

Synthesis of the first nano ionic liquid 1-methylimidazolium trinitromethanide {[HMIM]C(NO₂)₃} and its catalytic use for Hantzsch four-component condensation

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Supplementary data:

Fig. S1. The Mass spectrum of 1-methylimidazolium trinitromethanide as a nano ionic liquid catalyst

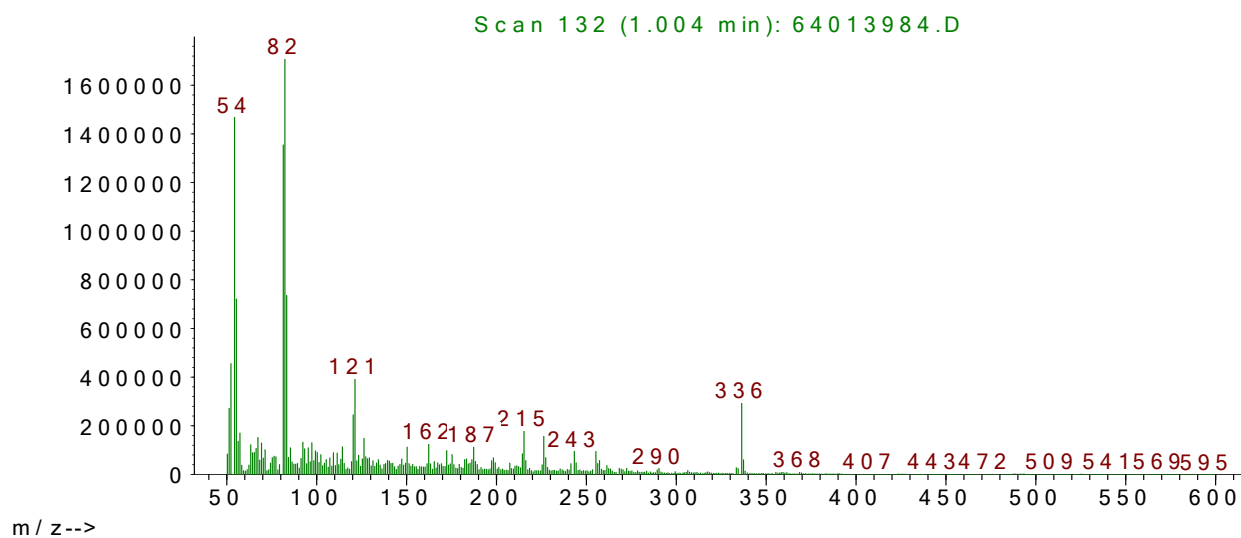


Fig. S2. The Mass spectrum of 1-methylimidazolium trinitromethanide as a nano ionic liquid catalyst

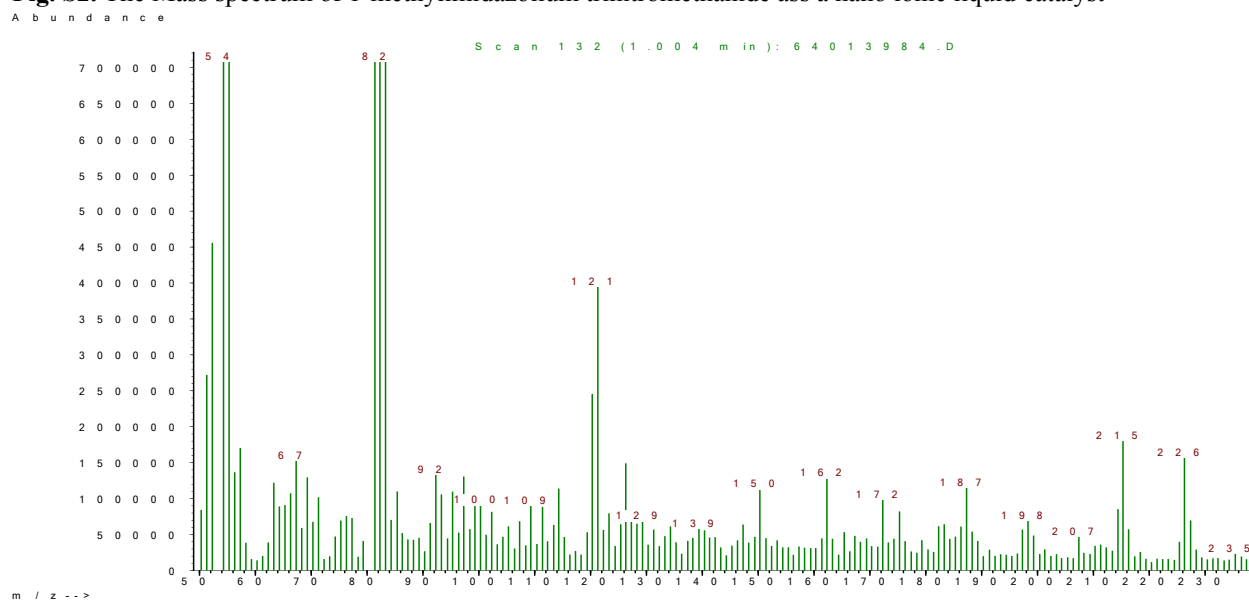


Fig. S3. Scanning electron microscopy (SEM) of the nano ionic liquid catalyst

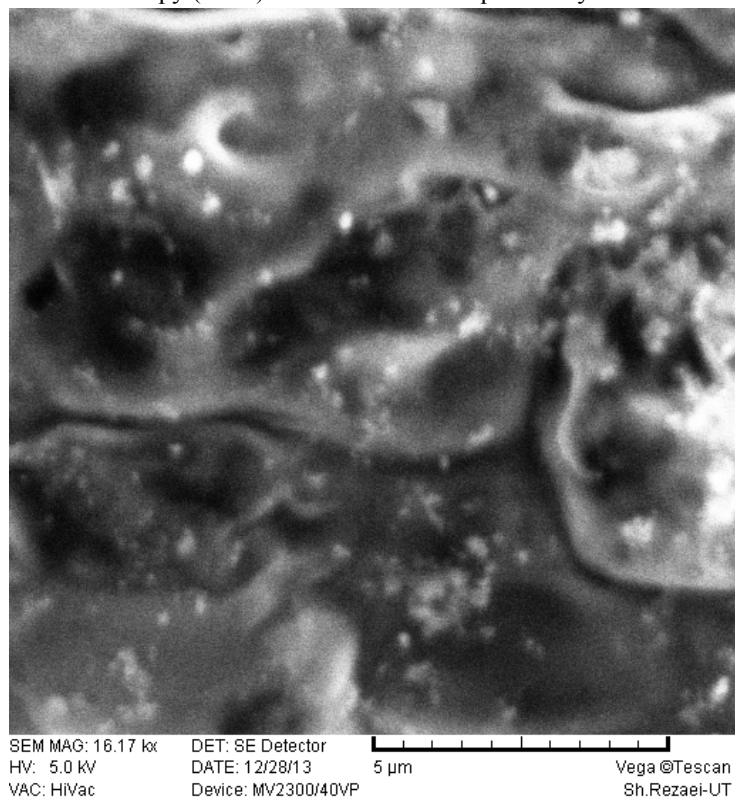


Fig. S4. The ^1H NMR spectrum of 1-methylimidazolium trinitromethanide as a nano ionic liquid catalyst after recycling

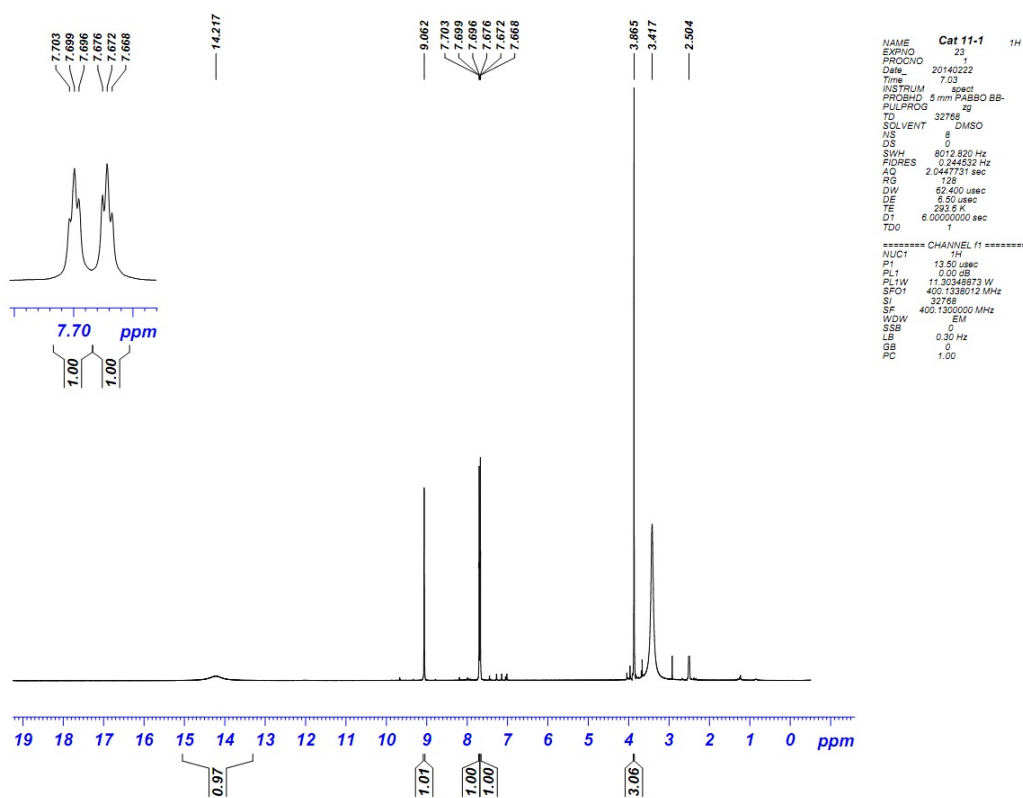


Fig. S.5. The ^{13}C NMR spectrum of 1-methylimidazolium trinitromethanide as a nano ionic liquid catalyst after recycling

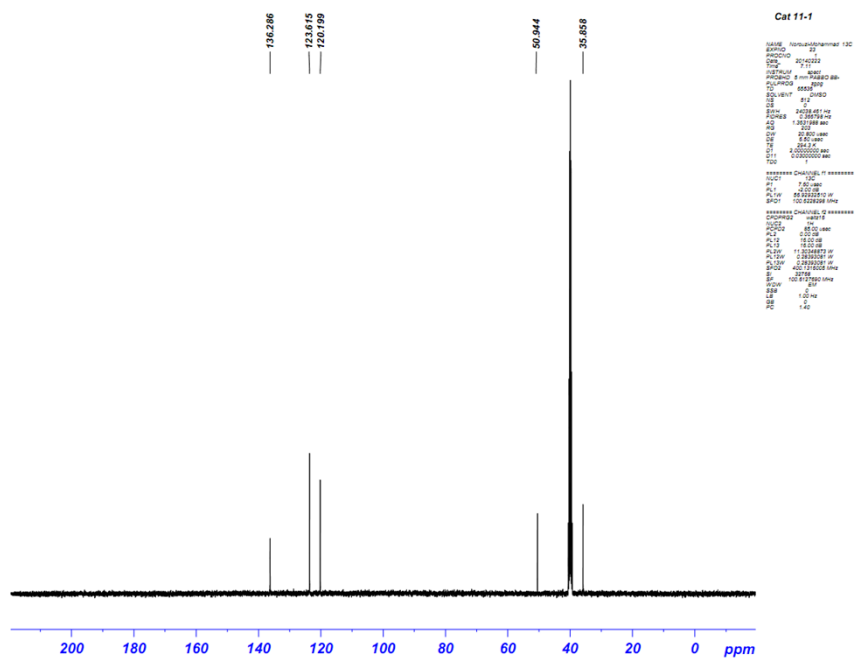


Fig. S.6. The Transmission electron microscopy (TEM) of 1-methylimidazolium trinitromethanide as a nano ionic liquid catalyst after recycling process.

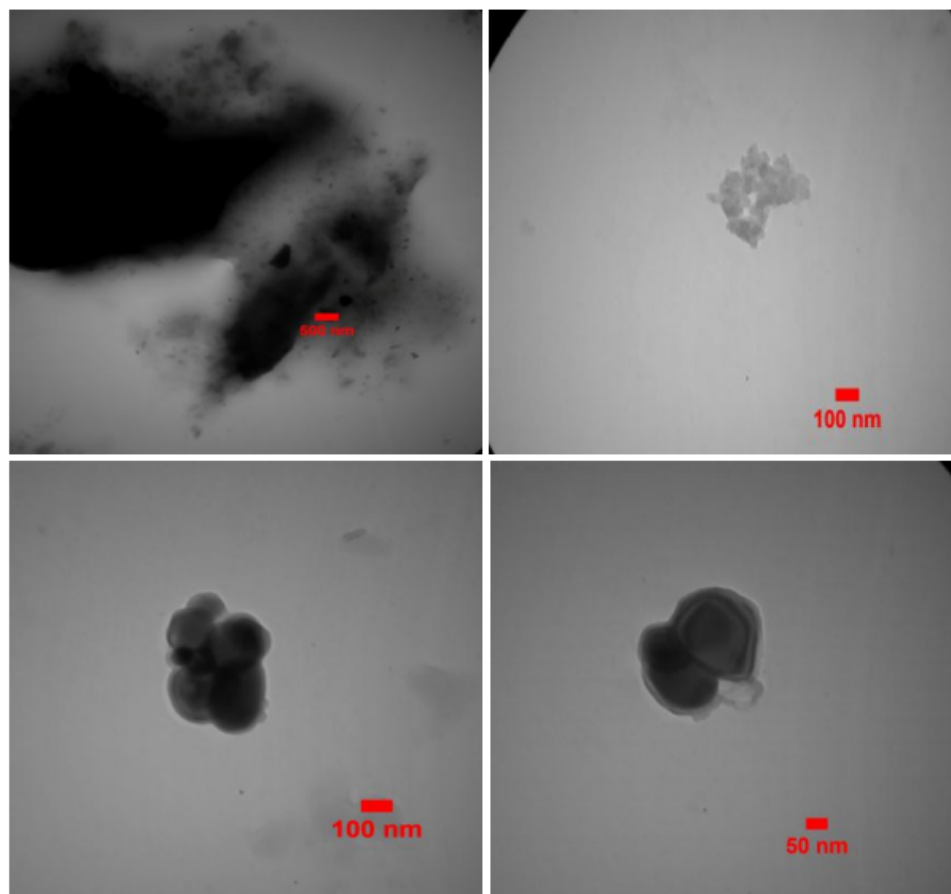


Fig. S7. The IR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5a**)

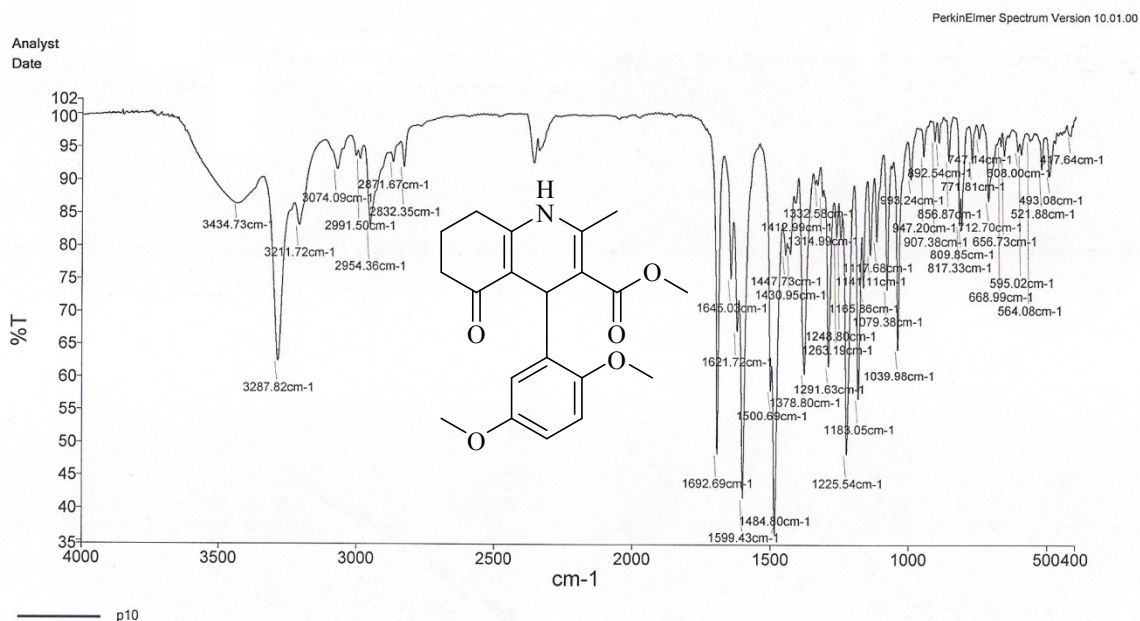


Fig. S8. The ^1H NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5a**)

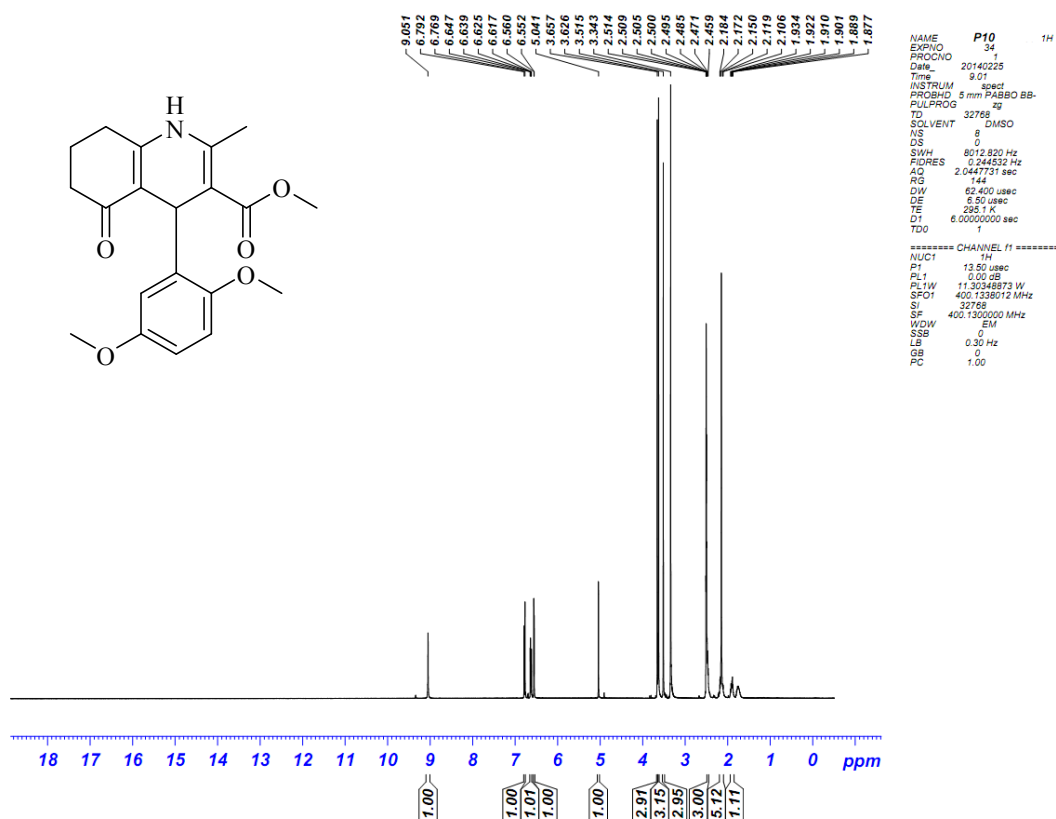


Fig. S9. The ^1H NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5a**)

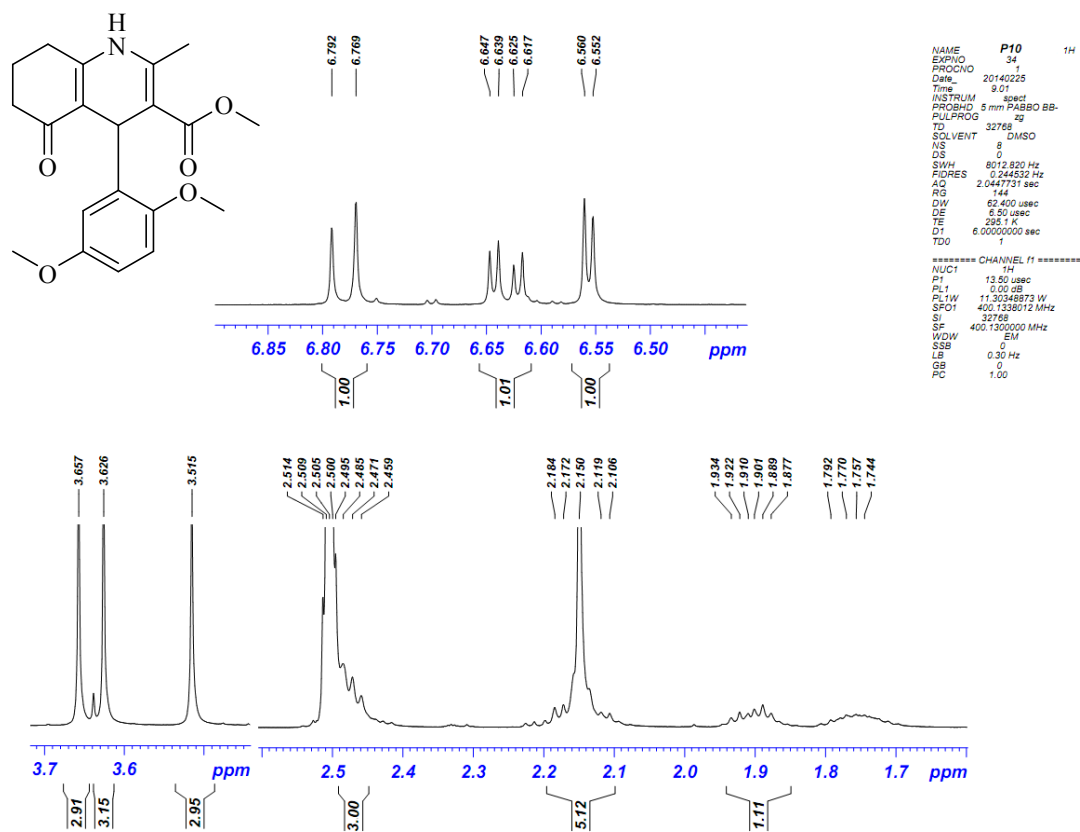


Fig. S10. The ^{13}C NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5a**)

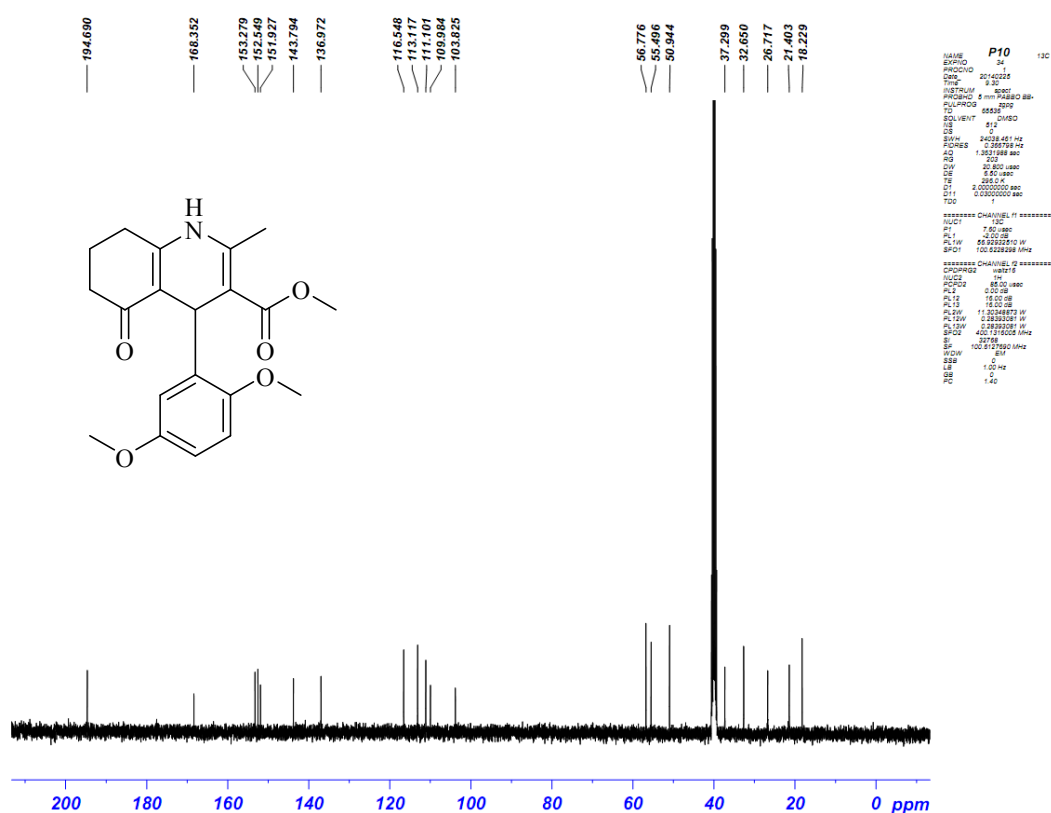


Fig. S11. The Mass spectrum of methyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5a**)

Abundance

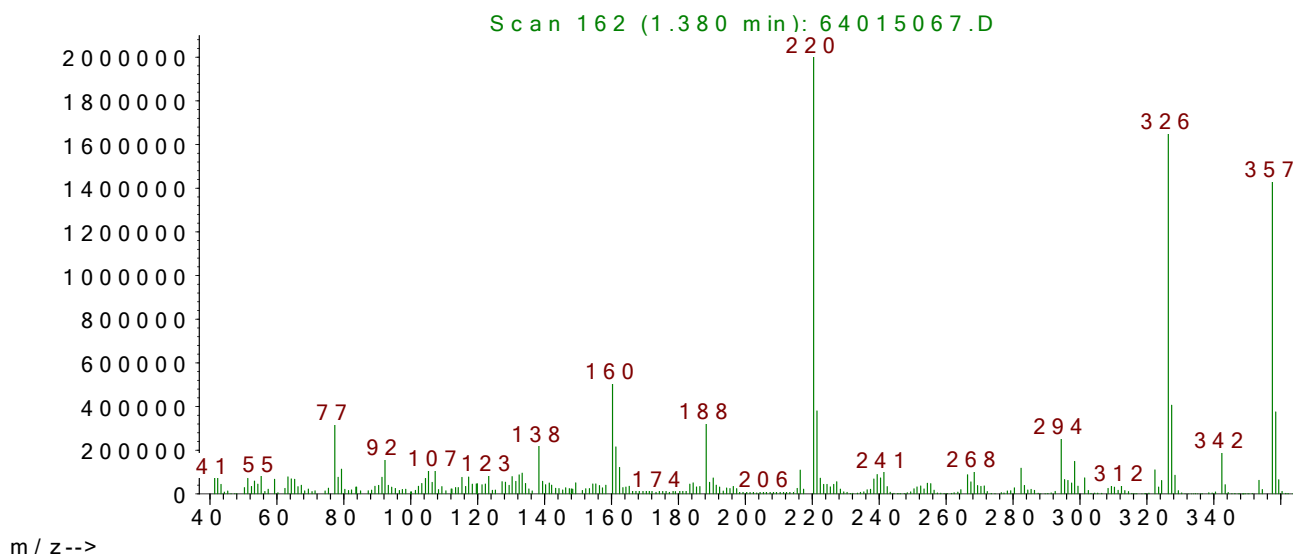


Fig. S12. The IR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5b**)

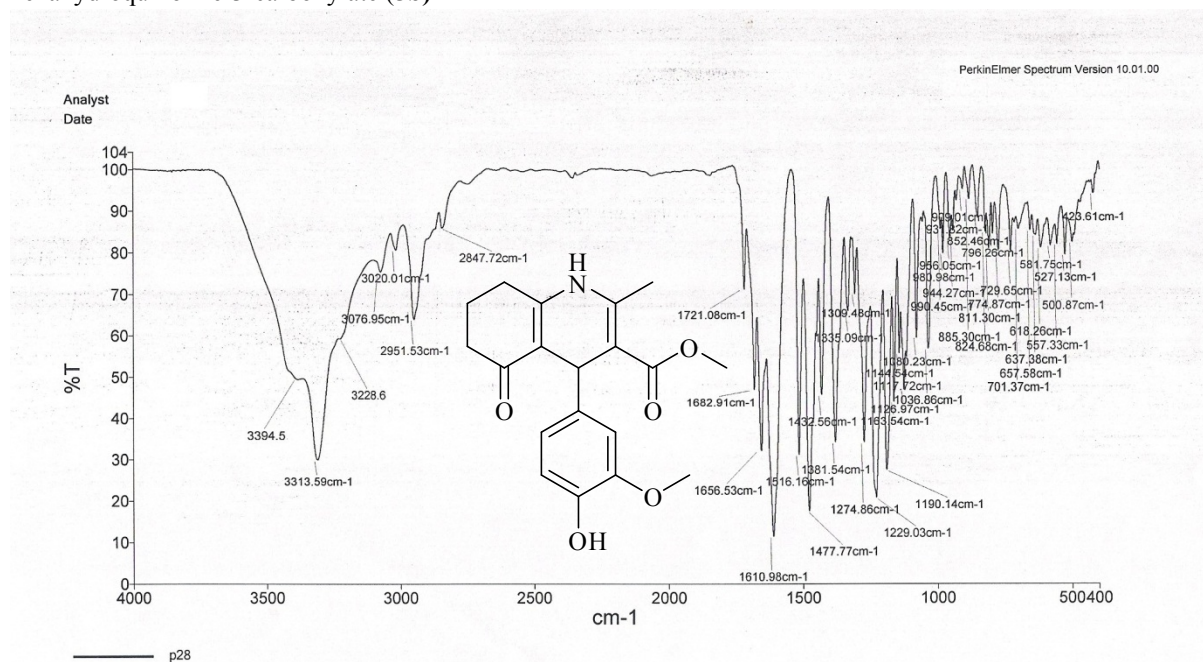


Fig. S13. The ¹H NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5b**)

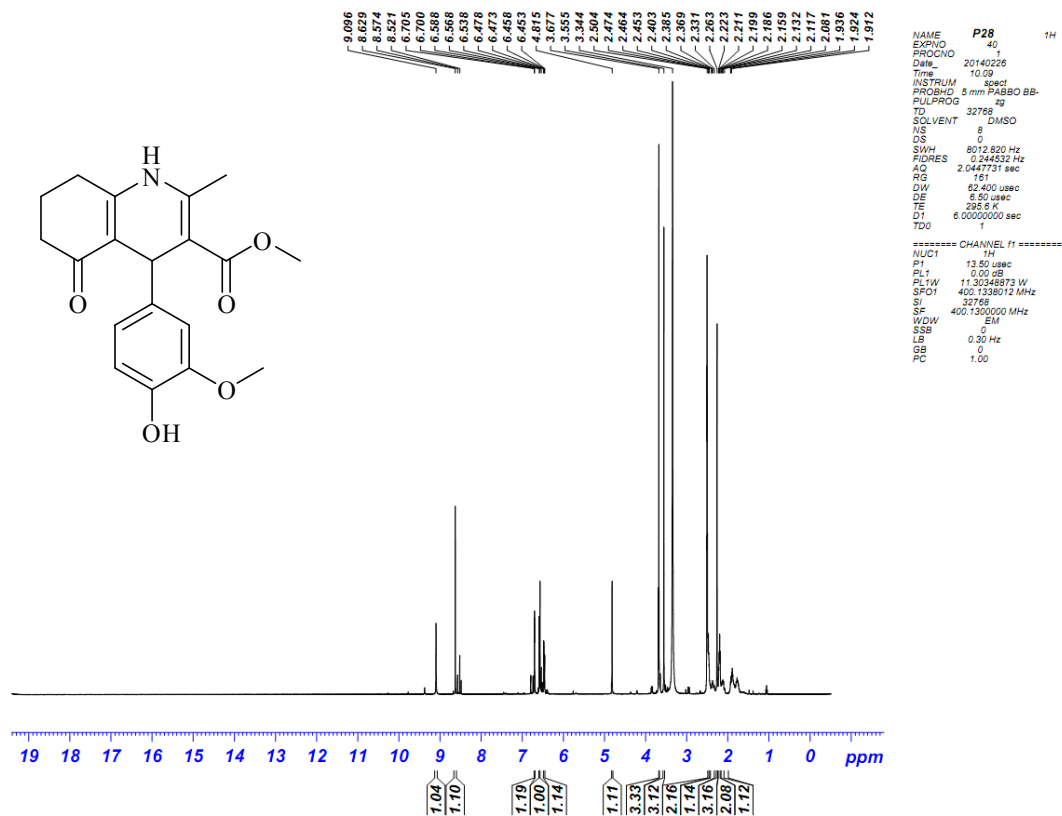


Fig. S14. The ^1H NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5b**)

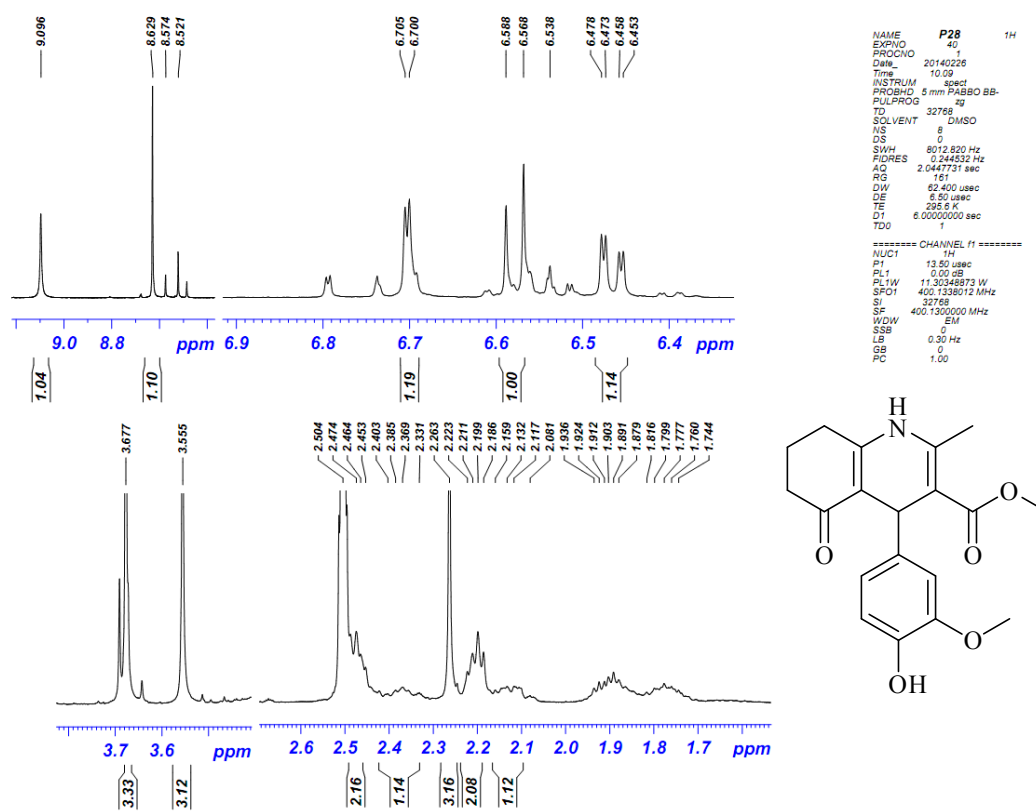


Fig. S15. The ^{13}C NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5b**)

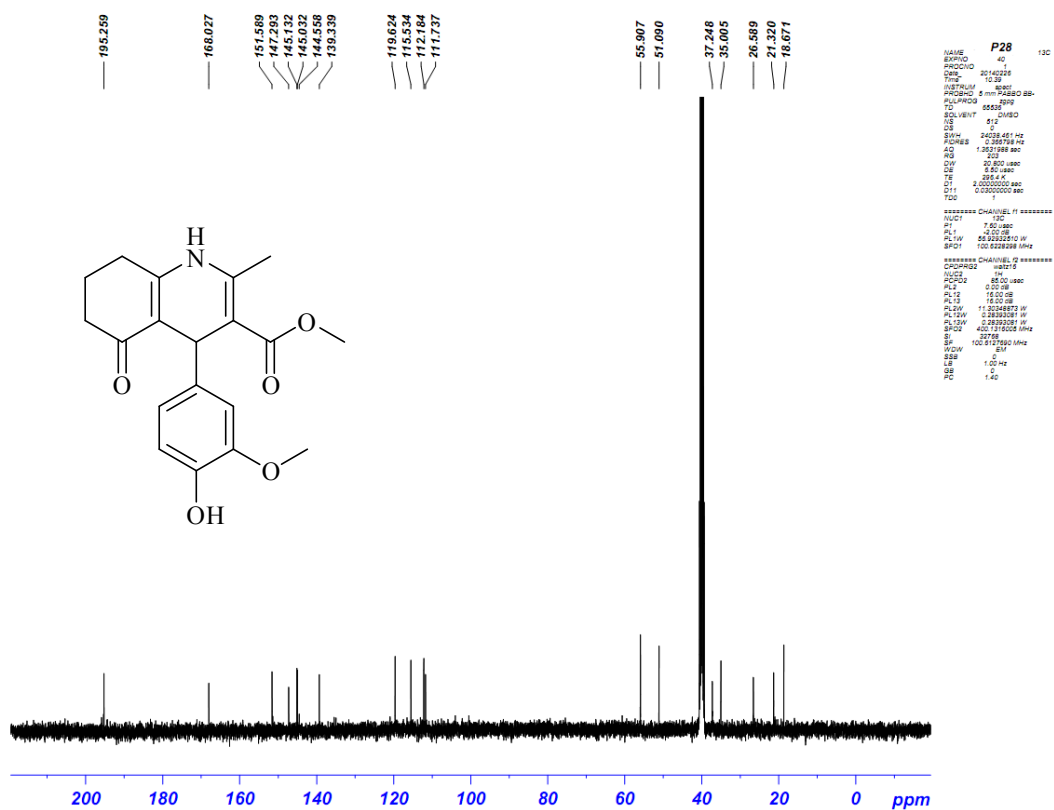


Fig. S16. The ^{13}C NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5b**)

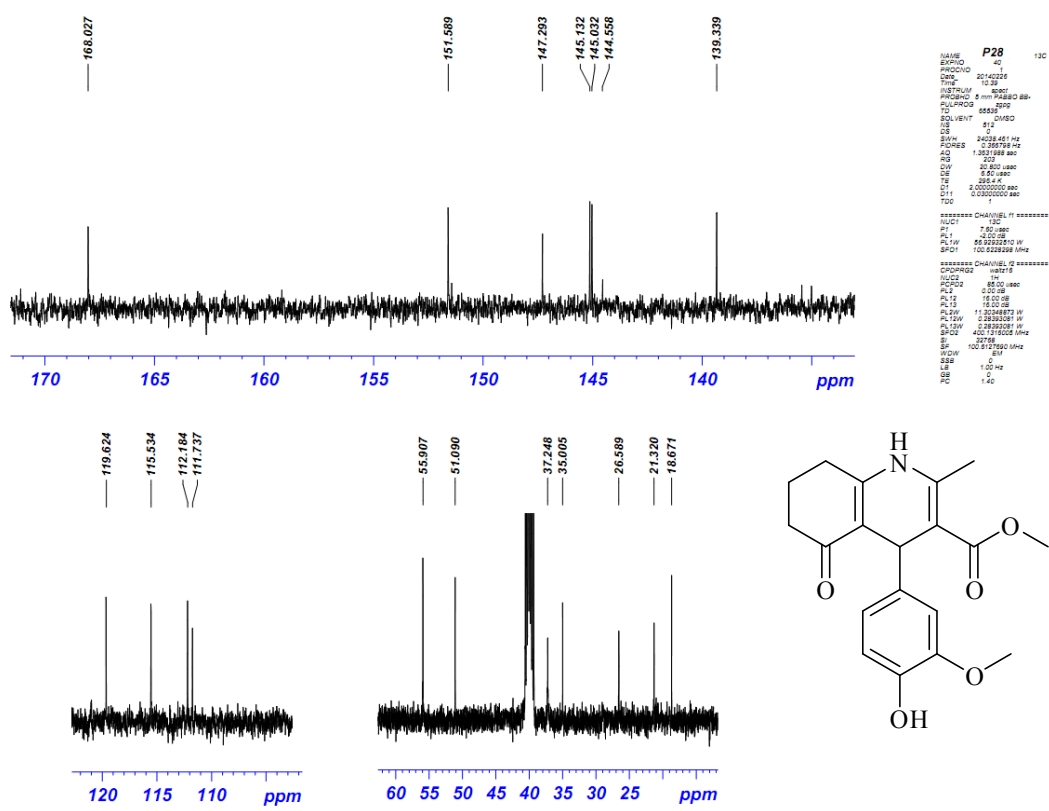


Fig. S17. The Mass spectrum of 1 methyl 4-(4-hydroxy-3-methoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5b**)

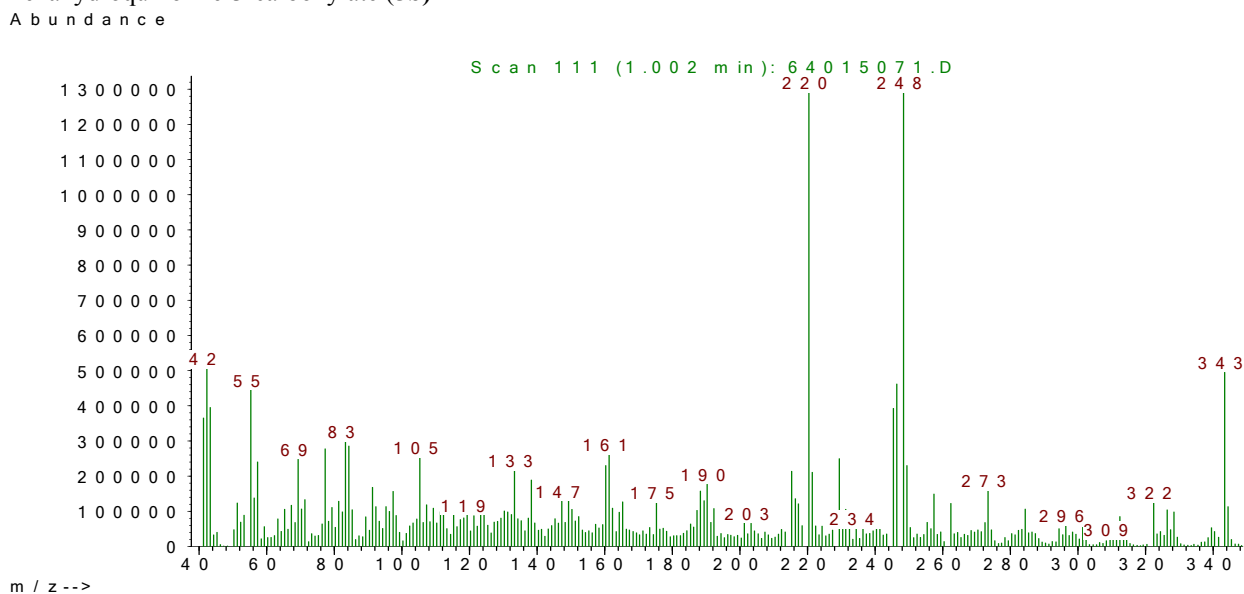


Fig. S18. The IR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5c**)

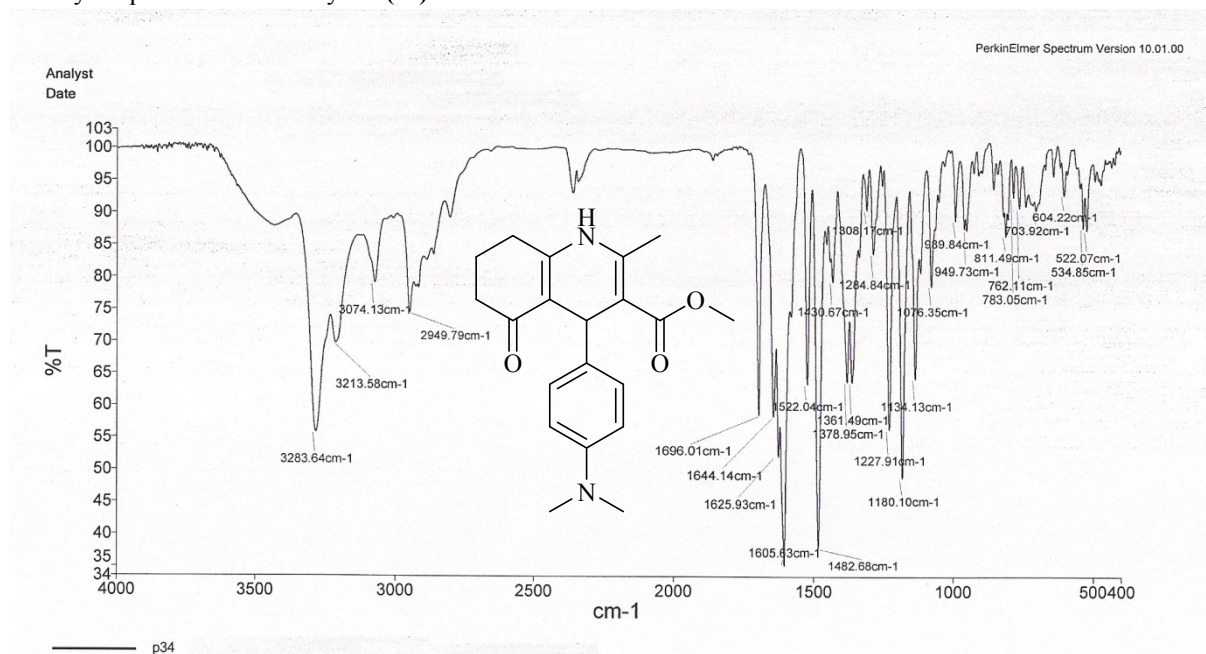


Fig. S19. The ¹H NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5c**)

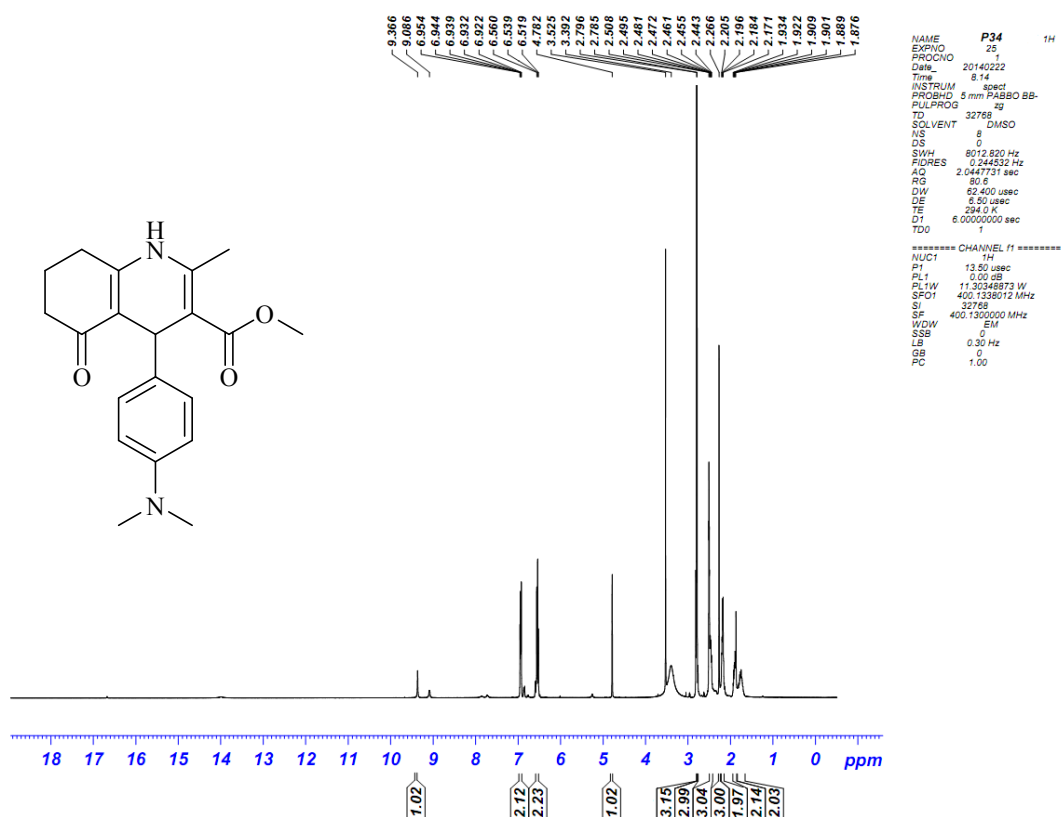


Fig. S20. The ^1H NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5c**)

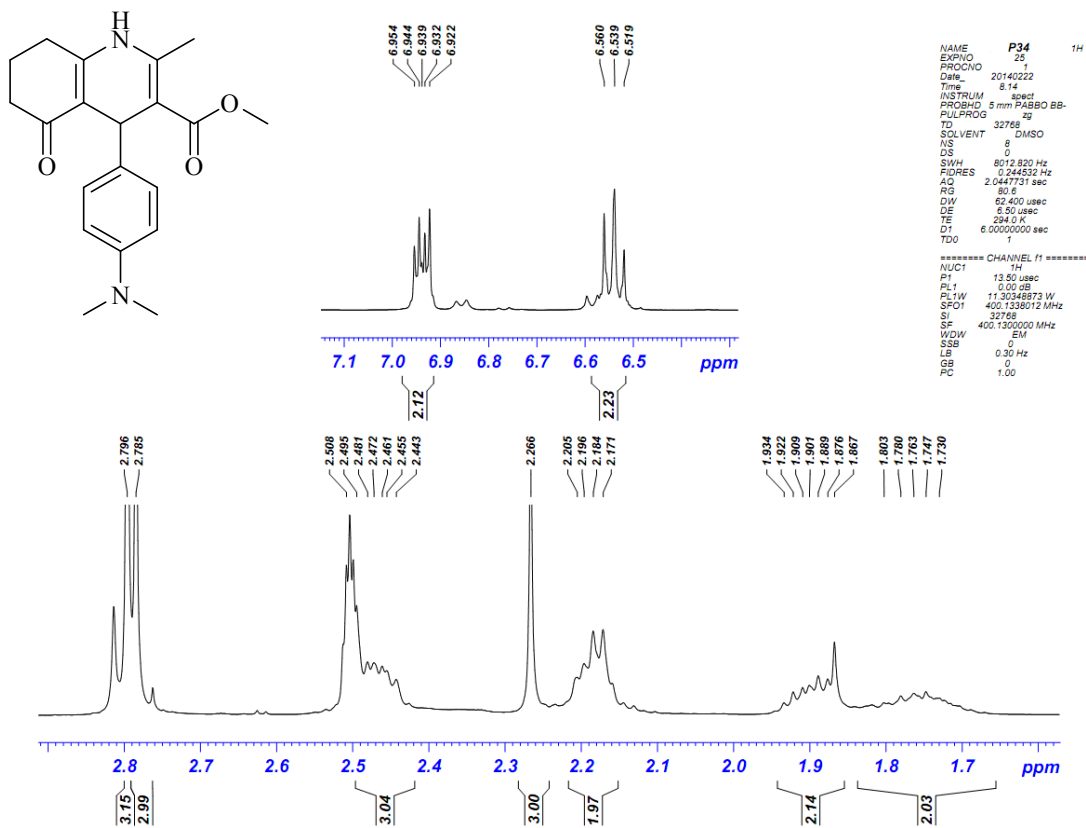


Fig. S21. The ^{13}C NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5c**)

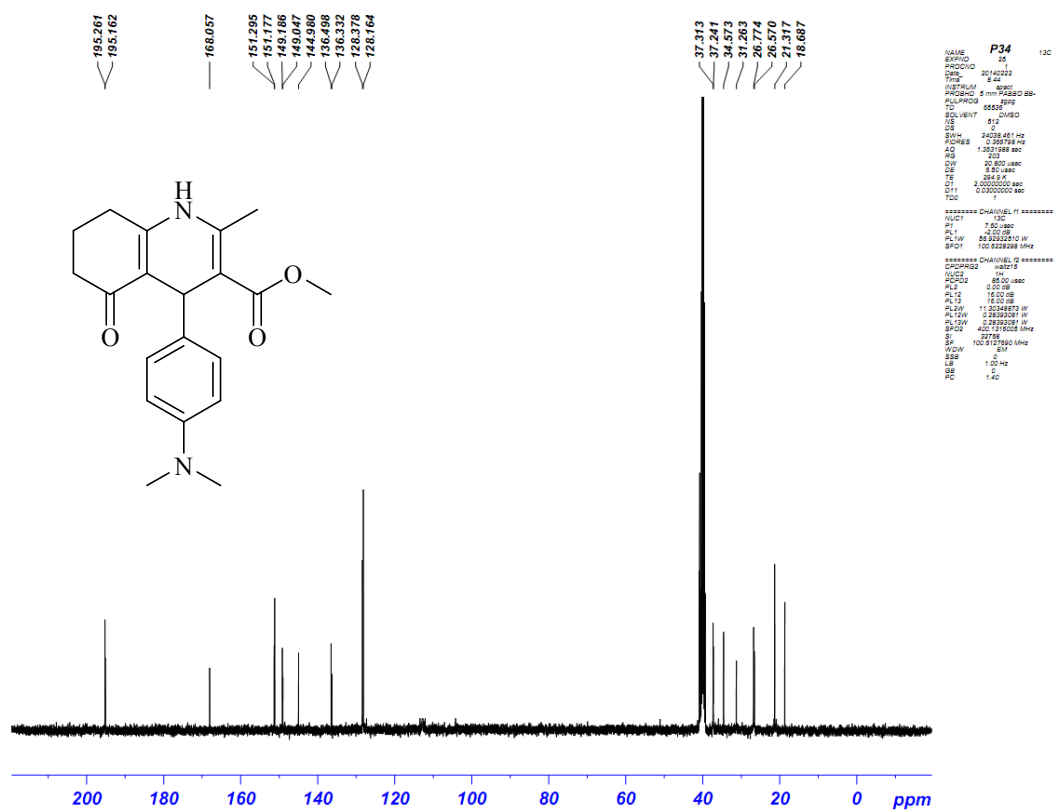


Fig. S22. The ^{13}C NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5c**)

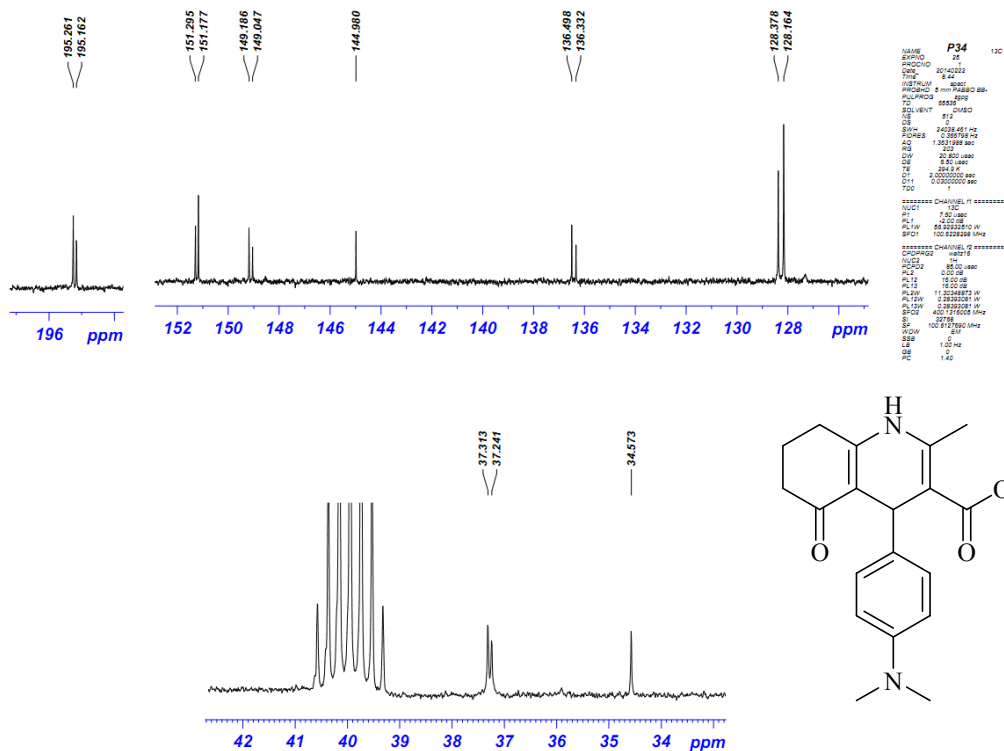


Fig. S23. The Mass spectrum of methyl 4-(4-(dimethylamino)phenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5c**)

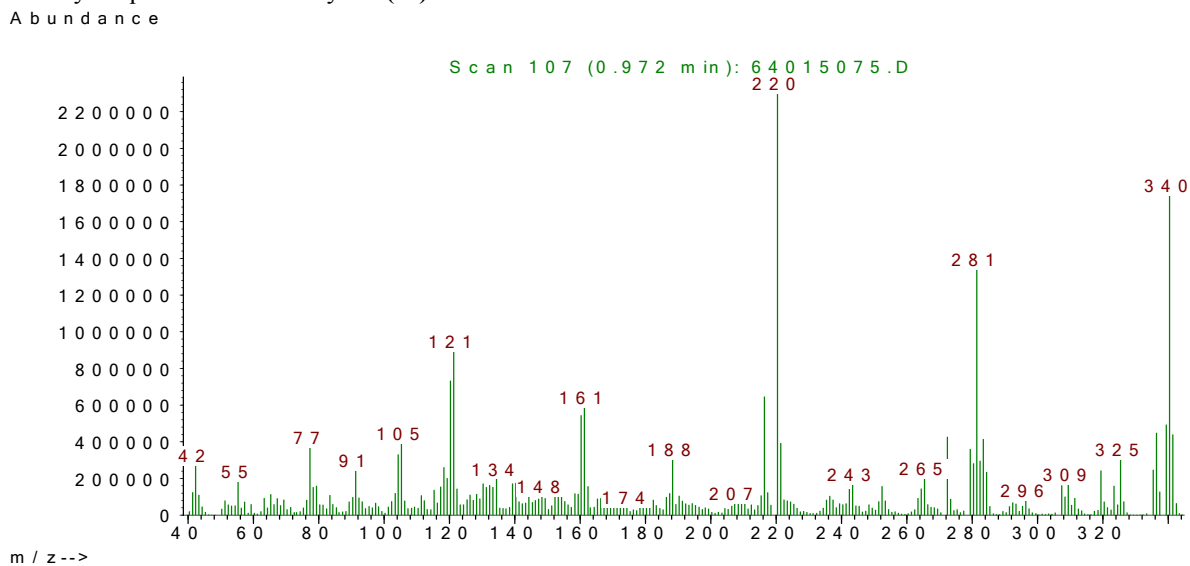


Fig. S24. The IR spectrum of methyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5d**)

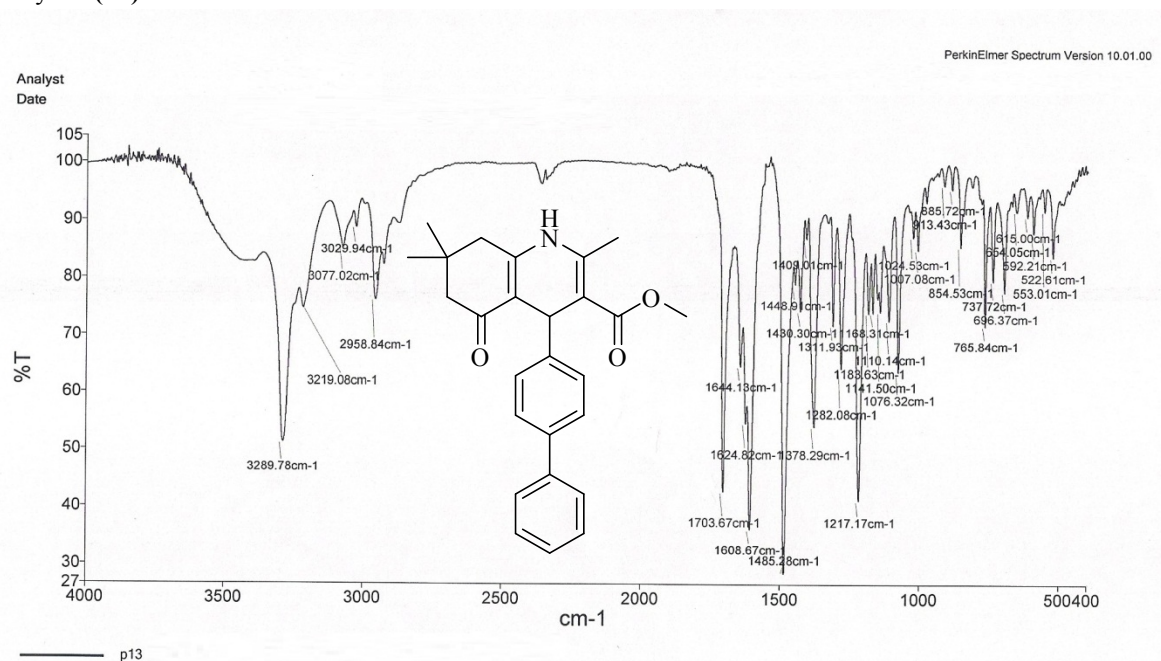


Fig. S25. The ¹H NMR spectrum of methyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5d**)

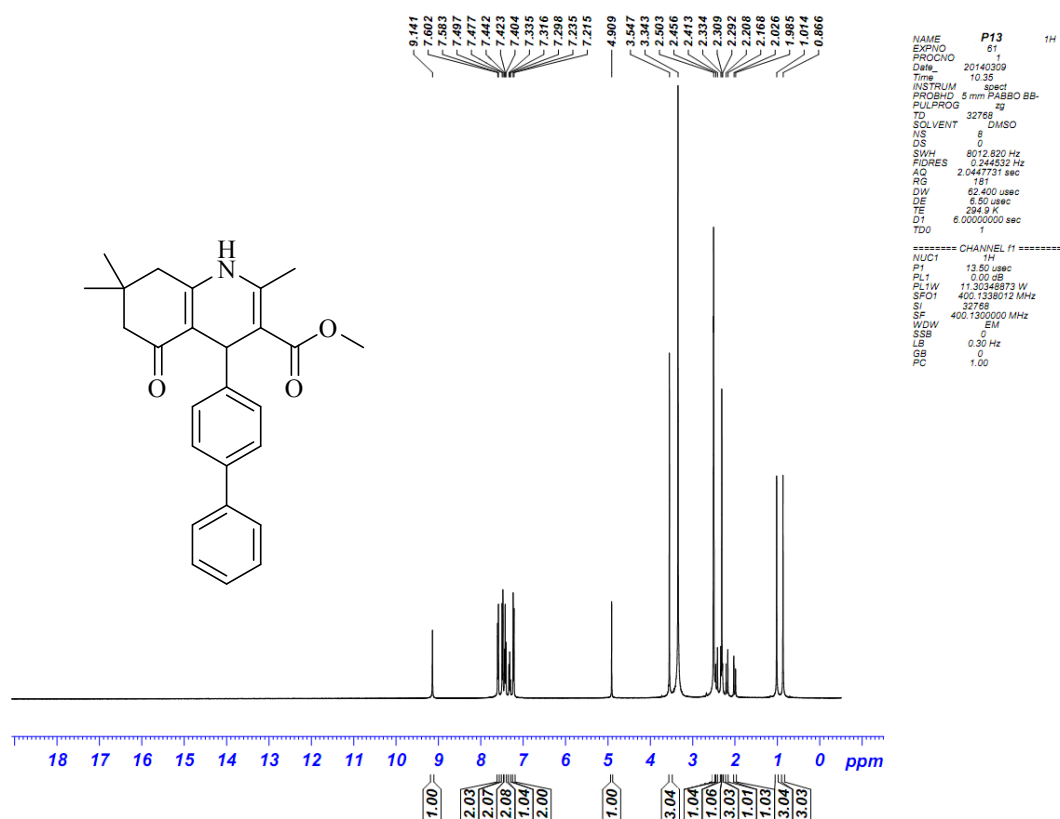


Fig. S26. The ^1H NMR spectrum of methyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5d**)

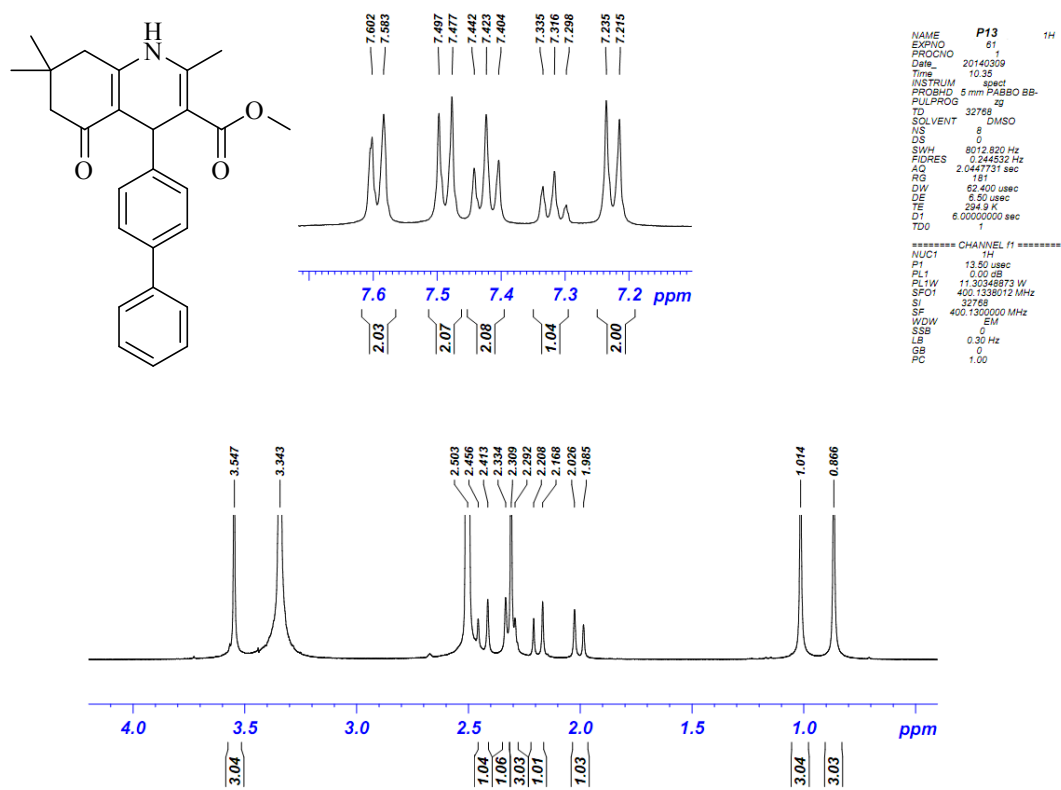


Fig. S27. The ^{13}C NMR spectrum of methyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5d**)

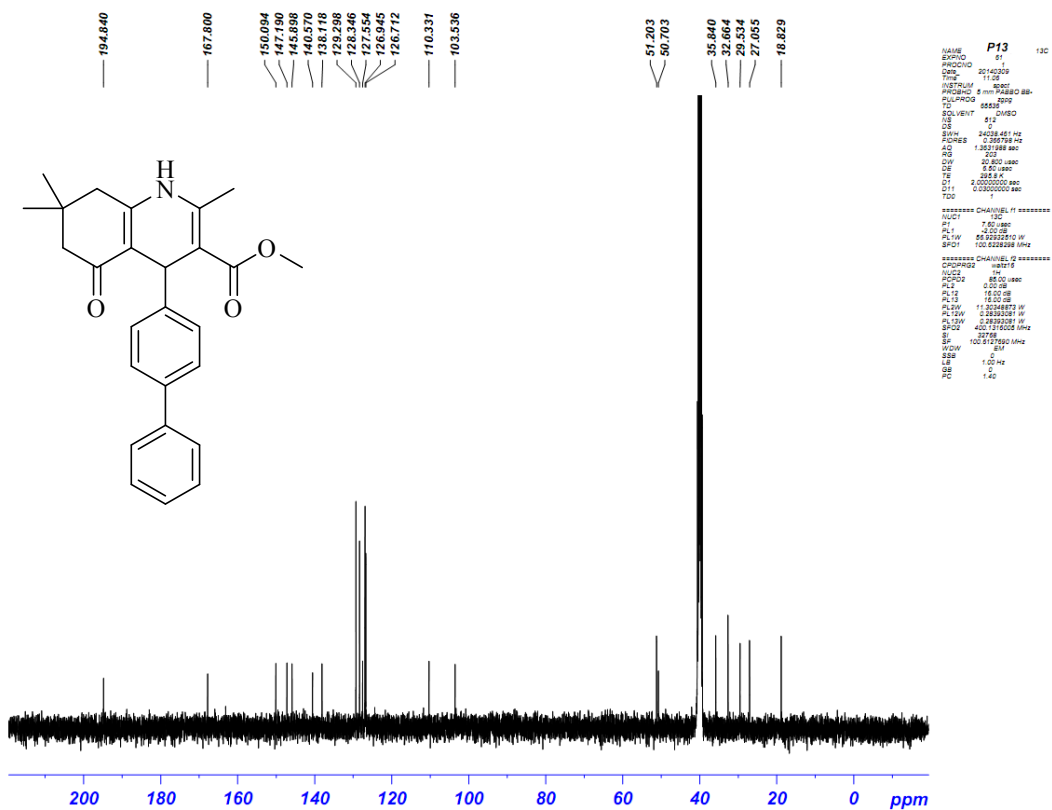


Fig. S28. The ^{13}C NMR spectrum of methyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5d**)

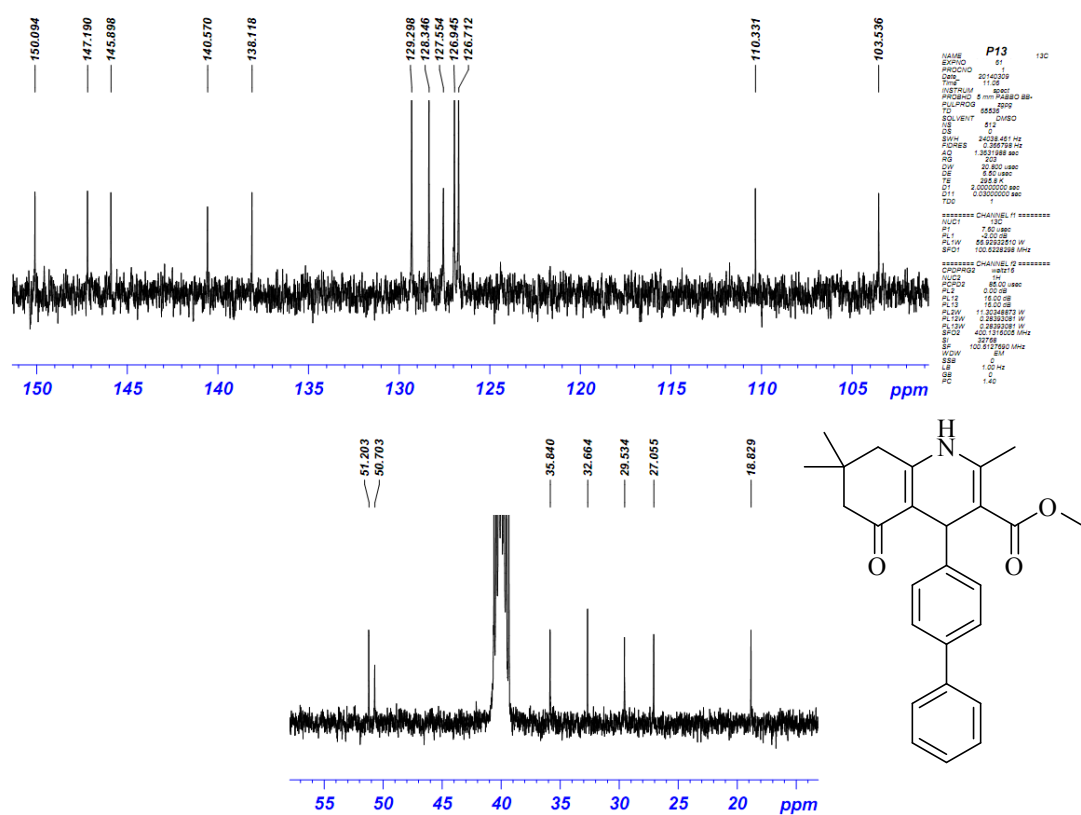


Fig. S29. The Mass spectrum of methyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5d**)

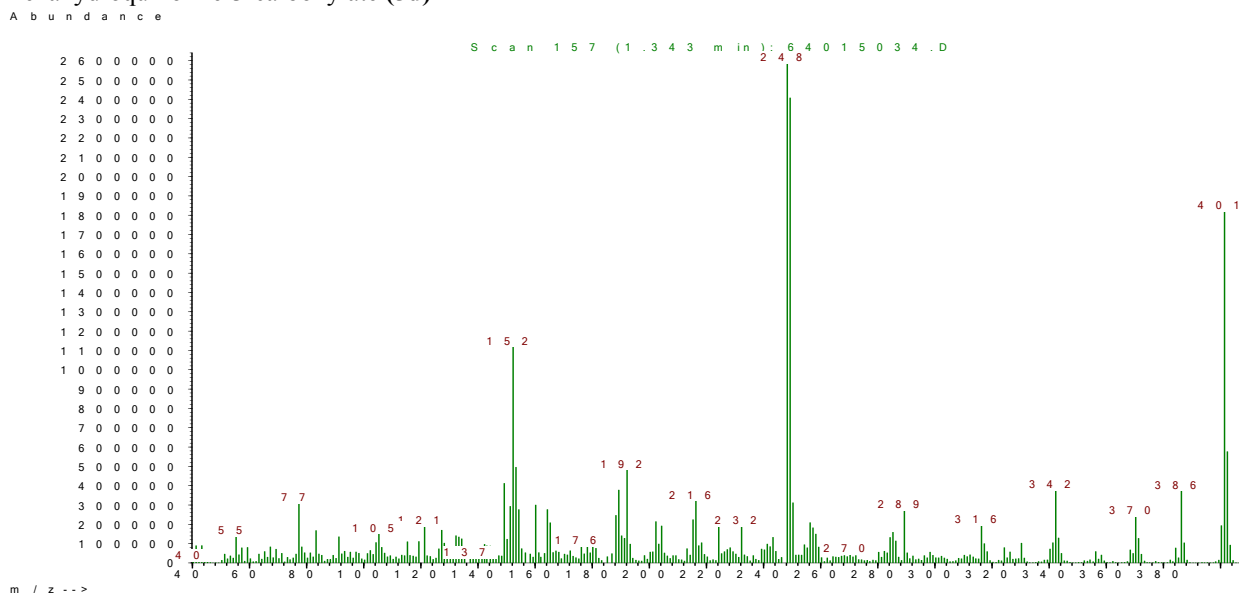


Fig. S30. The IR spectrum of dimethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**5e**)

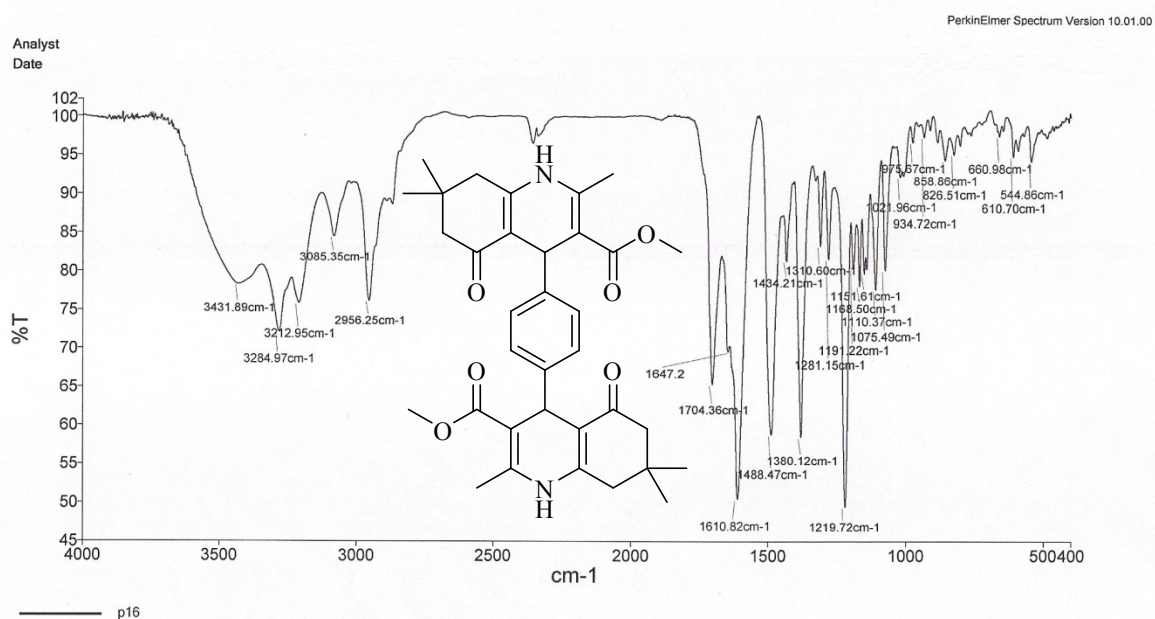


Fig. S31. The ¹H NMR spectrum of dimethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**5e**)

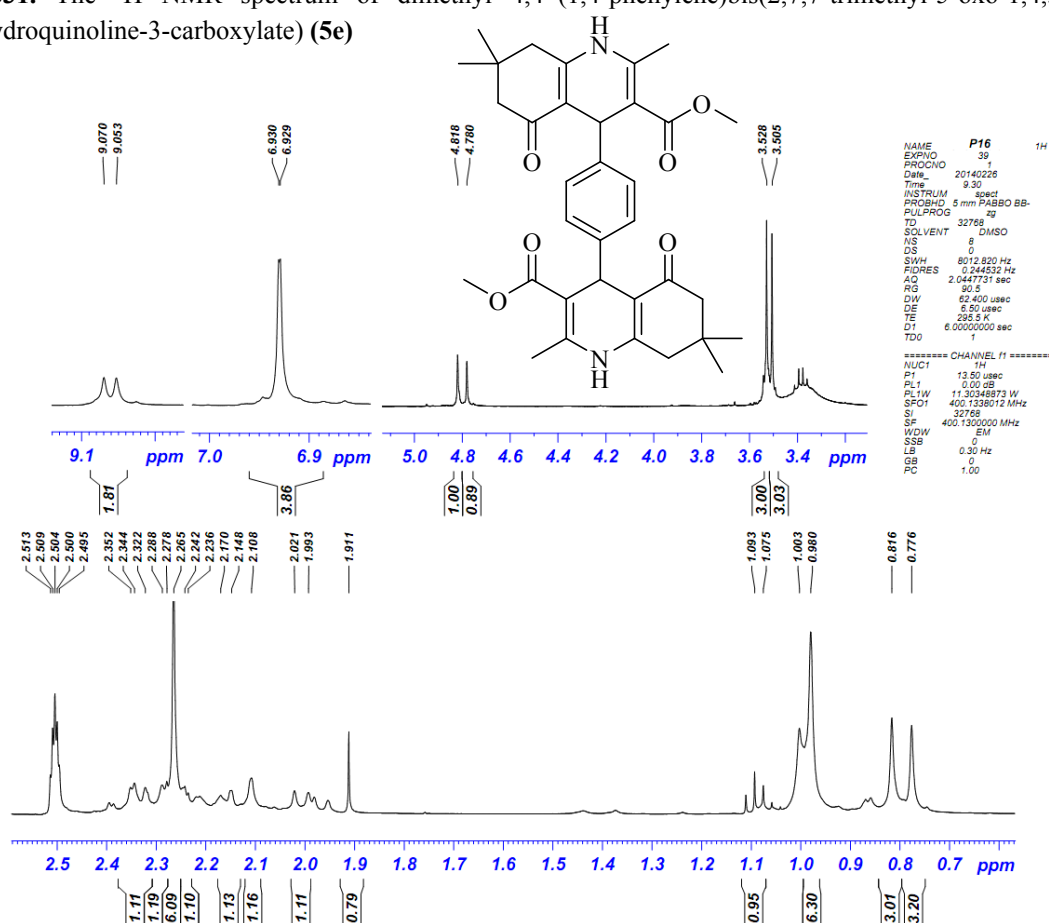


Fig. S32. The ^{13}C NMR spectrum of dimethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**5e**)

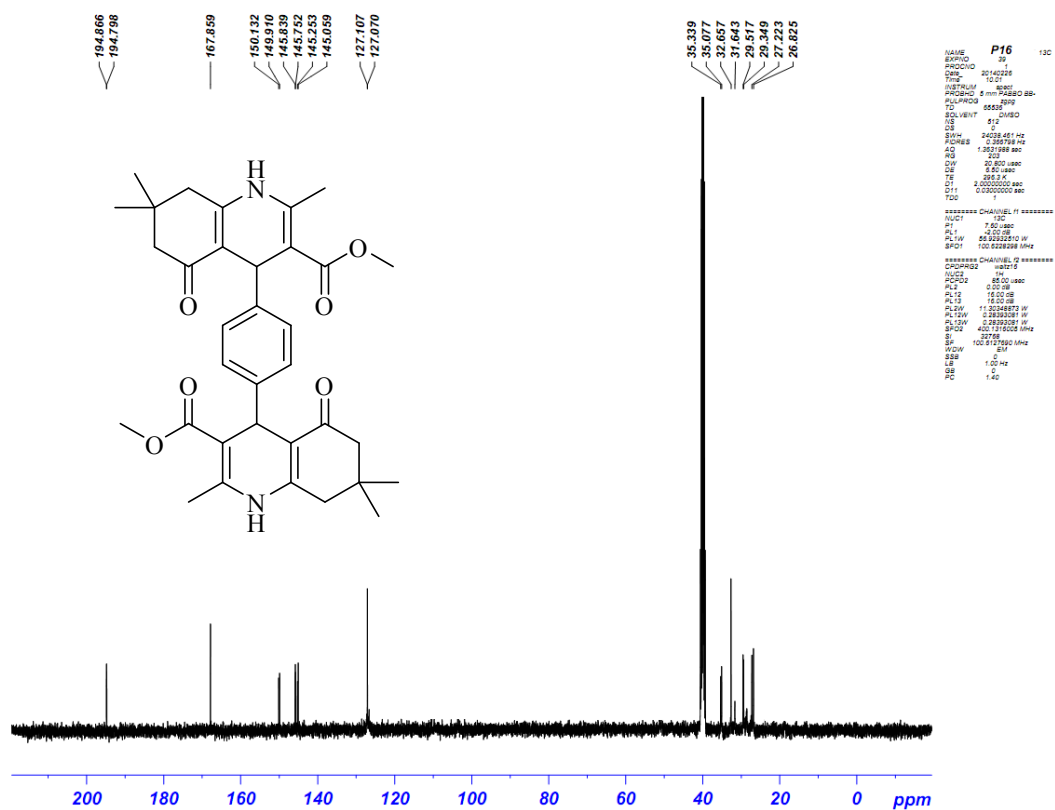


Fig. S33. The ^{13}C NMR spectrum of dimethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**5e**)

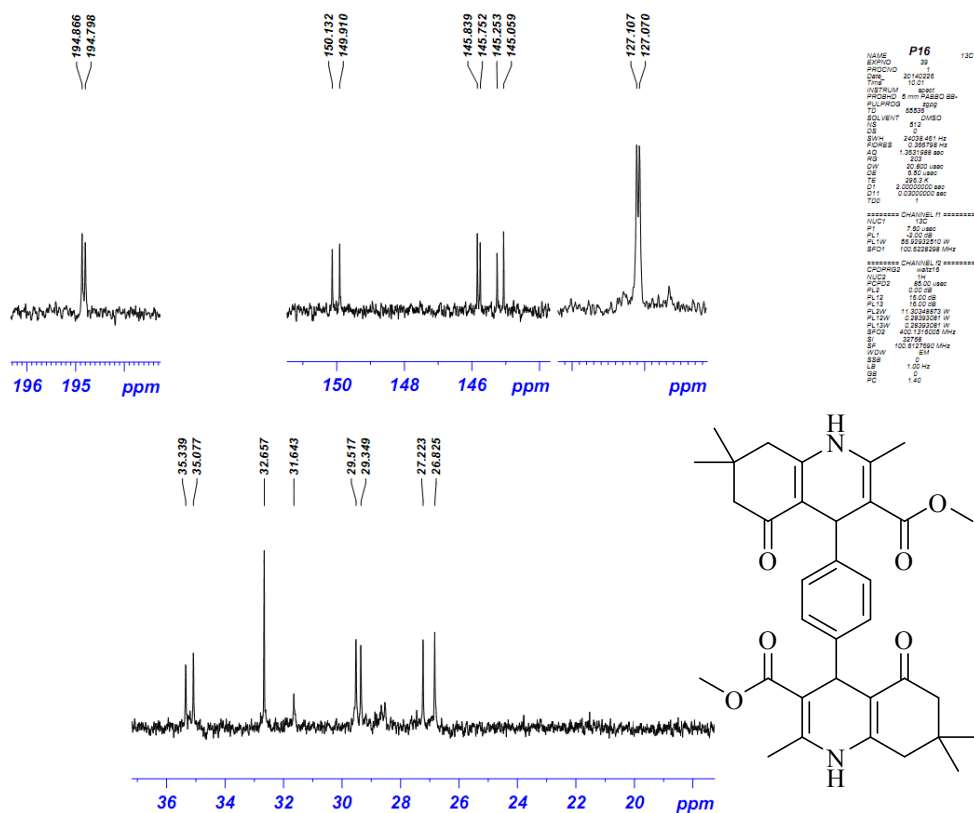


Fig. S34. The Mass spectrum of dimethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**5e**)

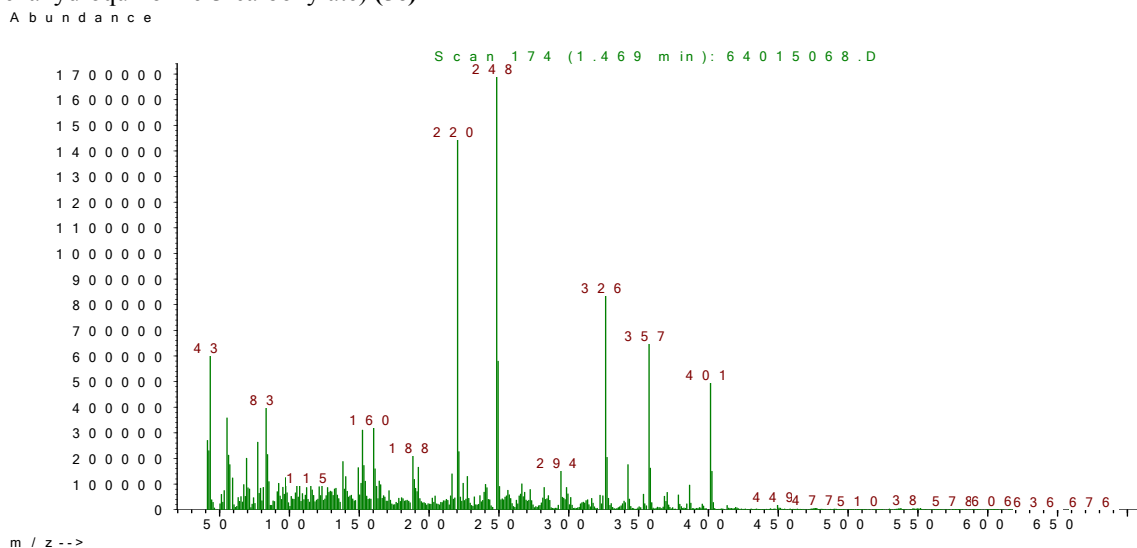


Fig. S35. The IR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5f**)

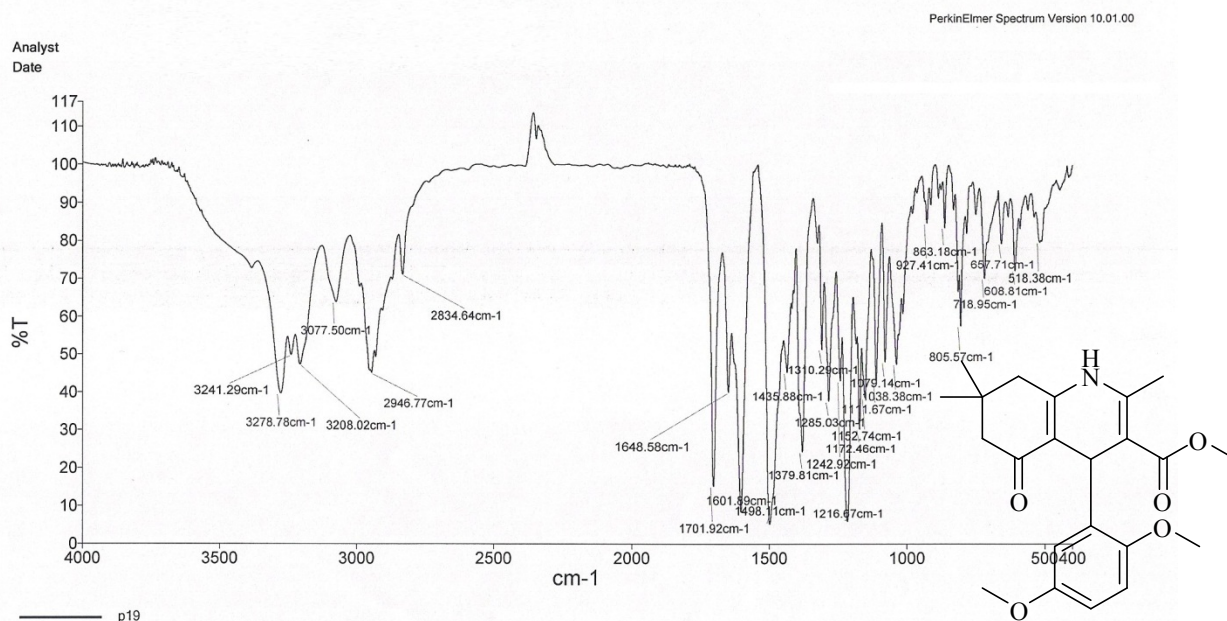


Fig. S36. The ^1H NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5f**)

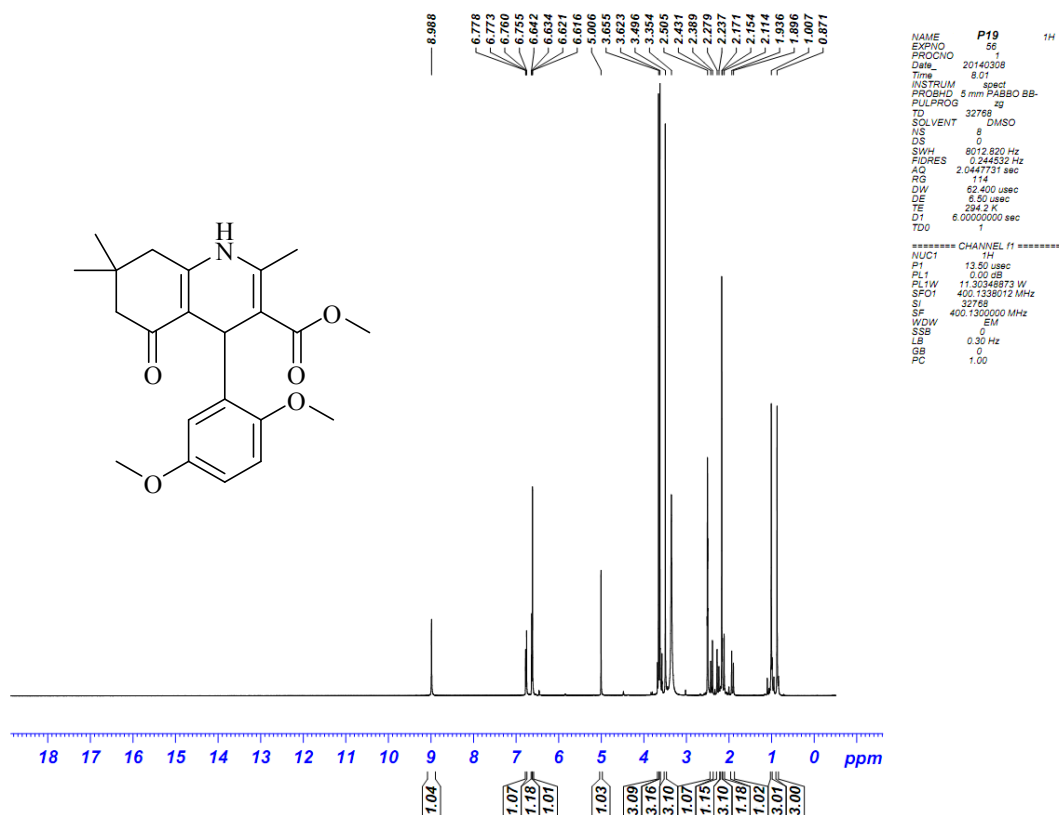


Fig. S37. The ^1H NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (5f)

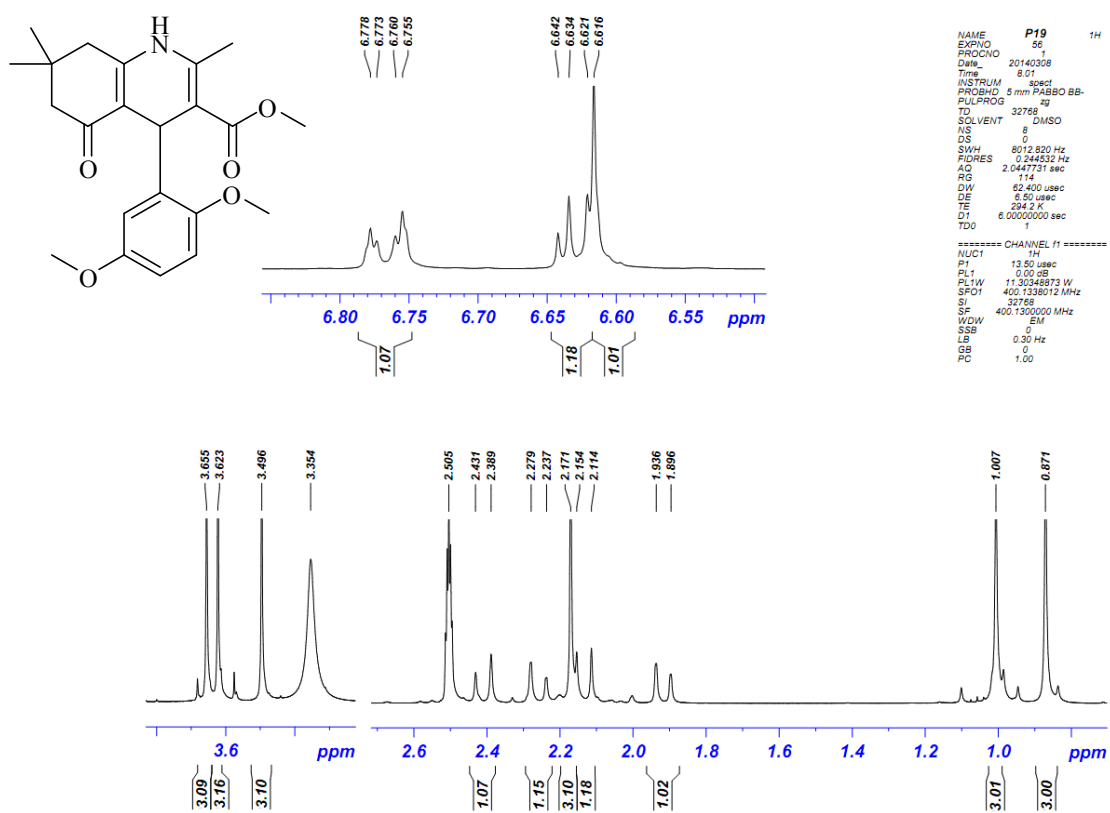


Fig. S38. The ^{13}C NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5f**)

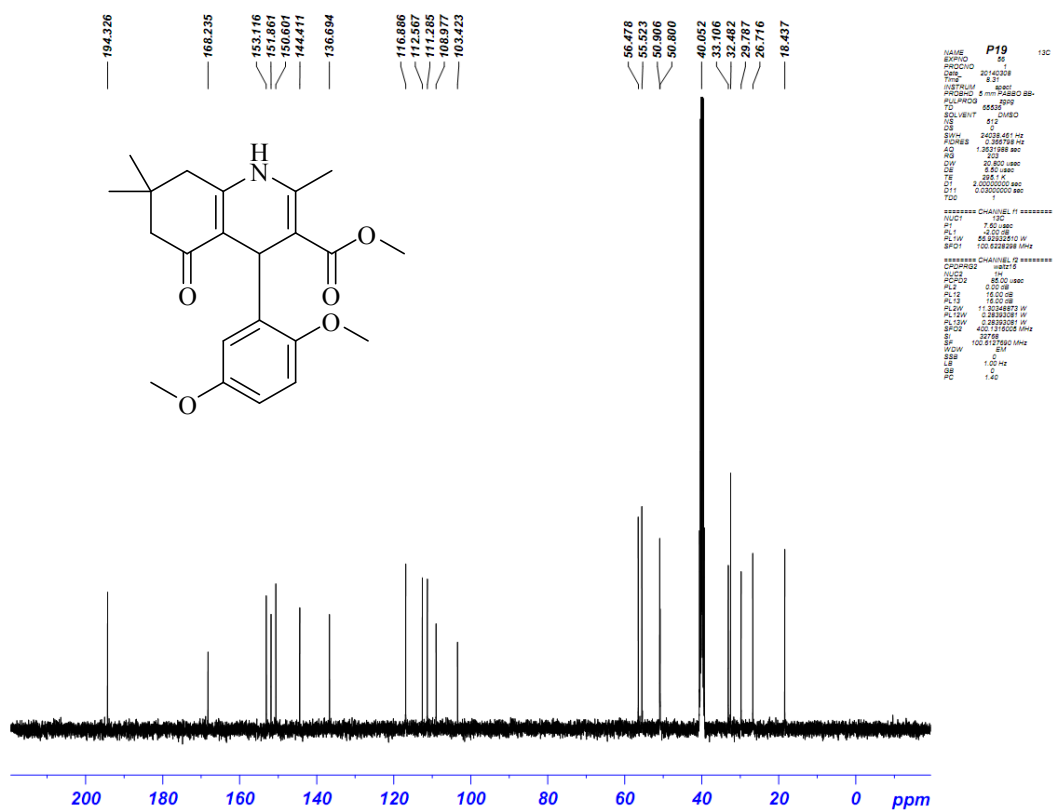


Fig. S39. The ^{13}C NMR spectrum of methyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5f**)

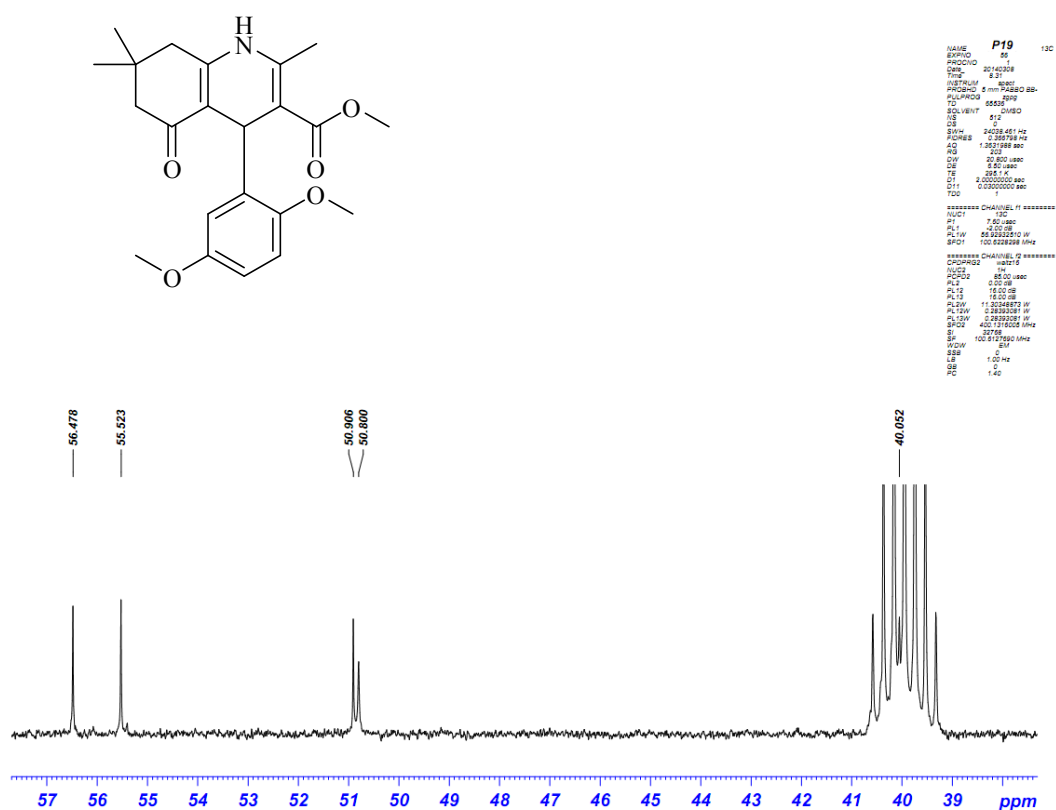


Fig. S40. The Mass spectrum of methyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5f**)

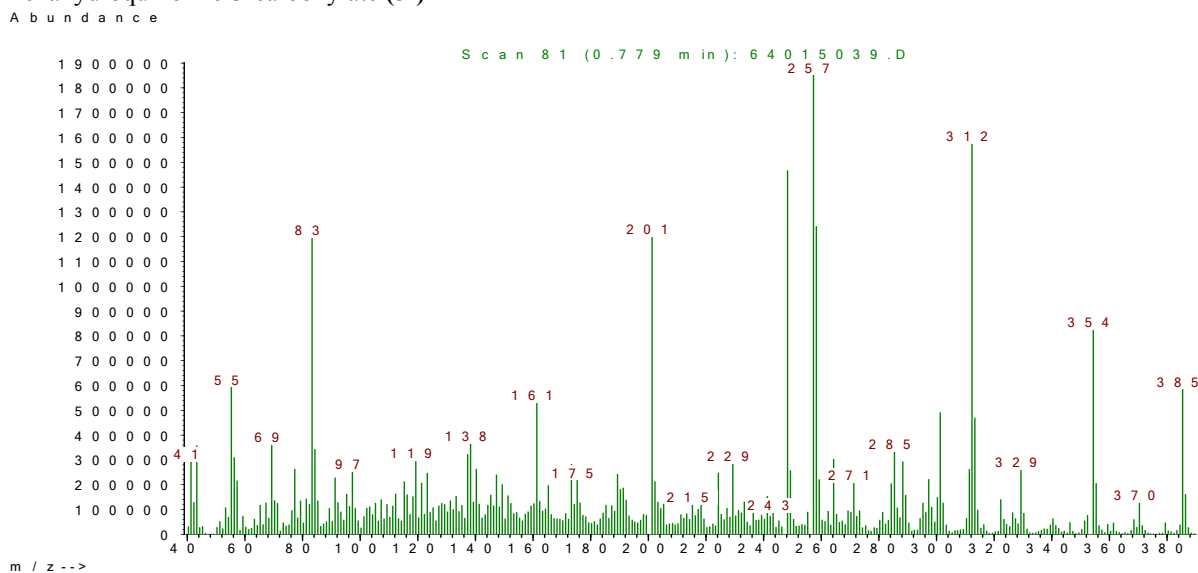


Fig. S41. The IR spectrum of methyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5g**)

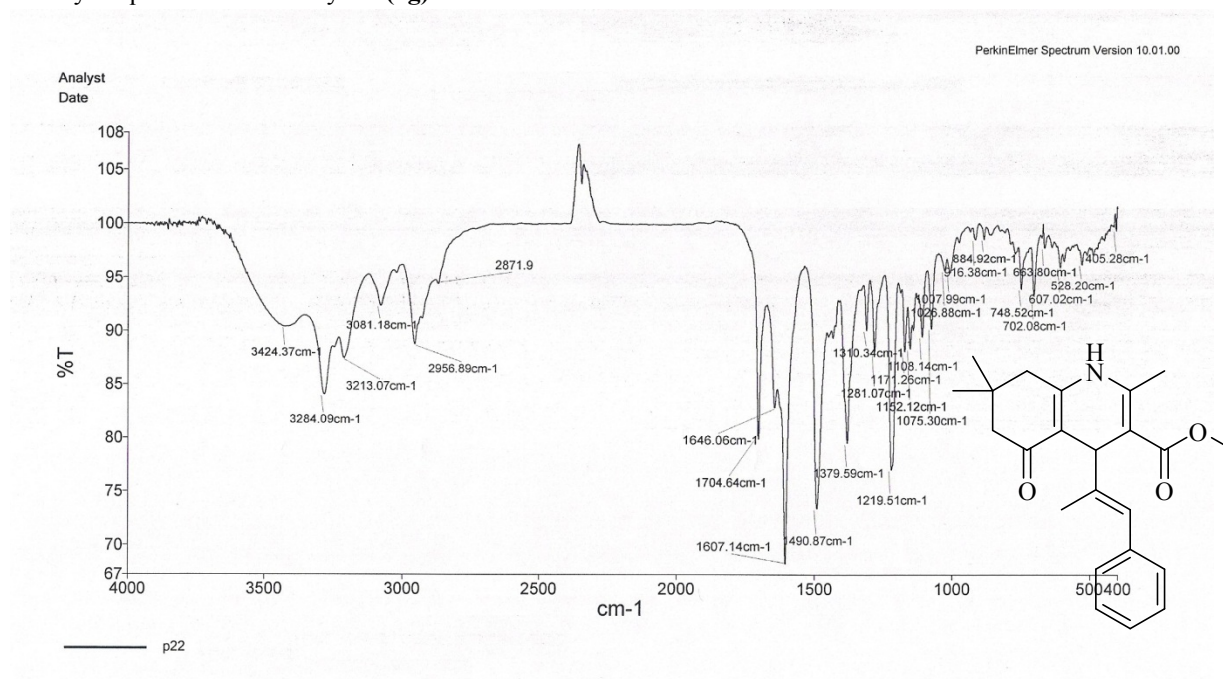


Fig. S42. The ¹H NMR spectrum of methyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5g**)

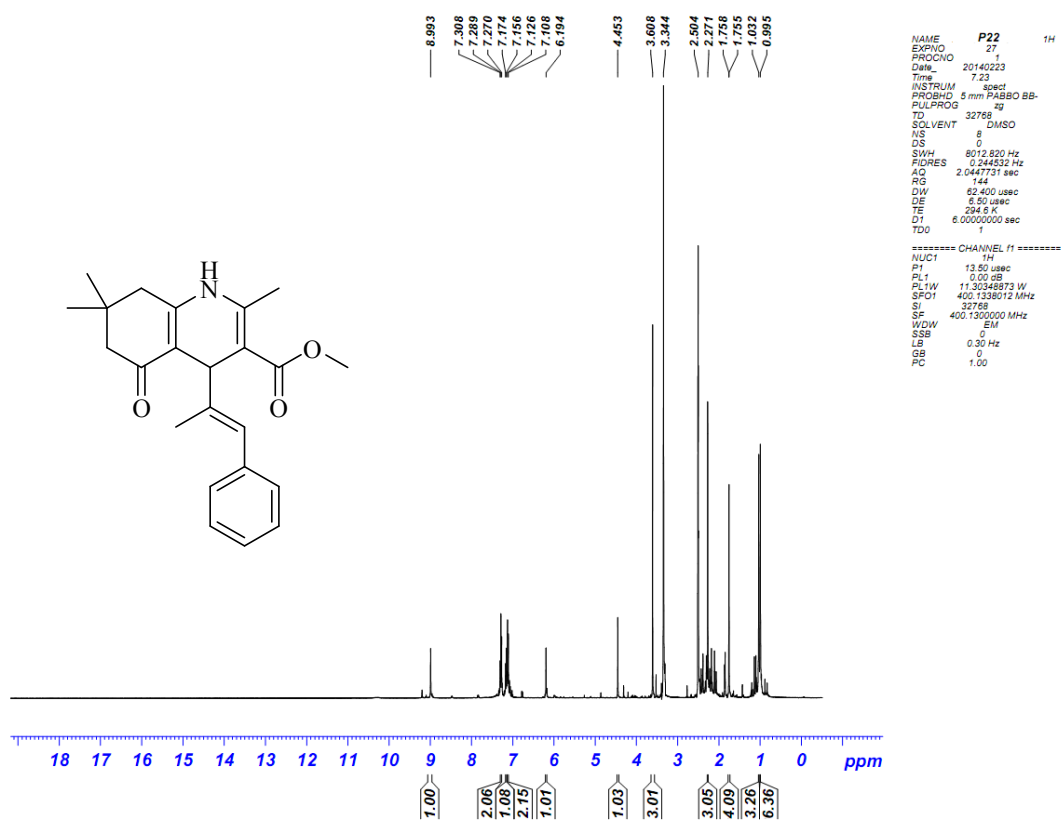


Fig. S43. The ^1H NMR spectrum of methyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5g**)

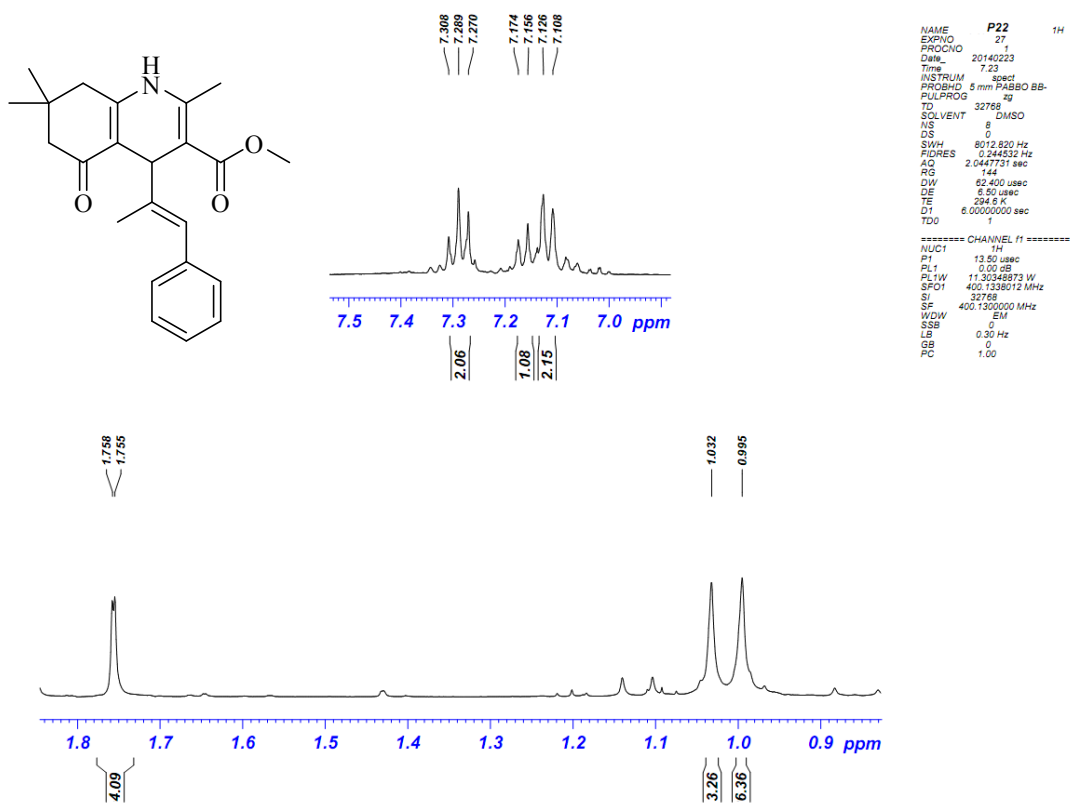


Fig. S44. The ^{13}C NMR spectrum of methyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5g**)

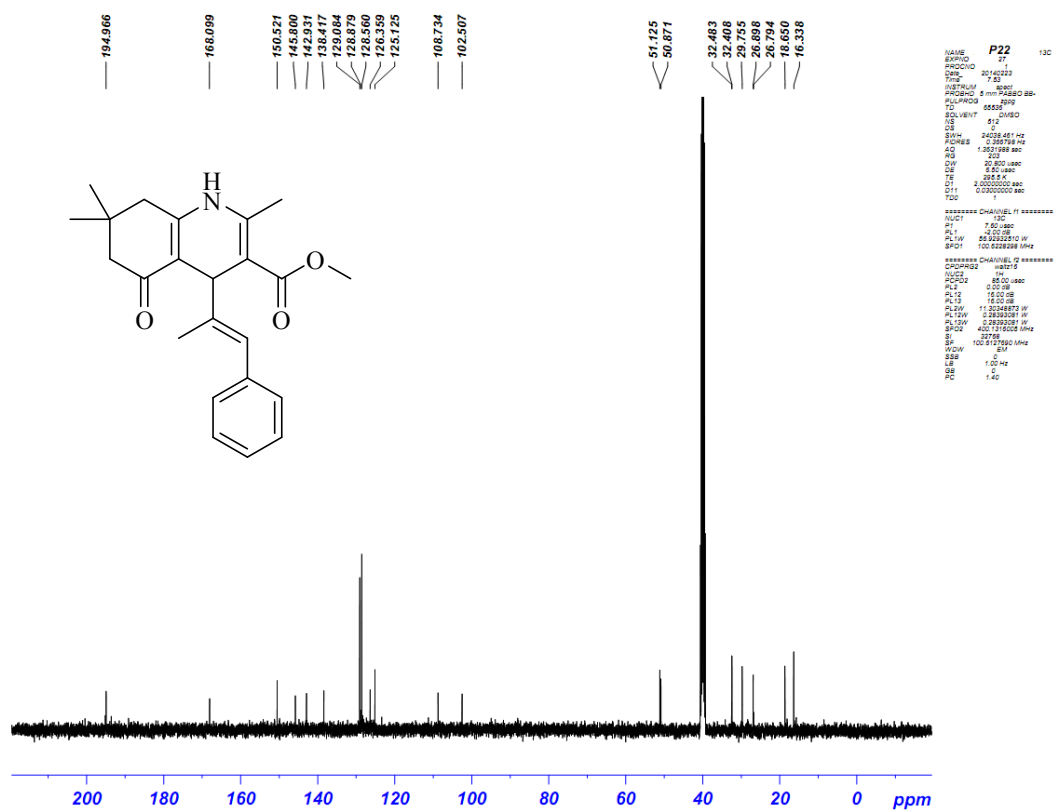


Fig. S45. The ^{13}C NMR spectrum of methyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5g**)

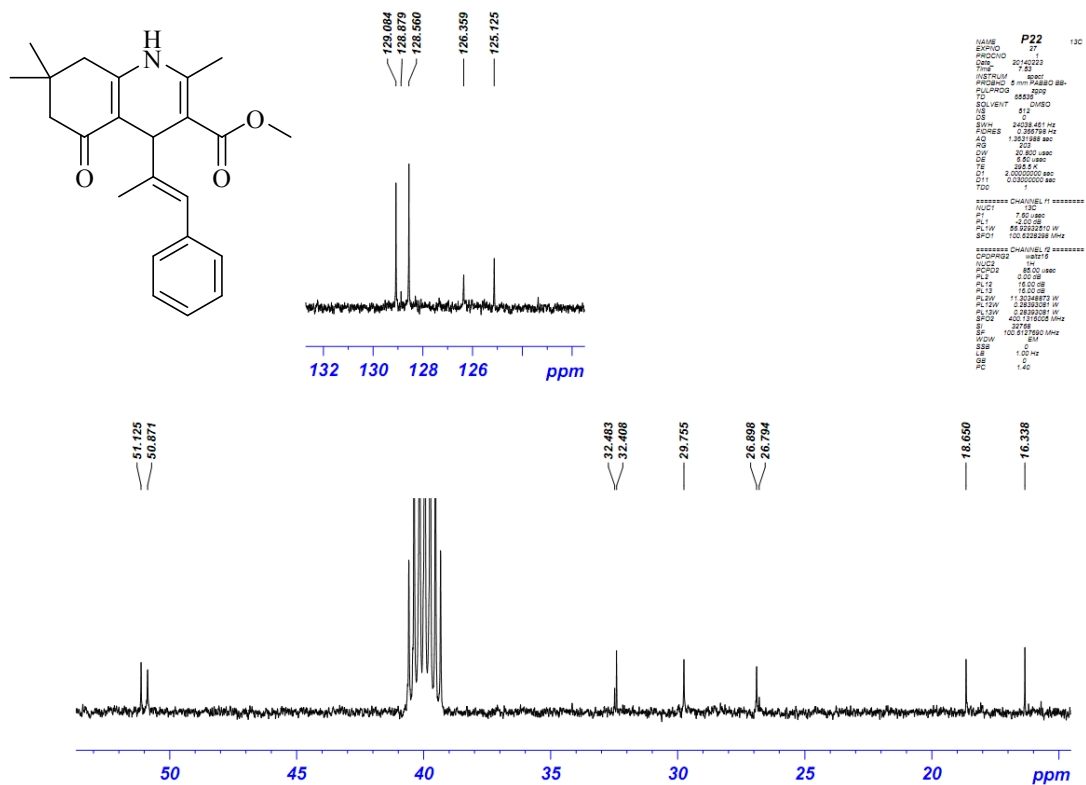


Fig. S46. The Mass spectrum of methyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5g**)

Abundance

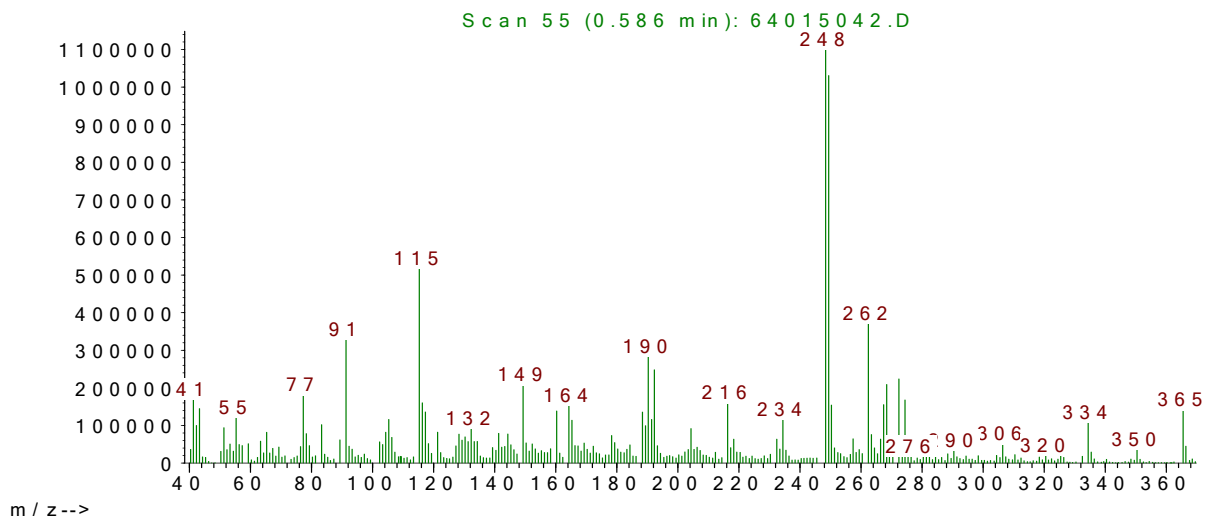


Fig. S47. The IR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5h**)

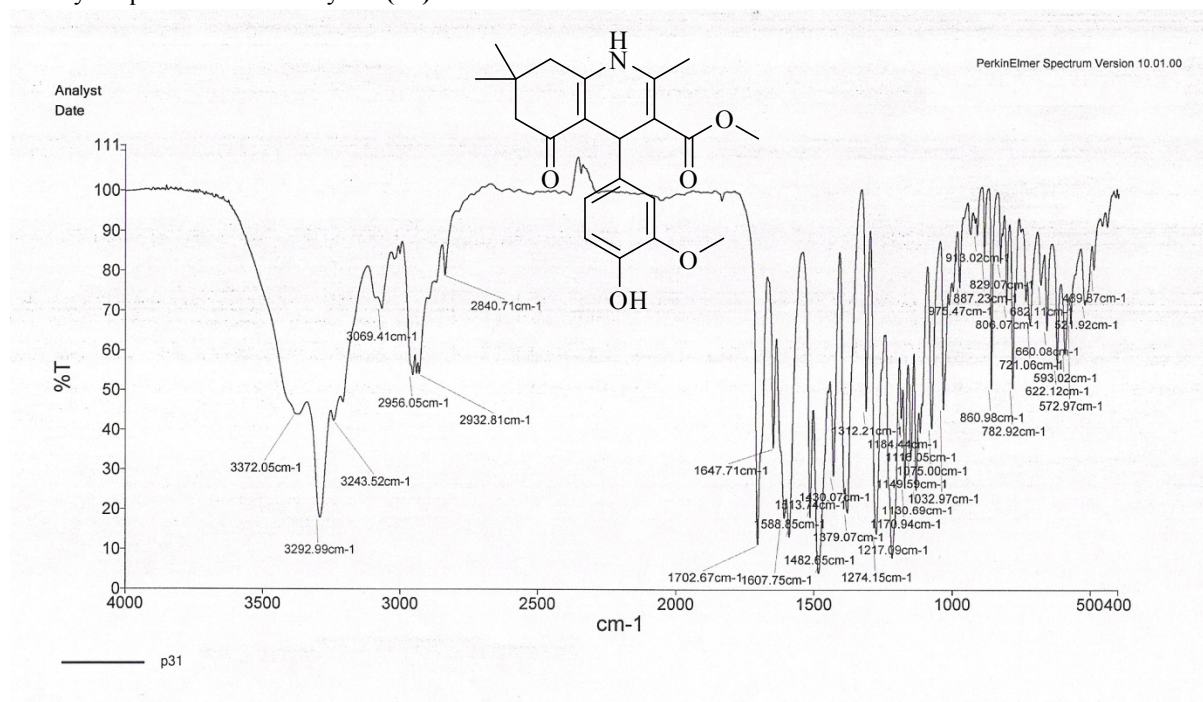


Fig. S48. The ¹H NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5h**)

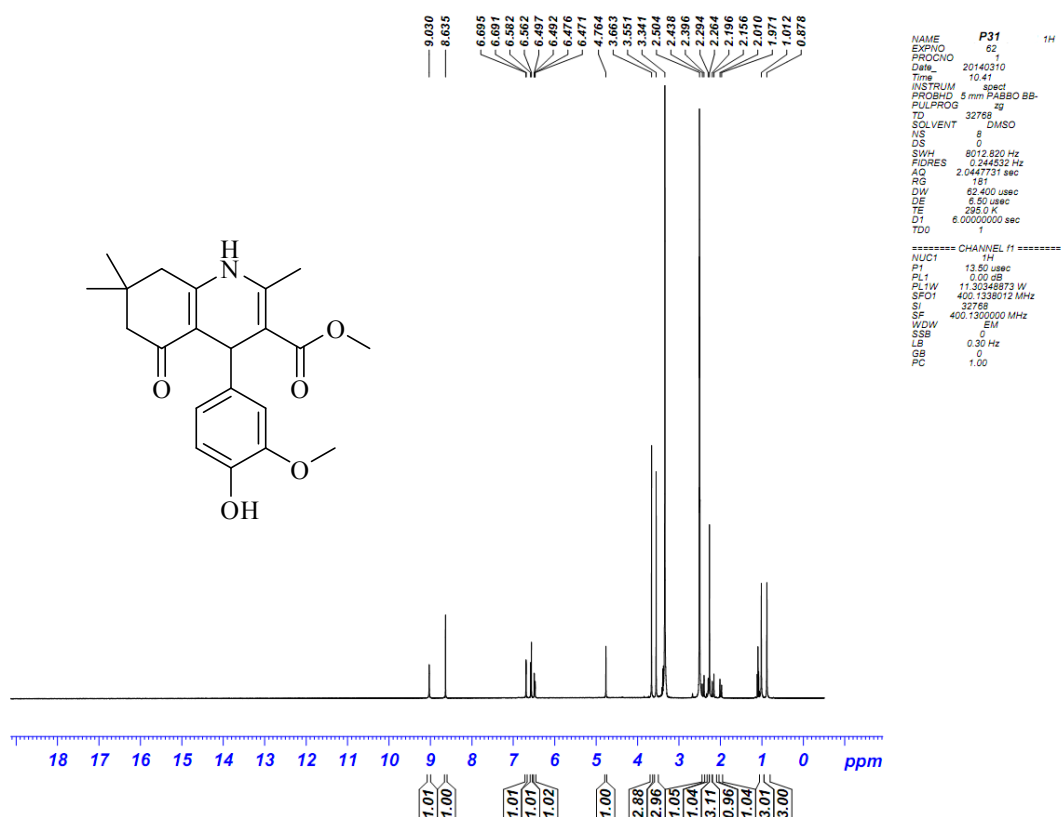


Fig. S49. The ^1H NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5h**)

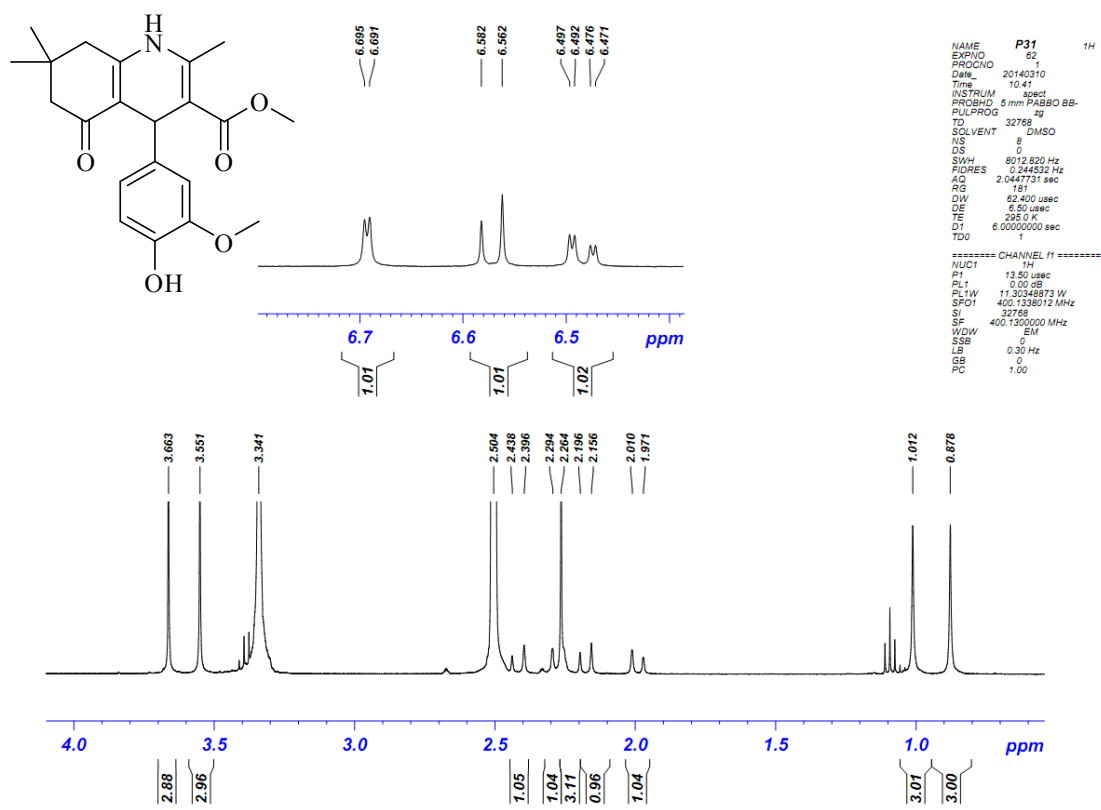


Fig. S50. The ^{13}C NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5h**)

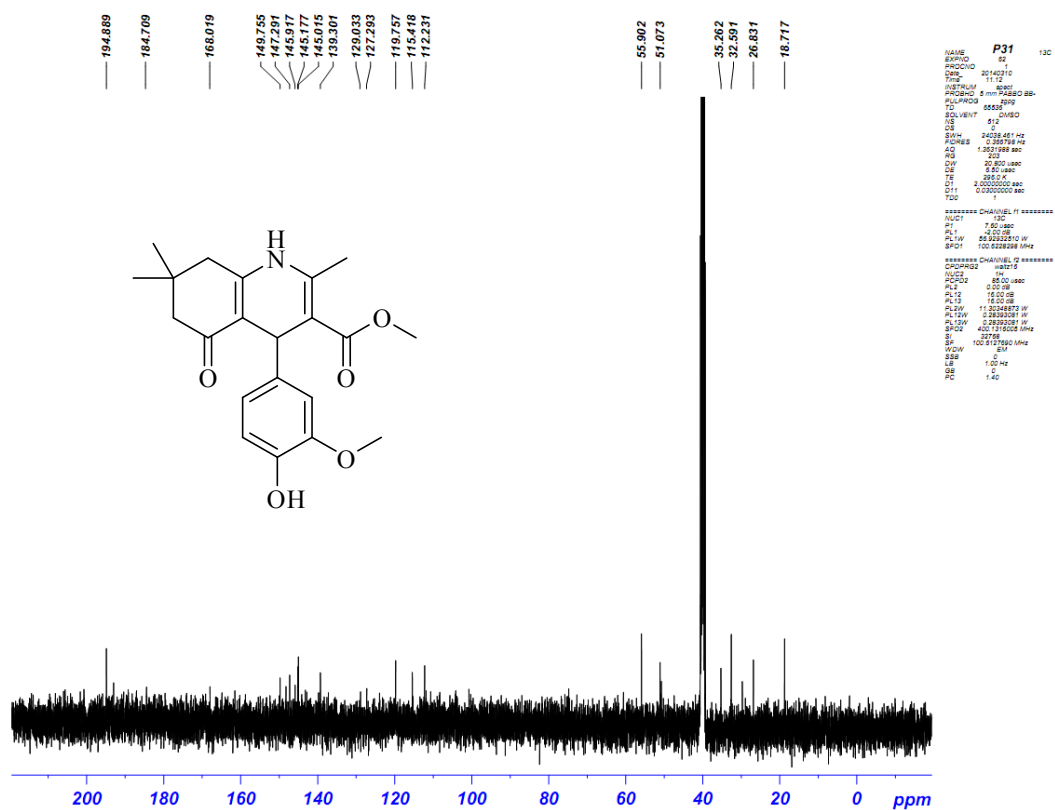


Fig. S51. The ¹³C NMR spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5h**)

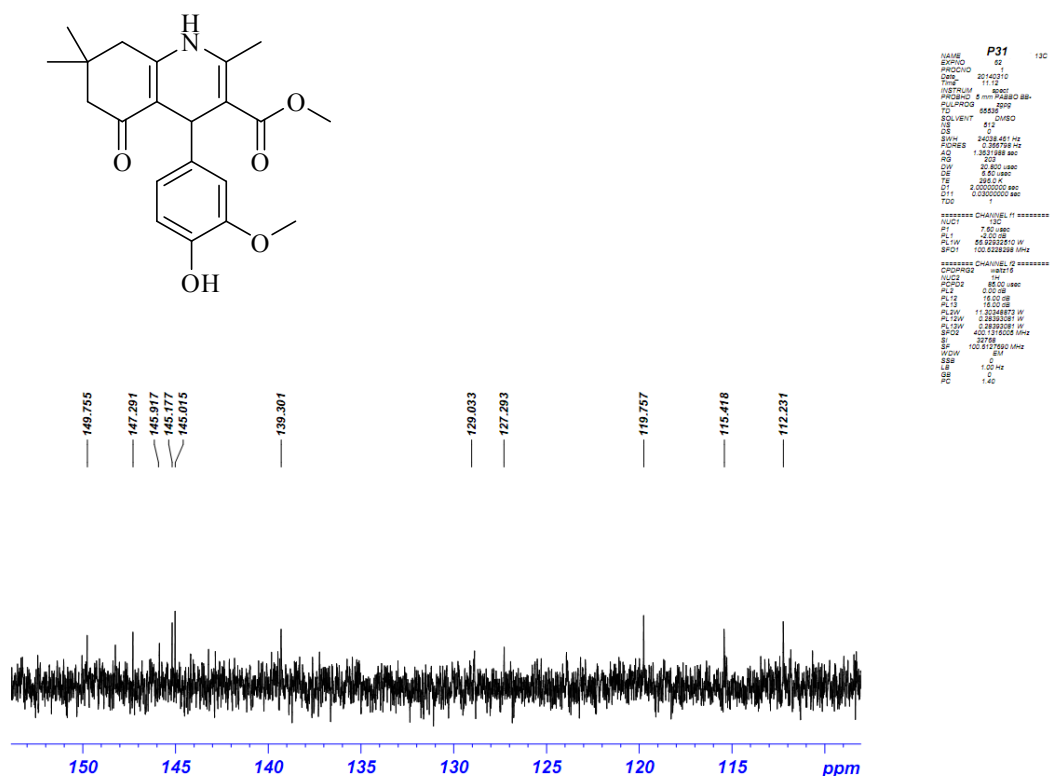


Fig. S52. The Mass spectrum of methyl 4-(4-hydroxy-3-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5h**)

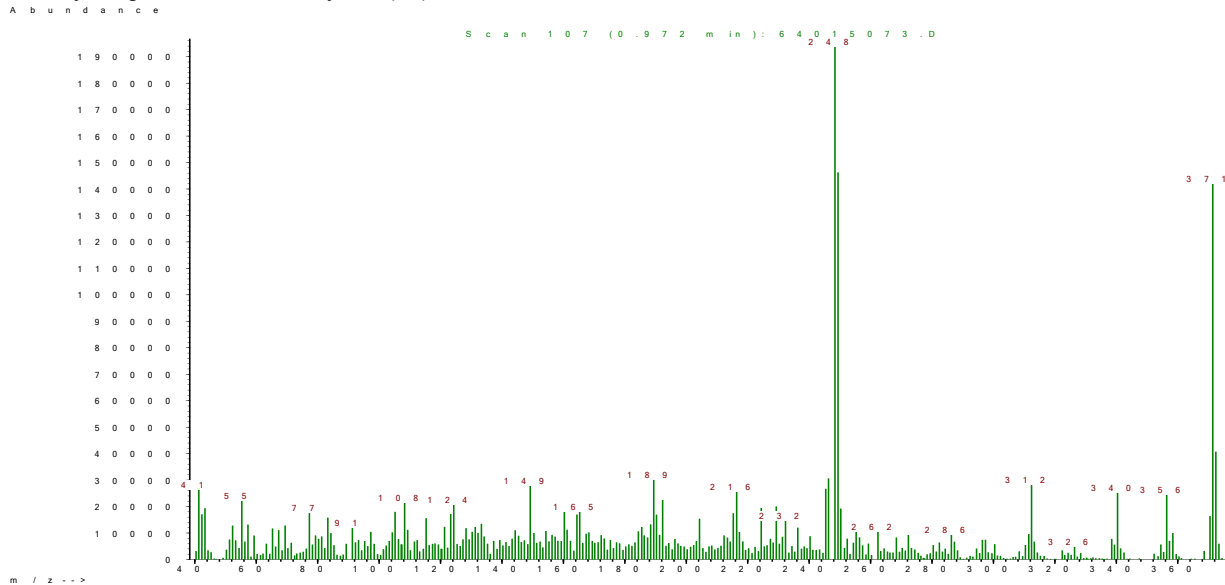


Fig. S53. The IR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5i**)

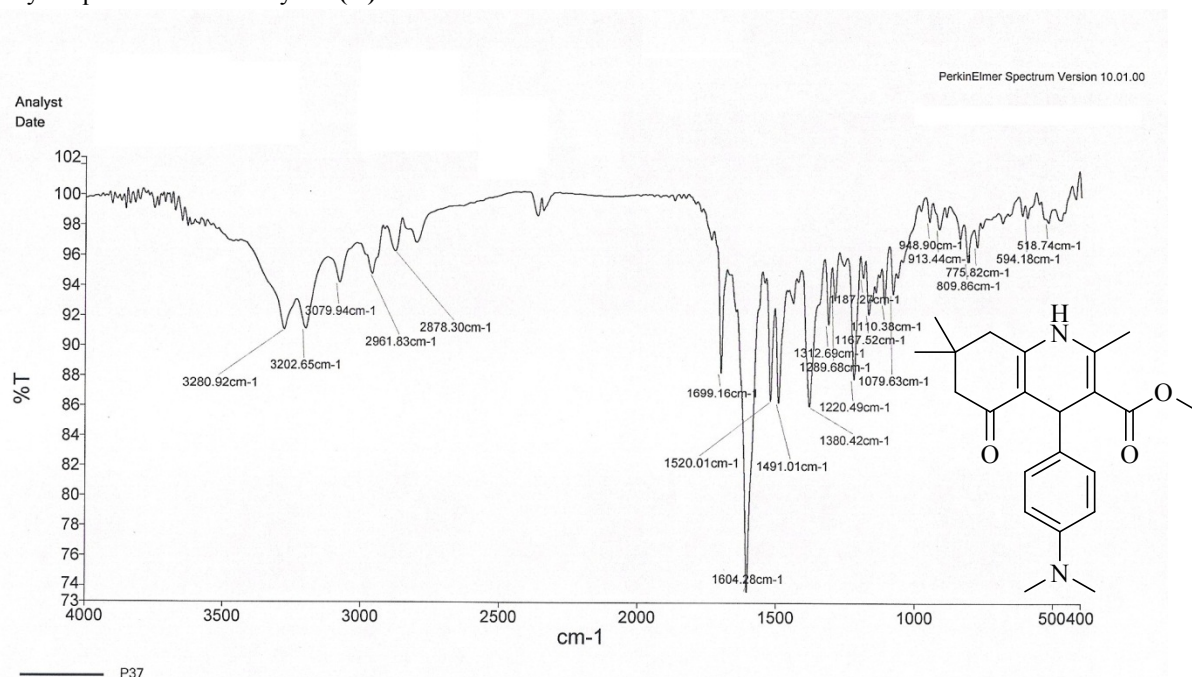


Fig. S54. The ¹H NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5i**)

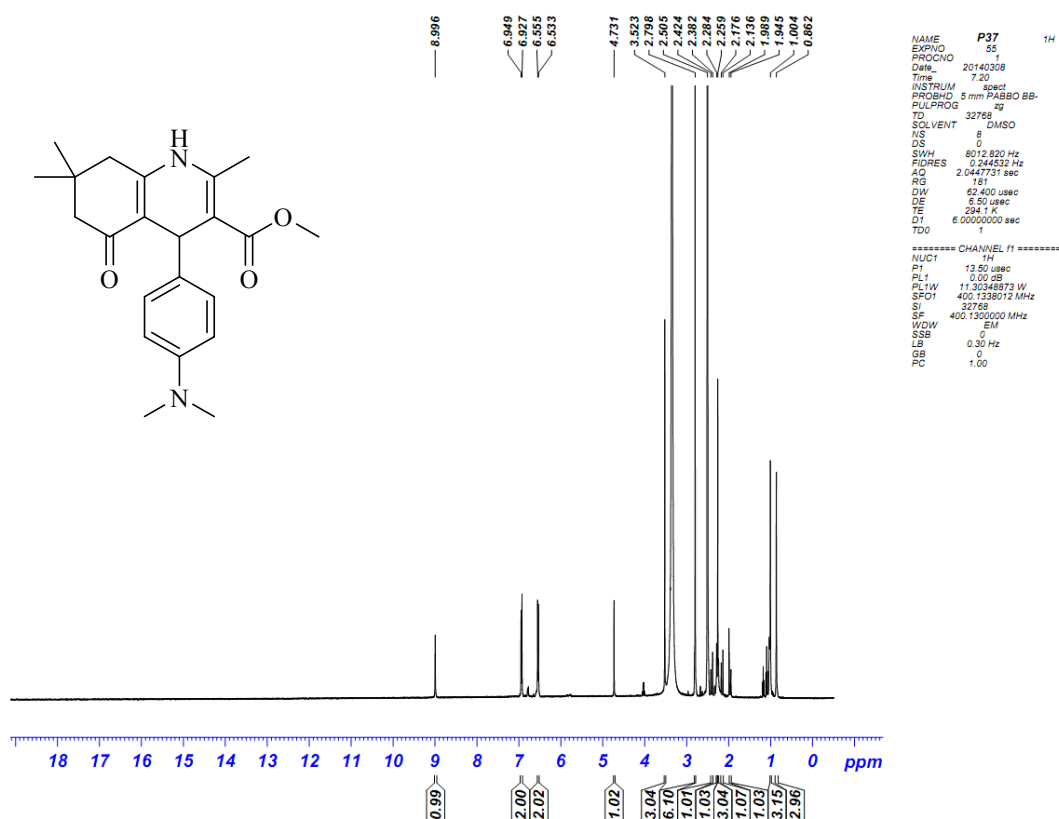


Fig. S55. The ^1H NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5i**)

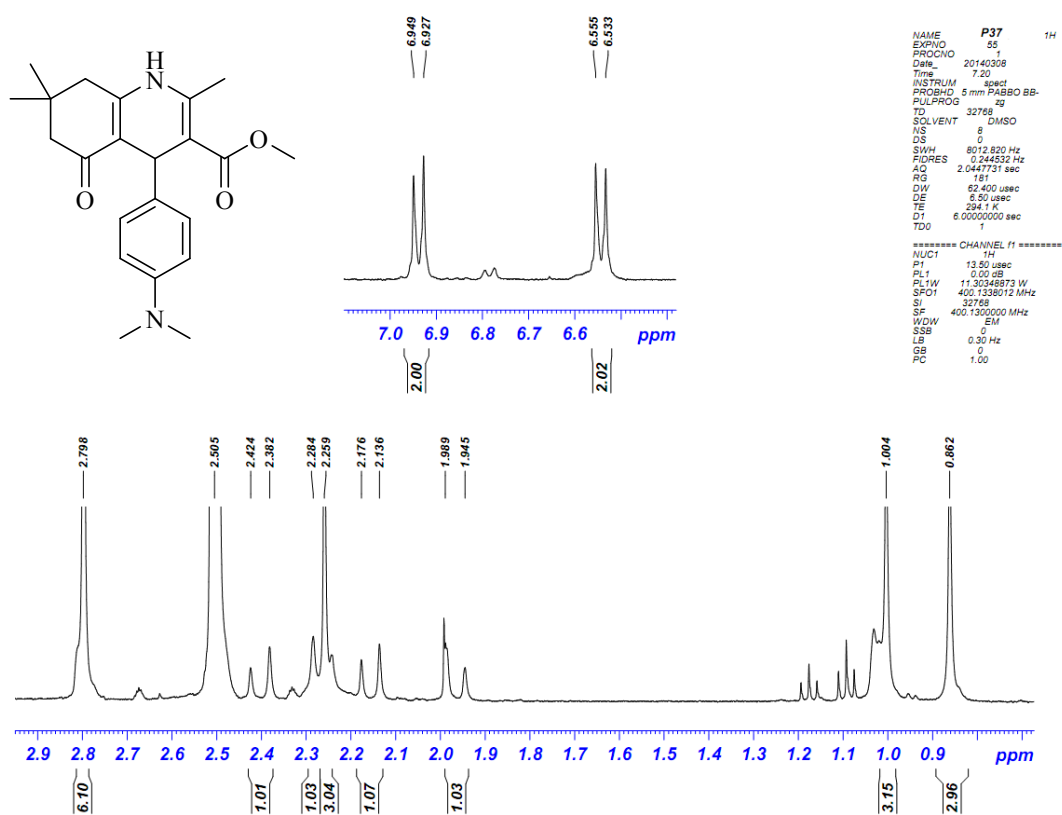


Fig. S56. The ¹³C NMR spectrum of methyl 4-(4-(dimethylamino)phenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5i**)

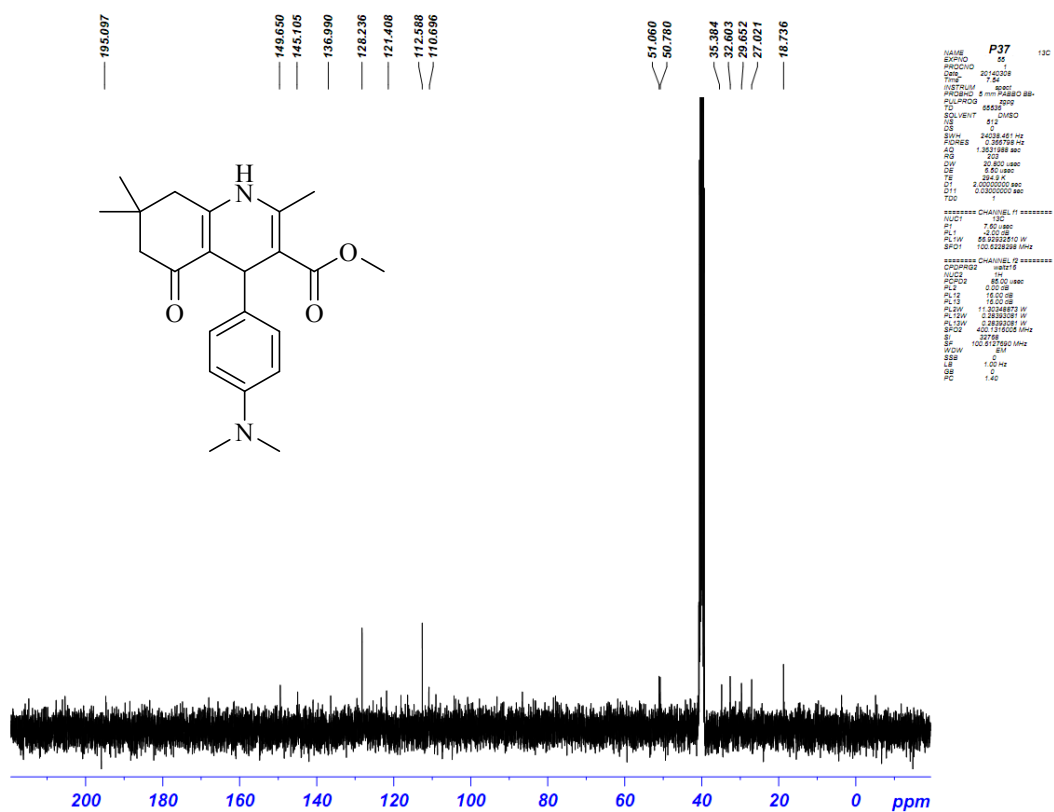


Fig. S57. The Mass spectrum of methyl 4-(4-(dimethylamino)phenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**5i**)

Abundance

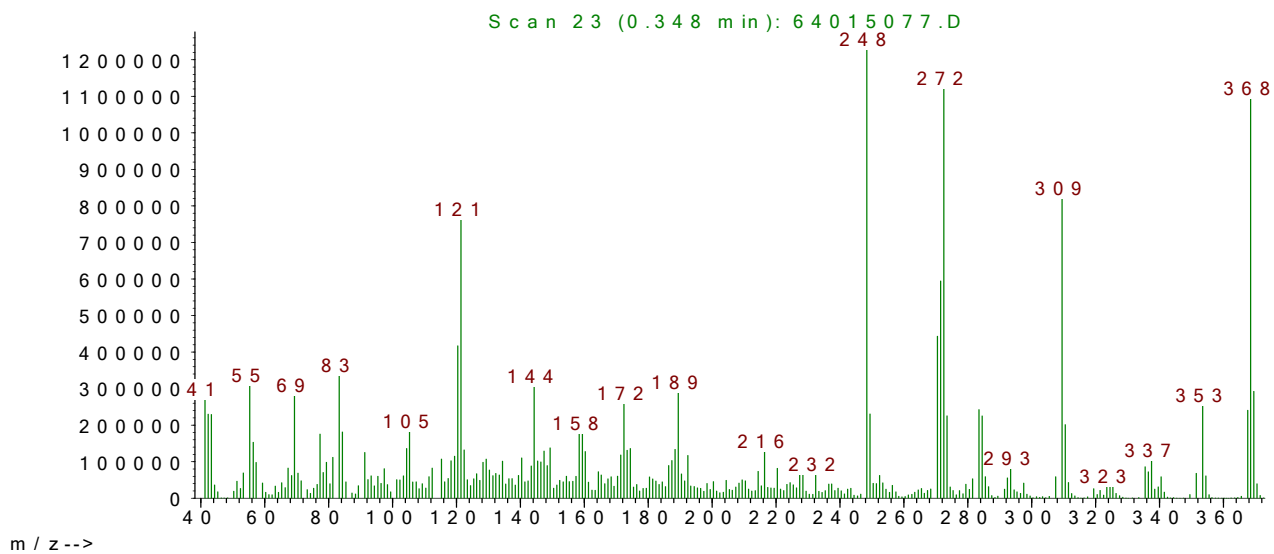


Fig. S58. The IR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6a**)

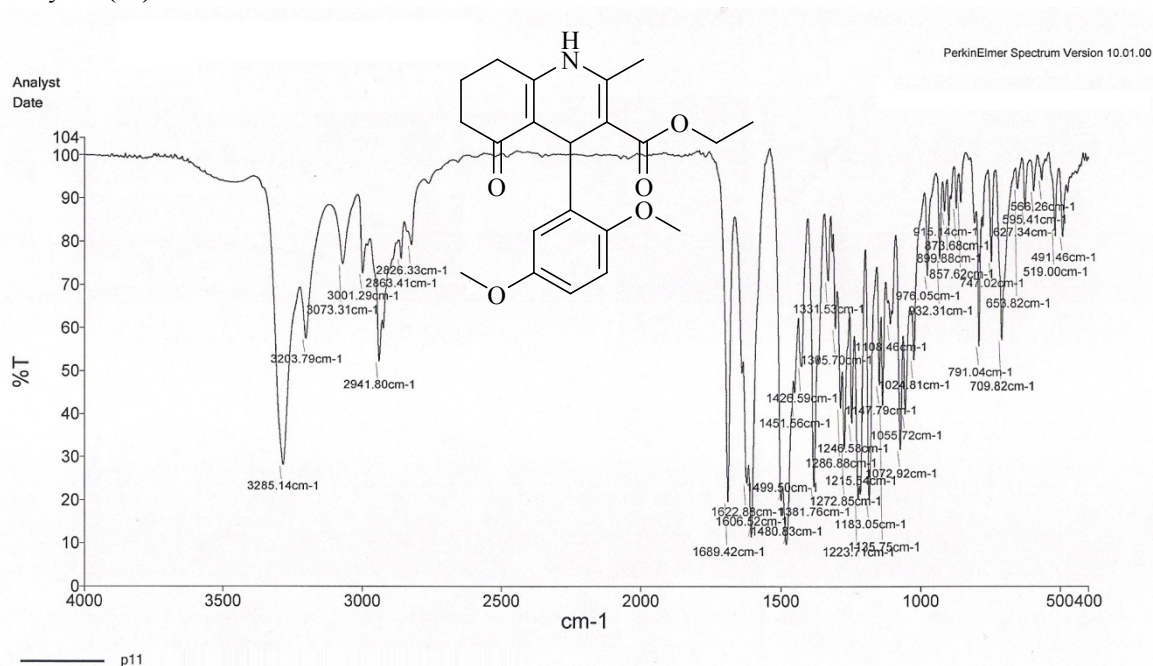


Fig. S59. The ^1H NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6a**)

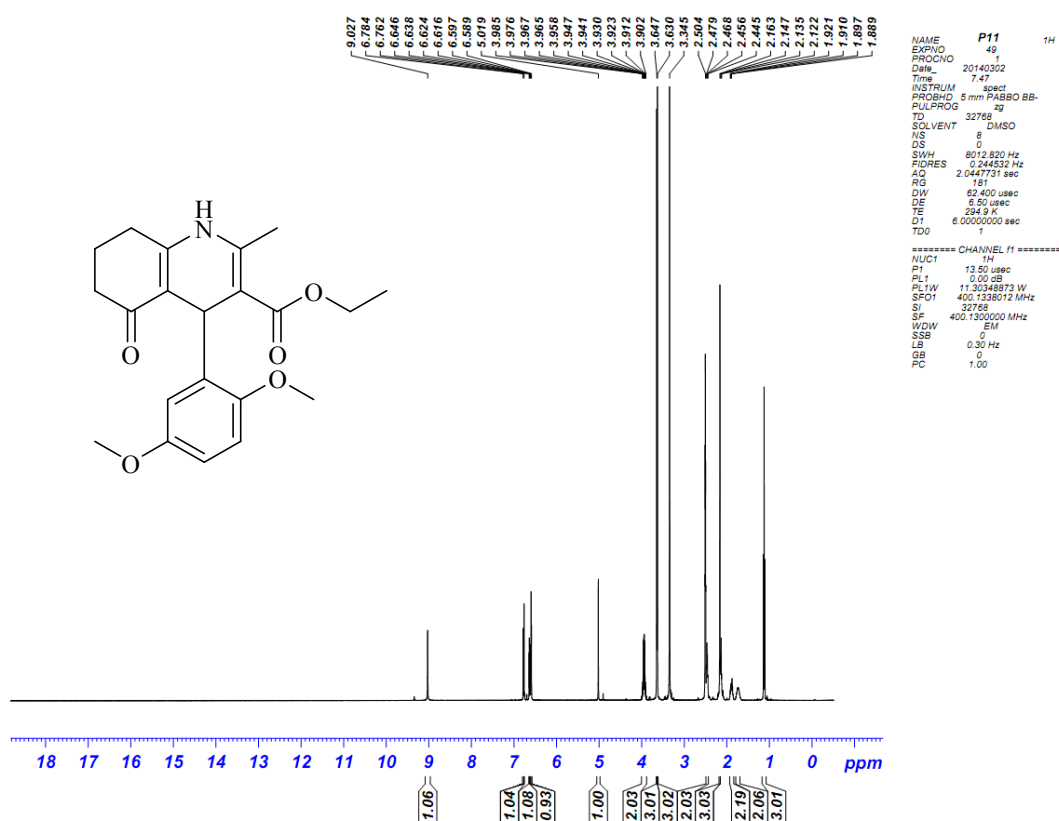


Fig. S60. The ^1H NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6a**)

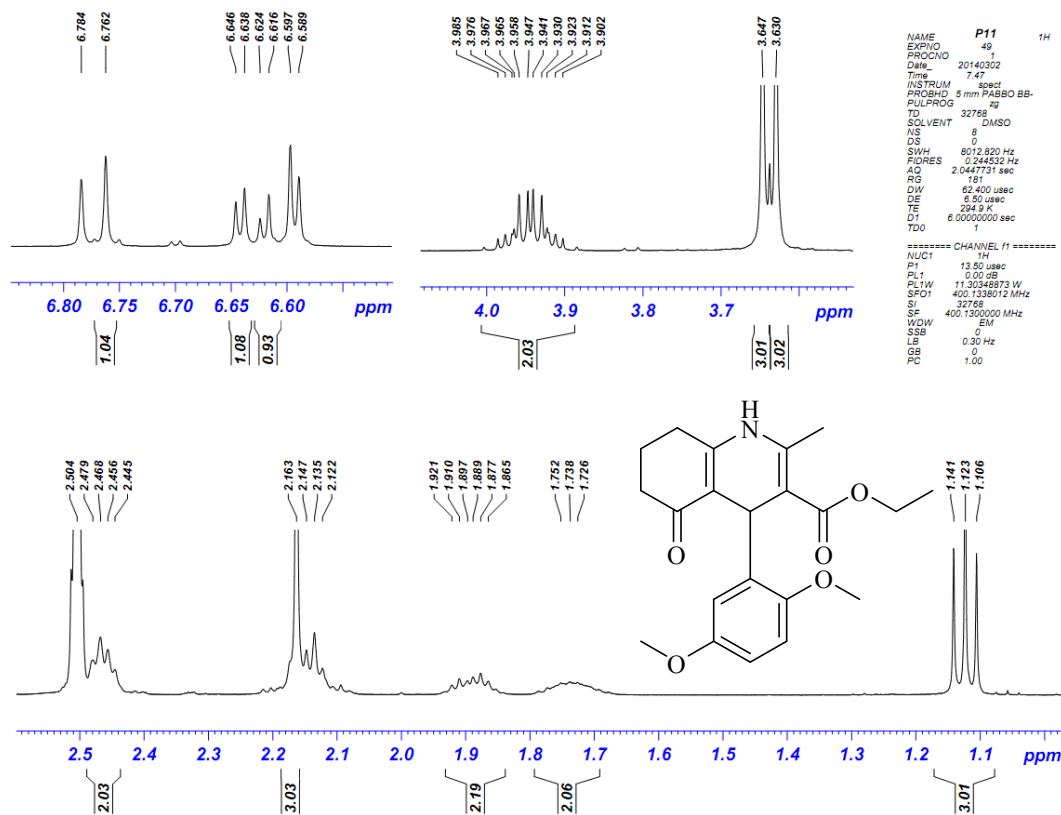


Fig. S61. The ^{13}C NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6a**)

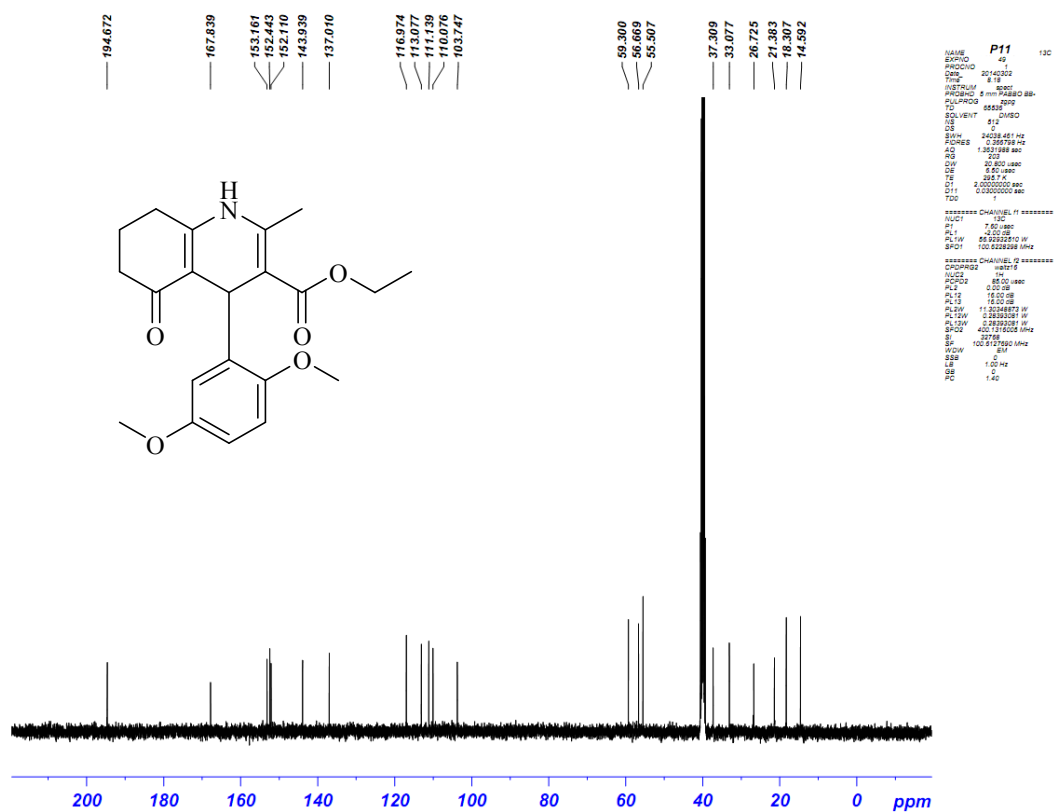


Fig. S62. The ^{13}C NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6a**)

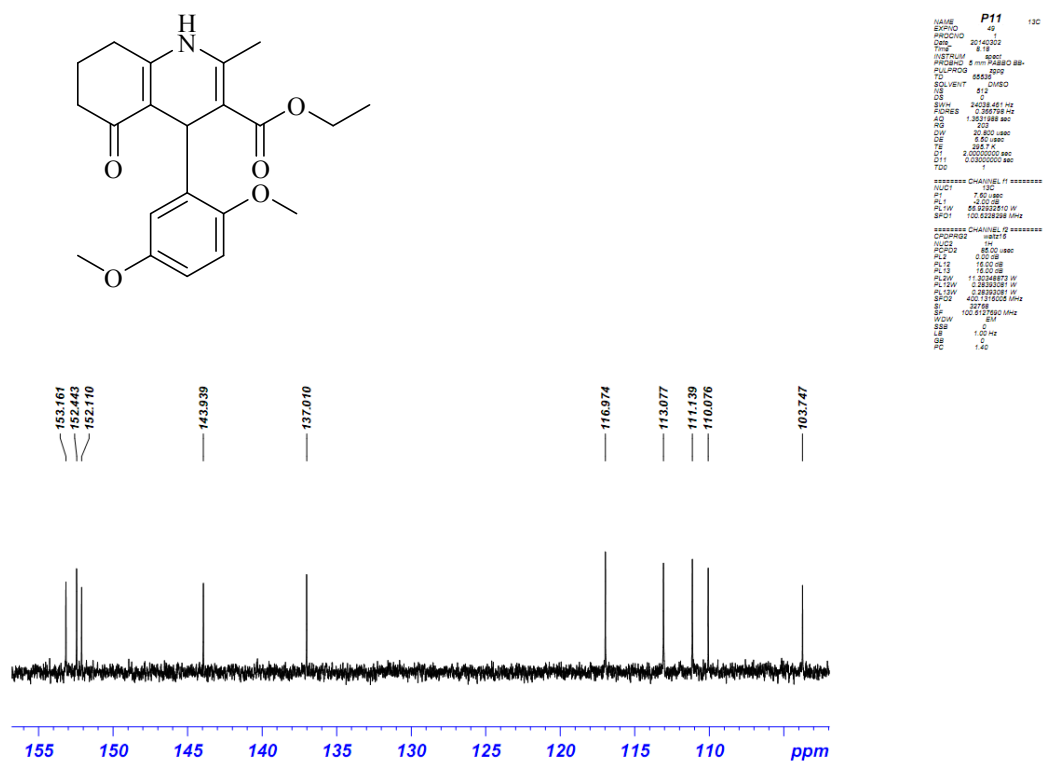


Fig. S63. The Mass spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2-methyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6a**)

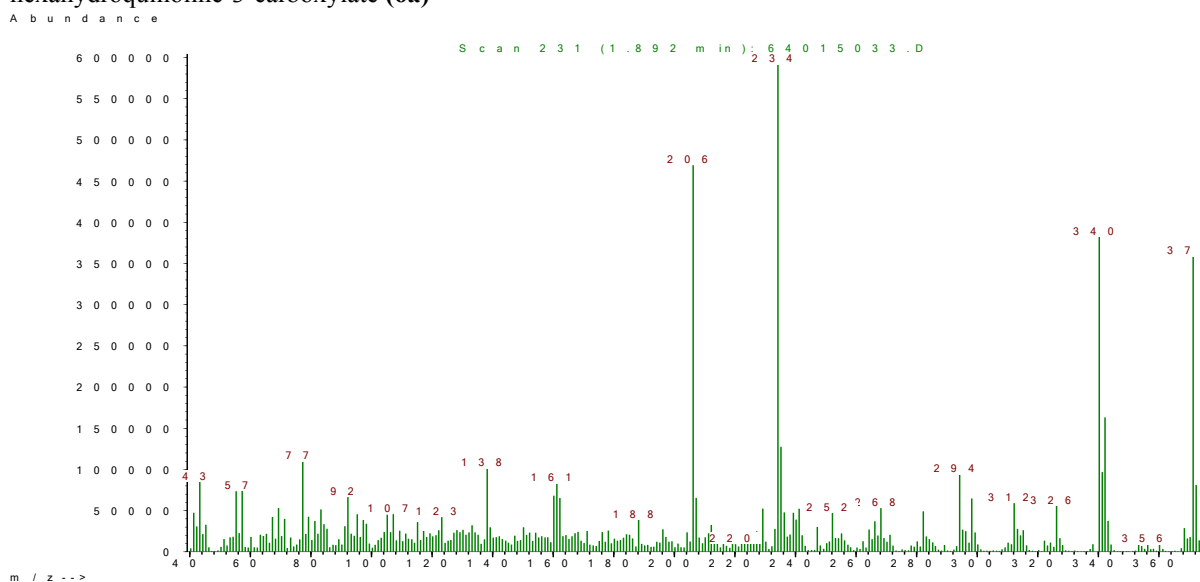


Fig. S64. The IR spectrum of ethyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6b**)

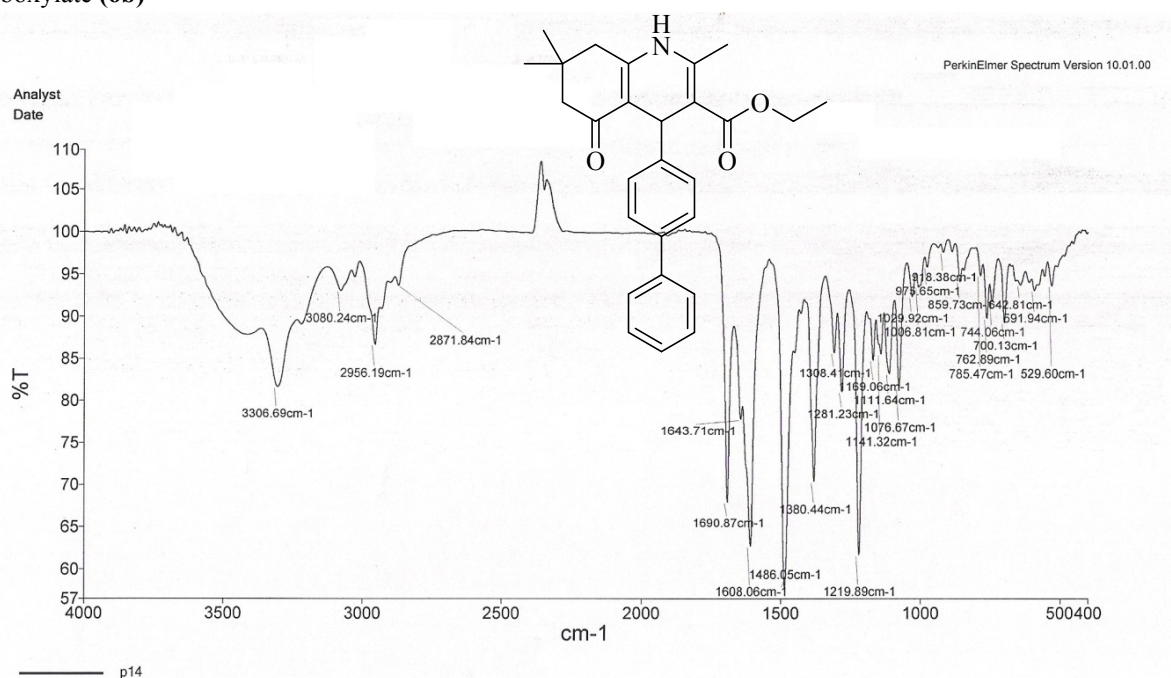


Fig. S65. The ^1H NMR spectrum of ethyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6b**)

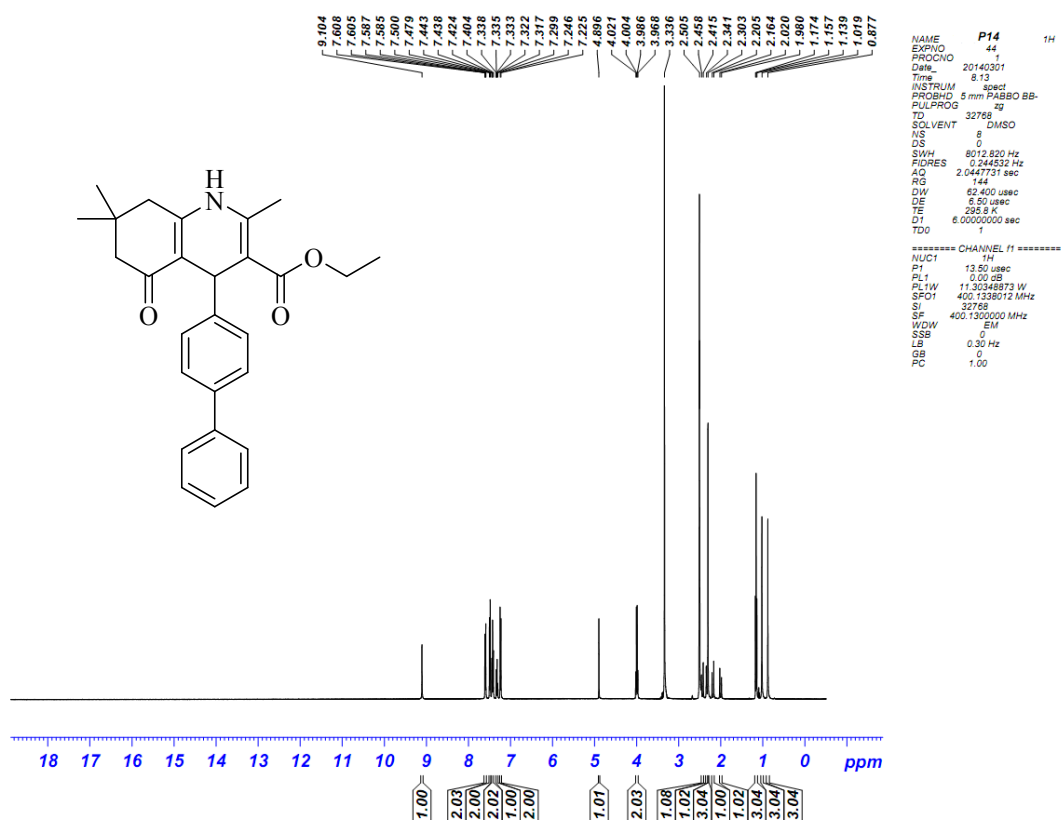


Fig. S66. The ^1H NMR spectrum of ethyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6b**)

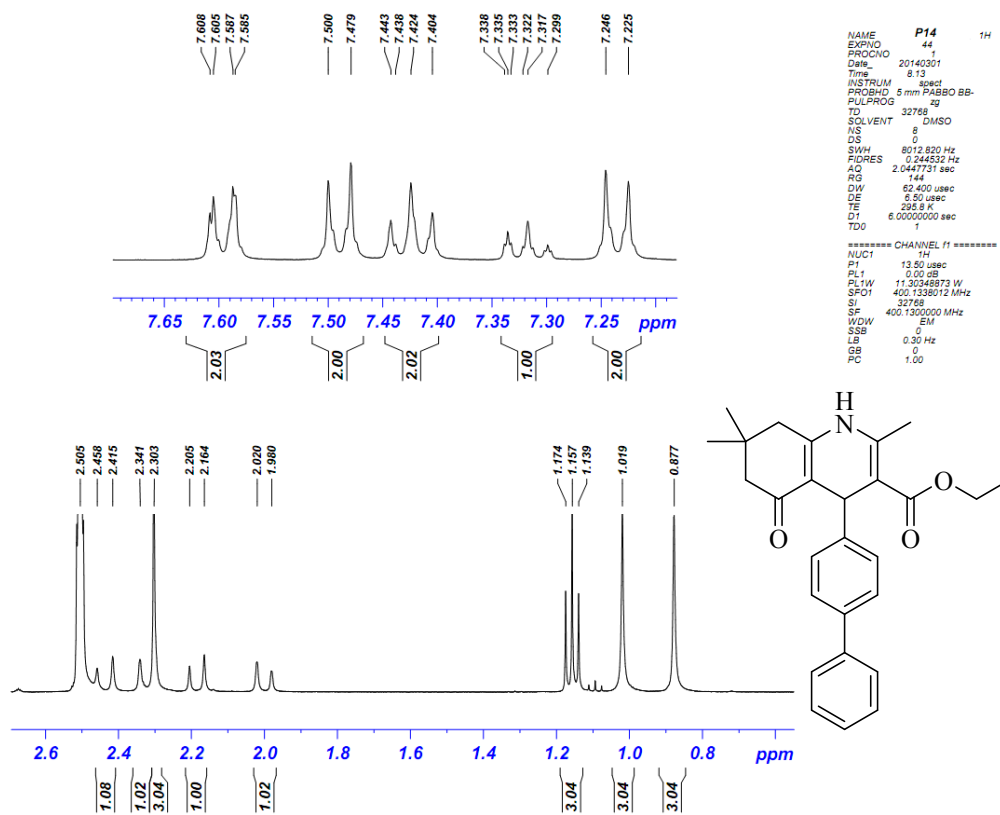


Fig. S67. The ^{13}C NMR spectrum of ethyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6b**)

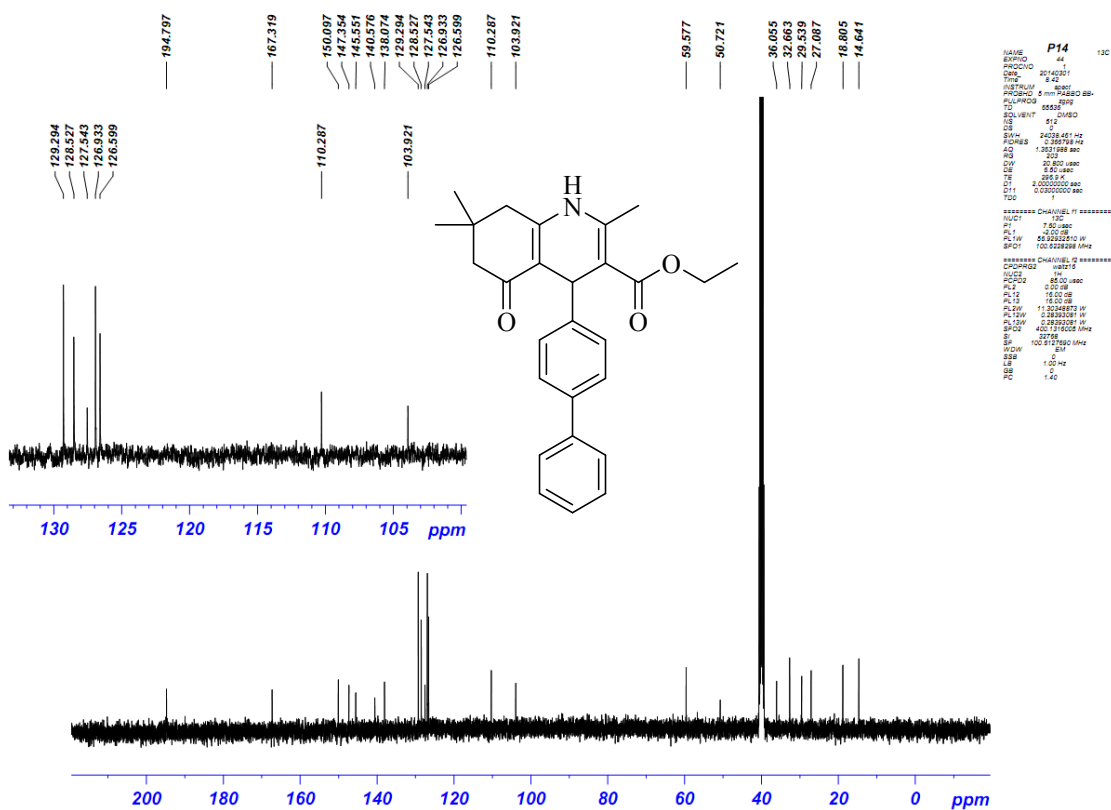


Fig. S68. The Mass spectrum of ethyl 4-(biphenyl-4-yl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6b**)

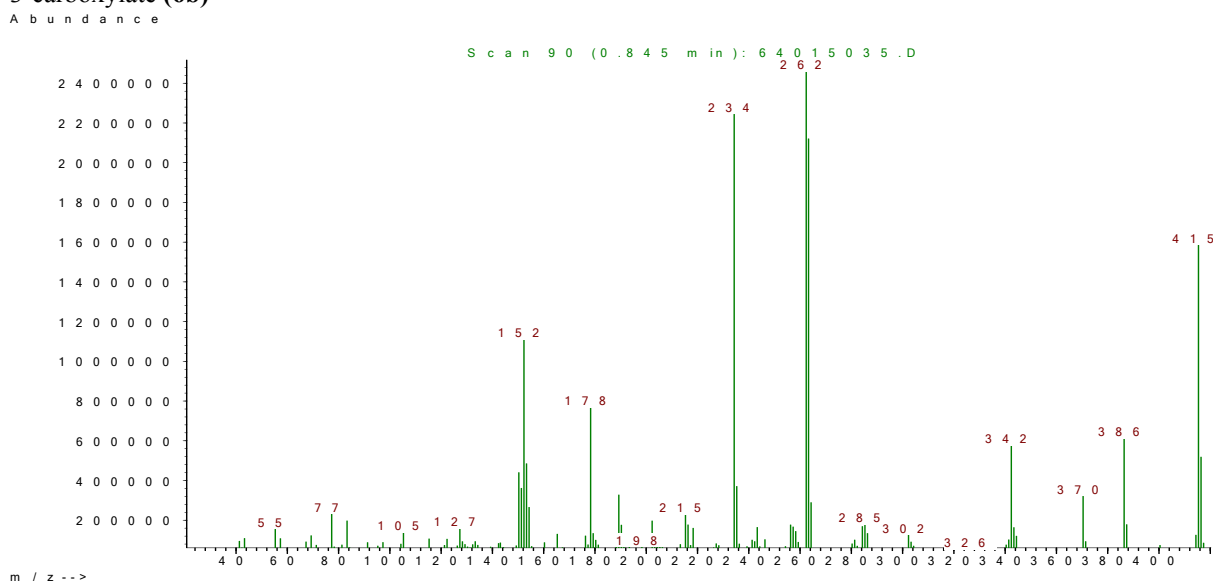


Fig. S69. The IR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**6c**)

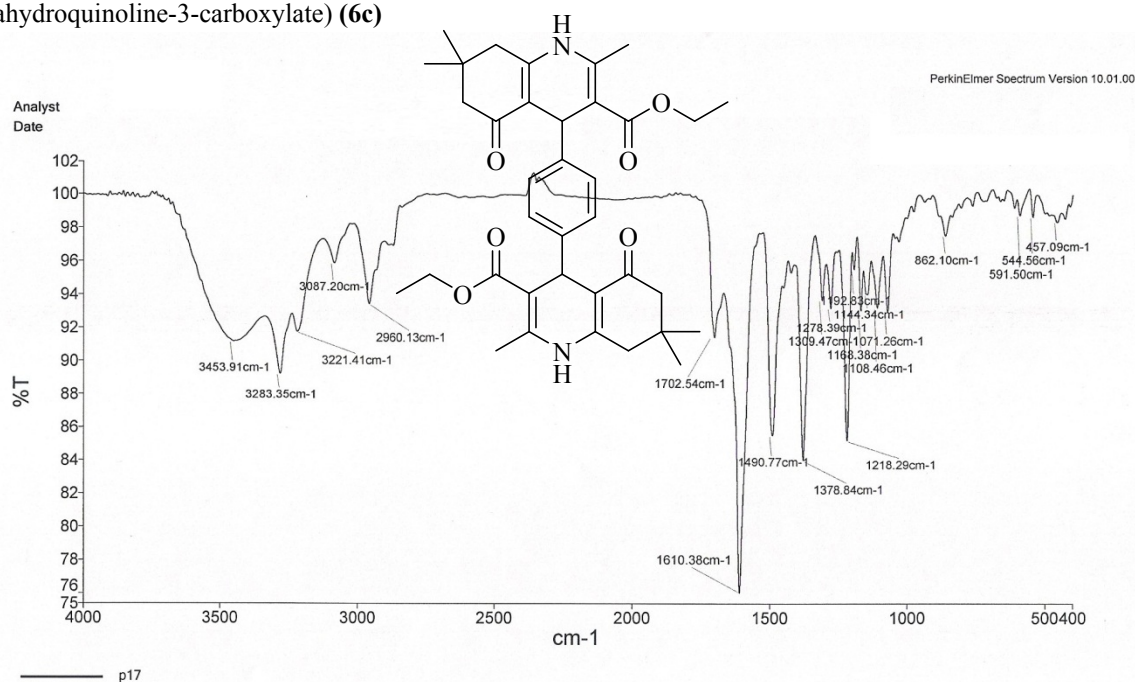


Fig. S70. The ^1H NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**6c**)

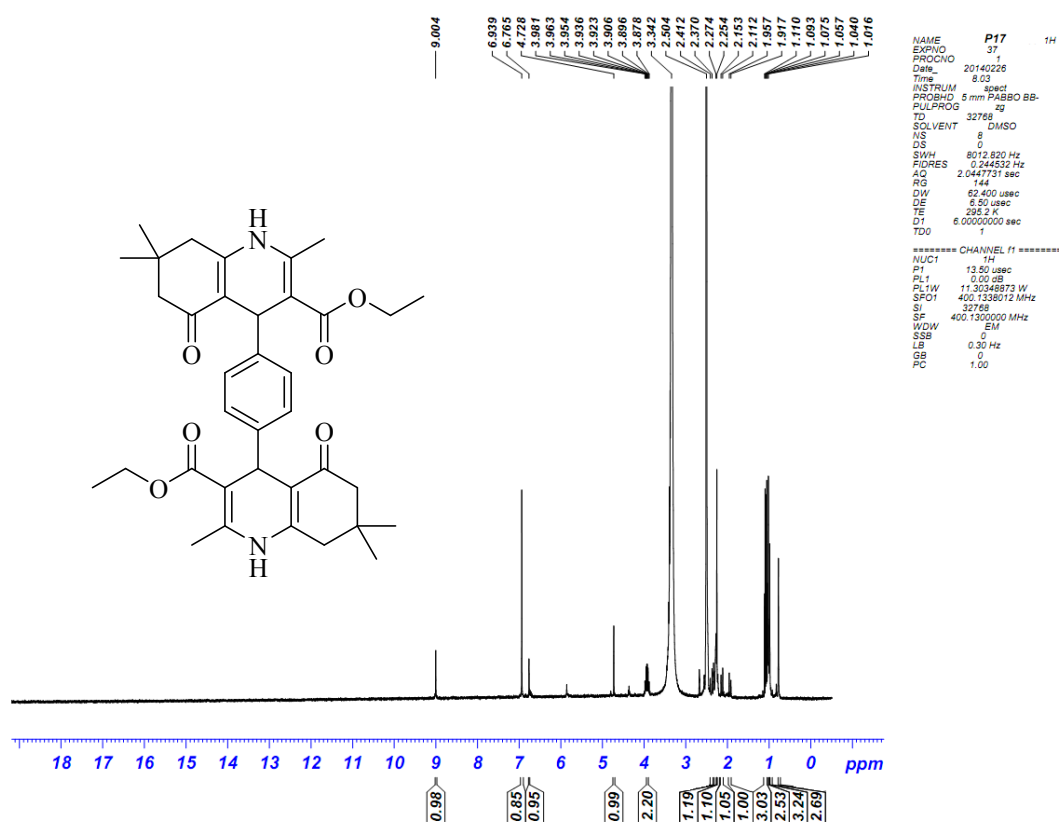


Fig. S71. The ^1H NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**6c**)

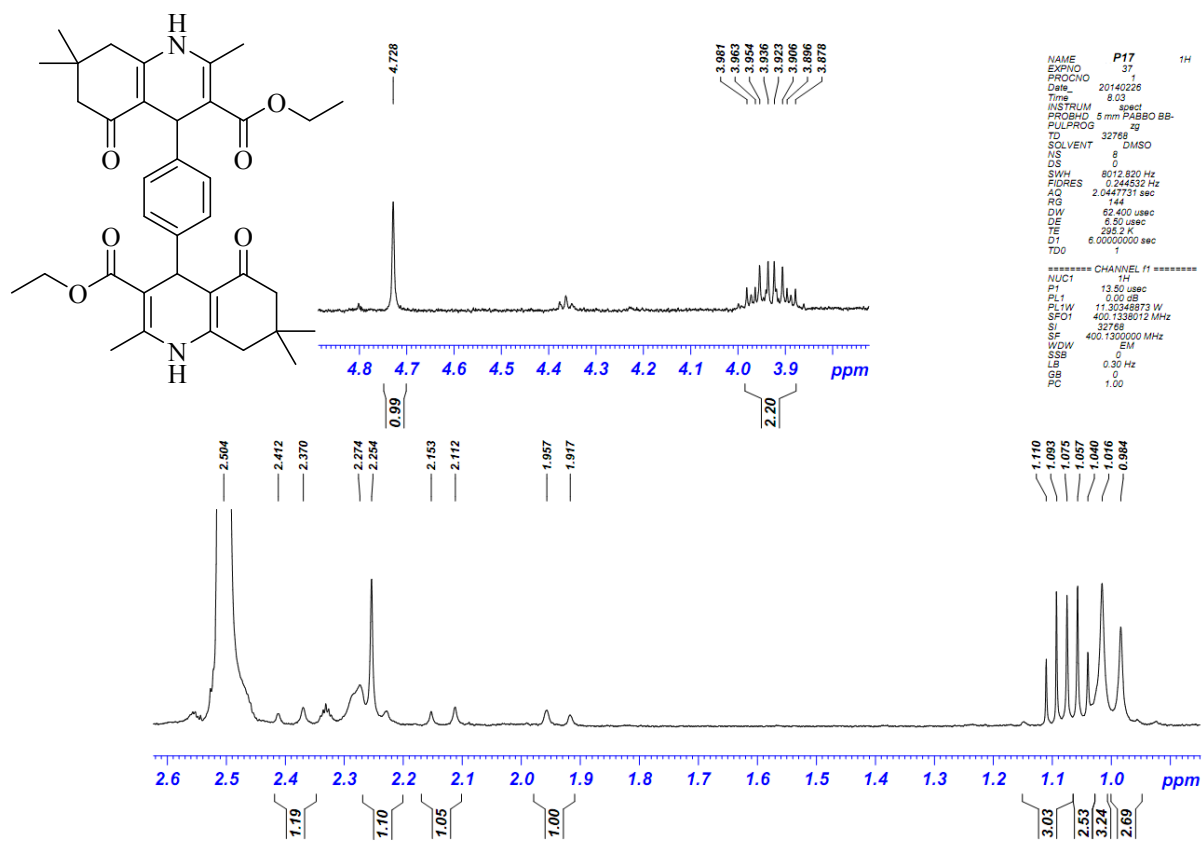


Fig. S72. The ^{13}C NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**6c**)

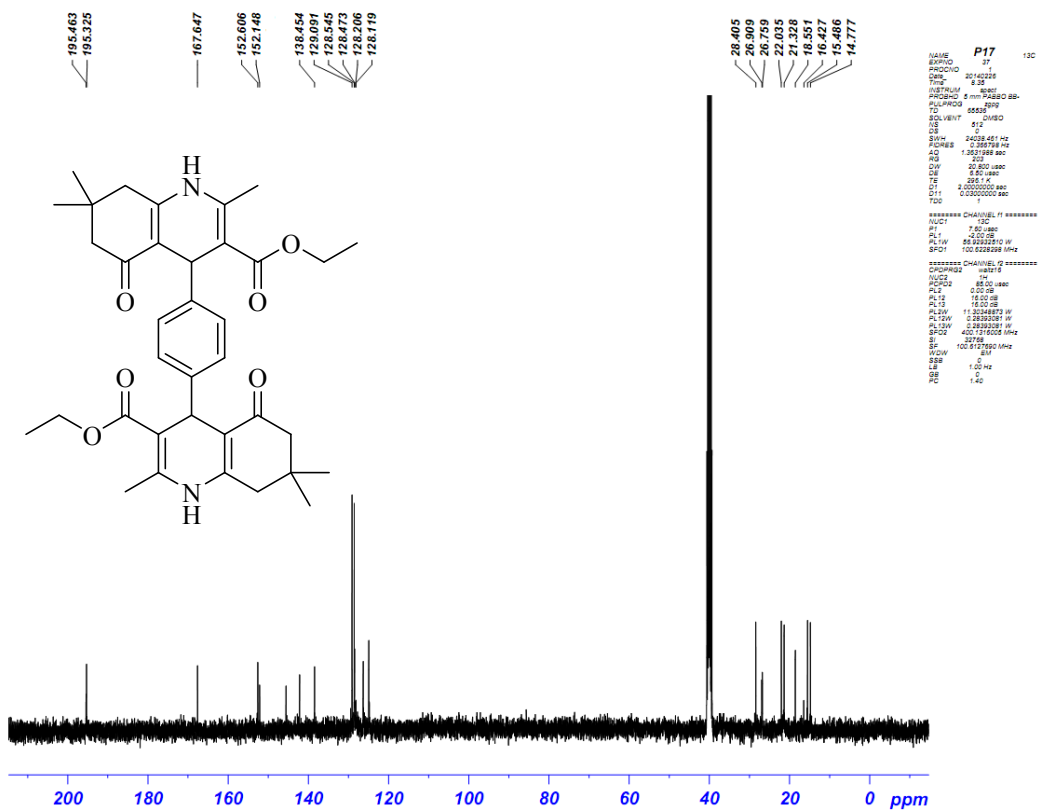


Fig. S73. The ^{13}C NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**6c**)

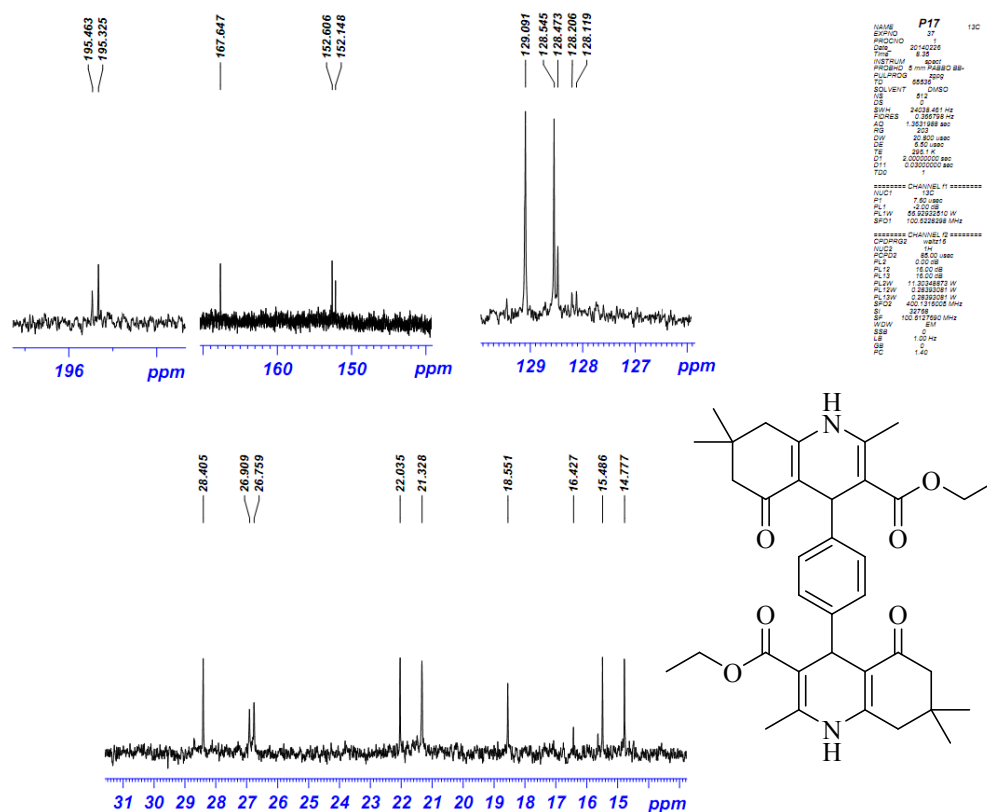


Fig. S74. The Mass spectrum of diethyl 4,4'-(1,4-phenylene)bis(2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**6c**)

Abundance

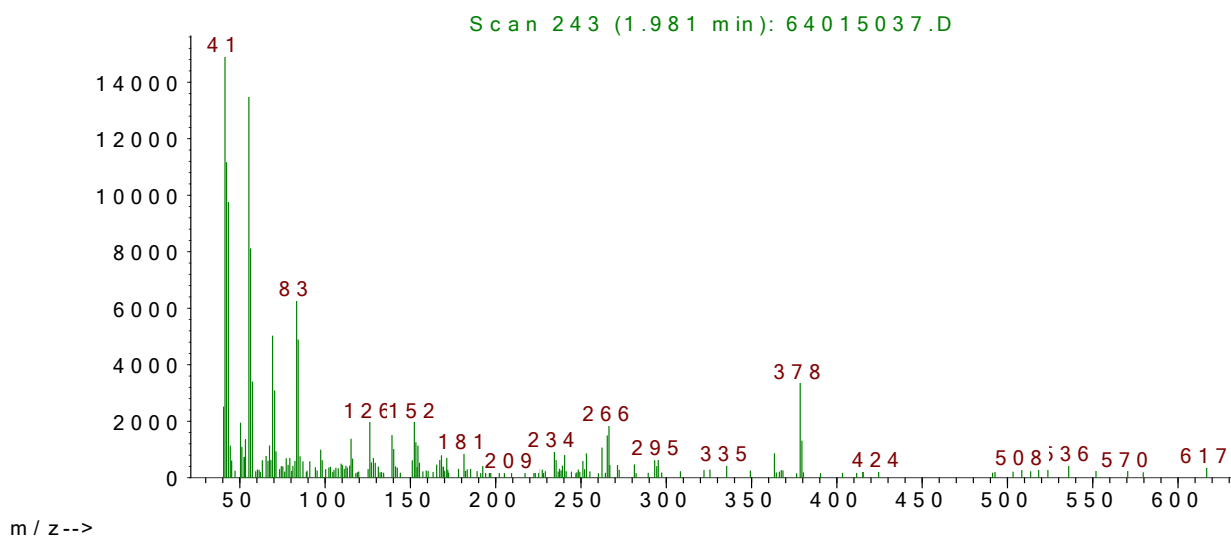


Fig. S75. The IR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6d**)

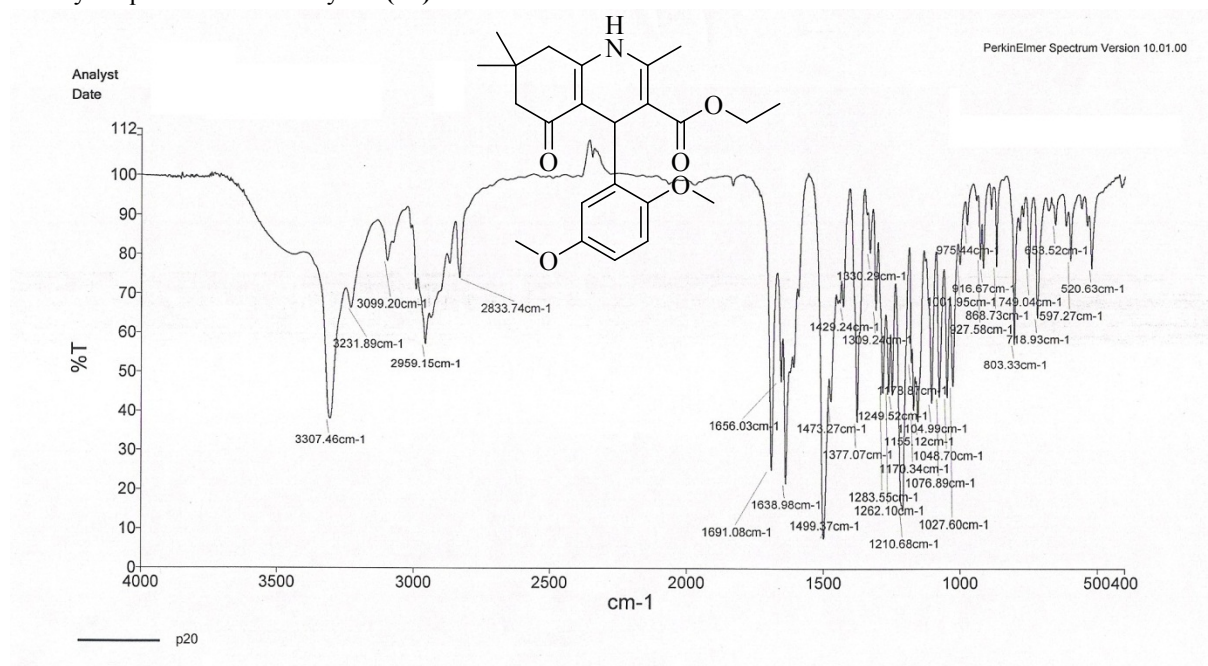


Fig. S76. The ¹H NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6d**)

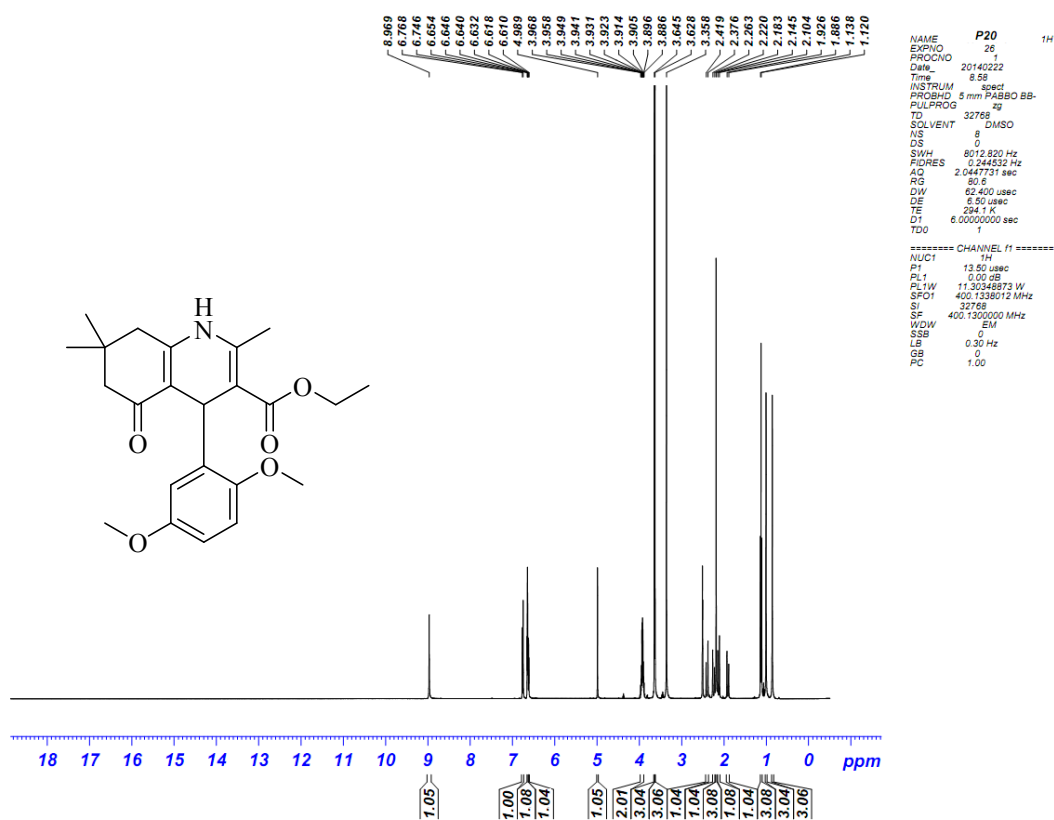


Fig. S77. The ^1H NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6d**)

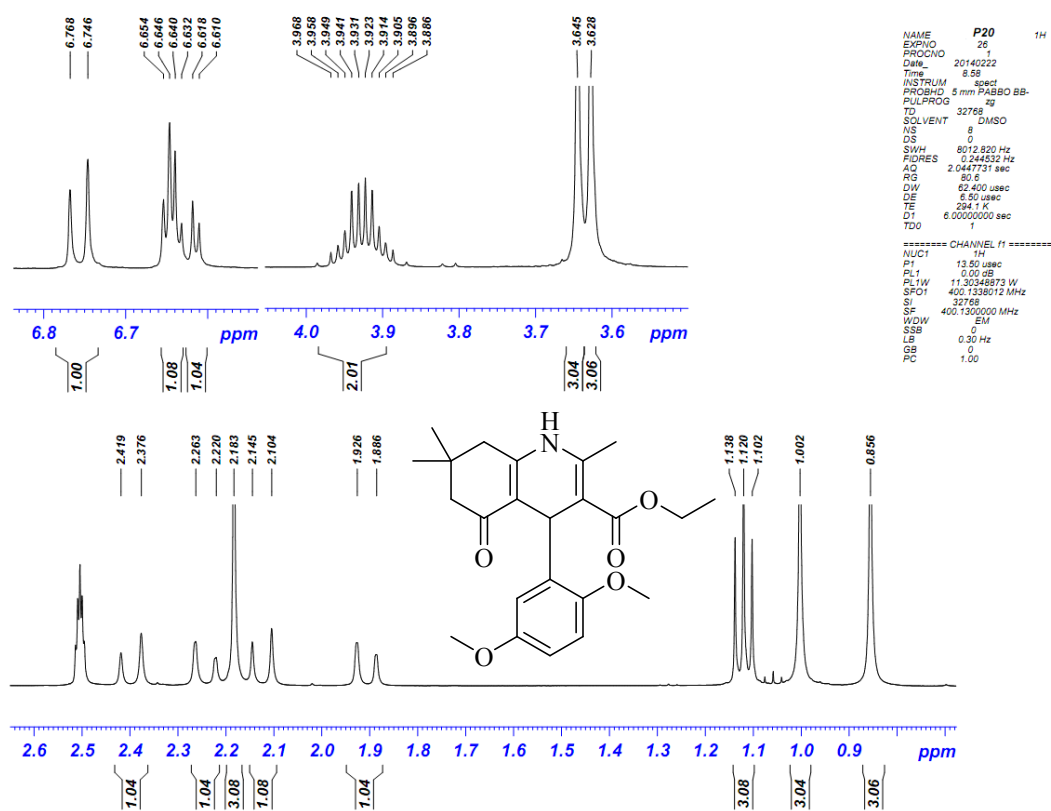


Fig. S78. The ^{13}C NMR spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6d**)

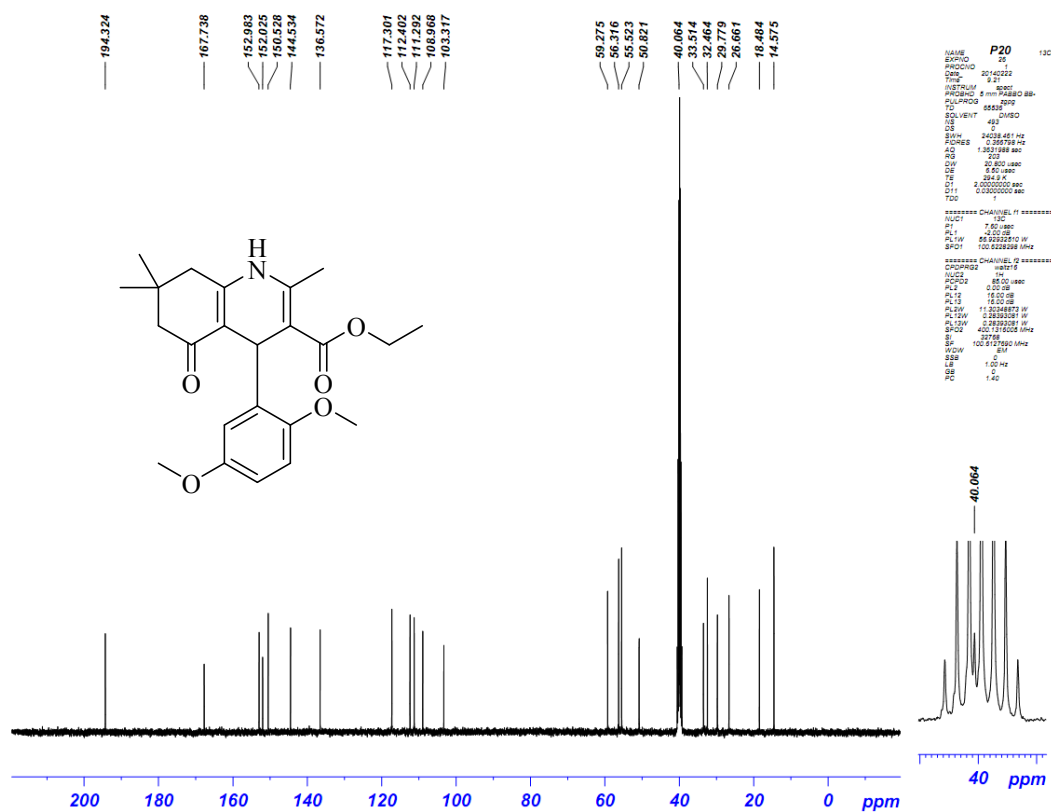


Fig. S79. The Mass spectrum of ethyl 4-(2,5-dimethoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6d**)

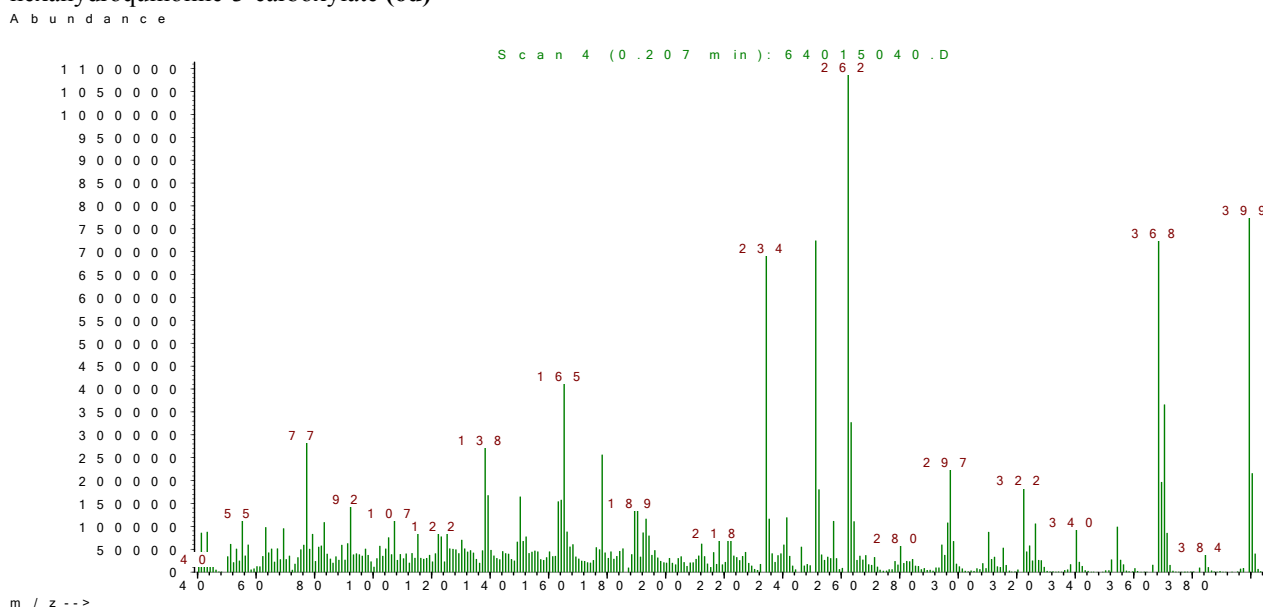


Fig. S80. The IR spectrum of ethyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6e**)

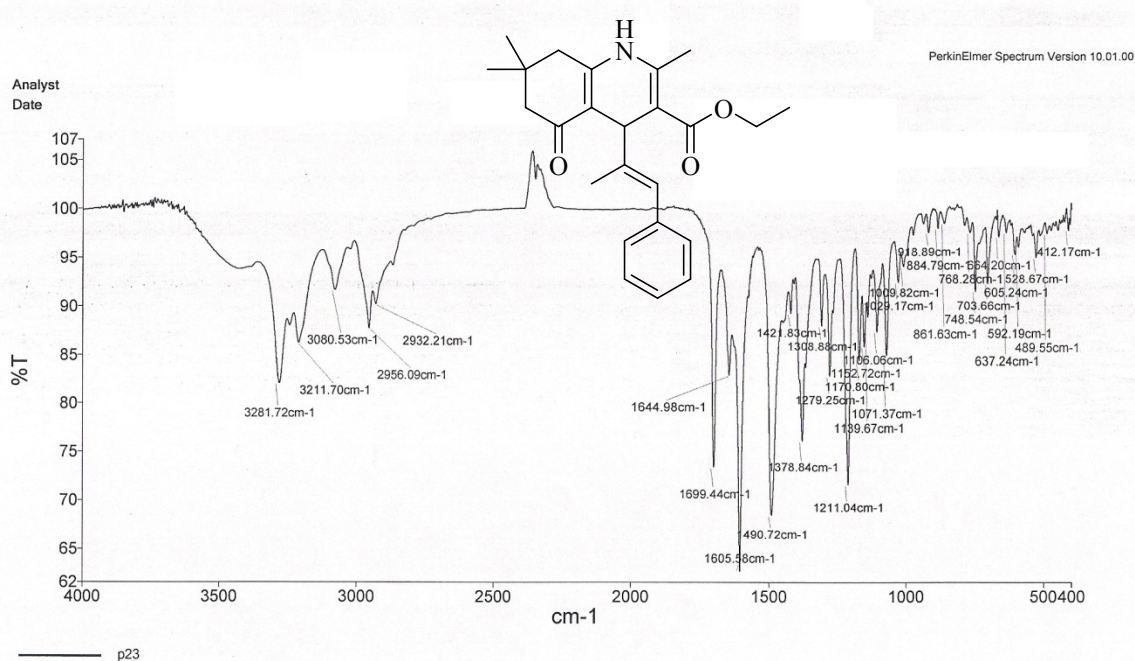


Fig. S81. The ^1H NMR spectrum of ethyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6e**)

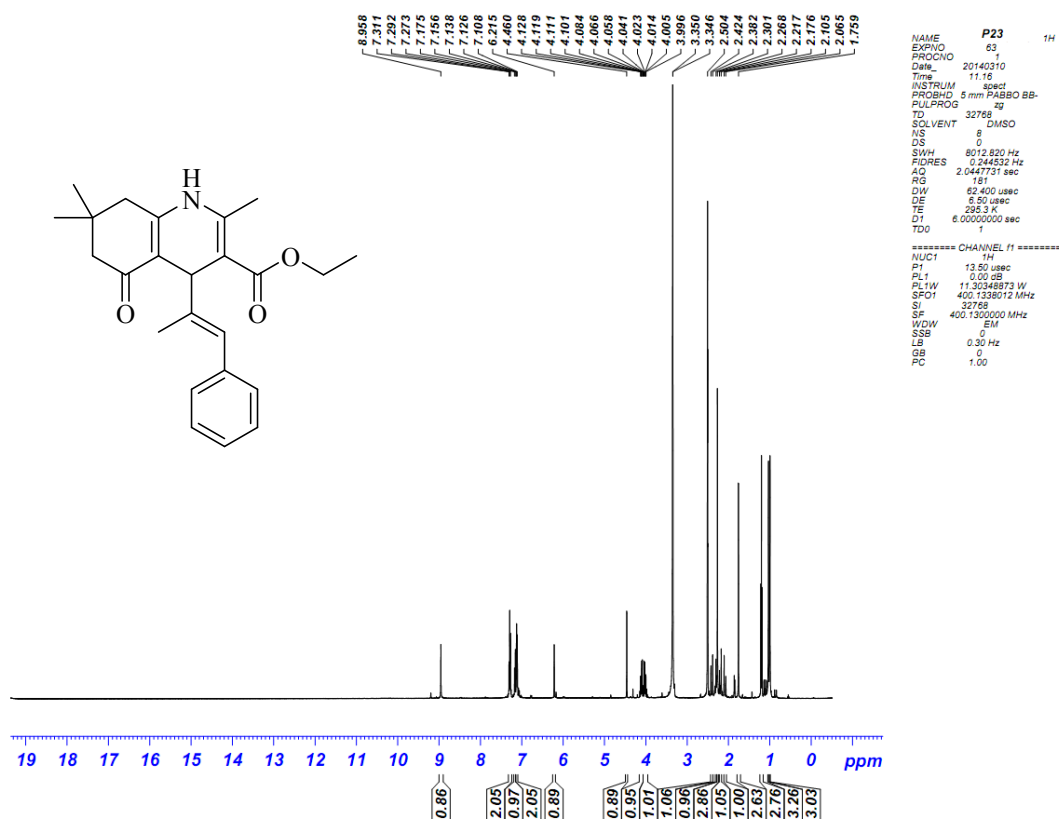


Fig. S82. The ^1H NMR spectrum of ethyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6e**)

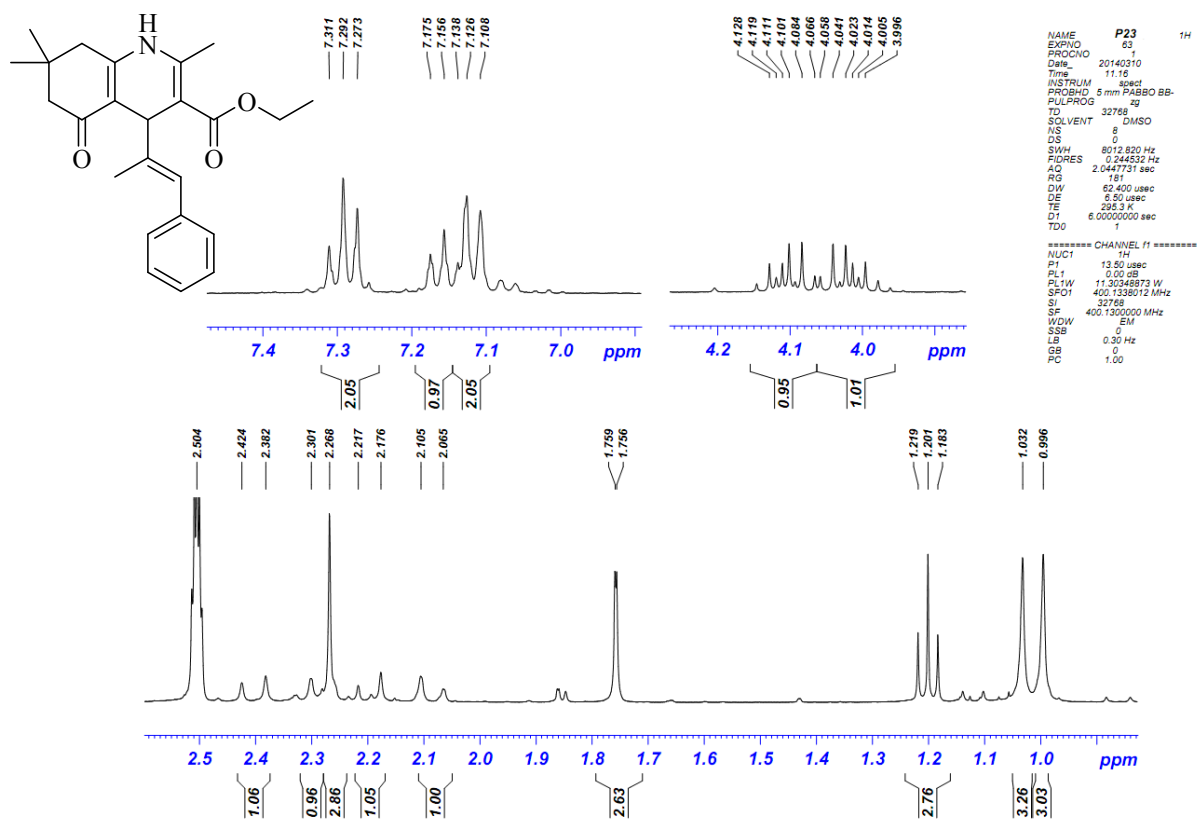


Fig. S83. The ^{13}C NMR spectrum of ethyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6e**)

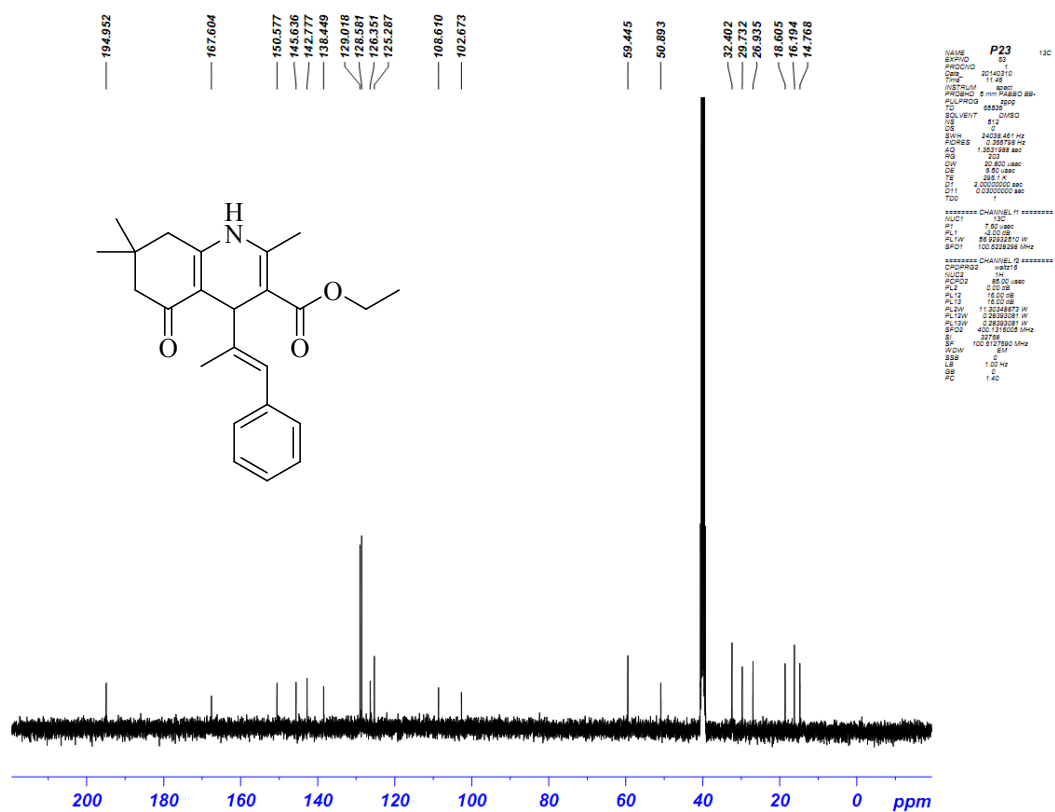


Fig. S84. The ^{13}C NMR spectrum of ethyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6e**)

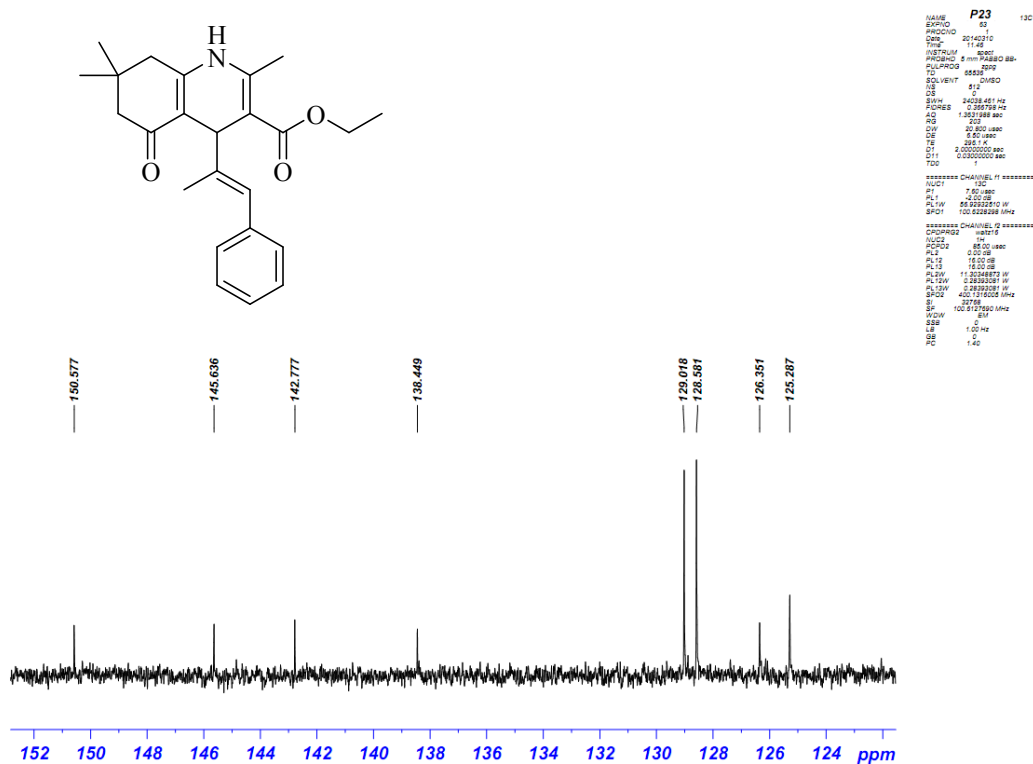


Fig. S85. The Mass spectrum of ethyl 2,7,7-trimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**6e**)

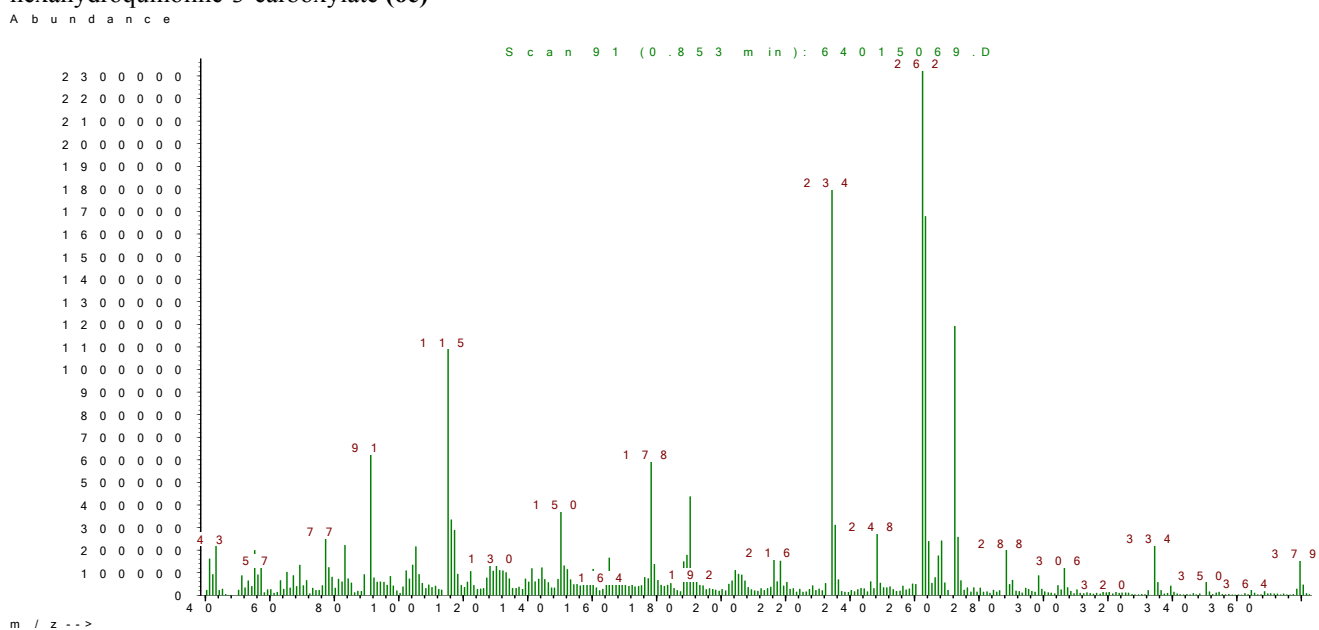


Fig. S86. The IR spectrum of ethyl 2-amino-4-(2,4-dinitrophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7a**)

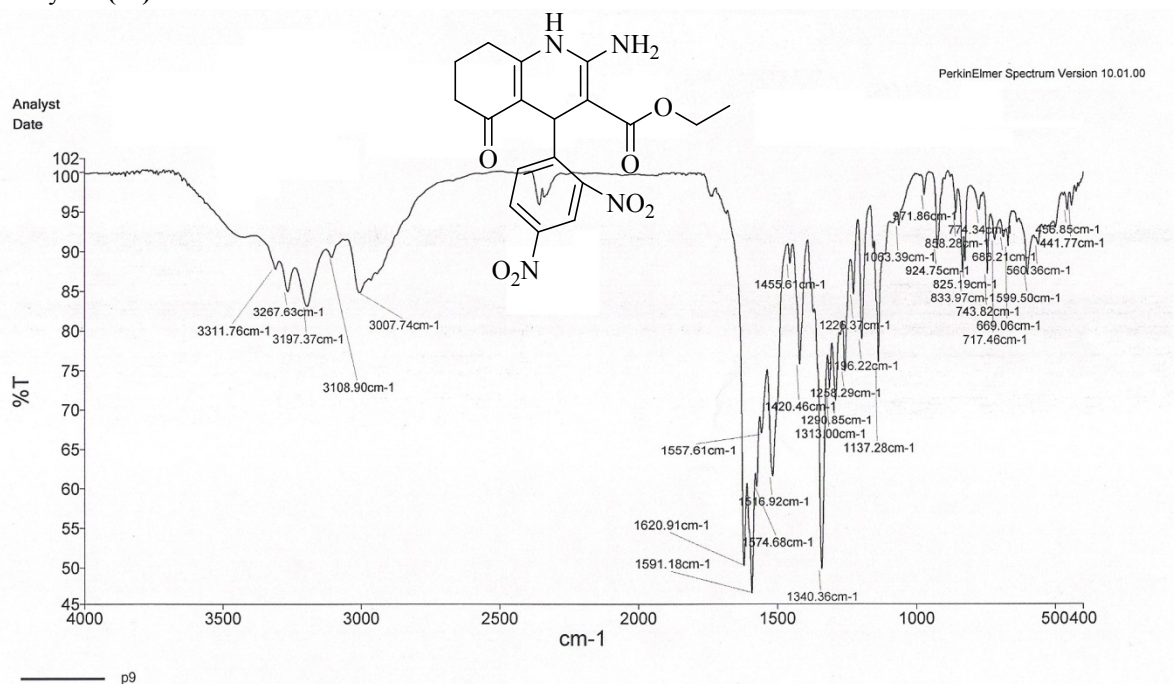


Fig. S87. The ^1H NMR spectrum of ethyl 2-amino-4-(2,4-dinitrophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7a**)

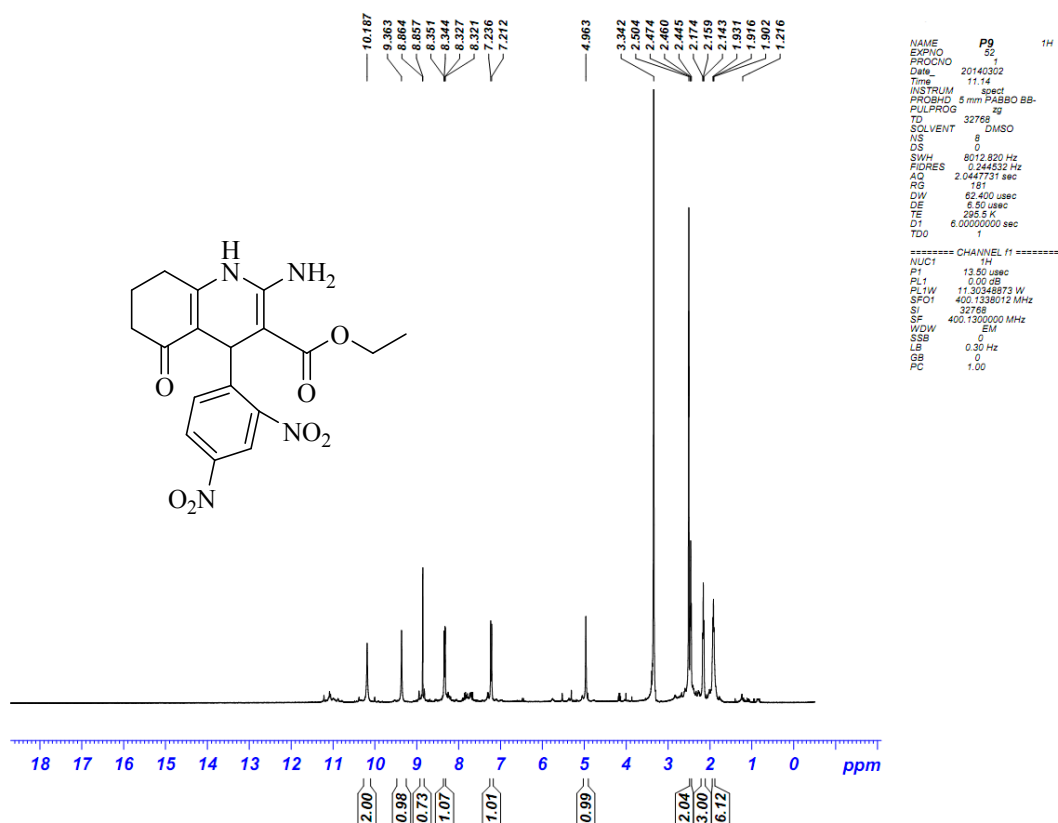


Fig. S88. The ^1H NMR spectrum of ethyl 2-amino-4-(2,4-dinitrophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7a**)

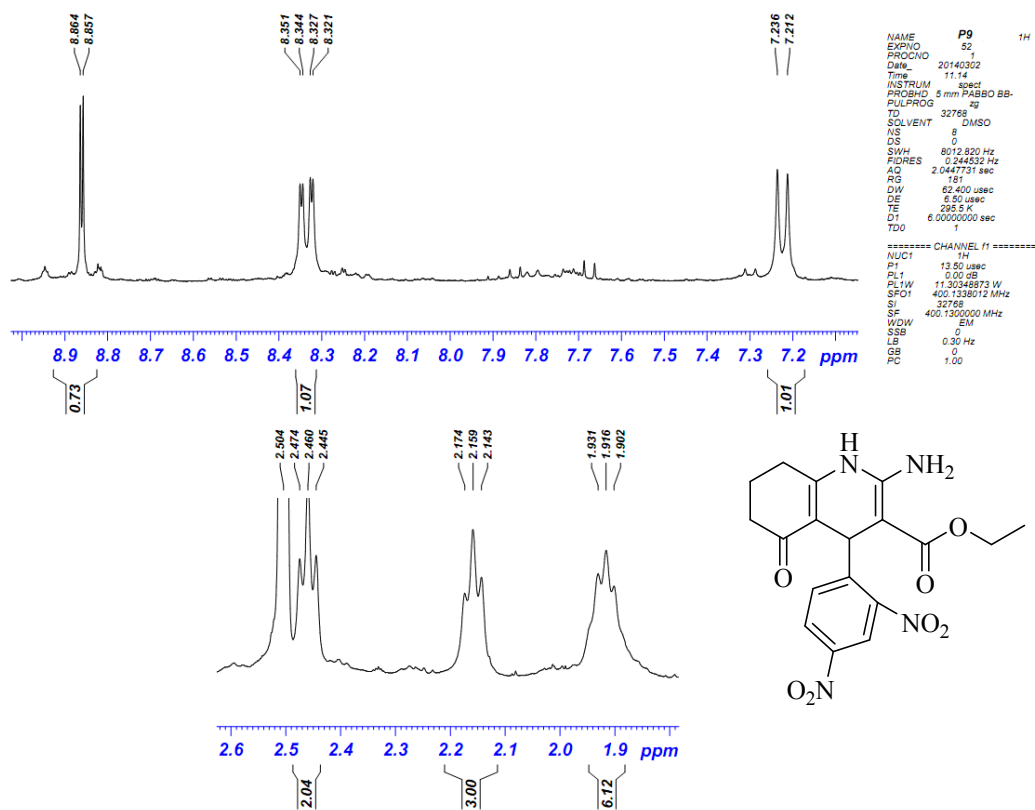


Fig. S89. The ^{13}C NMR spectrum of ethyl 2-amino-4-(2,4-dinitrophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7a**)

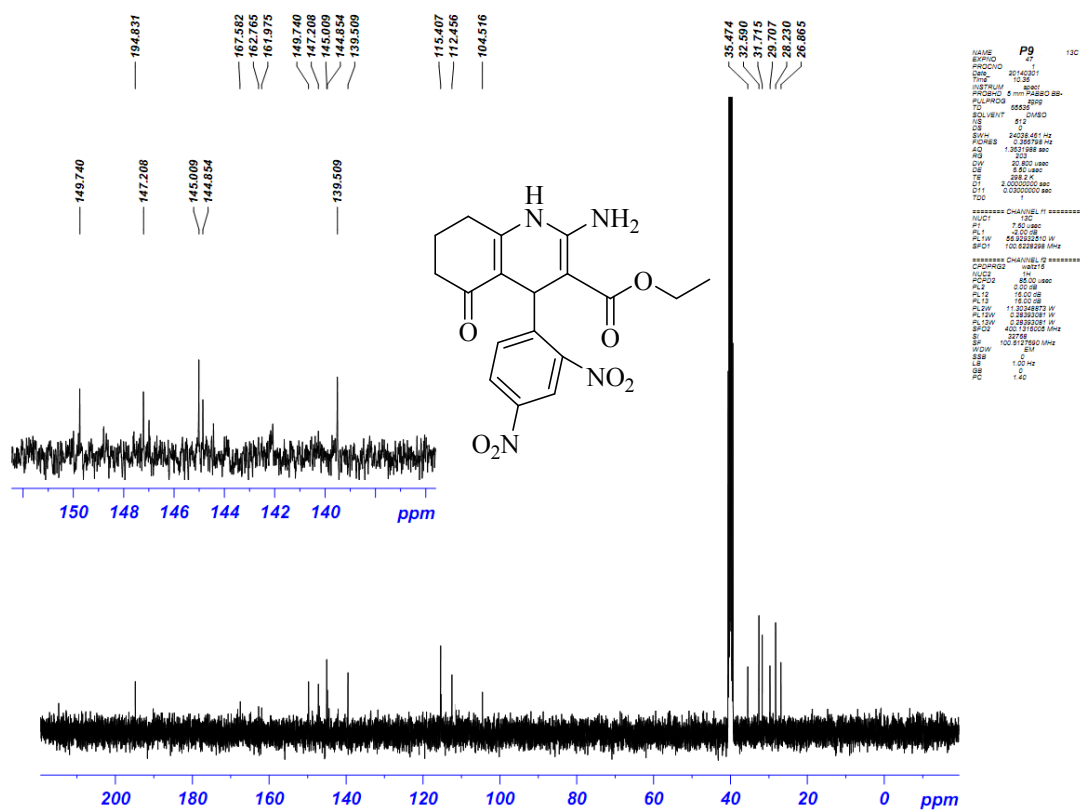


Fig. S90. The Mass spectrum of ethyl 2-amino-4-(2,4-dinitrophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7a**)

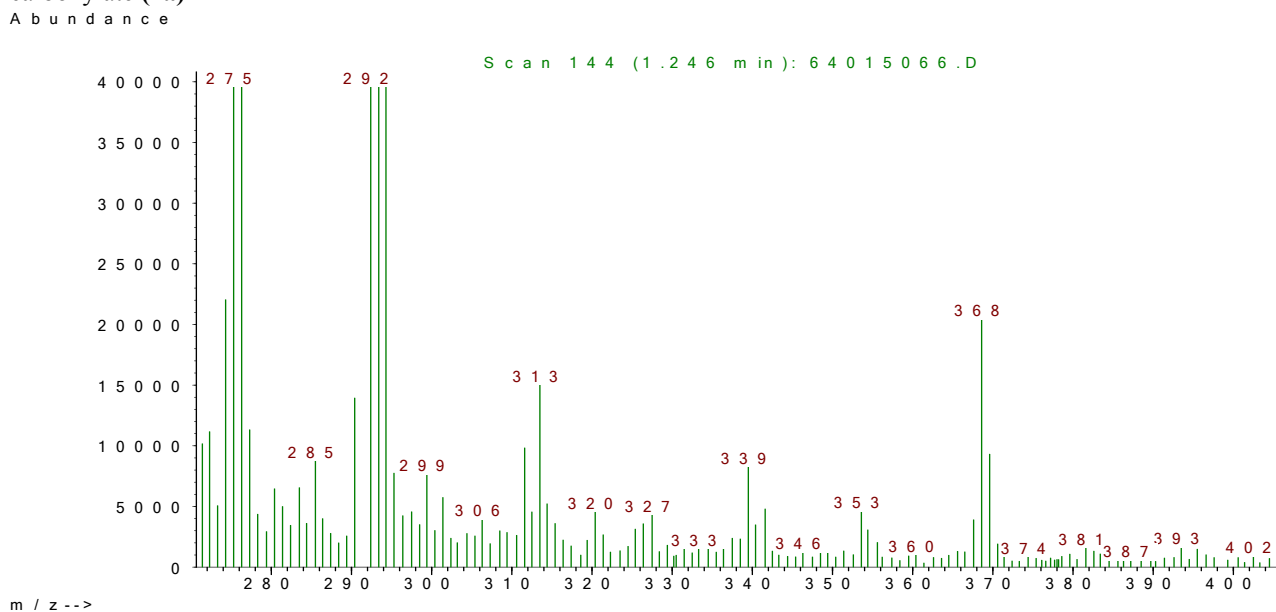


Fig. S91. The IR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7b**)

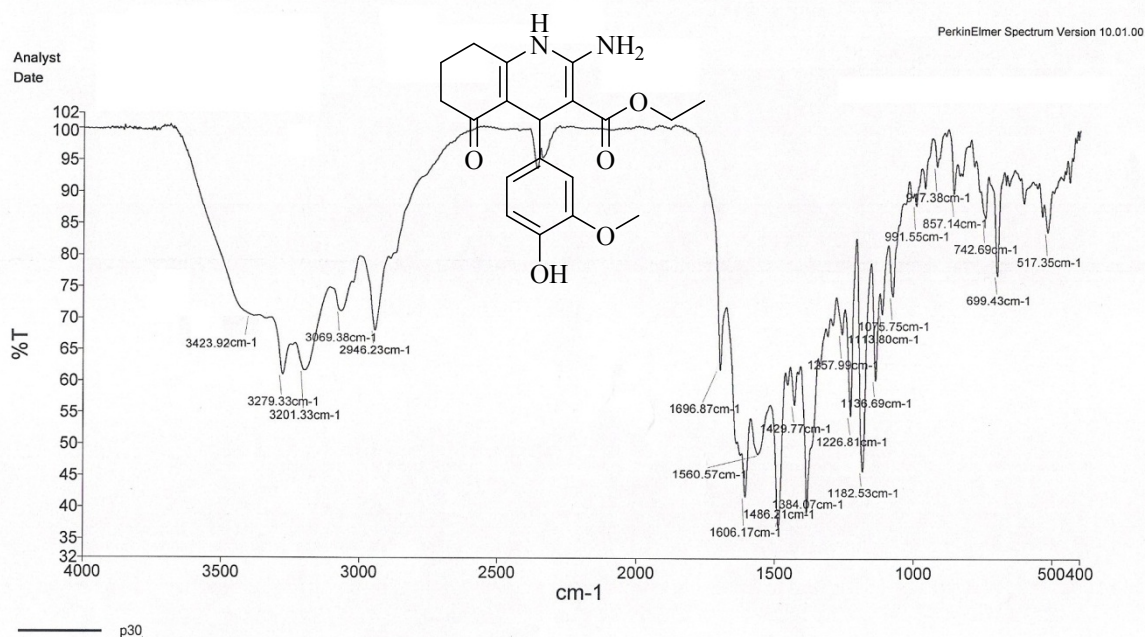


Fig. S92. The ^1H NMR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7b**)

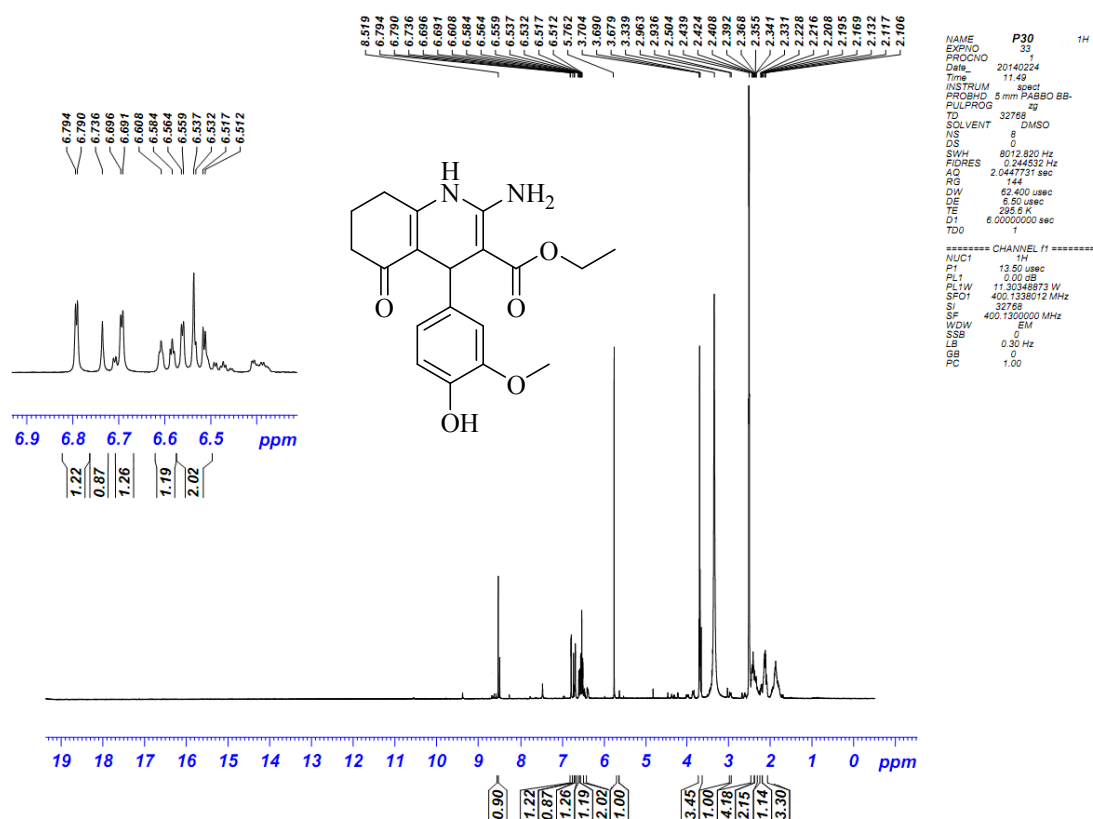


Fig. S93. The ^{13}C NMR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7b**)

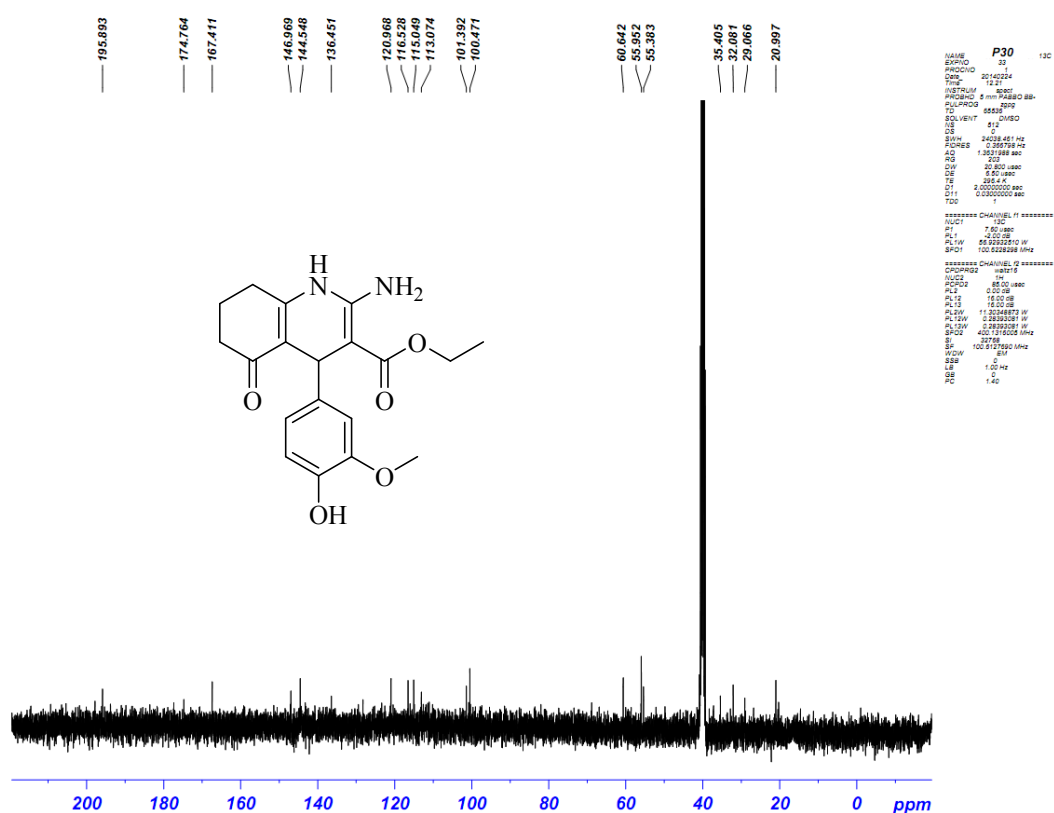


Fig. S94. The Mass spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7b**)

Abundance

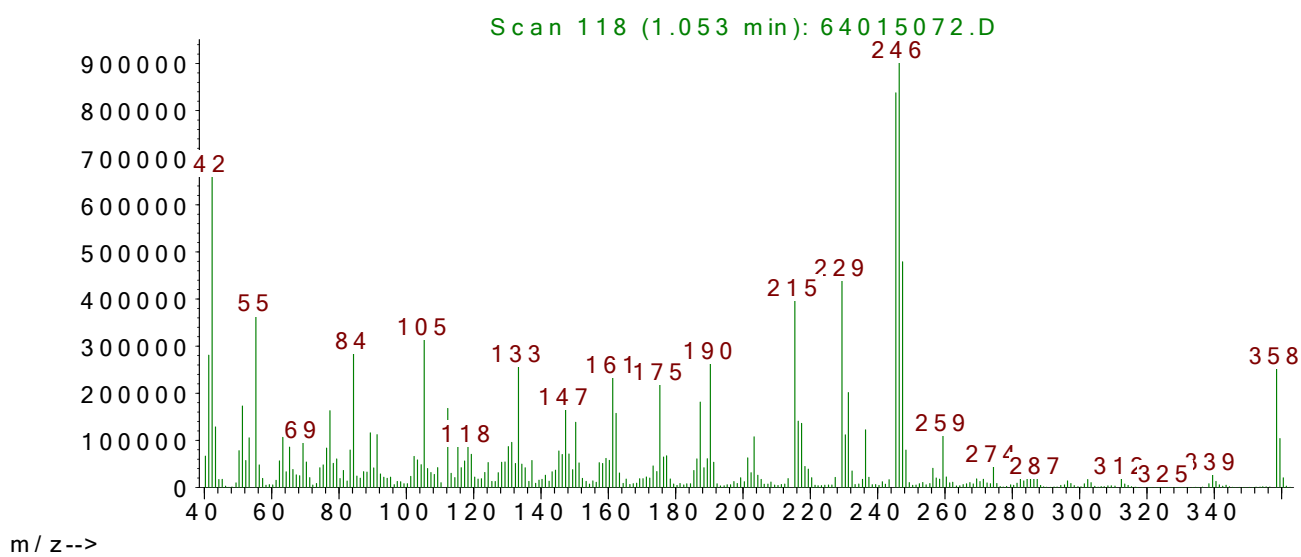


Fig. S95. The IR spectrum of ethyl 2-amino-4-(4-(dimethylamino)phenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7c**)

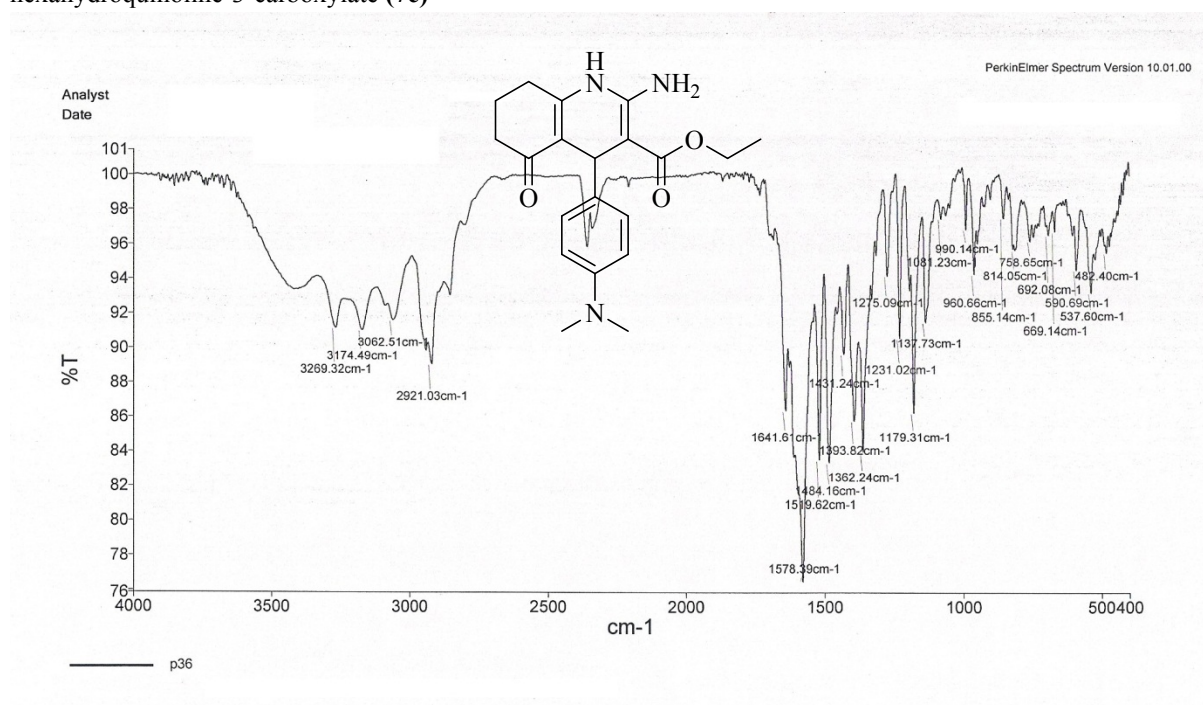


Fig. S96. The ¹H NMR spectrum of ethyl 2-amino-4-(4-(dimethylamino)phenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7c**)

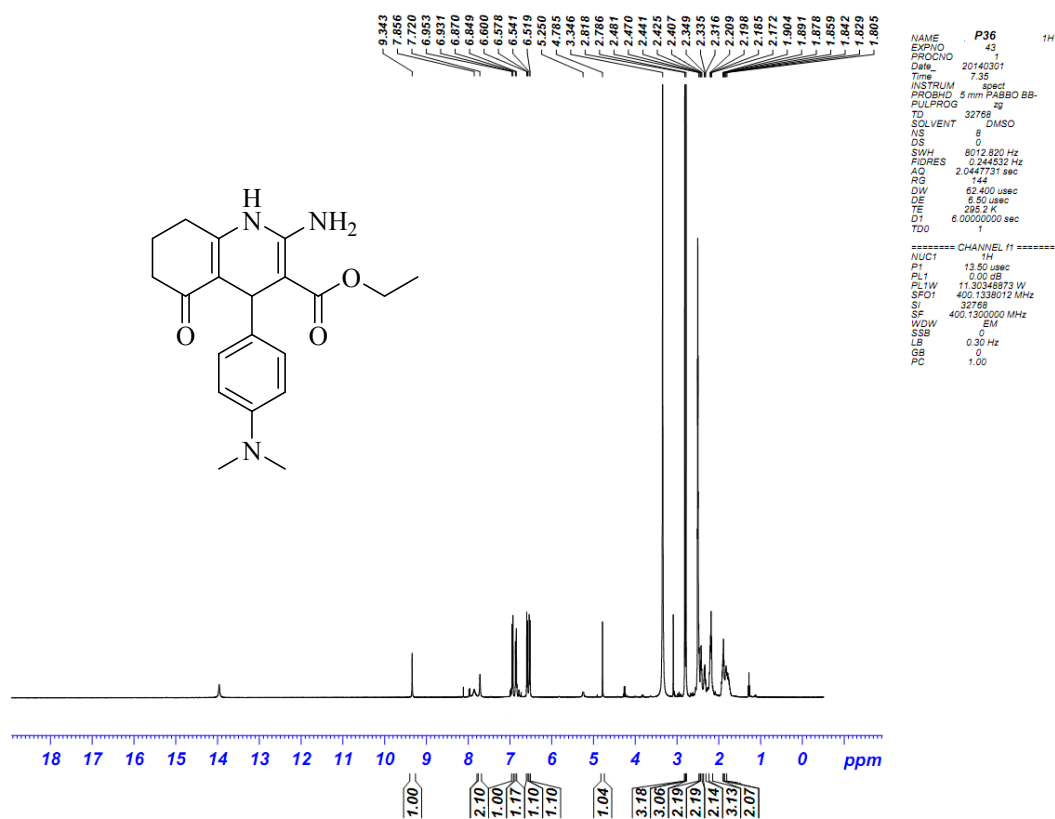


Fig. S97. The ^1H NMR spectrum of ethyl 2-amino-4-(4-(dimethylamino)phenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7c**)

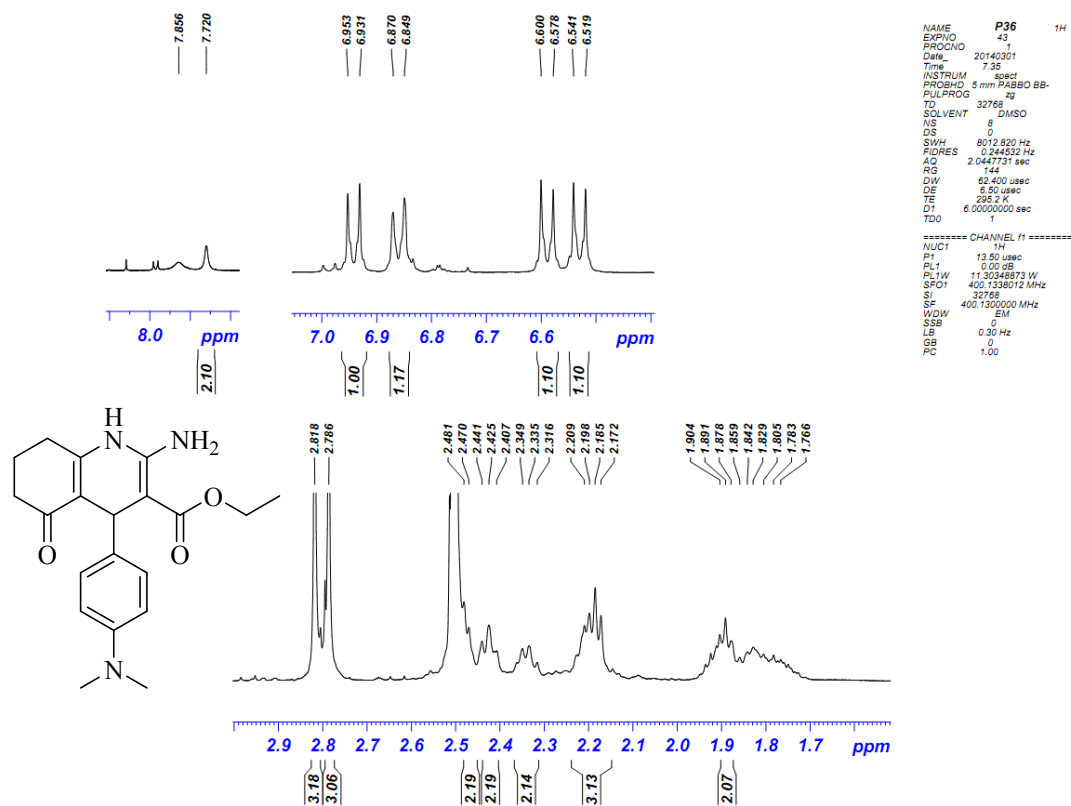


Fig. S98. The ^{13}C NMR spectrum of ethyl 2-amino-4-(4-(dimethylamino)phenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7c**)

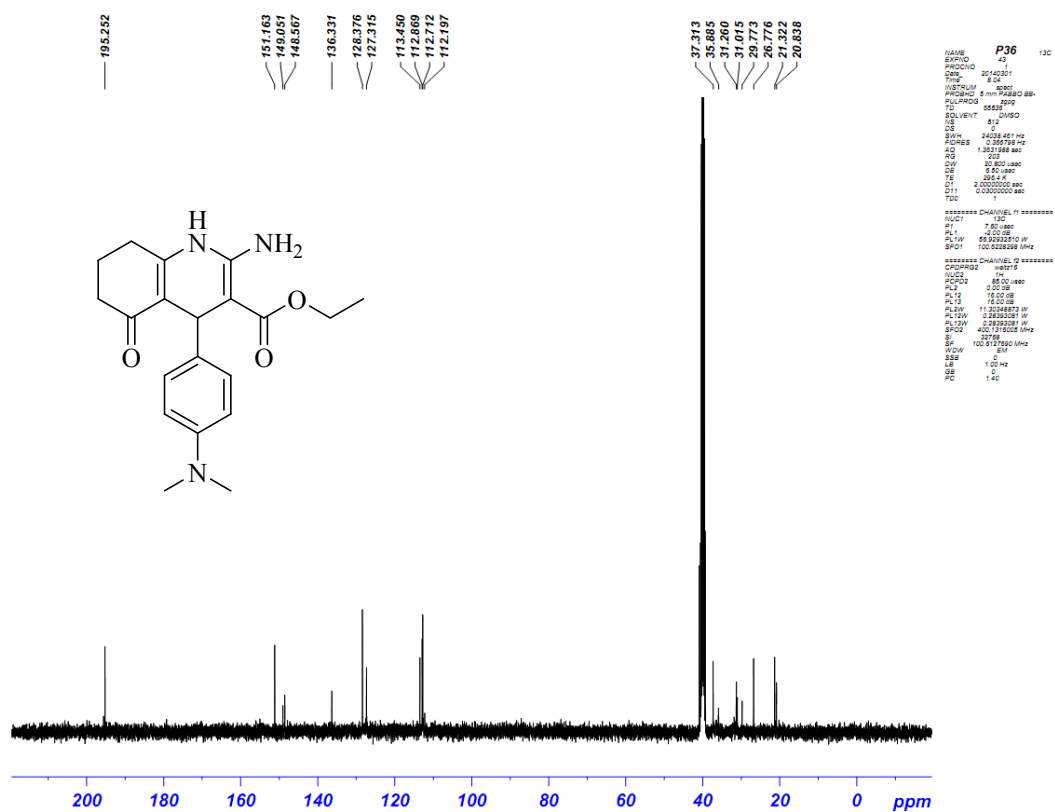


Fig. S99. The ^{13}C NMR spectrum of ethyl 2-amino-4-(4-(dimethylamino)phenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7c**)

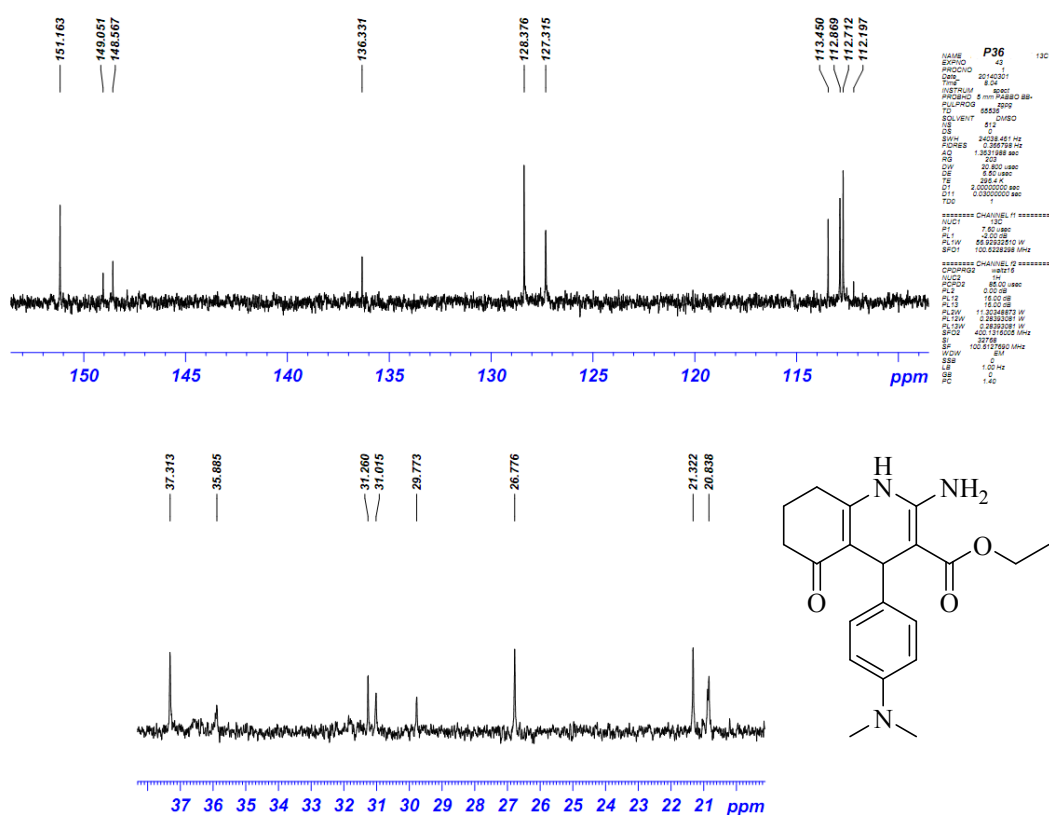


Fig. S100. The Mass spectrum of ethyl 2-amino-4-(4-(dimethylamino)phenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7c**)

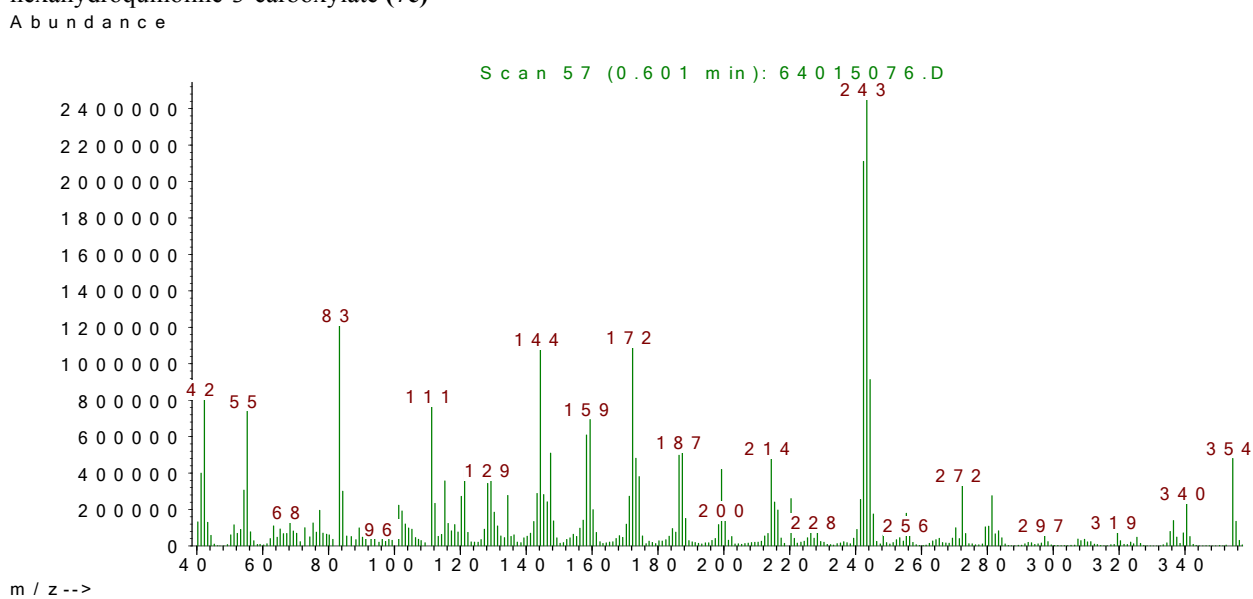


Fig. S101. The IR spectrum of ethyl 2-amino-4-(biphenyl-4-yl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7d**)

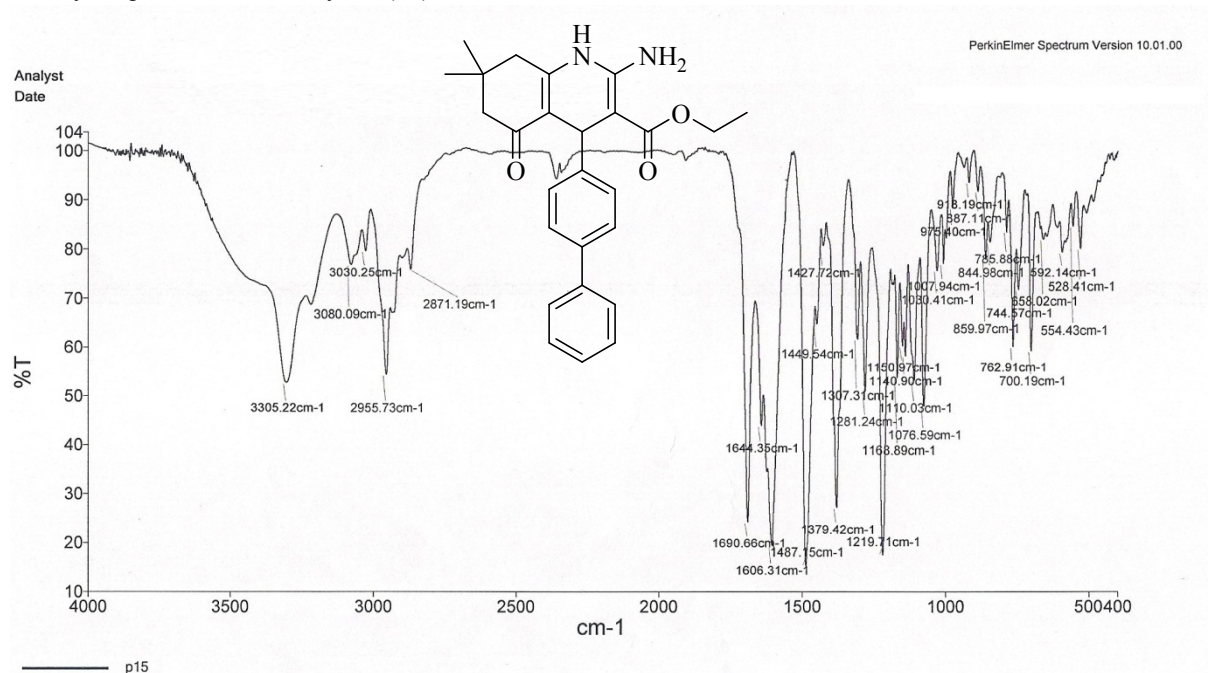


Fig. S102. The ¹H NMR spectrum of ethyl 2-amino-4-(biphenyl-4-yl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7d**)

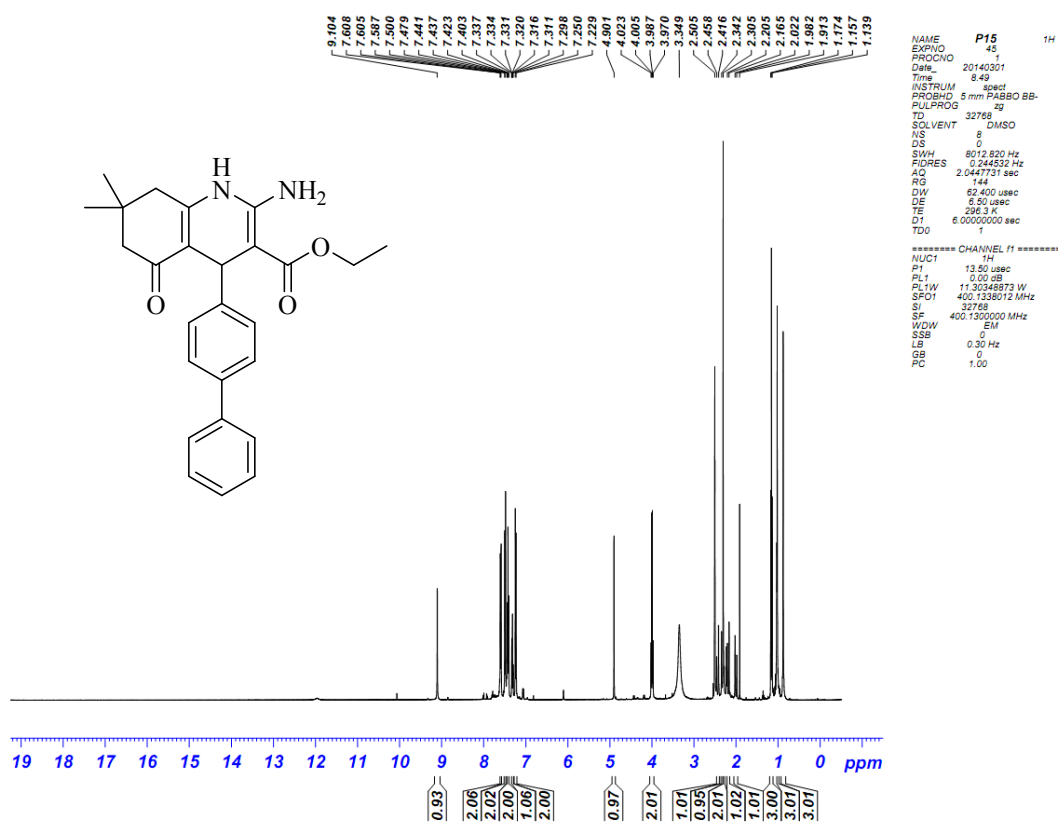


Fig. S103. The ^1H NMR spectrum of ethyl 2-amino-4-(biphenyl-4-yl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7d**)

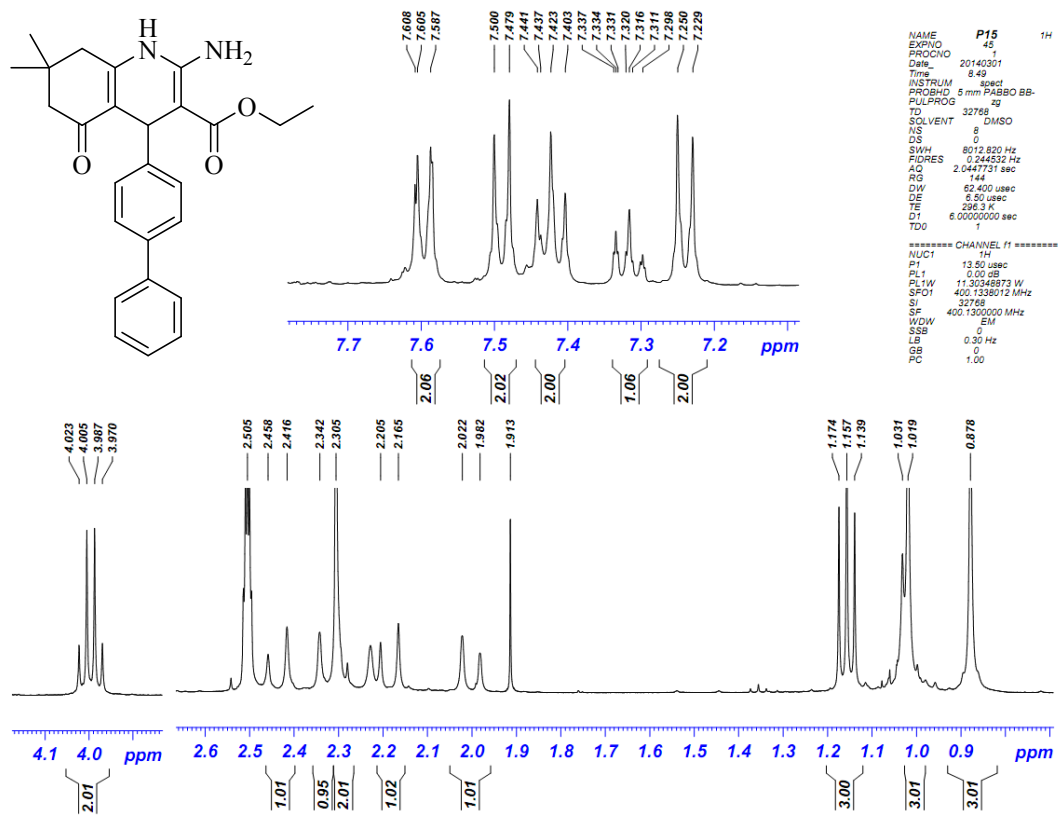


Fig. S104. The ^{13}C NMR spectrum of ethyl 2-amino-4-(biphenyl-4-yl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7d**)

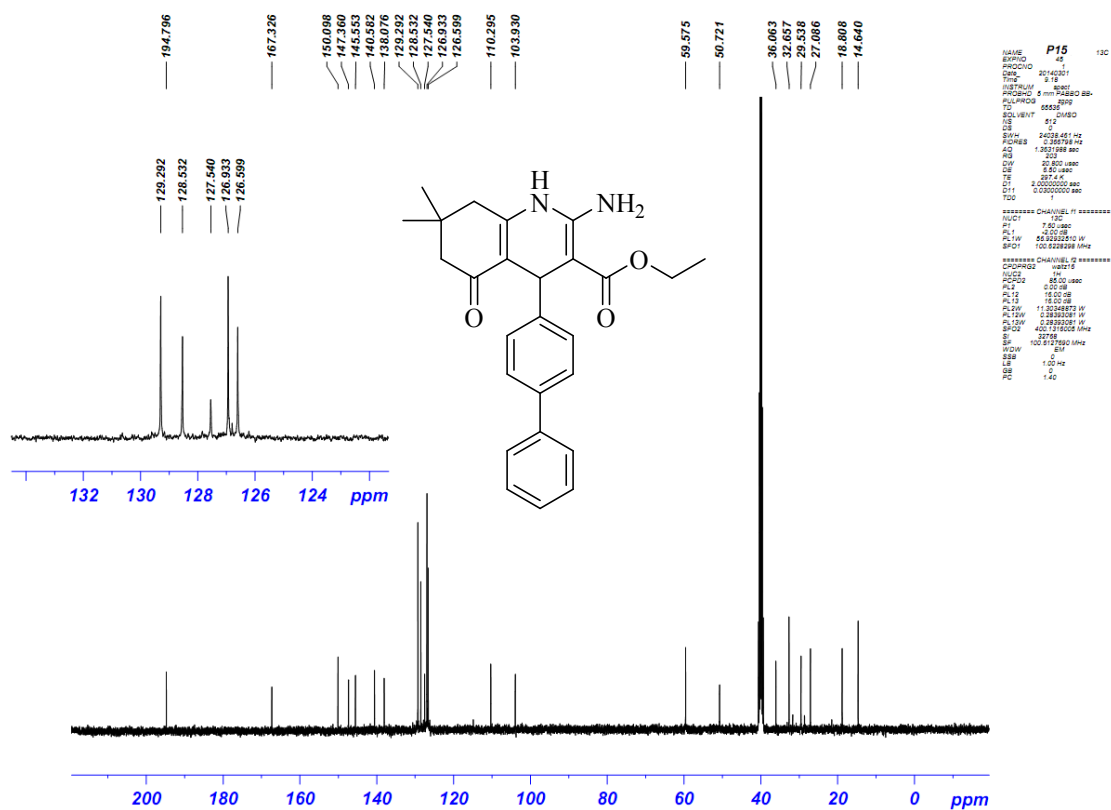


Fig. S105. The Mass spectrum of ethyl 2-amino-4-(biphenyl-4-yl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7d**)

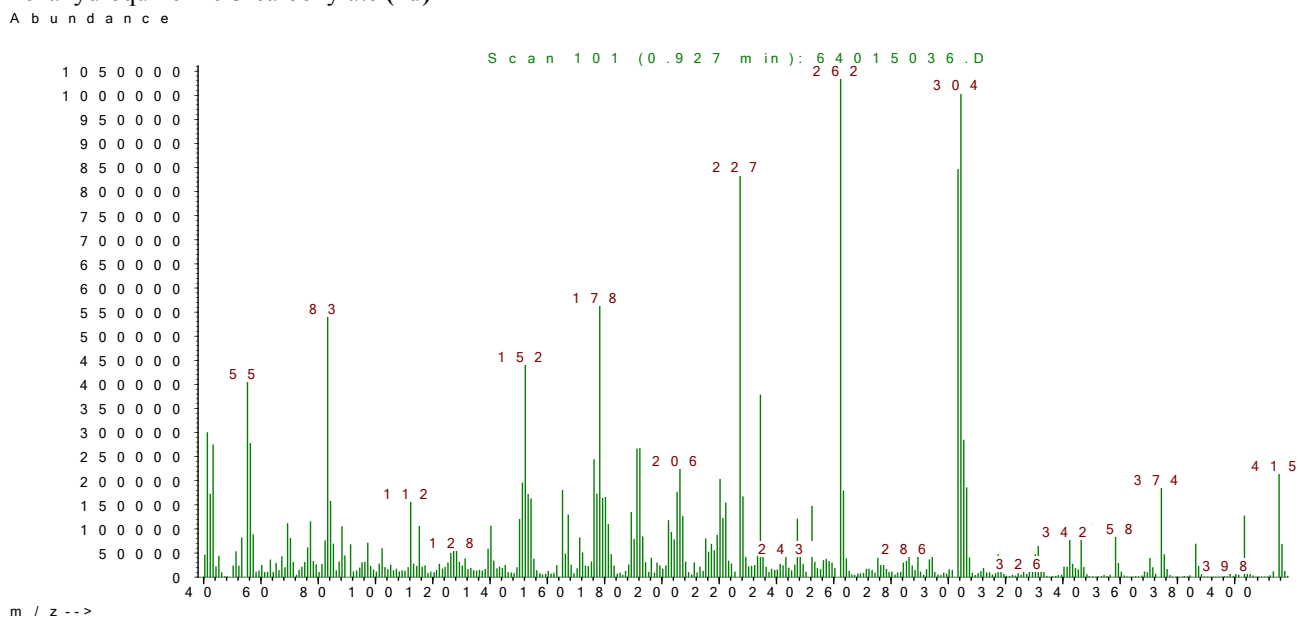


Fig. S106. The IR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2-amino-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**7e**)

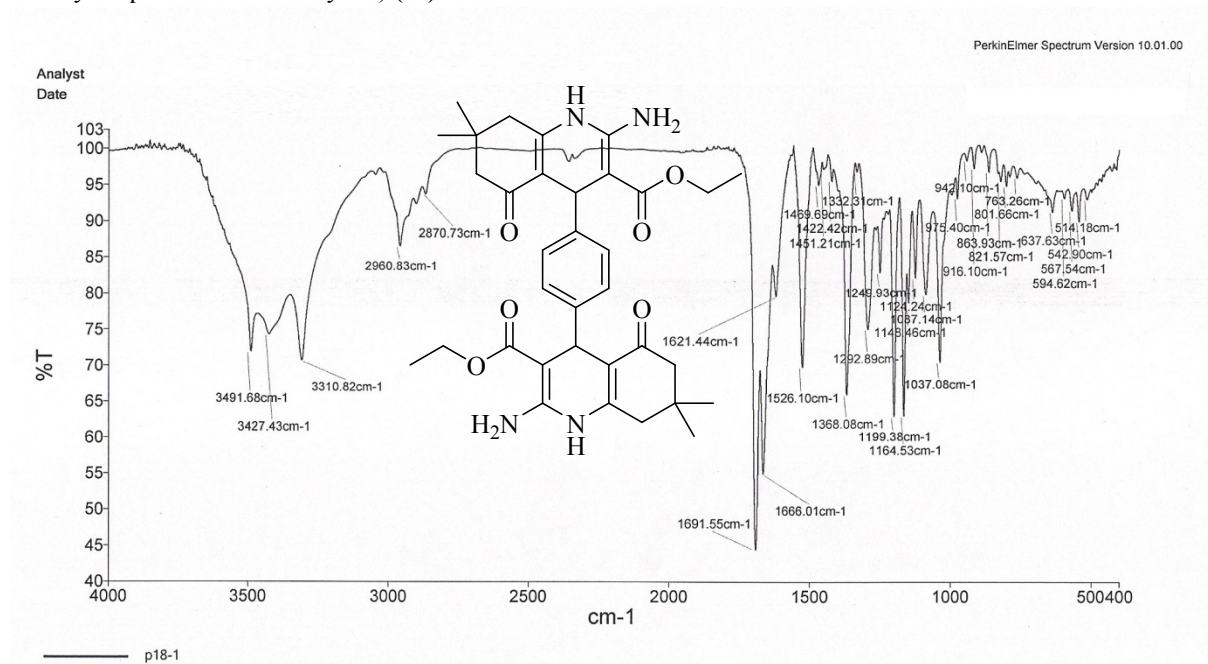


Fig. S107. The ¹H NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2-amino-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**7e**)

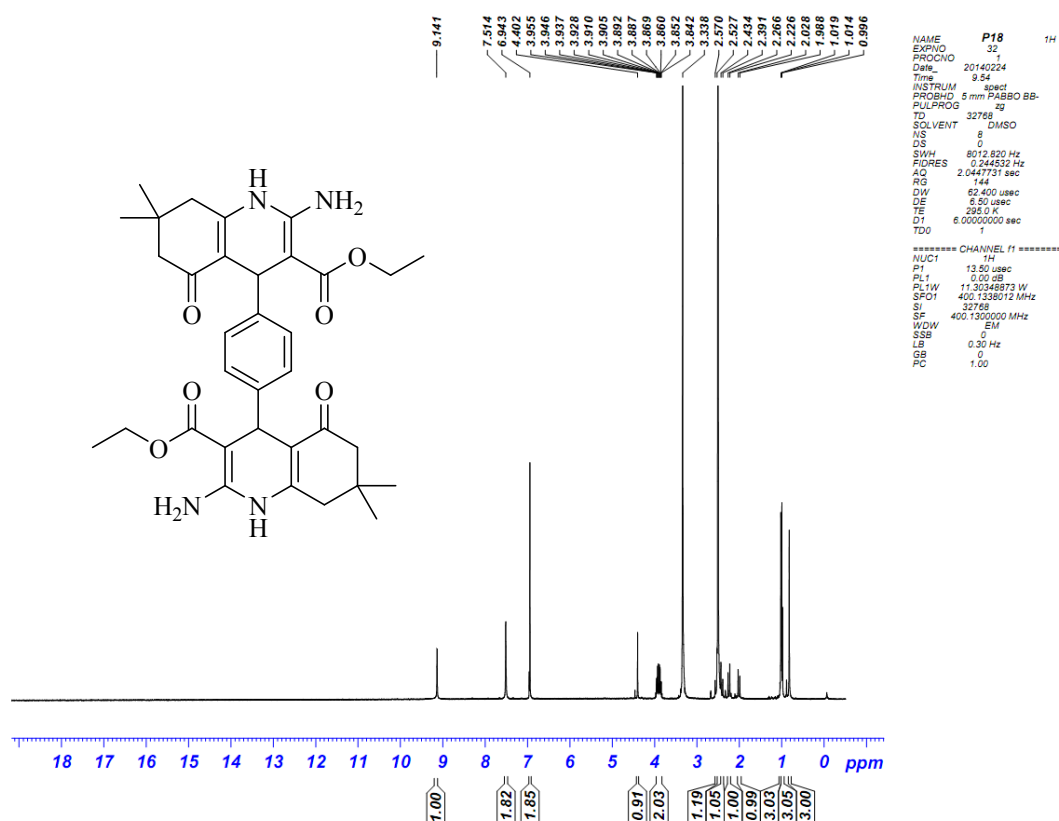


Fig. S108. The ^1H NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2-amino-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**7e**)

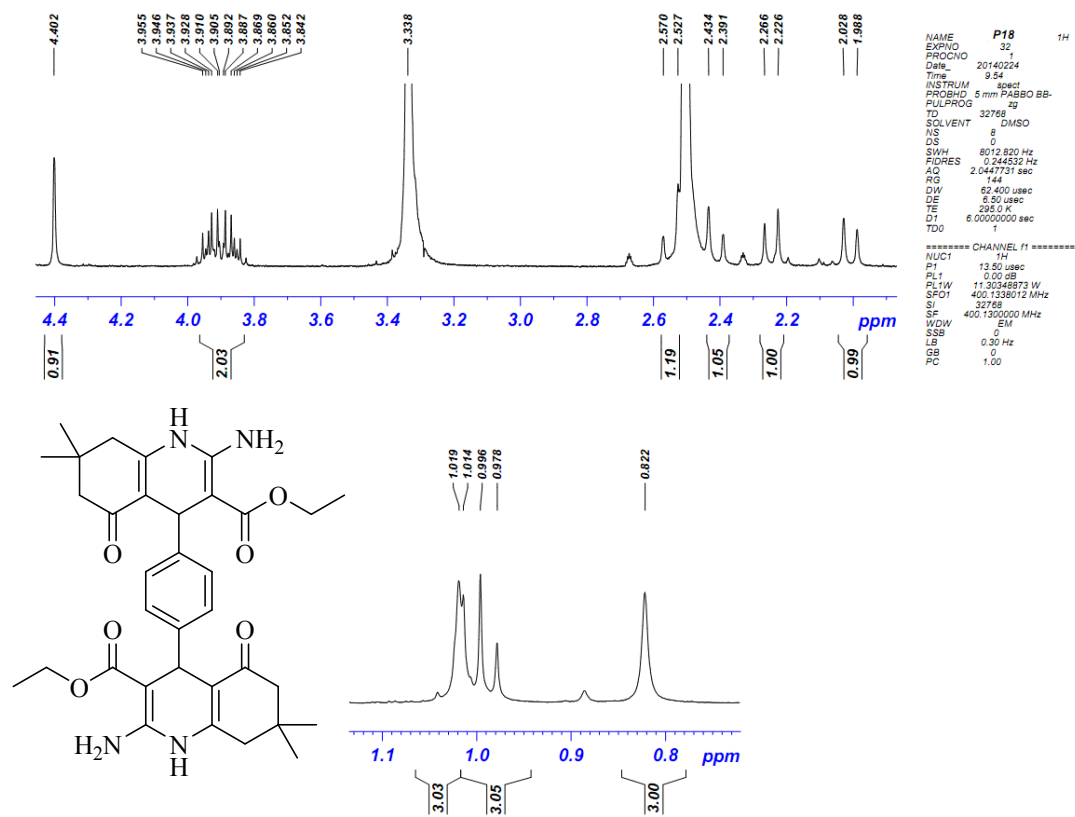


Fig. S109. The ^{13}C NMR spectrum of diethyl 4,4'-(1,4-phenylene)bis(2-amino-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**7e**)

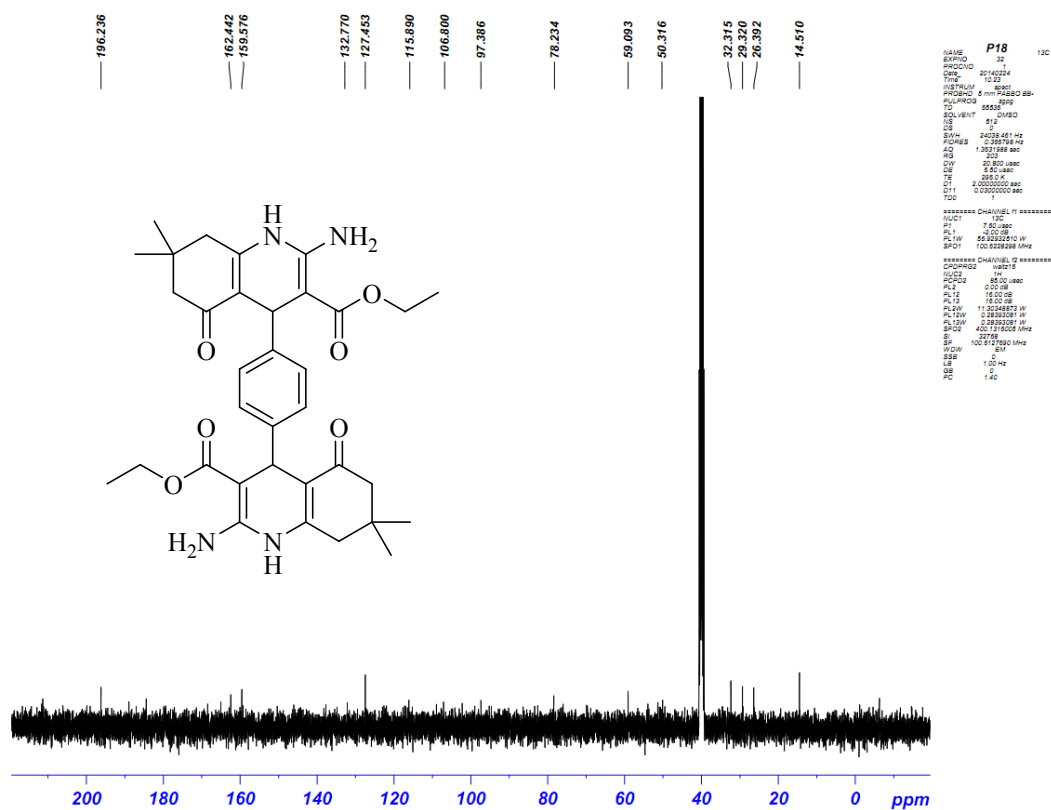


Fig. S110. The Mass spectrum of diethyl 4,4'-(1,4-phenylene)bis(2-amino-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate) (**7e**)

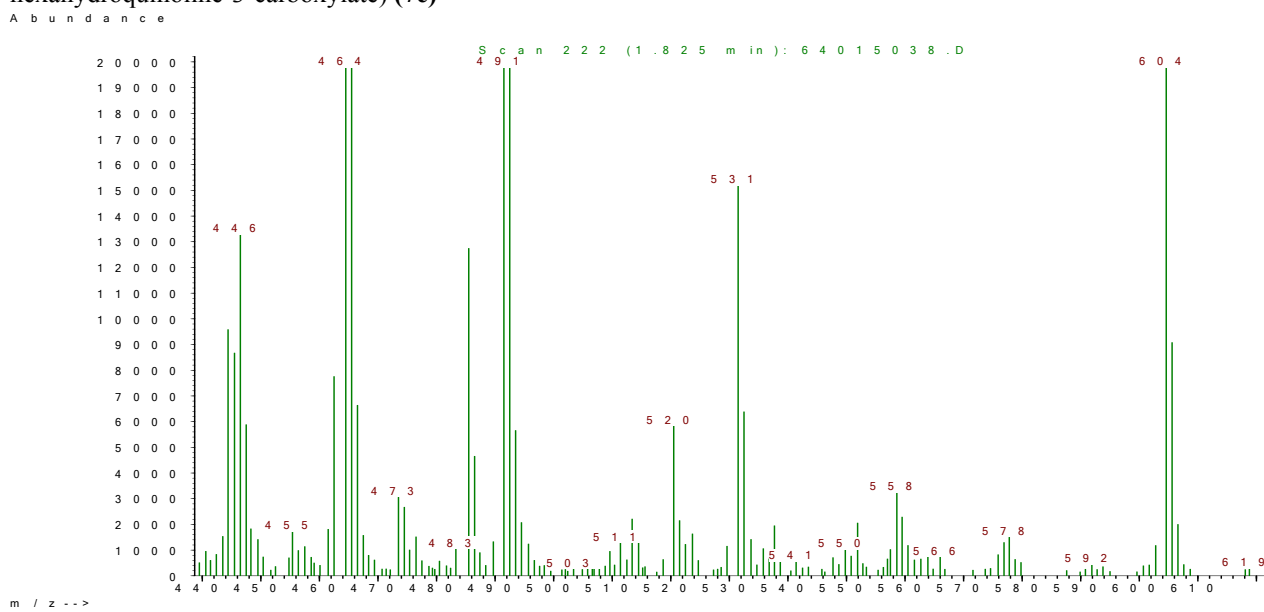


Fig. S111. The IR spectrum of ethyl 2-amino-4-(2,5-dimethoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7f**)

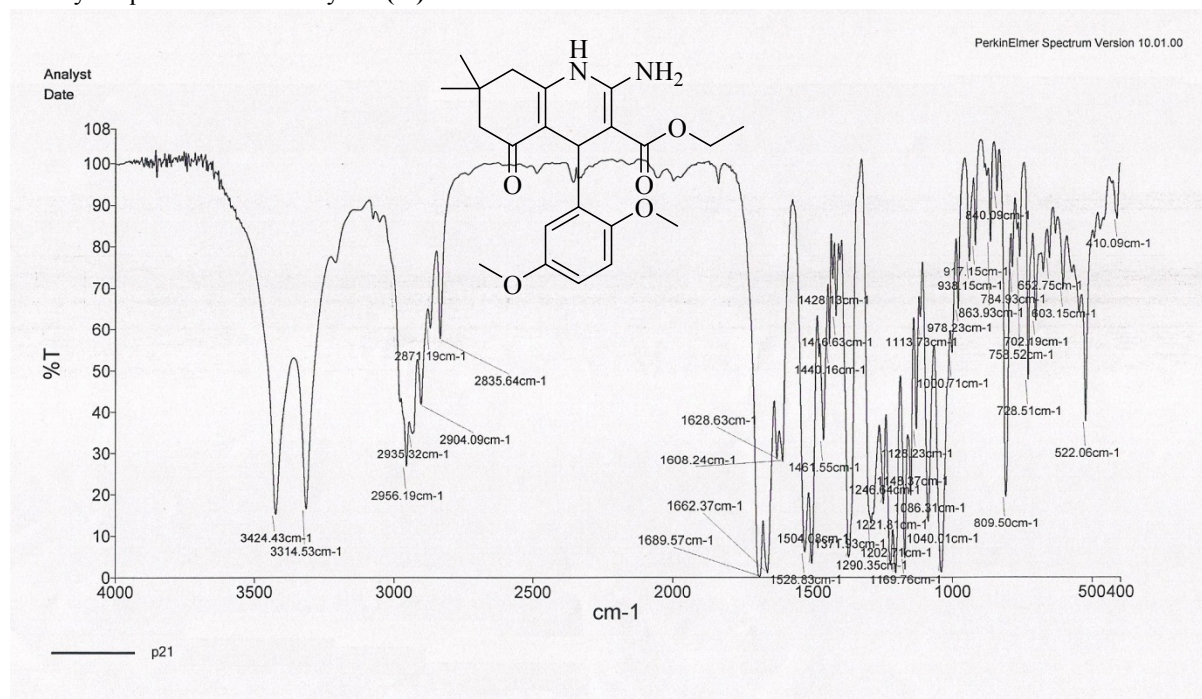


Fig. S112. The ¹H NMR spectrum of ethyl 2-amino-4-(2,5-dimethoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7f**)

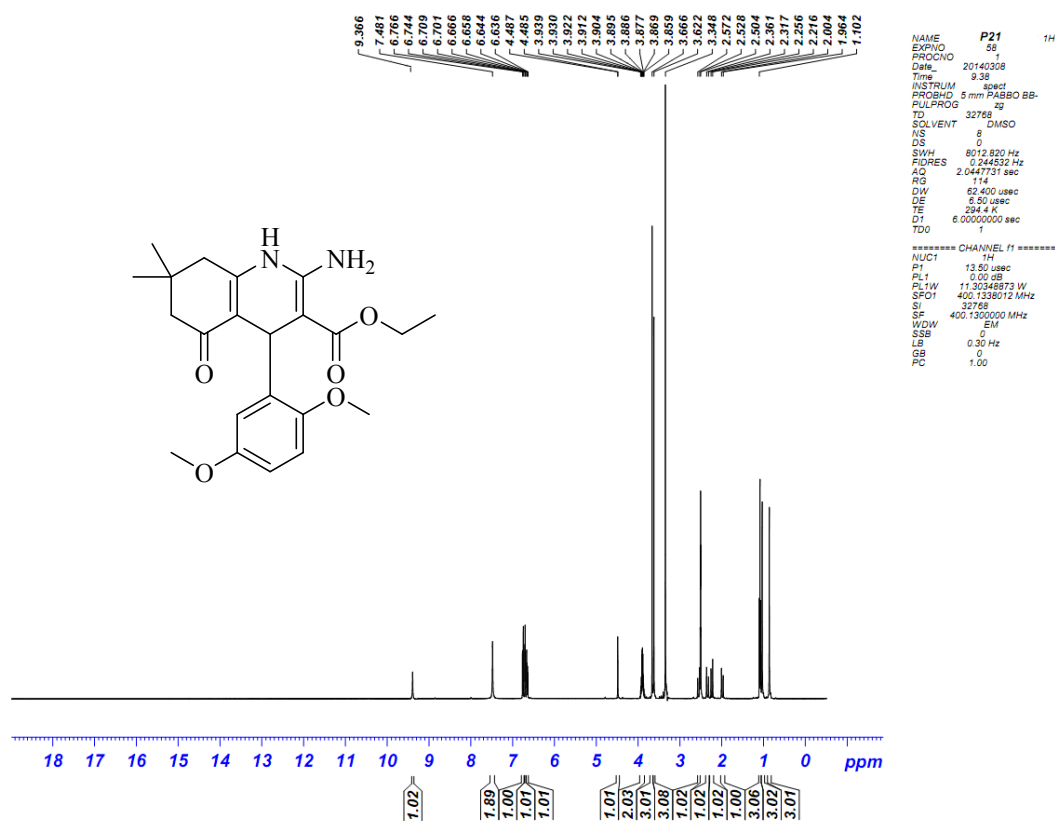


Fig. S113. The ^1H NMR spectrum of ethyl 2-amino-4-(2,5-dimethoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7f**)

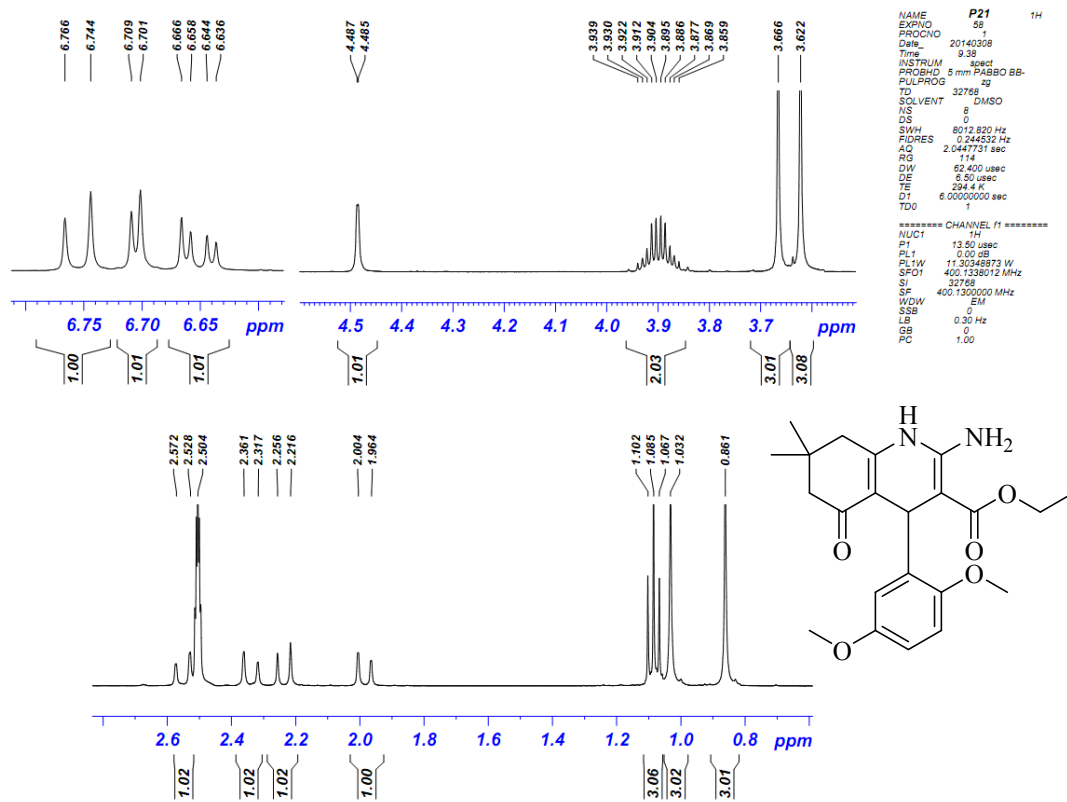


Fig. S114. The ^{13}C NMR spectrum of ethyl 2-amino-4-(2,5-dimethoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7f**)

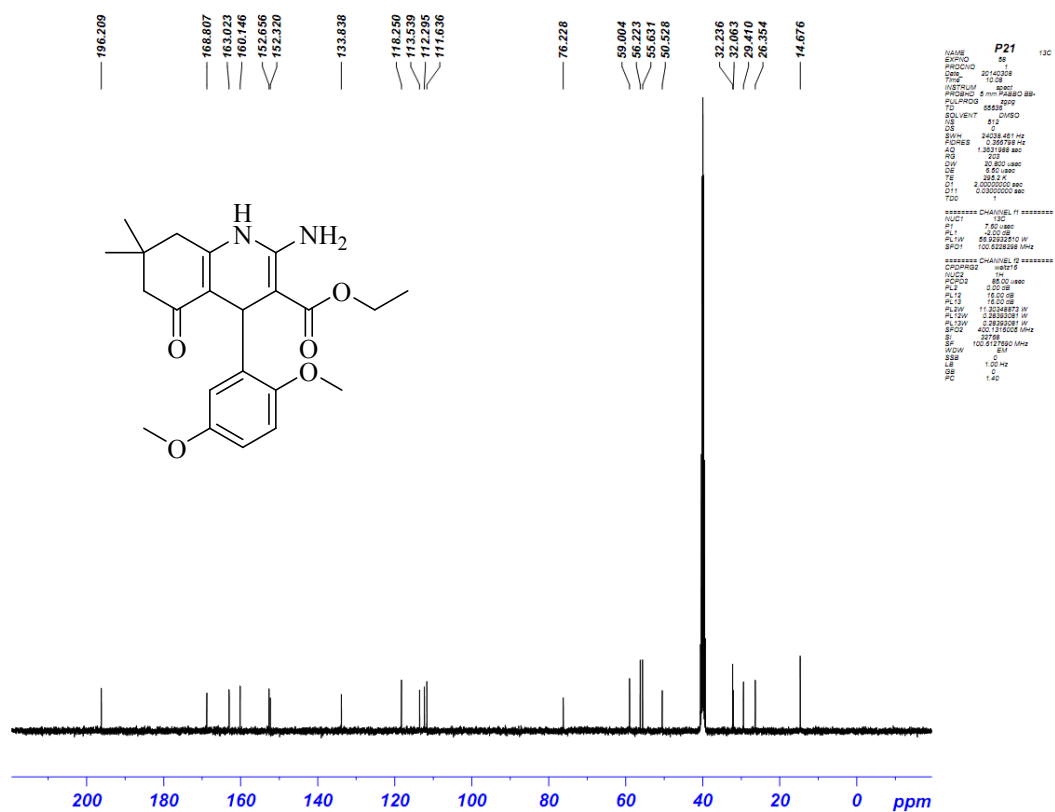


Fig. S115. The ^{13}C NMR spectrum of ethyl 2-amino-4-(2,5-dimethoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7f**)

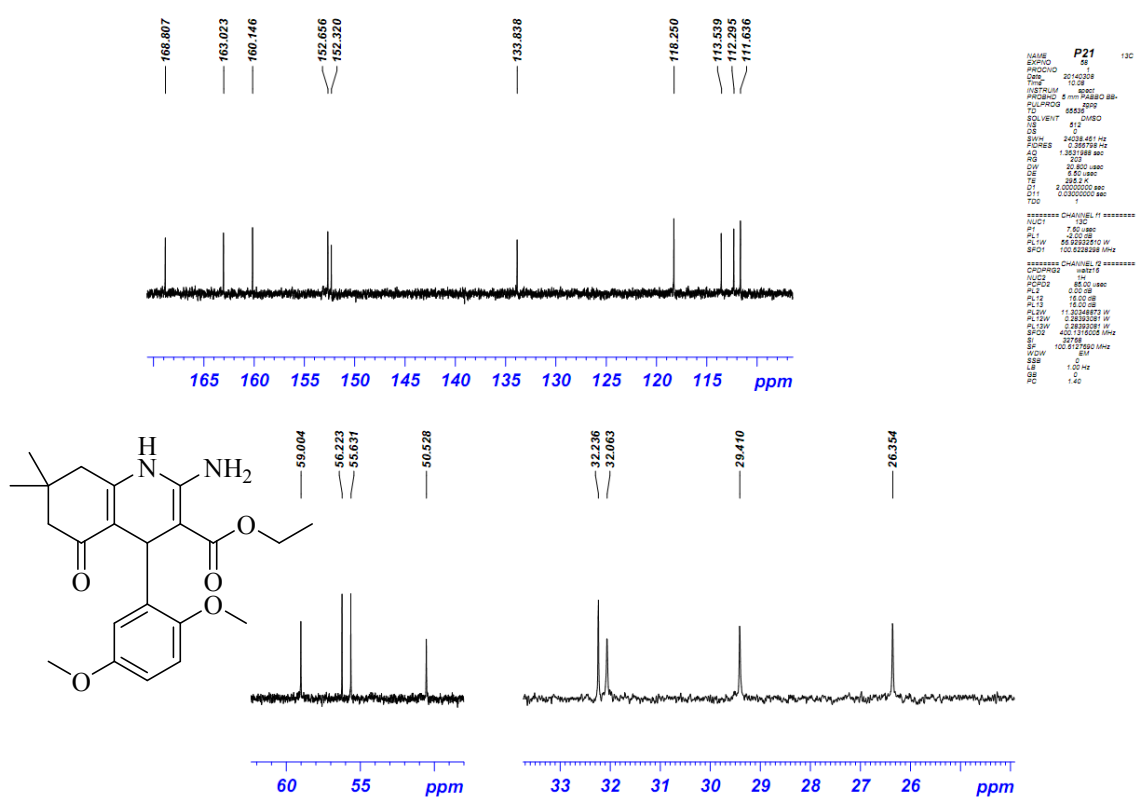


Fig. S116. The Mass spectrum of ethyl 2-amino-4-(2,5-dimethoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7f**)

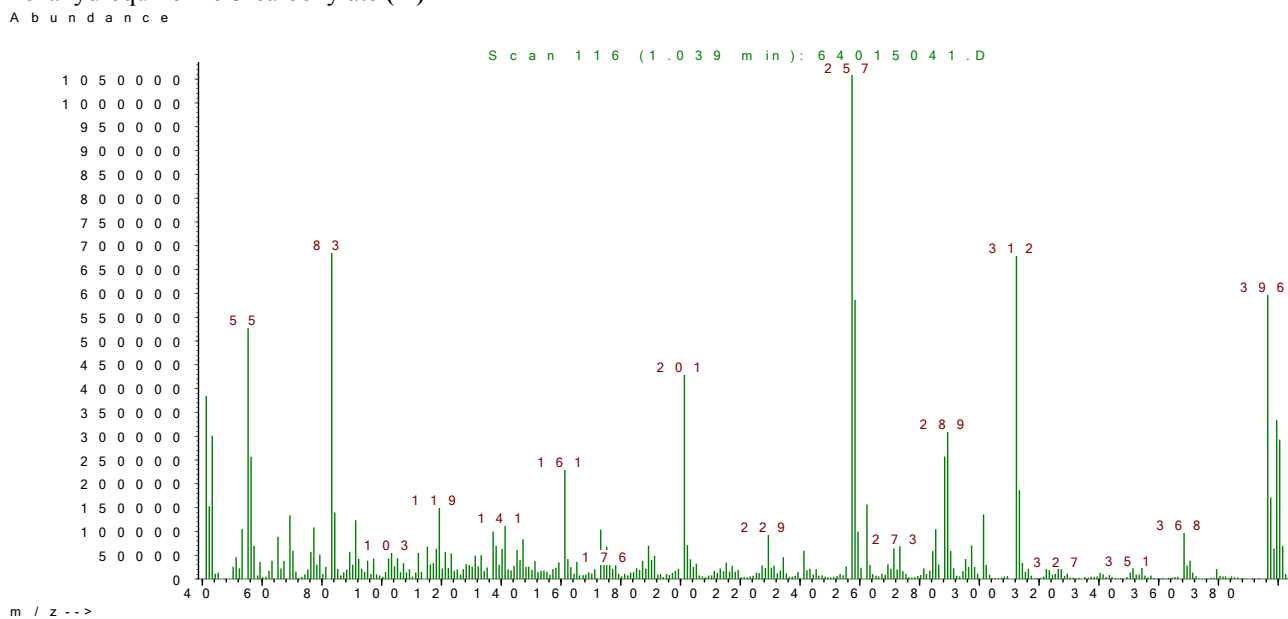


Fig. S117. The IR spectrum of ethyl 2-amino-7,7-dimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7g**)

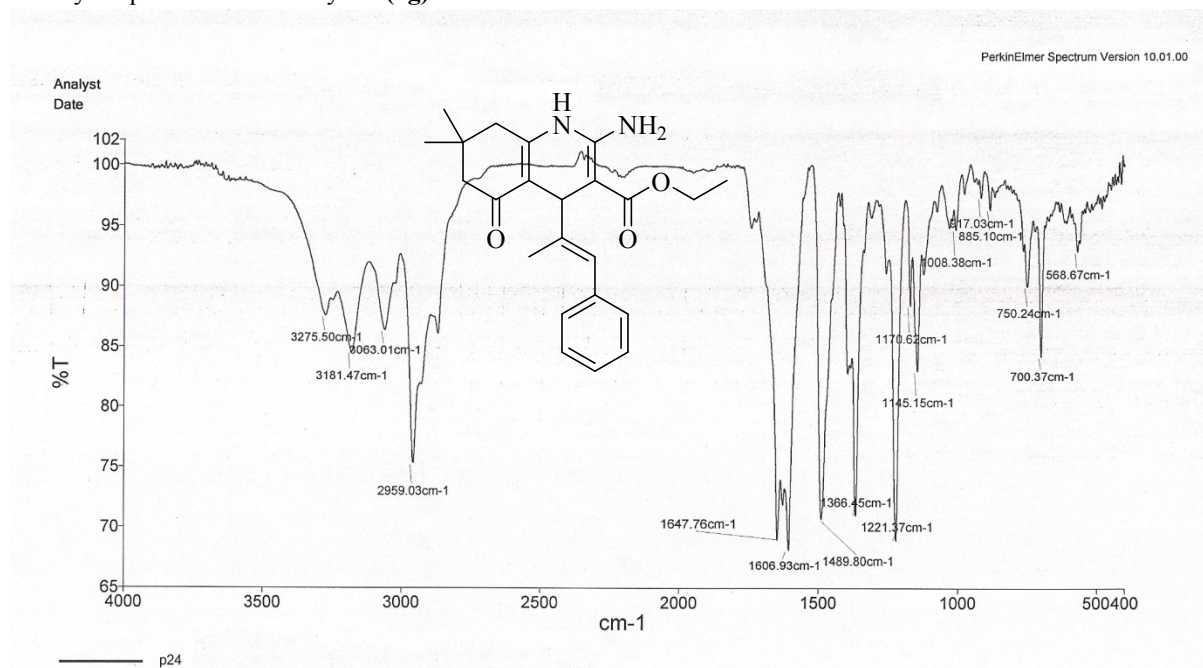


Fig. S118. The ¹H NMR spectrum of ethyl 2-amino-7,7-dimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7g**)

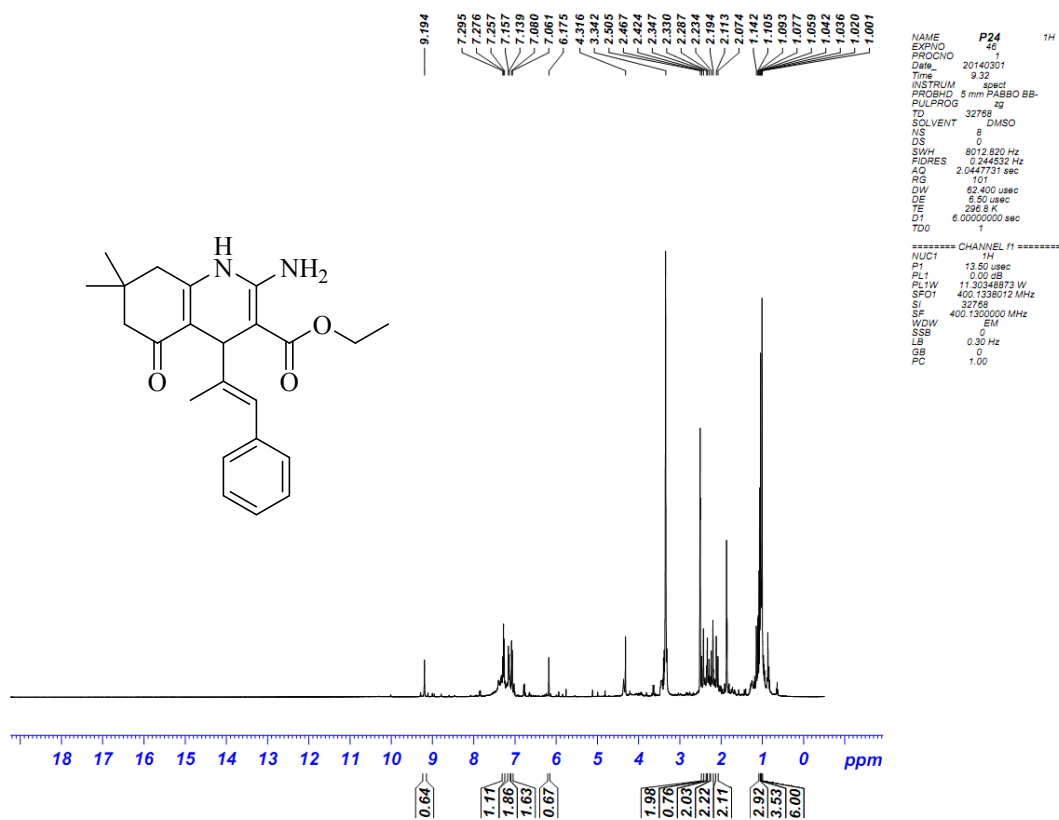


Fig. S119. The ^1H NMR spectrum of ethyl 2-amino-7,7-dimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7g**)

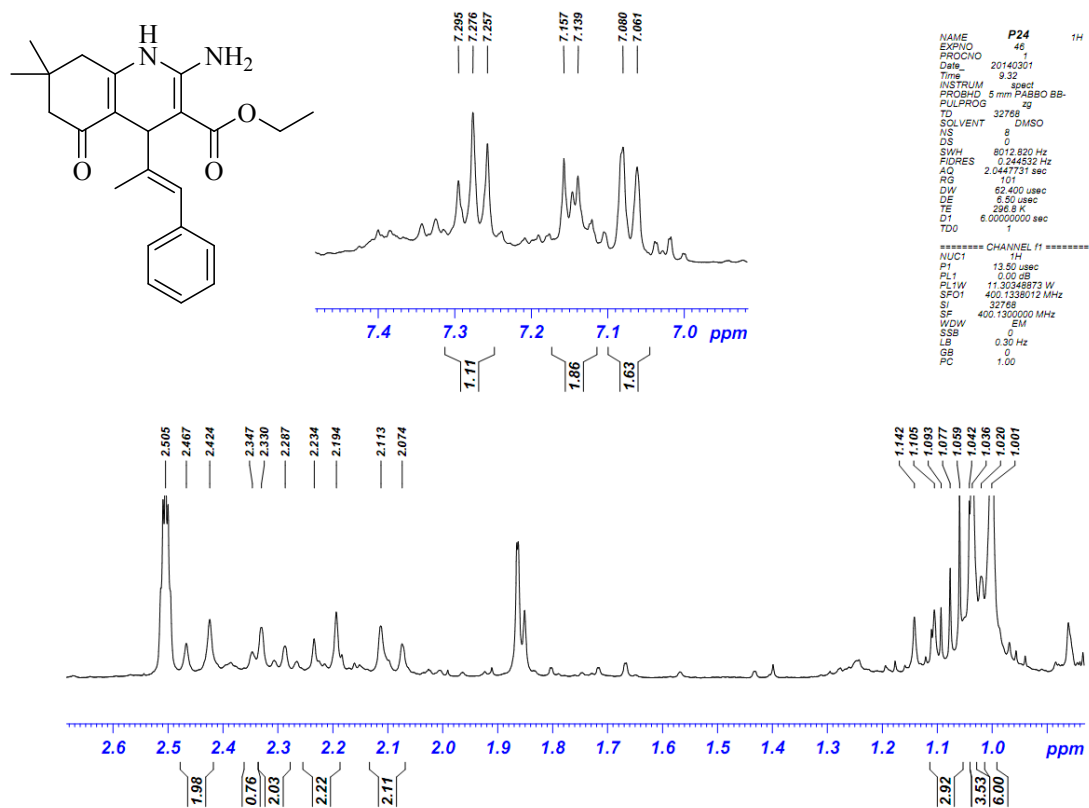


Fig. S120. The ^{13}C NMR spectrum of ethyl 2-amino-7,7-dimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7g**)

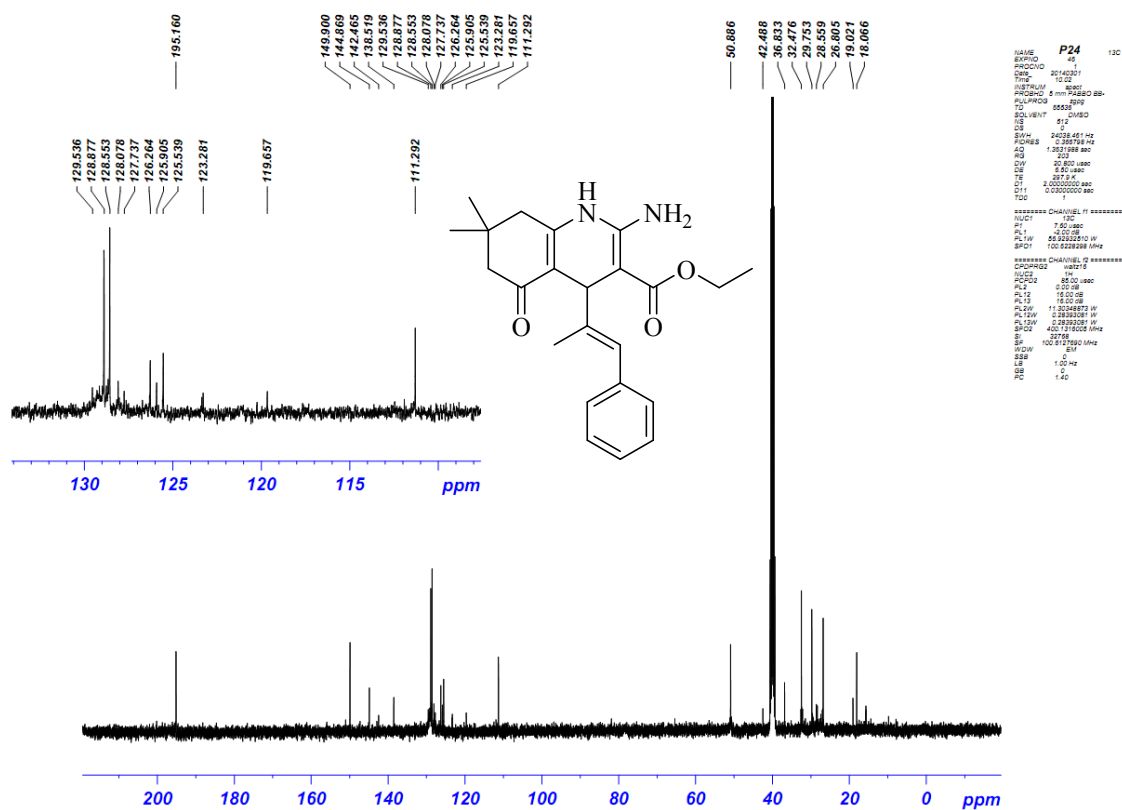


Fig. S121. The Mass spectrum of ethyl 2-amino-7,7-dimethyl-5-oxo-4-(1-phenylprop-1-en-2-yl)-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7g**)

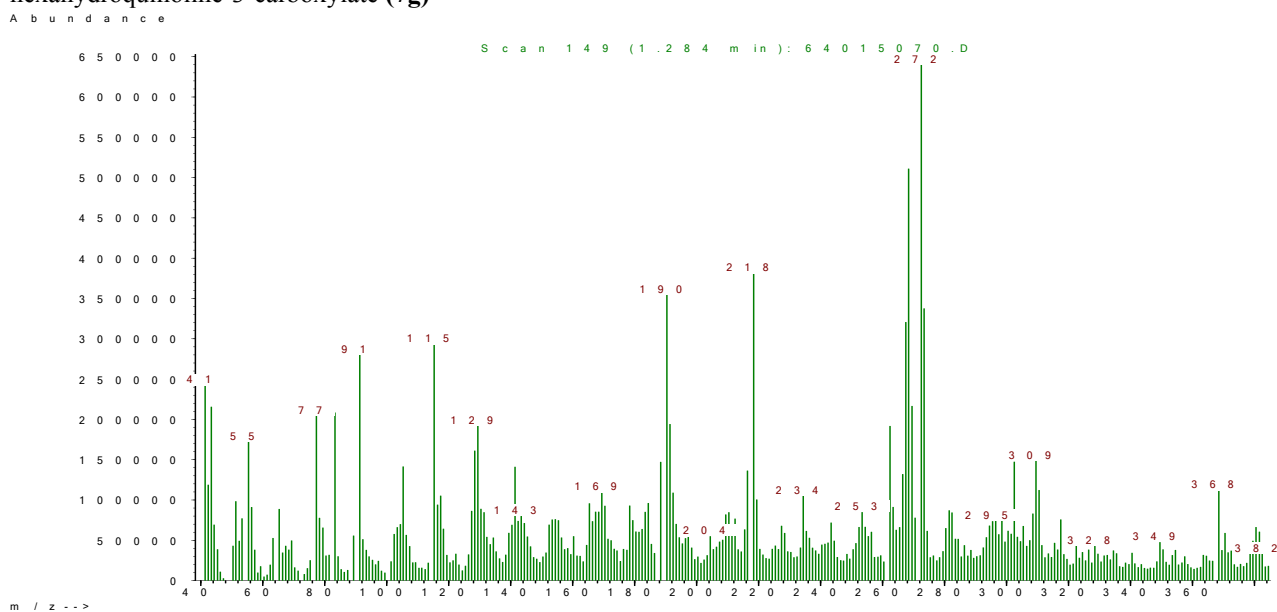


Fig. S122. The IR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7h**)

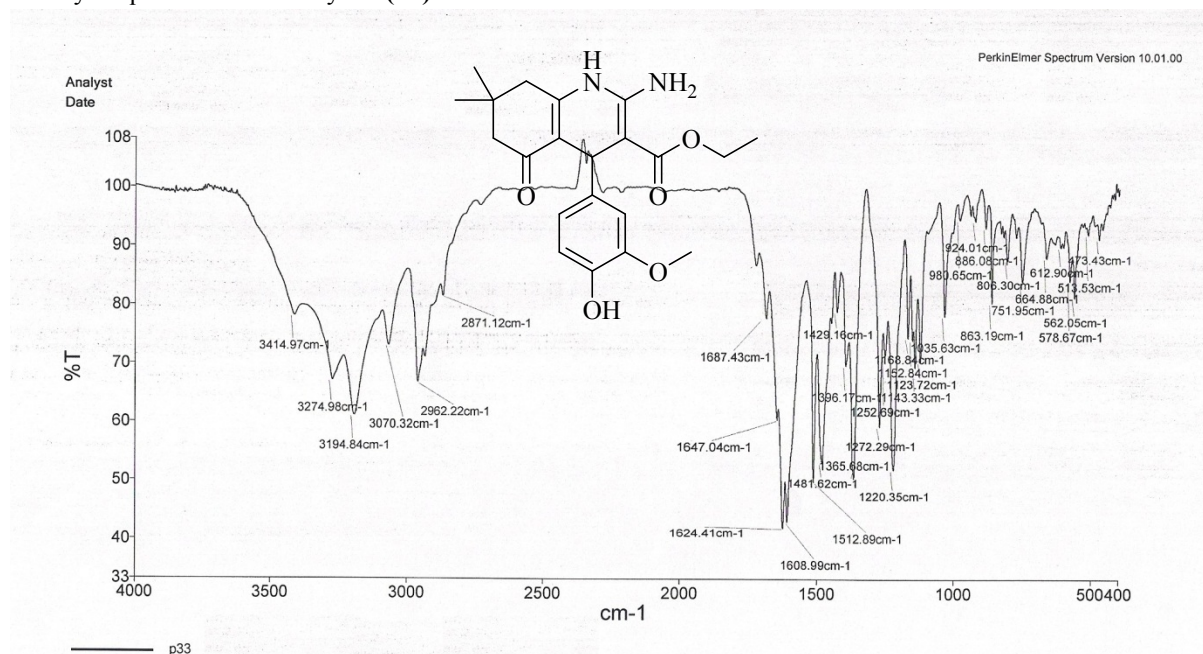


Fig. S123. The ¹H NMR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7h**)

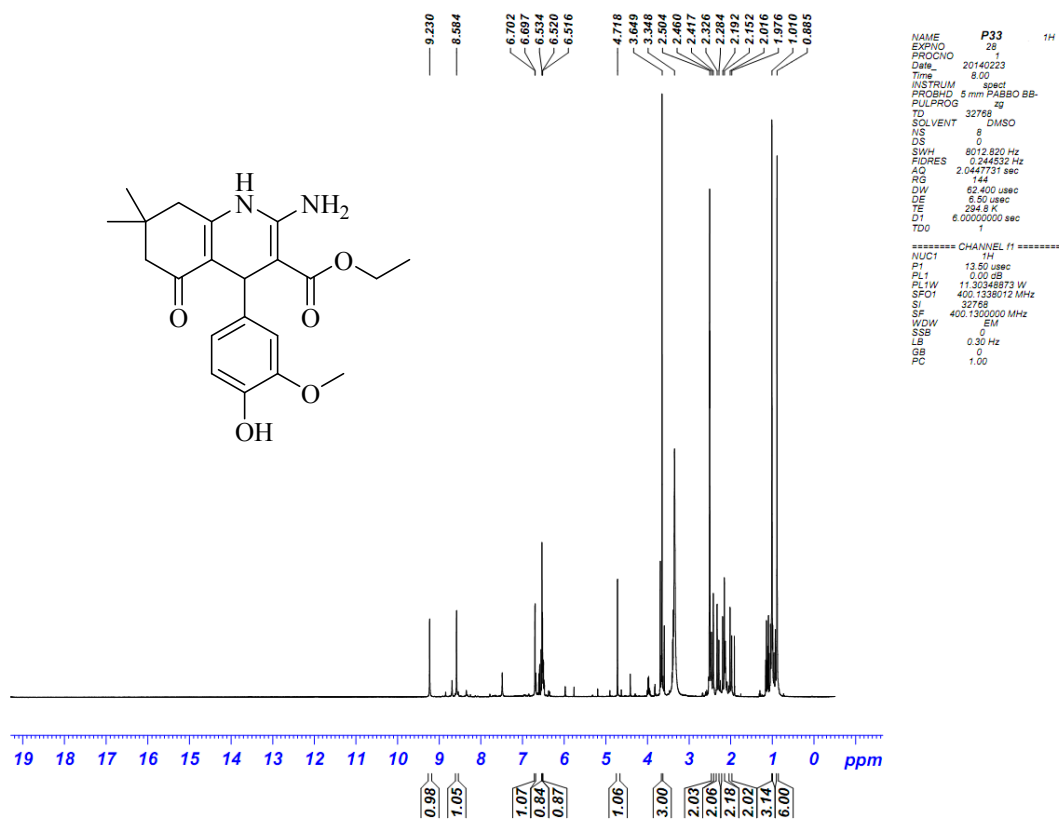


Fig. S124. The ^1H NMR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7h**)

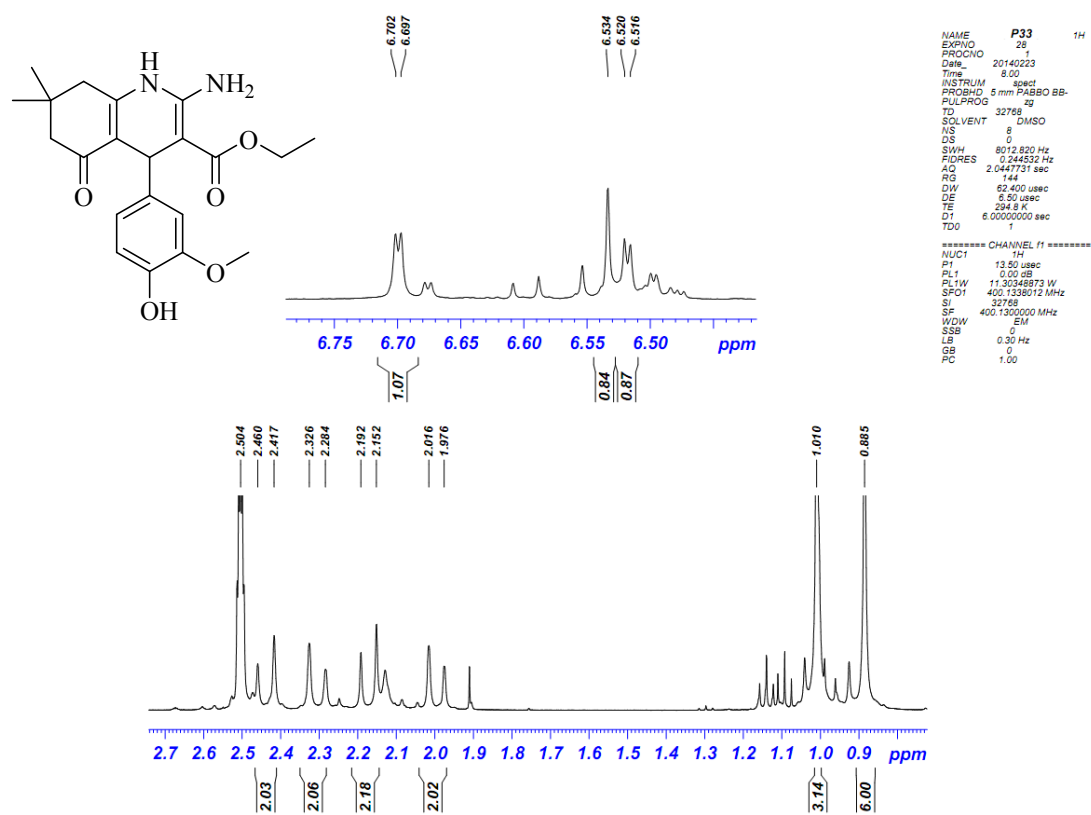


Fig. S125. The ^{13}C NMR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7h**)

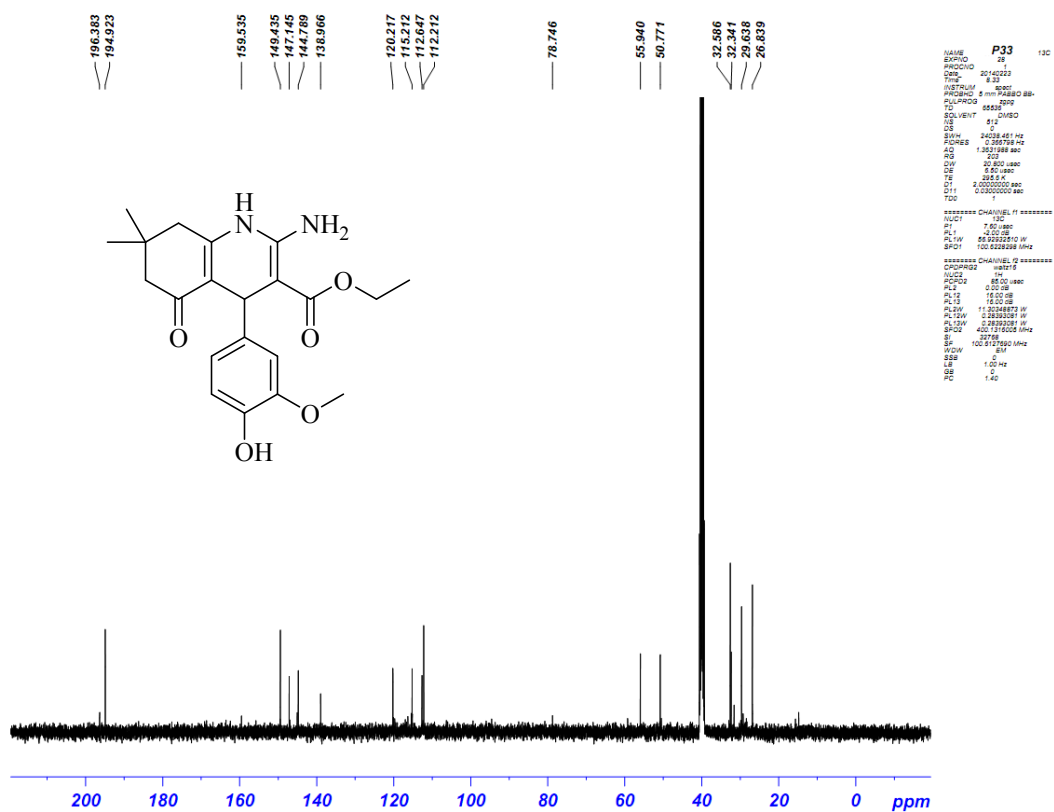


Fig. S126. The ^{13}C NMR spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7h**)

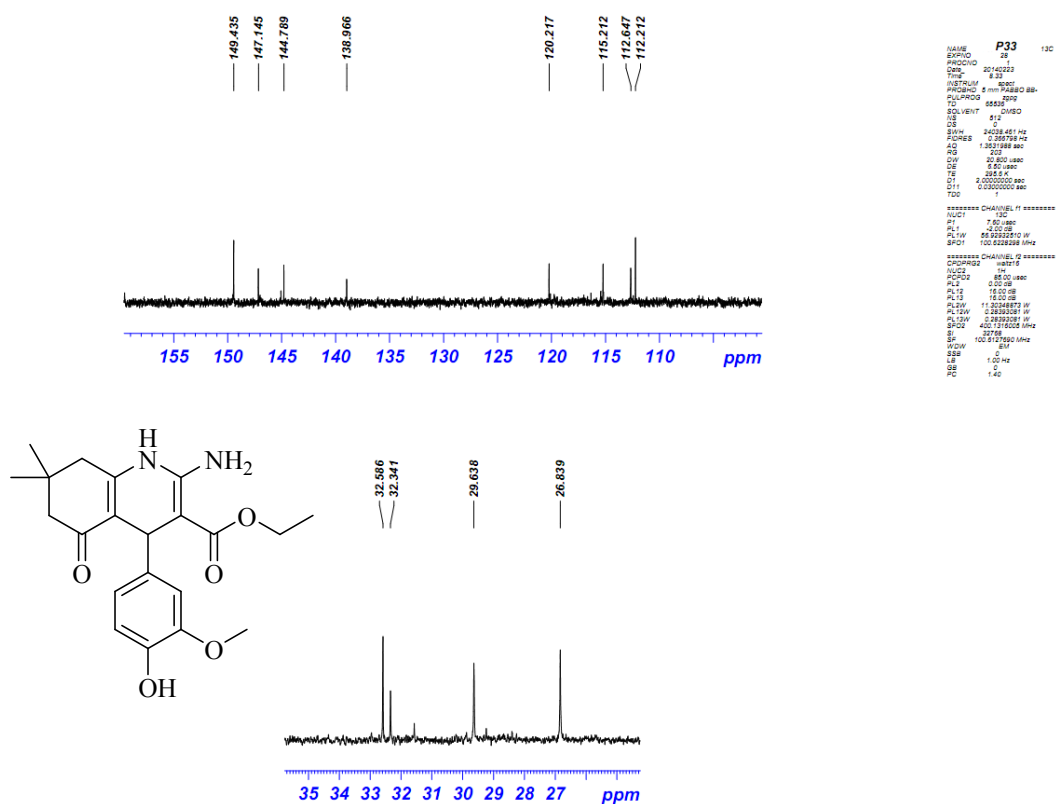


Fig. S127. The Mass spectrum of ethyl 2-amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (**7h**)

