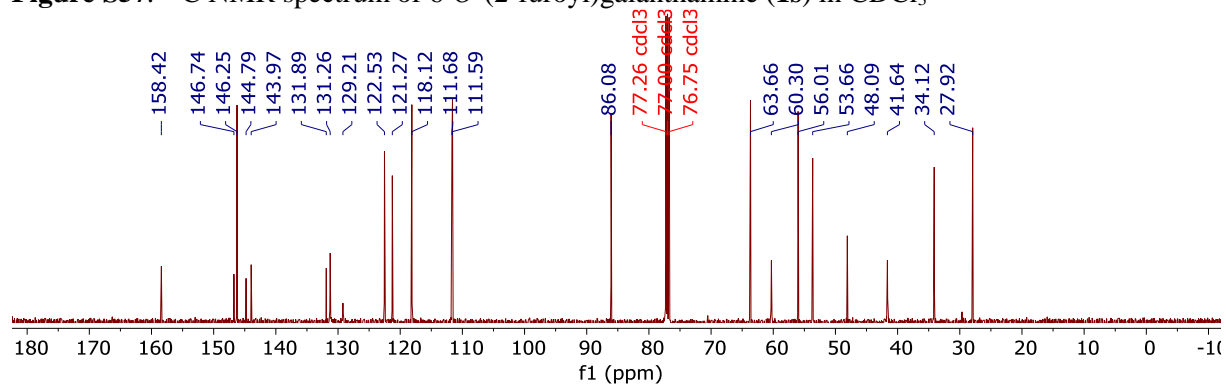


Figure S58. ESI-HRMS spectrum of 3-*O*-methylpancracine (**3**)

302.1378

2020 05 29 NM4 B 674 (1.194) Cm (662:675-(634:644+699:712))

1: TOF MS ES+

1.75e6

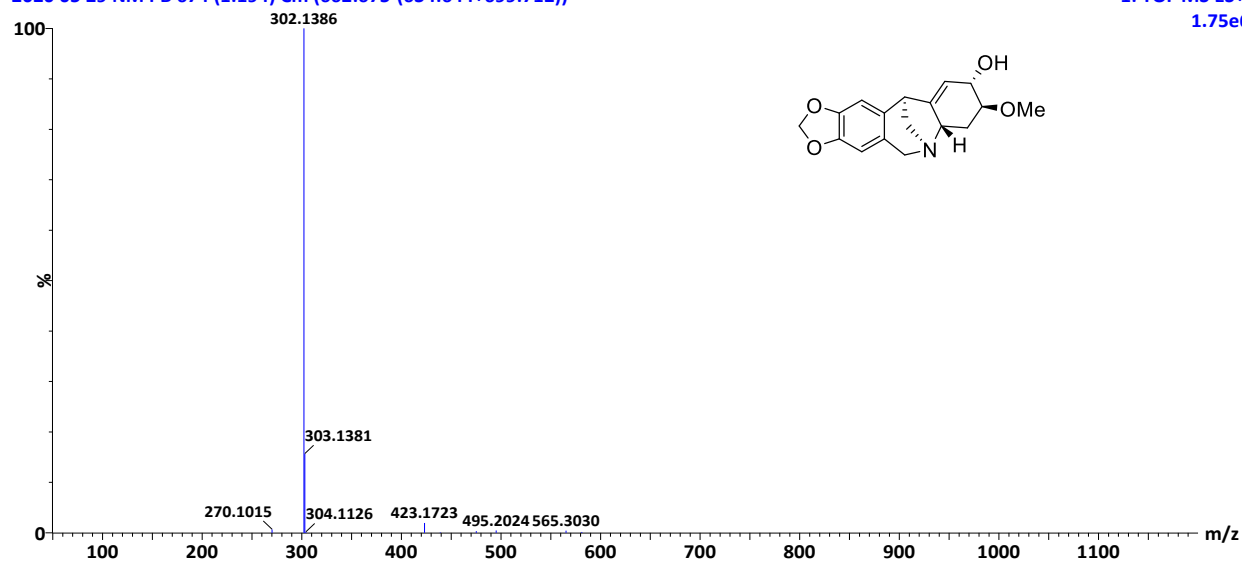


Figure S59. ^1H NMR spectrum of 3-*O*-methylpancracine (**3**) in CDCl_3

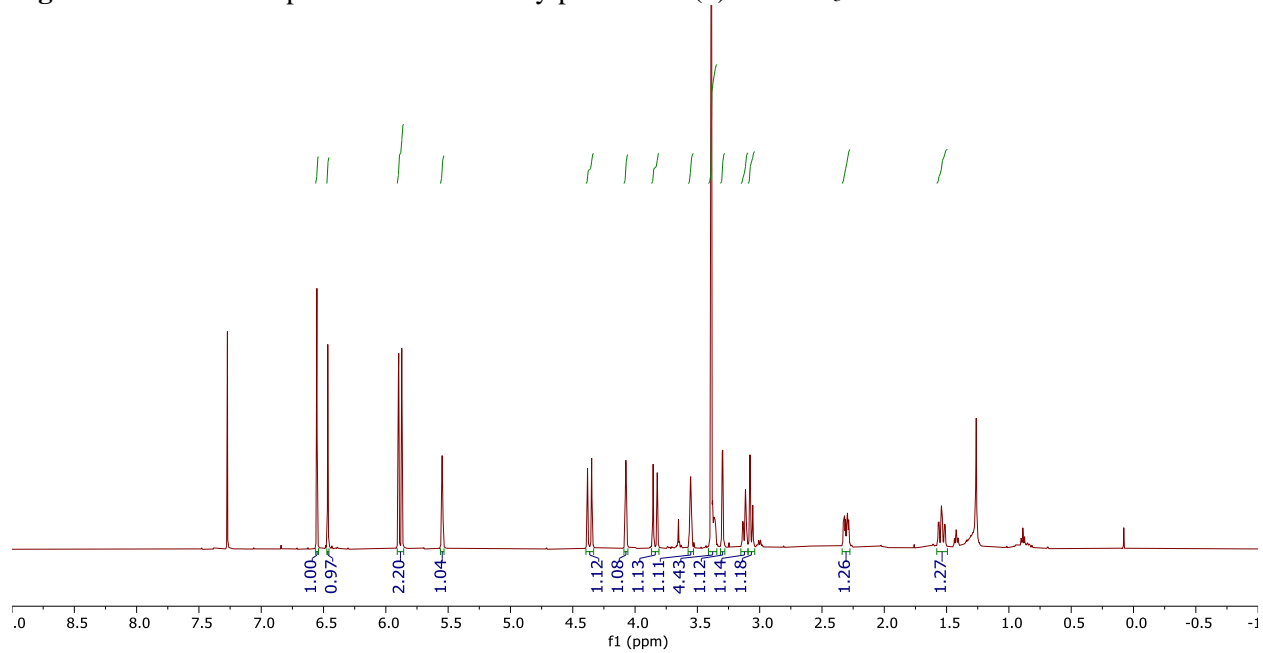


Figure S60. ^{13}C NMR spectrum of 3-*O*-methylpancracine (**3**) in CDCl_3

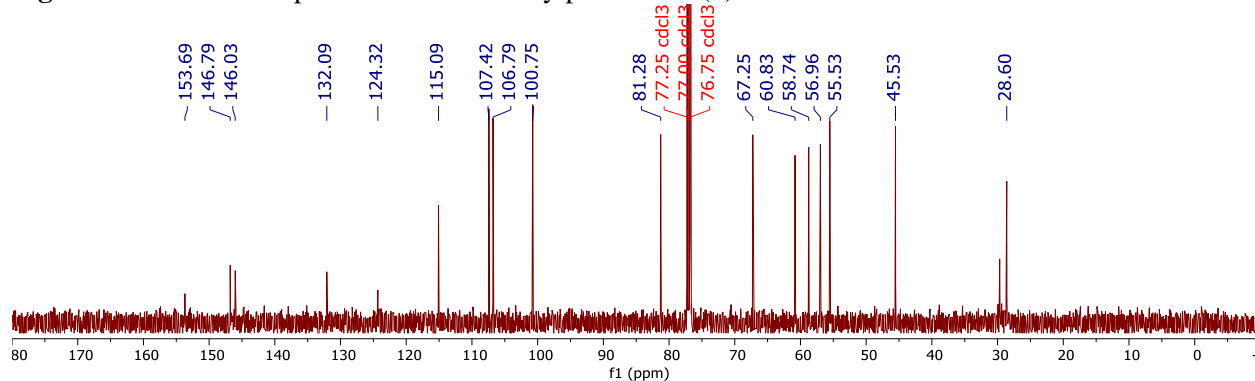


Figure S61. ESI-HRMS spectrum of 2-*O*-(3,5-dimethylbenzoyl)-3-*O*-methylpancracine (**3a**)

434.1962

2020 05 28 NM A59 A 1560 (2.742) Cm (1551:1573-(1425:1499+1640:1696))

1: TOF MS ES+
2.52e6

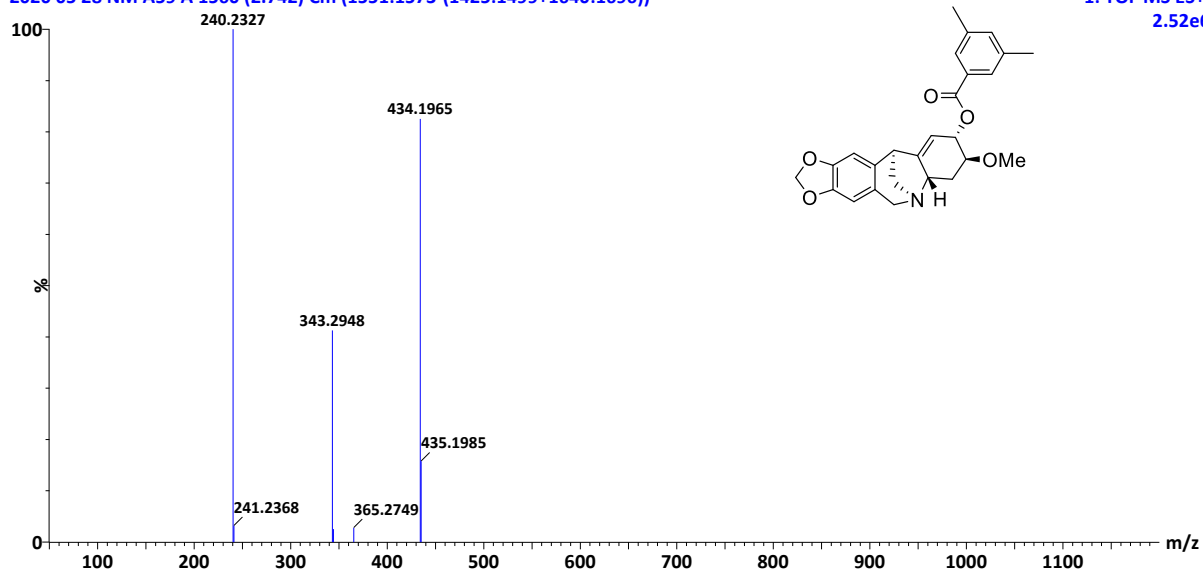


Figure S62. ^1H NMR spectrum of 2-*O*-(3,5-dimethylbenzoyl)-3-*O*-methylpancracine (**3a**) in CDCl_3

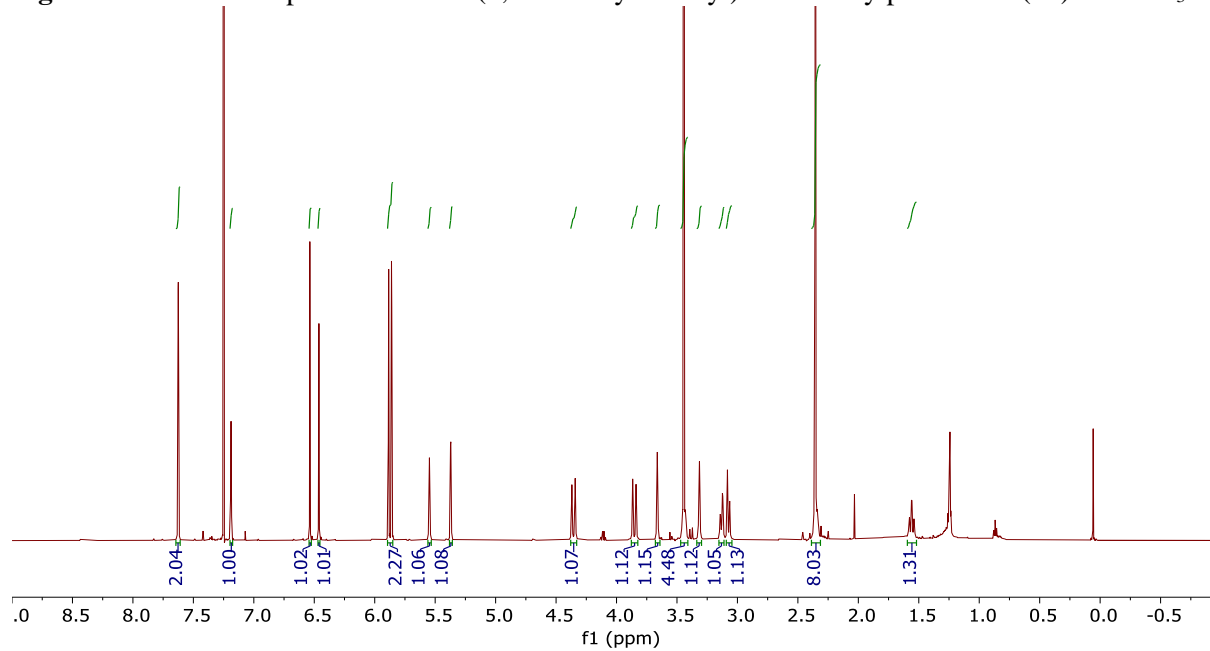


Figure S63. ^{13}C NMR spectrum of 2-*O*-(3,5-dimethylbenzoyl)-3-*O*-methylpancracine (**3a**) in CDCl_3

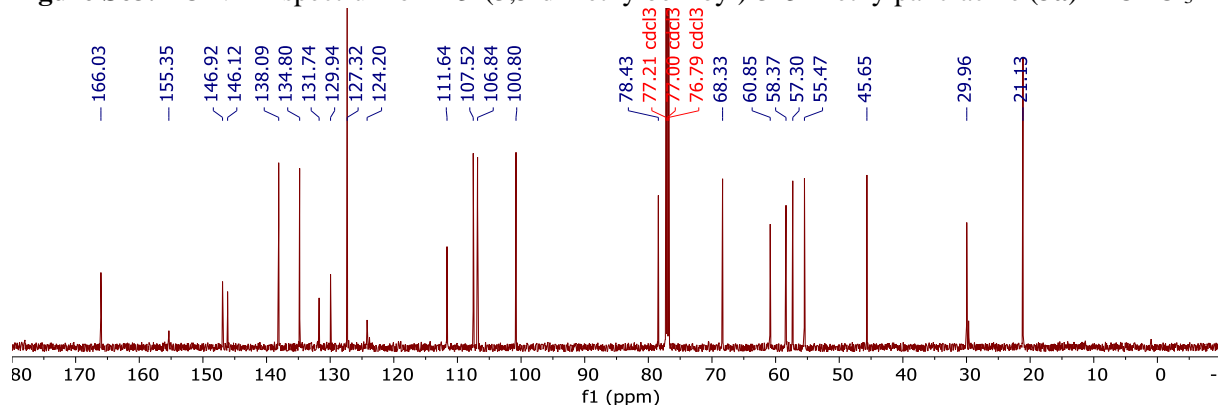


Figure S64. ESI-HRMS spectrum of 2-*O*-(2,4,6-trimethylbenzoyl)-3-*O*-methylpancracine (**3b**)

448.2118

2020 05 28 NM A15 A 1597 (2.807) Cm (1596:1618-(1483:1534+1668:1712))

1: TOF MS ES+
3.69e6

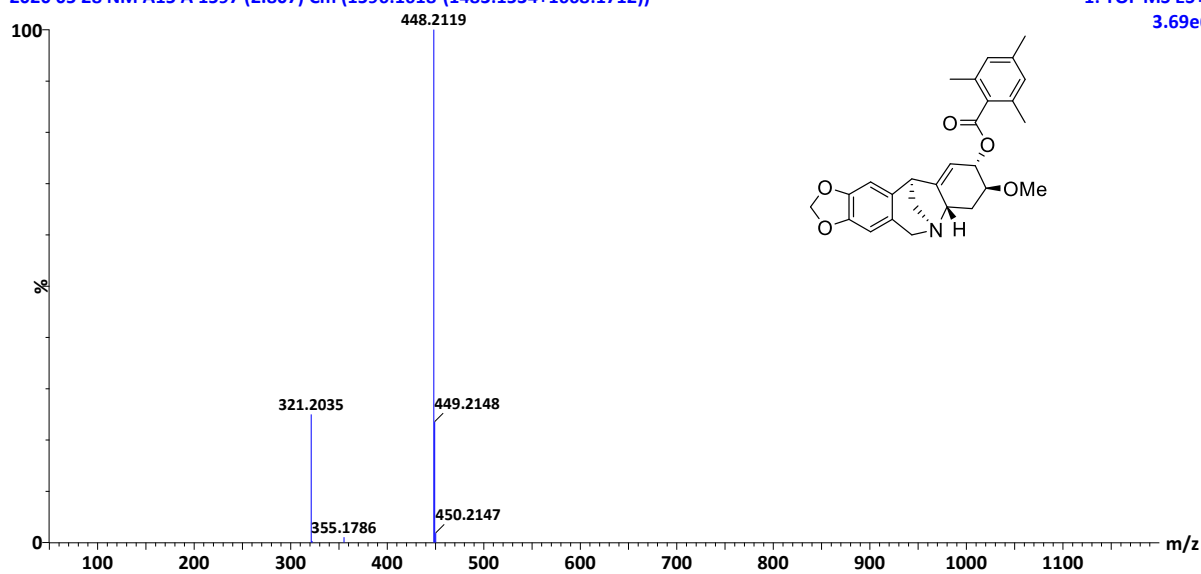


Figure S65. ^1H NMR spectrum of 2-*O*-(2,4,6-trimethylbenzoyl)-3-*O*-methylpancracine (**3b**) in CDCl_3

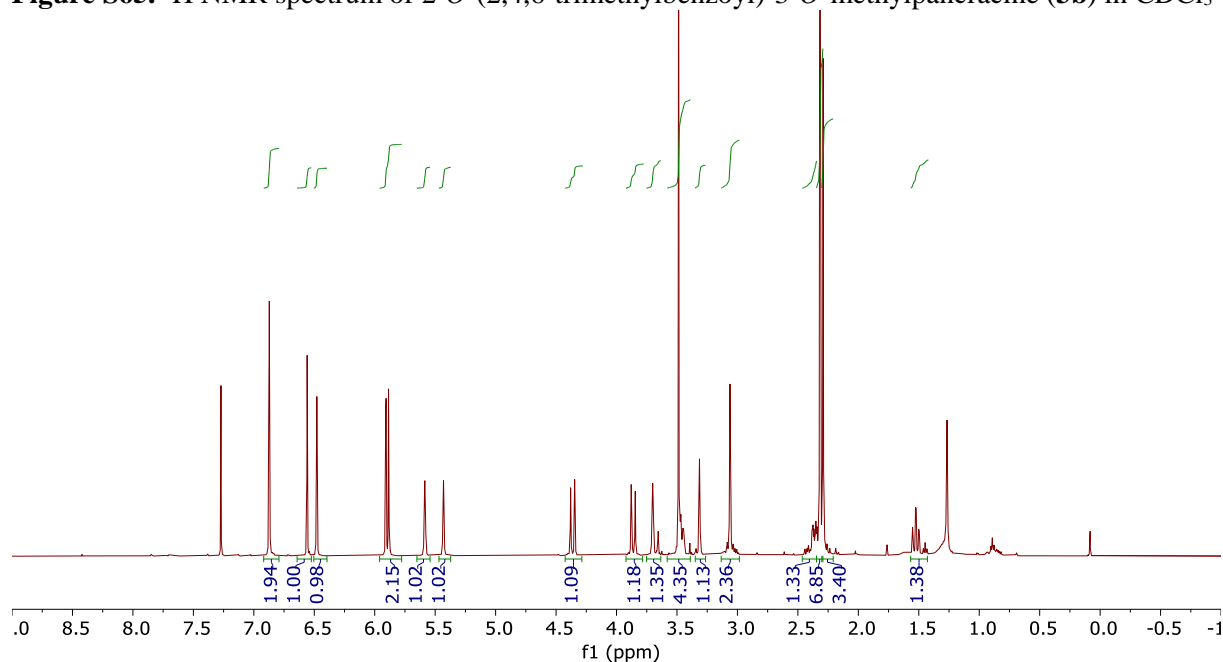


Figure S66. ^{13}C NMR spectrum of 2-*O*-(2,4,6-trimethylbenzoyl)-3-*O*-methylpancracine (**3b**) in CDCl_3

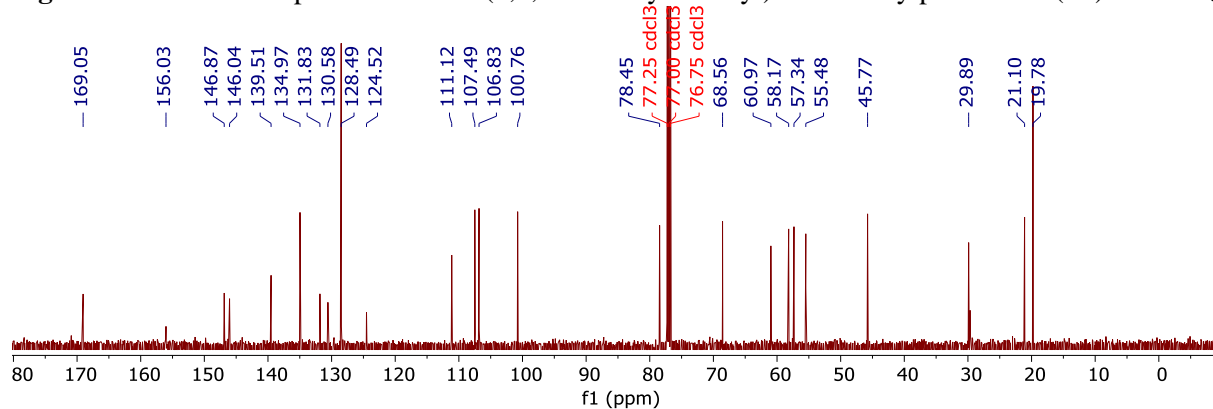


Figure S67. ESI-HRMS spectrum of 2-*O*-(4-*tert*-butylbenzoyl)-3-*O*-methylpancracine (**3c**)

462.2275

2020 09 23 NM47B 1715 (2.954) Cm (1706:1735-(1604:1676+1792:1885))

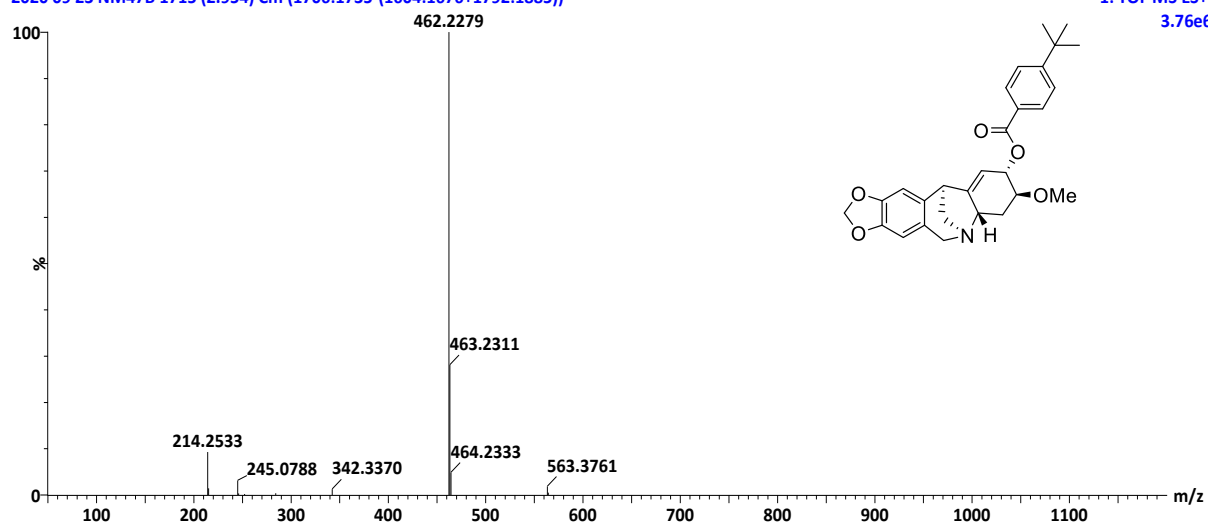


Figure S68. ^1H NMR spectrum of 2-*O*-(4-*tert*-butylbenzoyl)-3-*O*-methylpancracine (**3c**) in CDCl_3

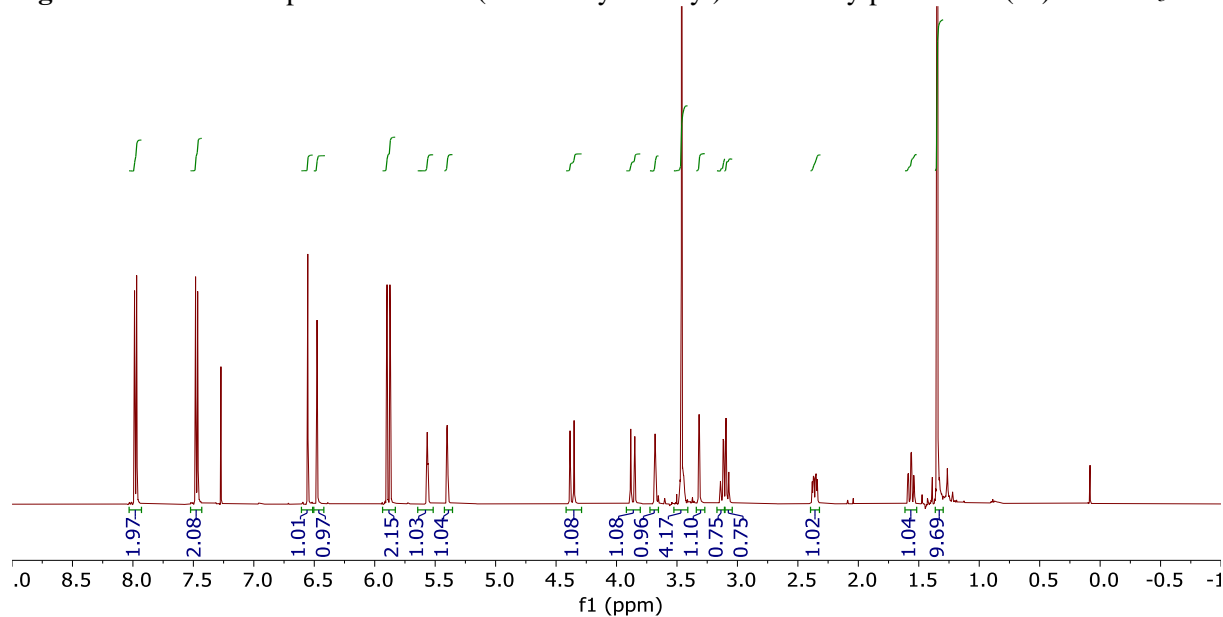


Figure S69. ^{13}C NMR spectrum of 2-*O*-(4-*tert*-butylbenzoyl)-3-*O*-methylpancracine (**3c**) in CDCl_3

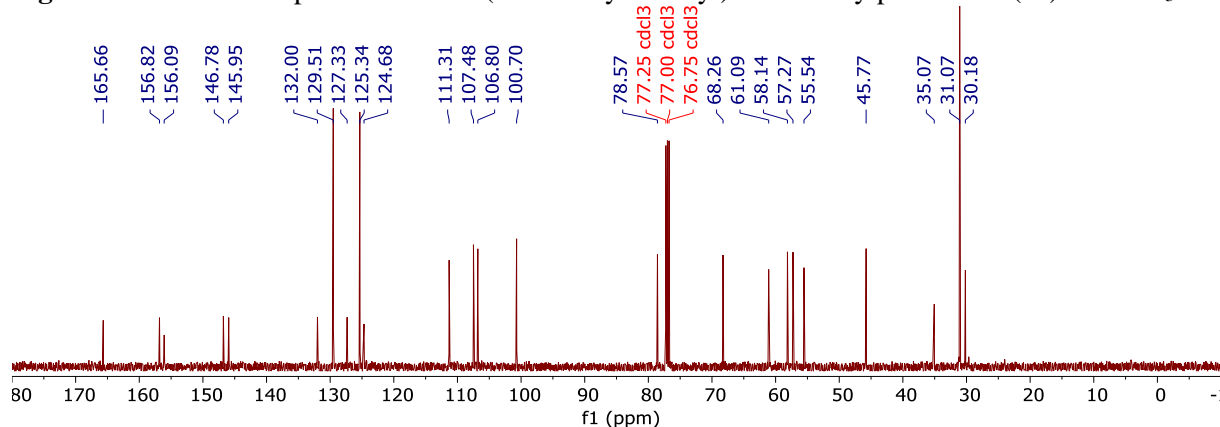


Figure S70. ESI-HRMS spectrum of 2-*O*-(4-butylbenzoyl)-3-*O*-methylpancracine (**3d**)

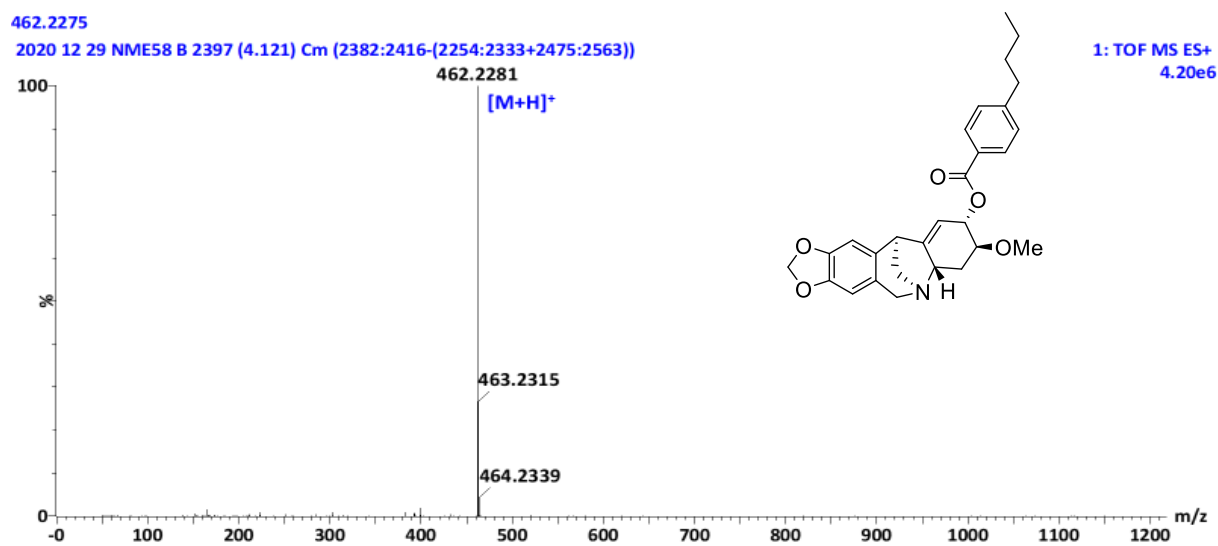


Figure S71. ^1H NMR spectrum of 2-*O*-(4-butylbenzoyl)-3-*O*-methylpancracine (**3d**) in CDCl_3

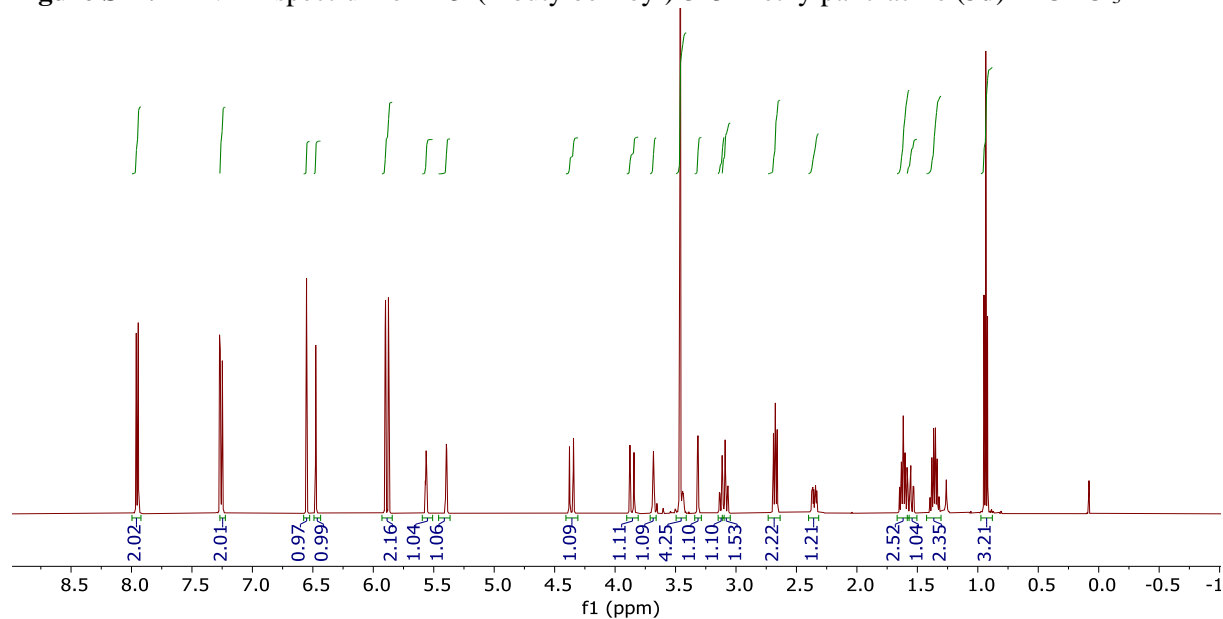


Figure S72. ^{13}C NMR spectrum of 2-*O*-(4-butylbenzoyl)-3-*O*-methylpancracine (**3d**) in CDCl_3

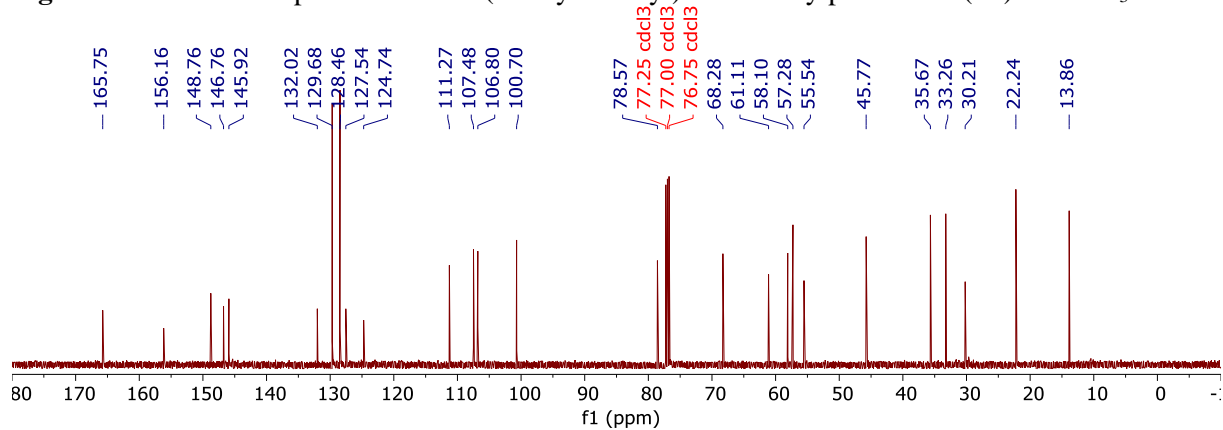


Figure S73. ESI-HRMS spectrum of 2-*O*-(3,5-diethoxybenzoyl)-3-*O*-methylpancracine (**3e**)

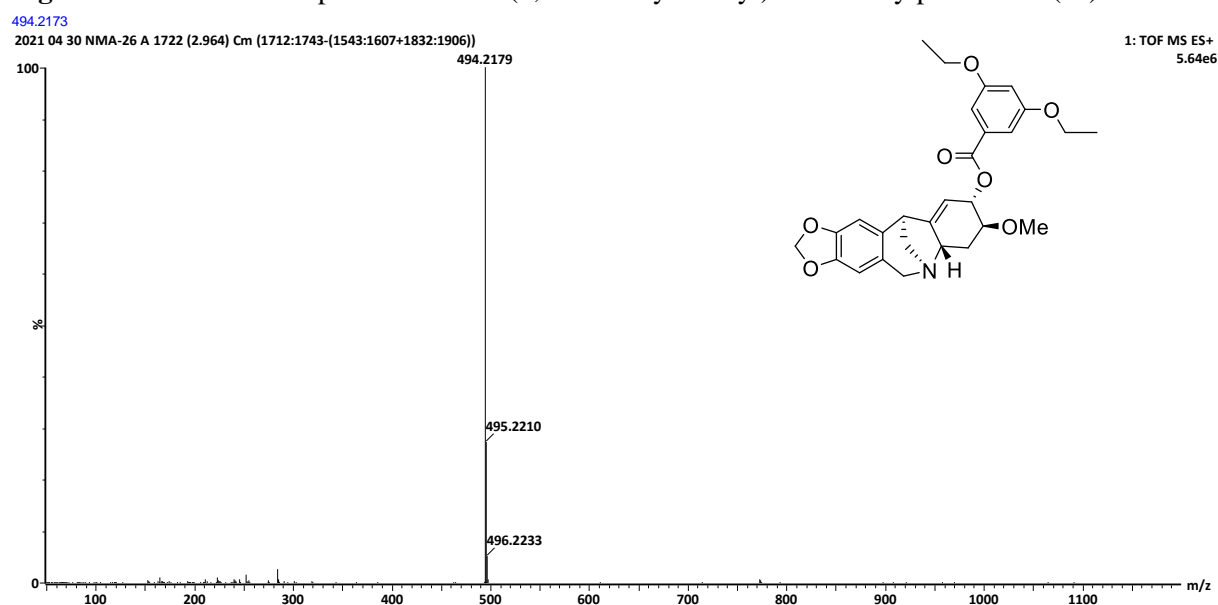


Figure S74. ^1H NMR spectrum of 2-*O*-(3,5-diethoxybenzoyl)-3-*O*-methylpancracine (**3e**) in CDCl_3

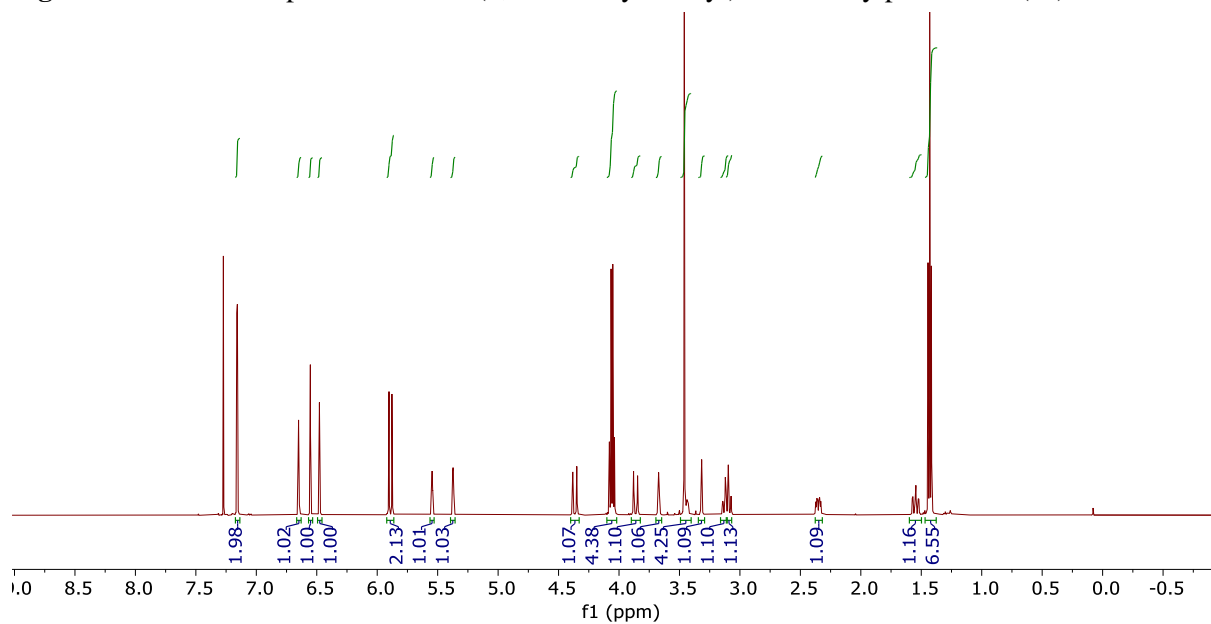


Figure S75. ^{13}C NMR spectrum of 2-*O*-(3,5-diethoxybenzoyl)-3-*O*-methylpancracine (**3e**) in CDCl_3

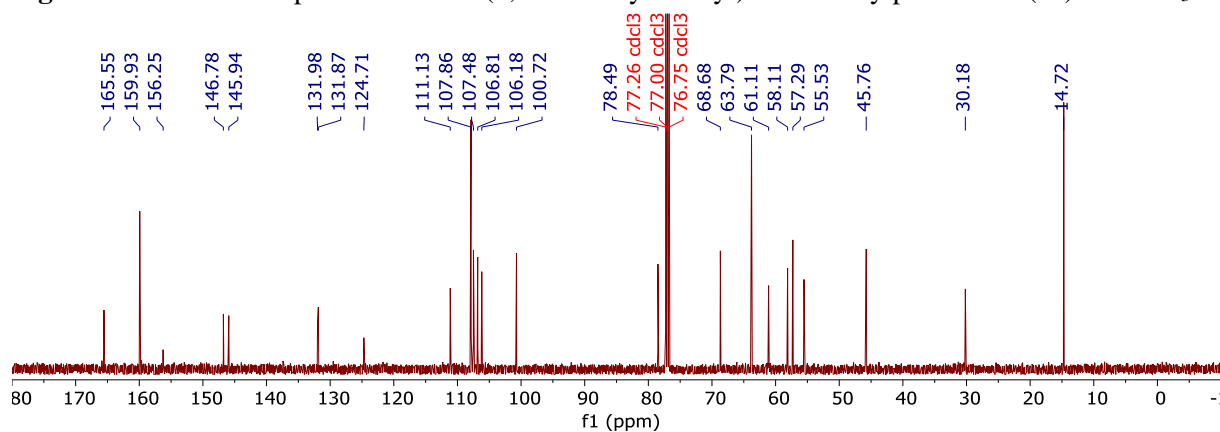


Figure S76. ESI-HRMS spectrum of 2-*O*-(1-naphtoyl)-3-*O*-methylpancracine (**3f**)

456.1805

2020 05 28 NM A4 A 1593 (2.801) Cm (1578:1604-(1520:1555+1645:1715))

1: TOF MS ES+
2.21e6

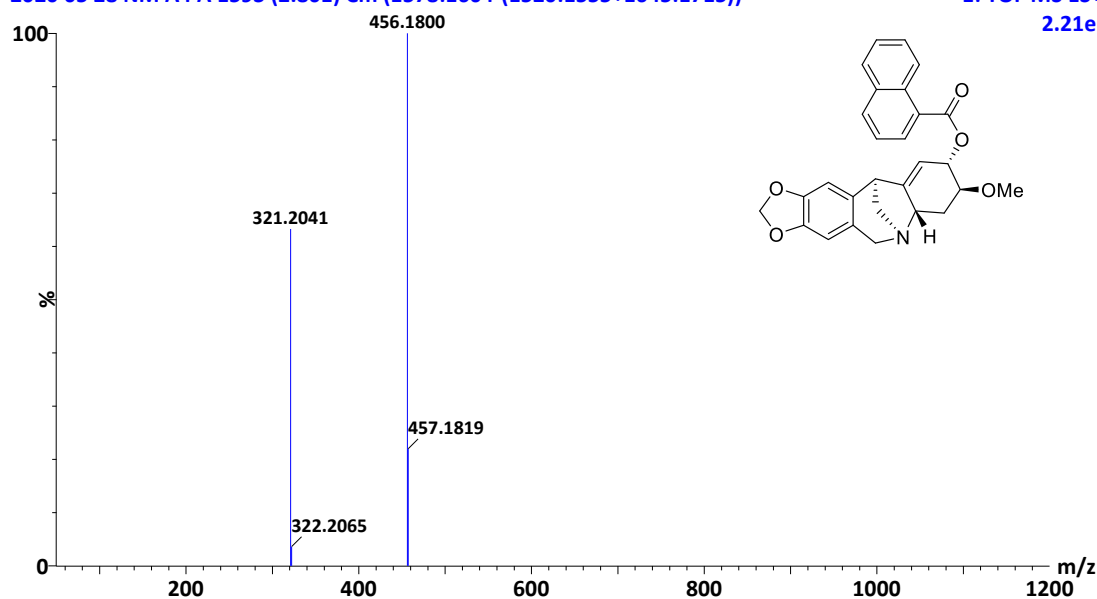


Figure S77. ^1H NMR spectrum of 2-*O*-(1-naphtoyl)-3-*O*-methylpancracine (**3f**) in CDCl_3

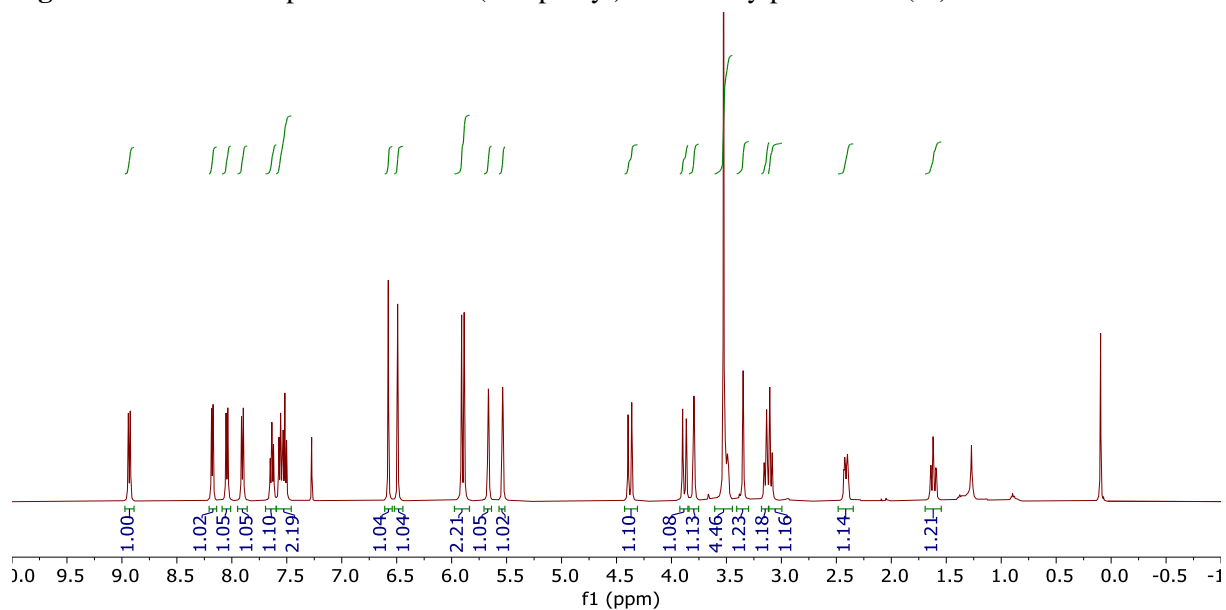


Figure S78. ^{13}C NMR spectrum of 2-*O*-(1-naphtoyl)-3-*O*-methylpancracine (**3f**) in CDCl_3

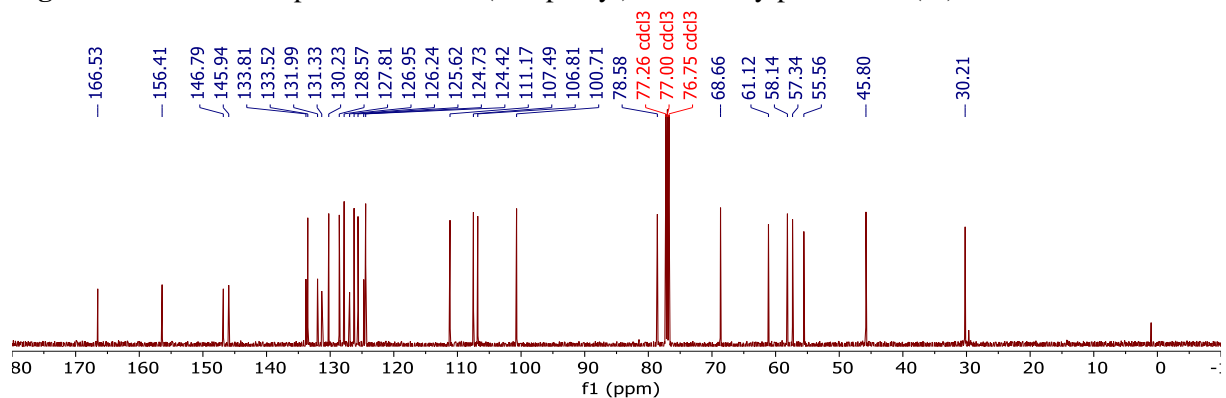


Figure S79. ESI-HRMS spectrum of 2-*O*-(2-naphtoyl)-3-*O*-methylpancracine (**3g**)

456.1805

2020 05 28 NM A16 A 1594 (2.802) Cm (1575:1599-(1447:1552+1662:1749))

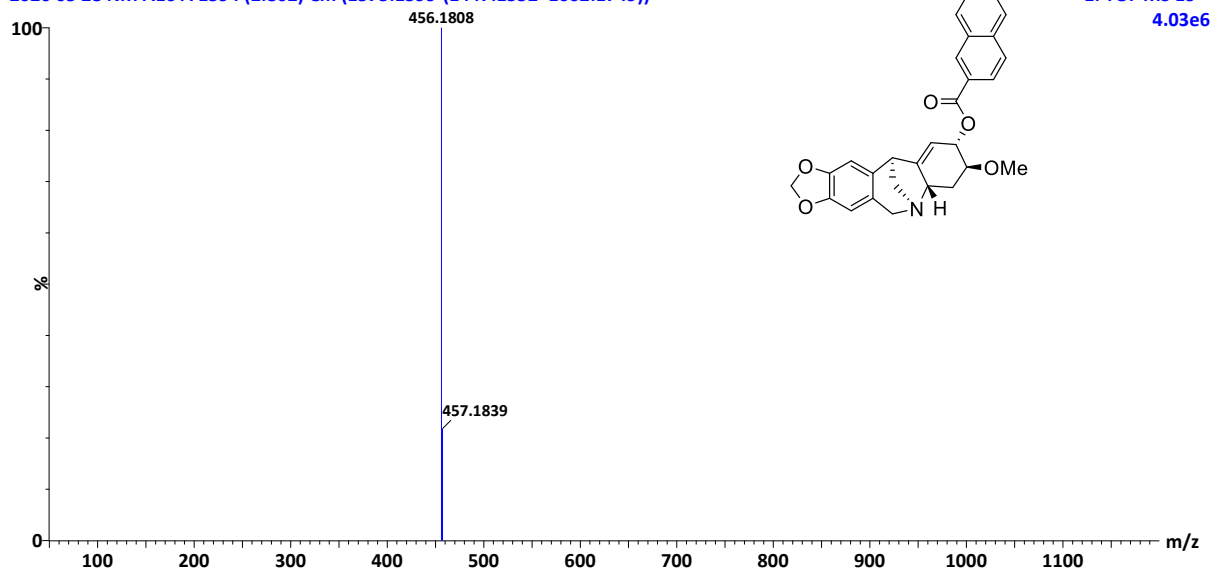


Figure S80. ^1H NMR spectrum of 2-*O*-(2-naphtoyl)-3-*O*-methylpancracine (**3g**) in CDCl_3

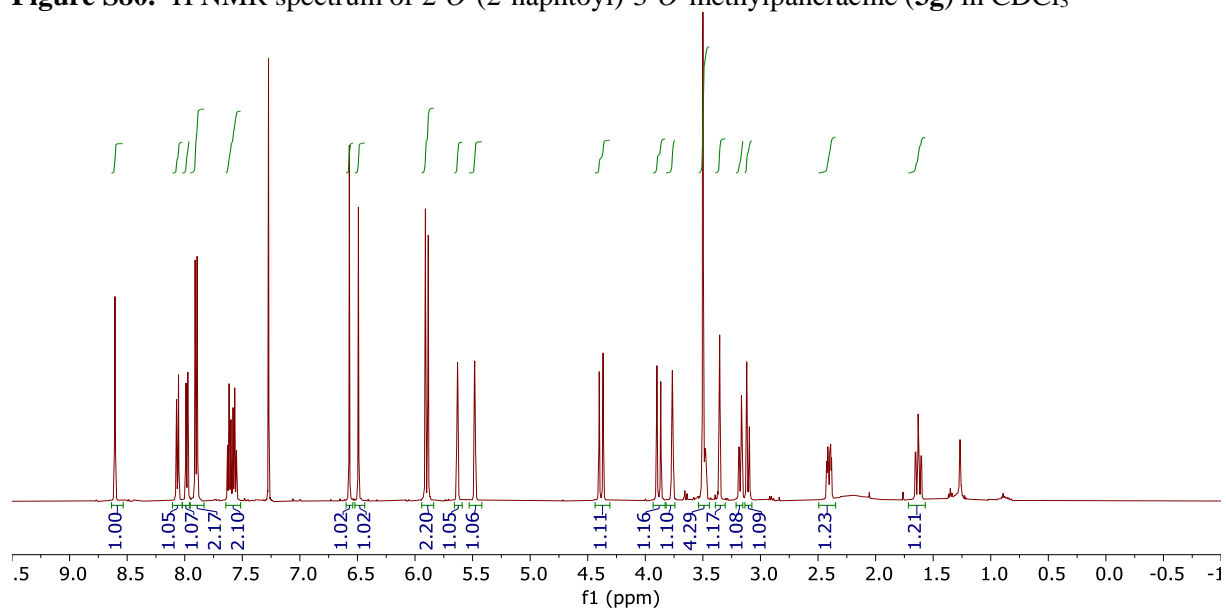


Figure S81. ^{13}C NMR spectrum of 2-*O*-(2-naphtoyl)-3-*O*-methylpancracine (**3g**) in CDCl_3

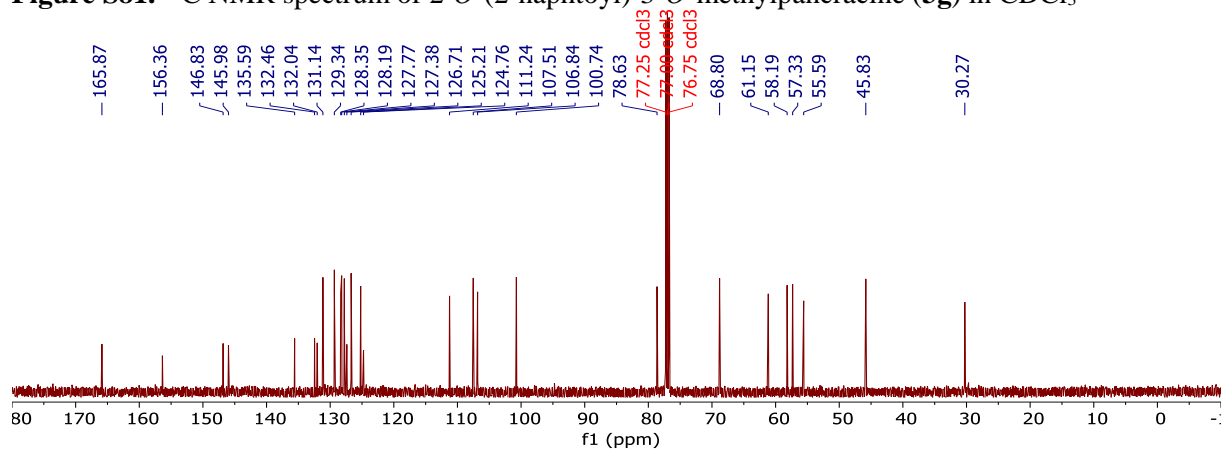


Figure S82. ESI-HRMS spectrum of 3-*O*-(1-naphtoyl)vittatine (**4a**)

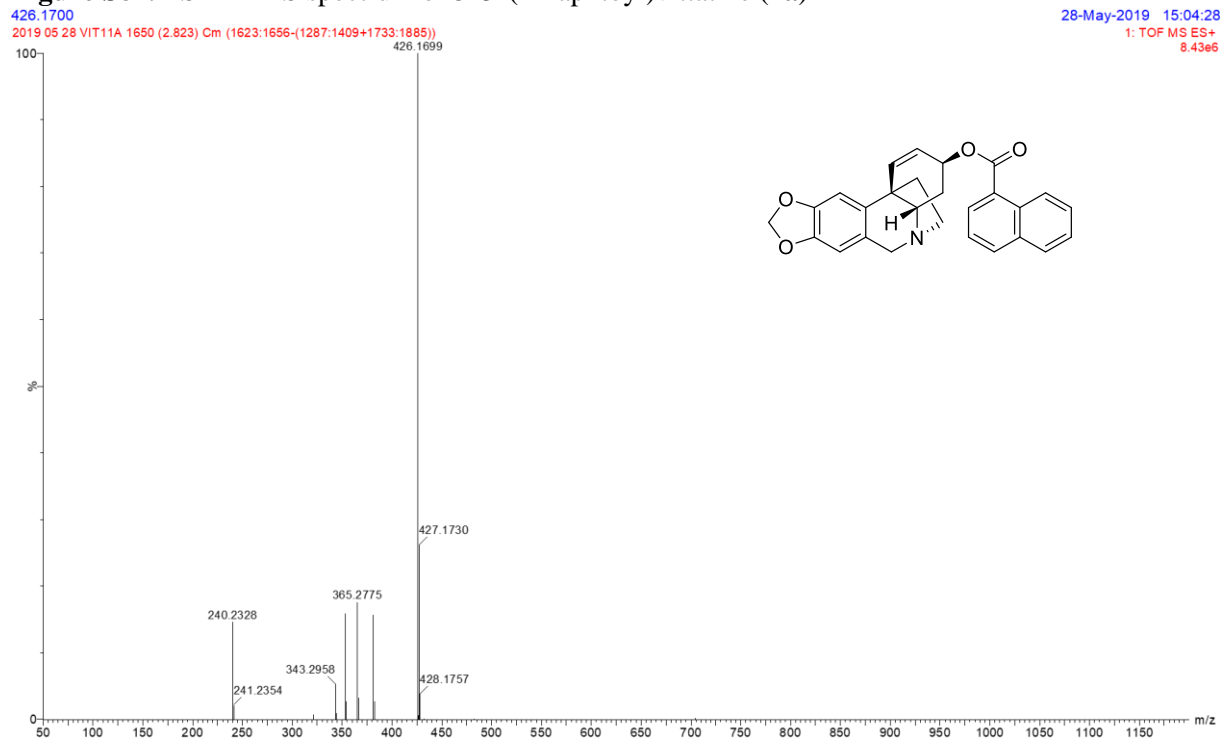


Figure S83. ^1H NMR spectrum of 3-*O*-(1-naphtoyl)vittatine (**4a**) in CDCl_3

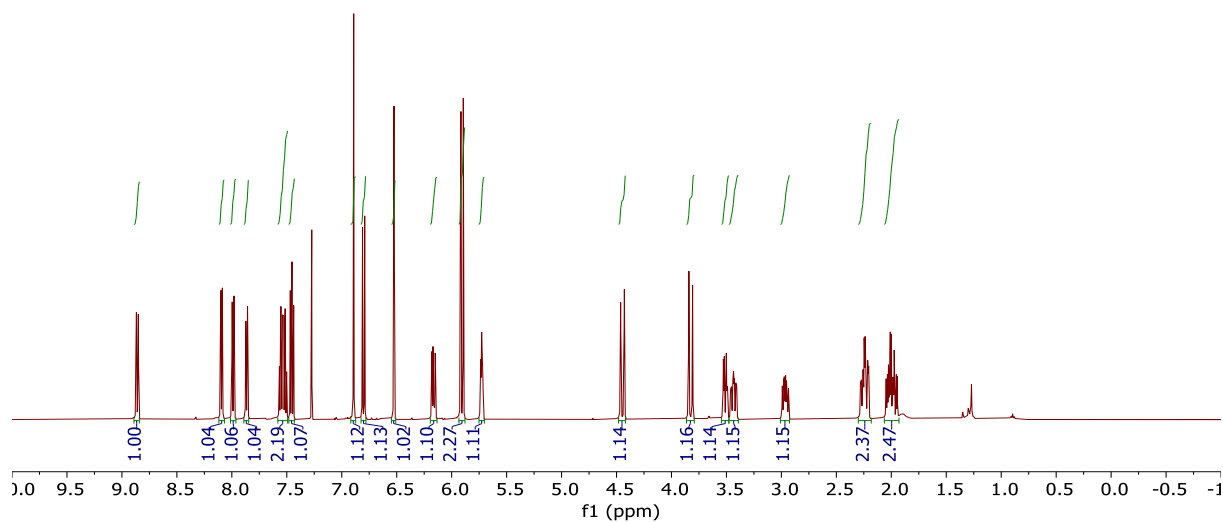


Figure S84. ^{13}C NMR spectrum of 3-*O*-(1-naphtoyl)vittatine (**4a**) in CDCl_3

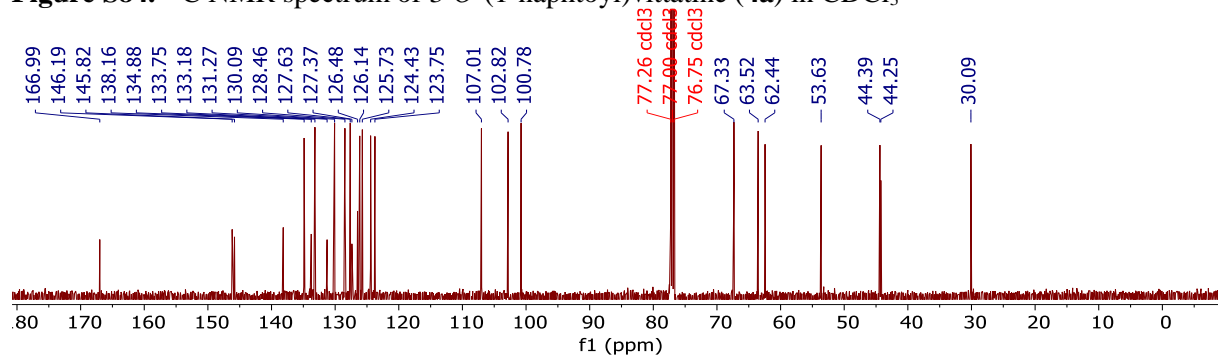


Figure S85. ESI-HRMS spectrum of 3-*O*-(2-naphtoyl)vittatine (**4b**)

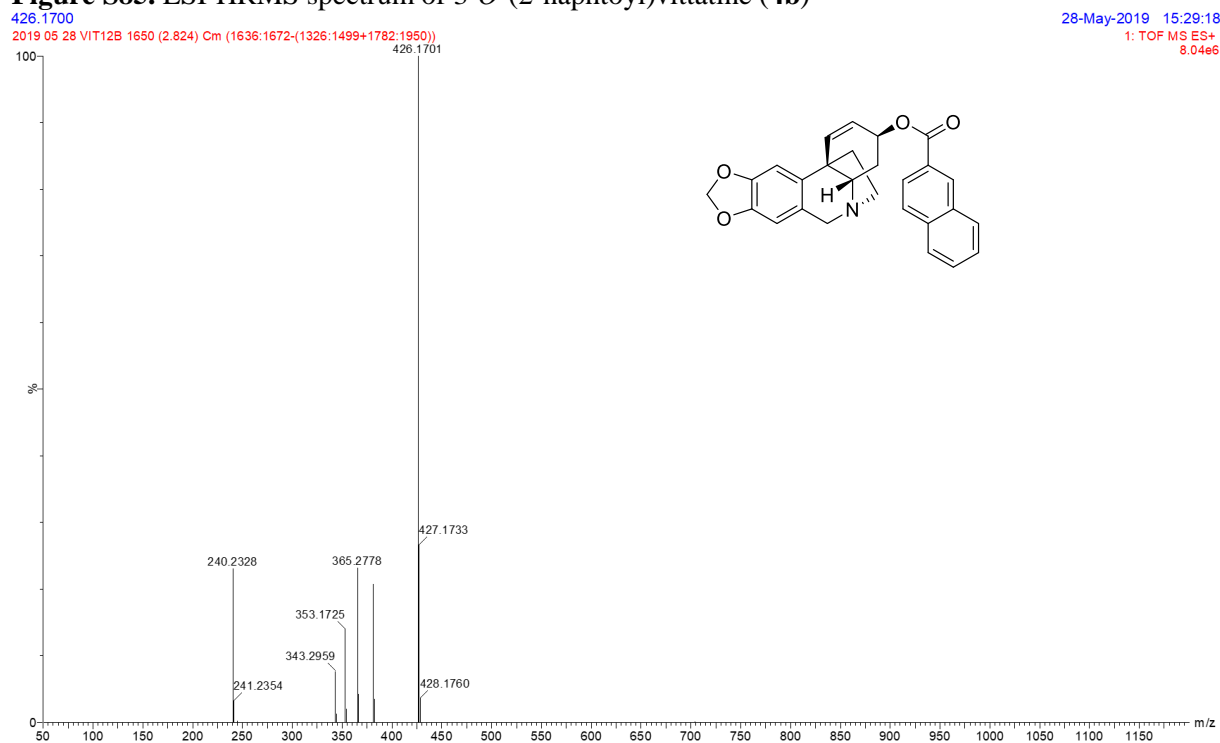


Figure S86. ^1H NMR spectrum of 3-*O*-(2-naphtoyl)vittatine (**4b**) in CDCl_3

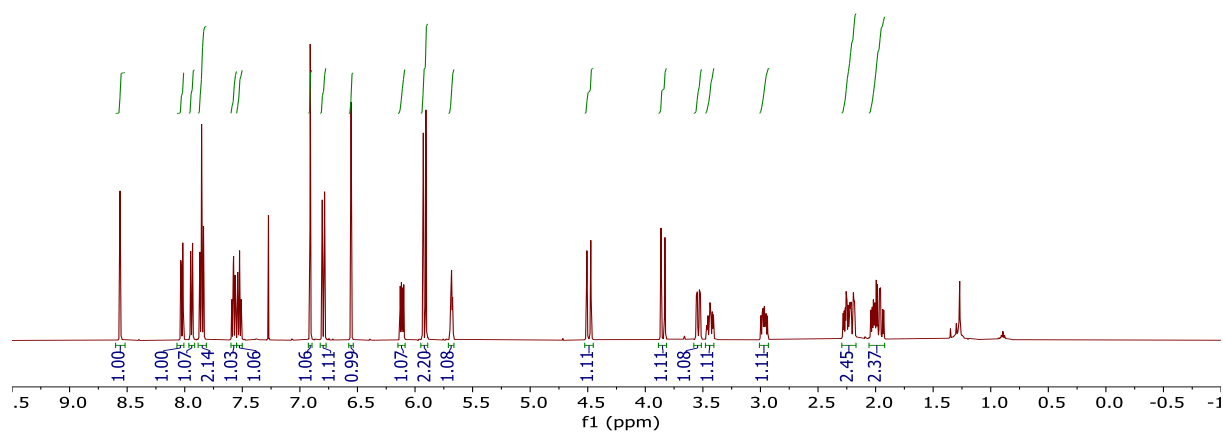


Figure S87. ^{13}C NMR spectrum of 3-*O*-(2-naphtoyl)vittatine (**4b**) in CDCl_3

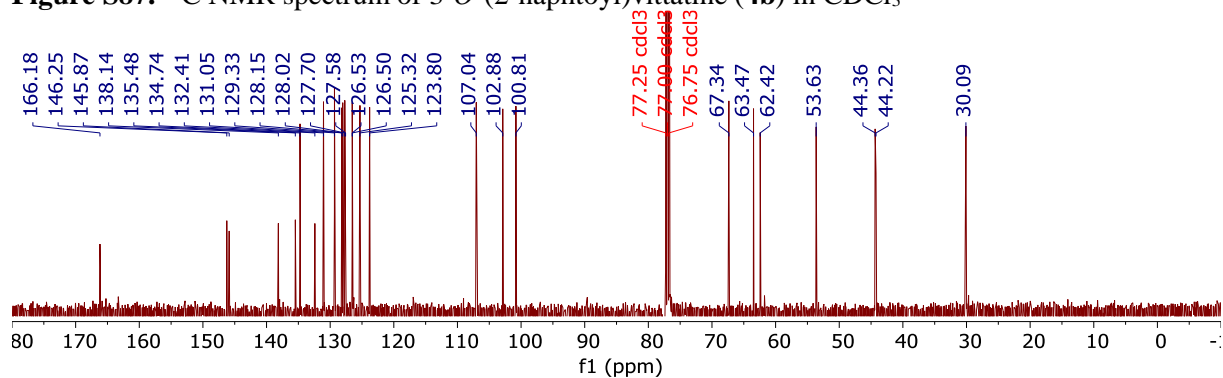


Figure S88. ESI-HRMS spectrum of 3-*O*-(3,5-dimethylbenzoyl)maritidine (**5a**)

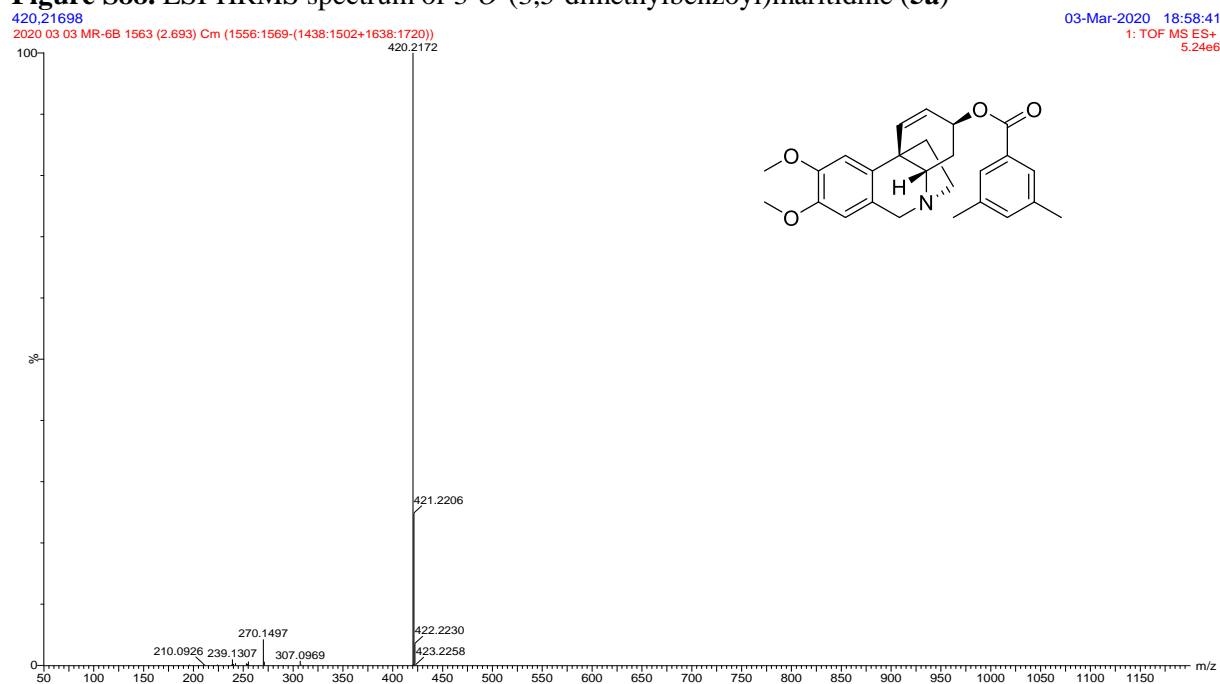


Figure S89. ^1H NMR spectrum of 3-*O*-(3,5-dimethylbenzoyl)maritidine (**5a**) in CDCl_3

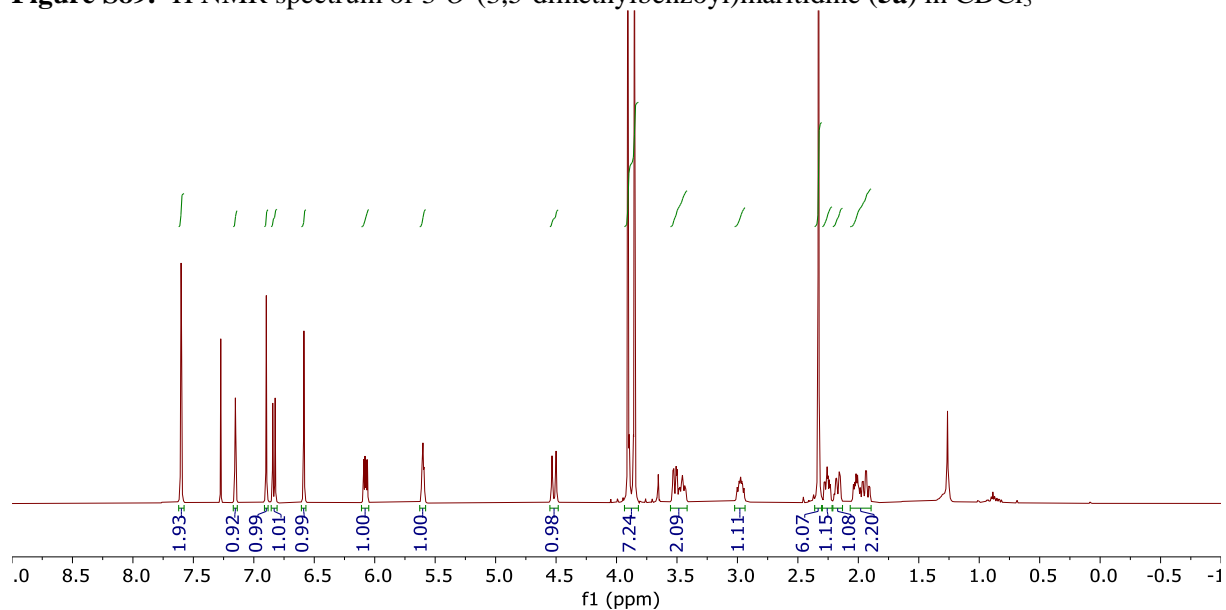


Figure S90. ^{13}C NMR spectrum of 3-*O*-(3,5-dimethylbenzoyl)maritidine (**5a**) in CDCl_3

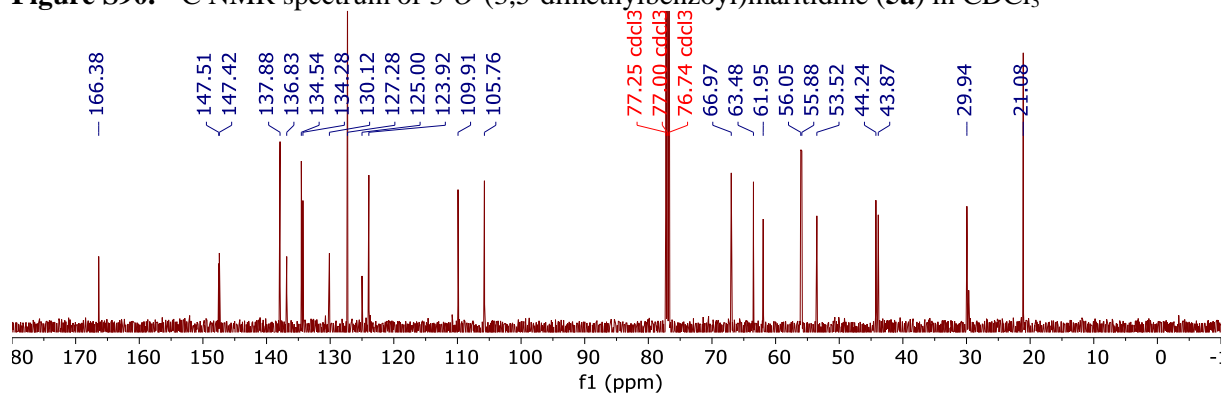


Figure S91. ESI-HRMS spectrum of 3-*O*-(1-naphtoyl)maritidine (**5b**)

442.20128

2021 05 01 MR-31 B 1525 (2.629) Cm (1509:1549-(1357:1438+1636:1717))

1: TOF MS ES+
3.11e6

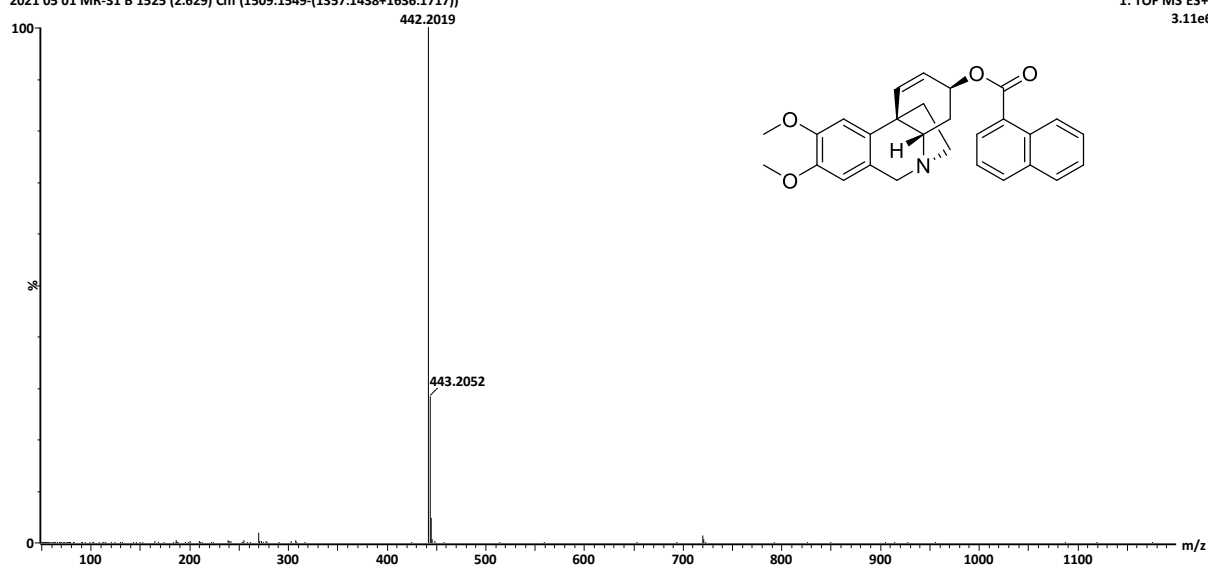


Figure S92. ^1H NMR spectrum of 3-*O*-(1-naphtoyl)maritidine (**5b**) in CDCl_3

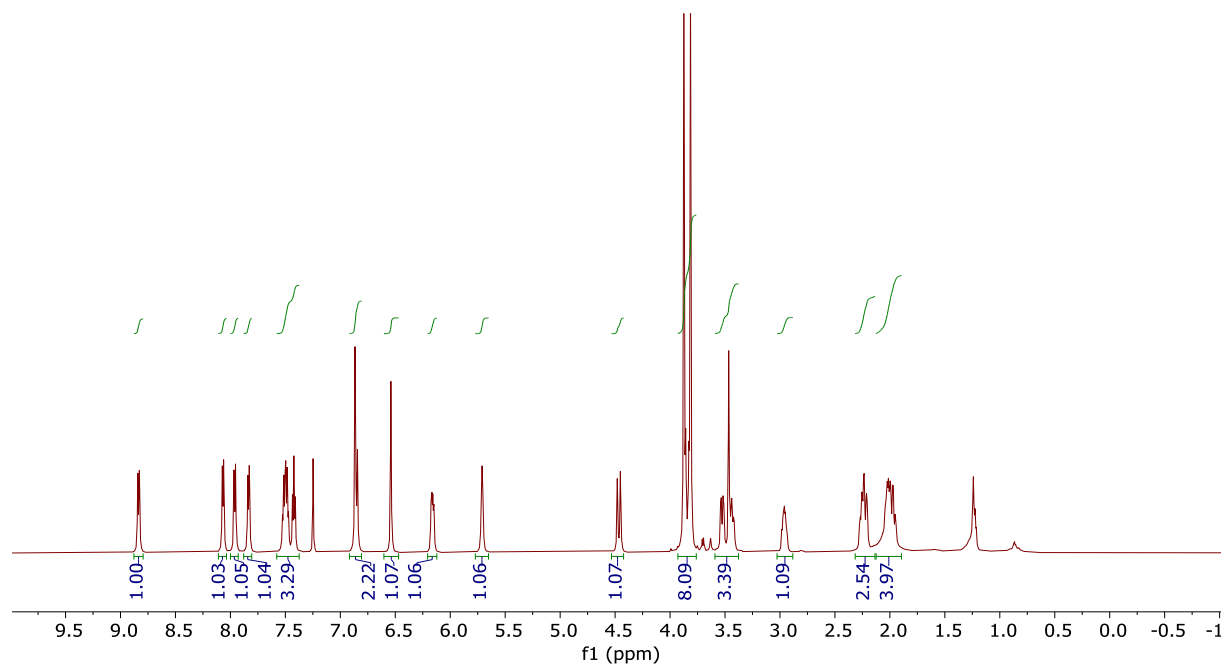


Figure S93. ^{13}C NMR spectrum of 3-*O*-(1-naphtoyl)maritidine (**5b**) in CDCl_3

