

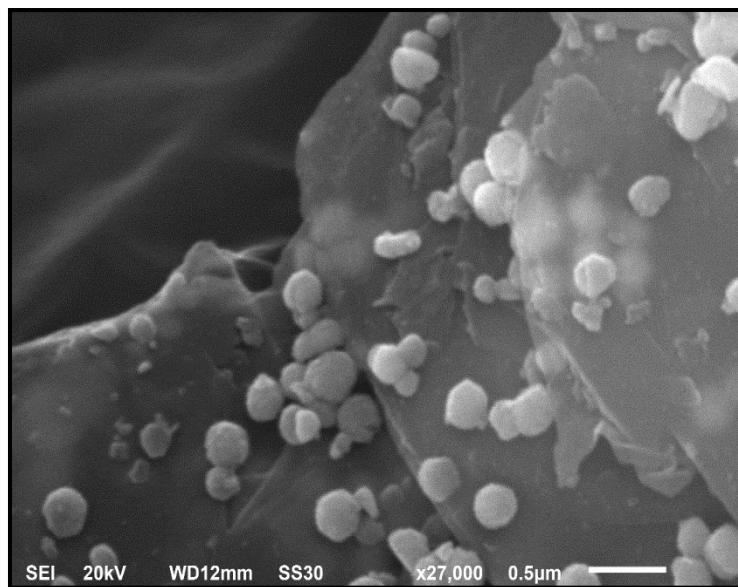
## **Insights into the catalytic potential of rationally designed magnetic boron nitride nanosheets supported nickel catalyst for the efficient synthesis of 1,4-dihydropyridines**

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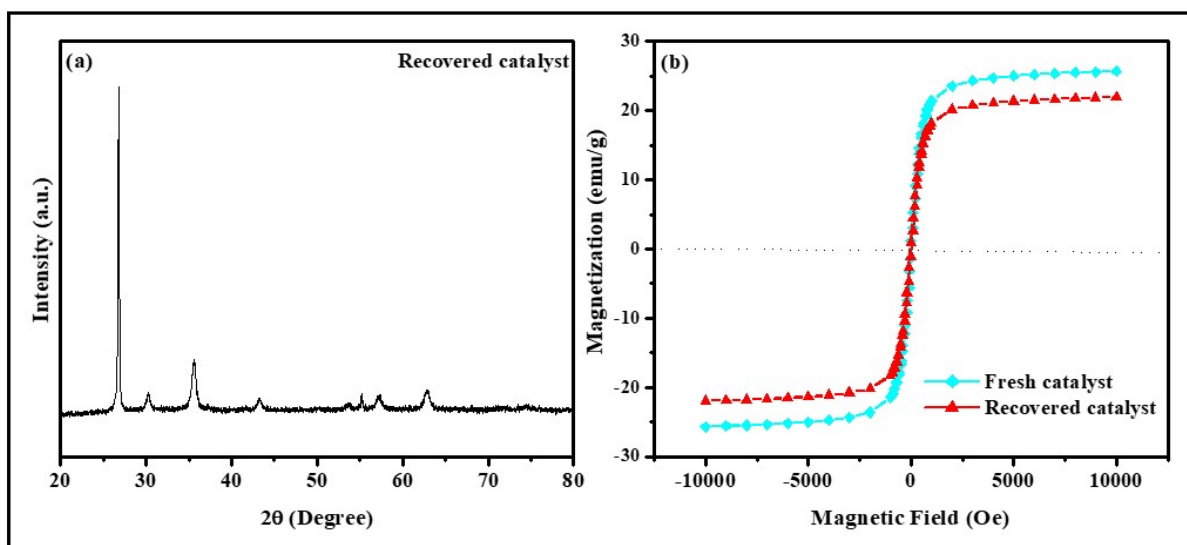
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## Recyclability test



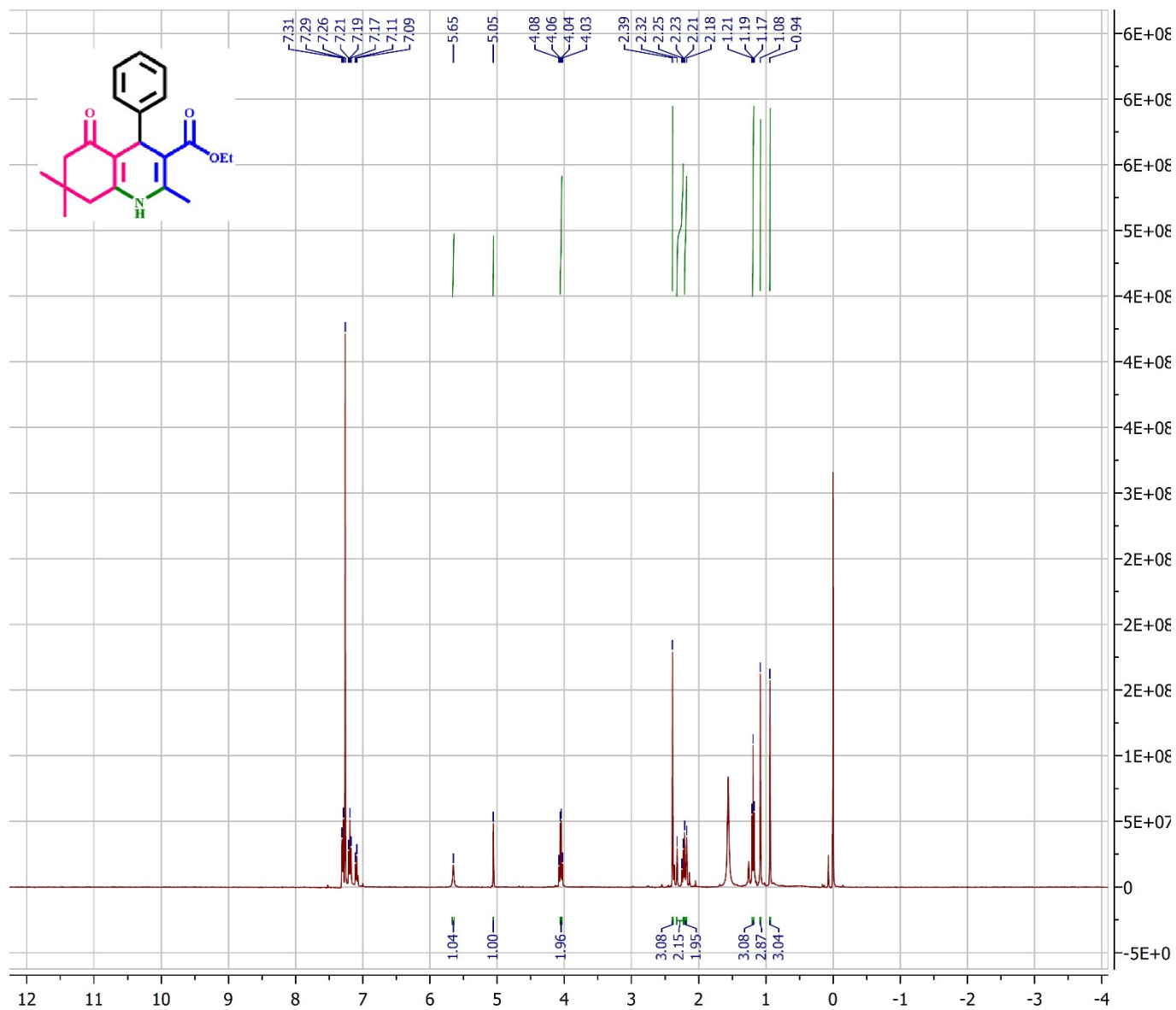
**Fig. S1** SEM image of the recovered  $h\text{-BN@Fe}_3\text{O}_4\text{@APTES@TPC@Ni}$  catalyst.



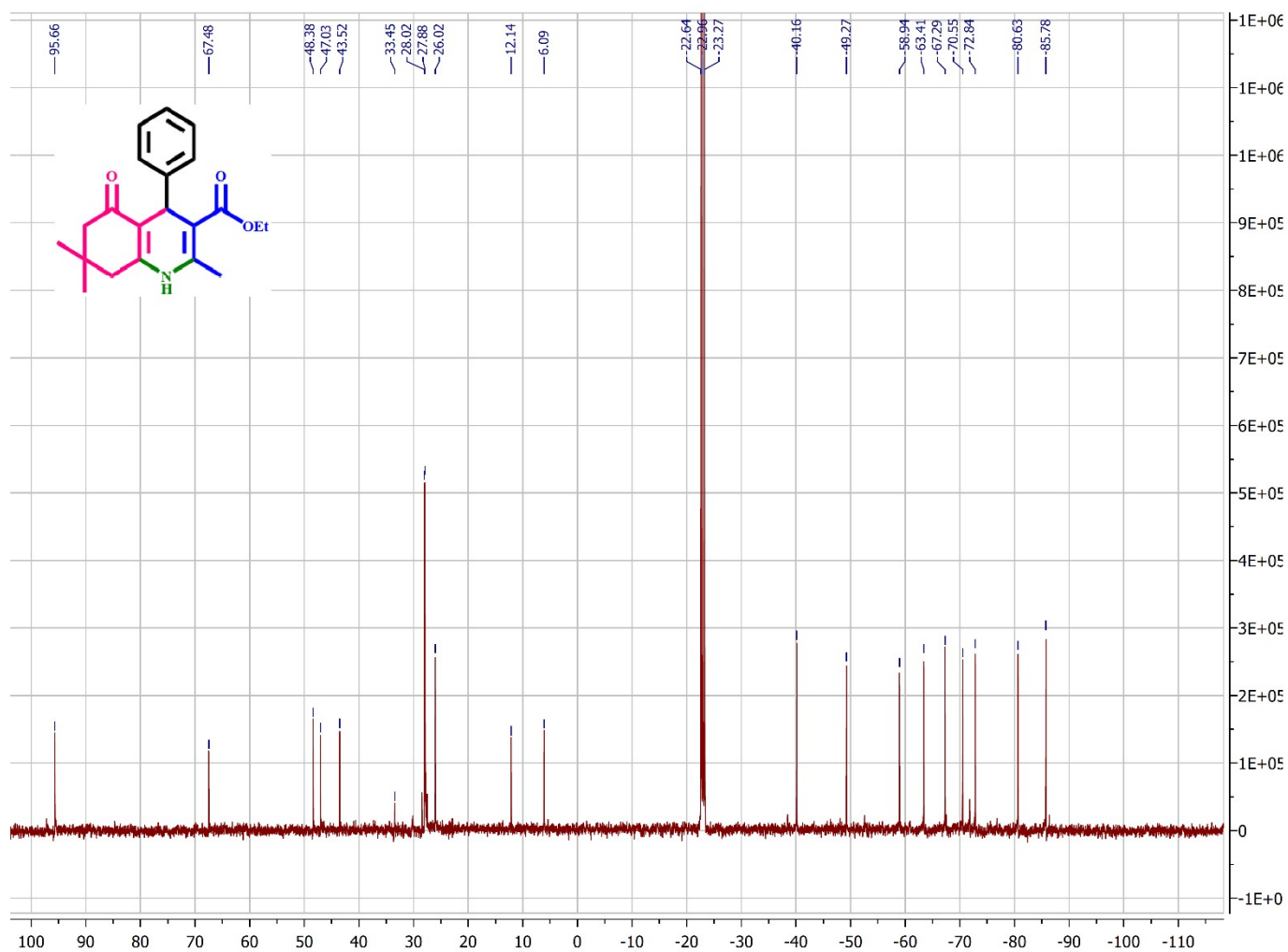
**Fig. S2** (a) XRD and (b) VSM of recovered  $h\text{-BN@Fe}_3\text{O}_4\text{@APTES@TPC@Ni}$ .

## $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of 1,4-dihydropyridines (4a-4h)

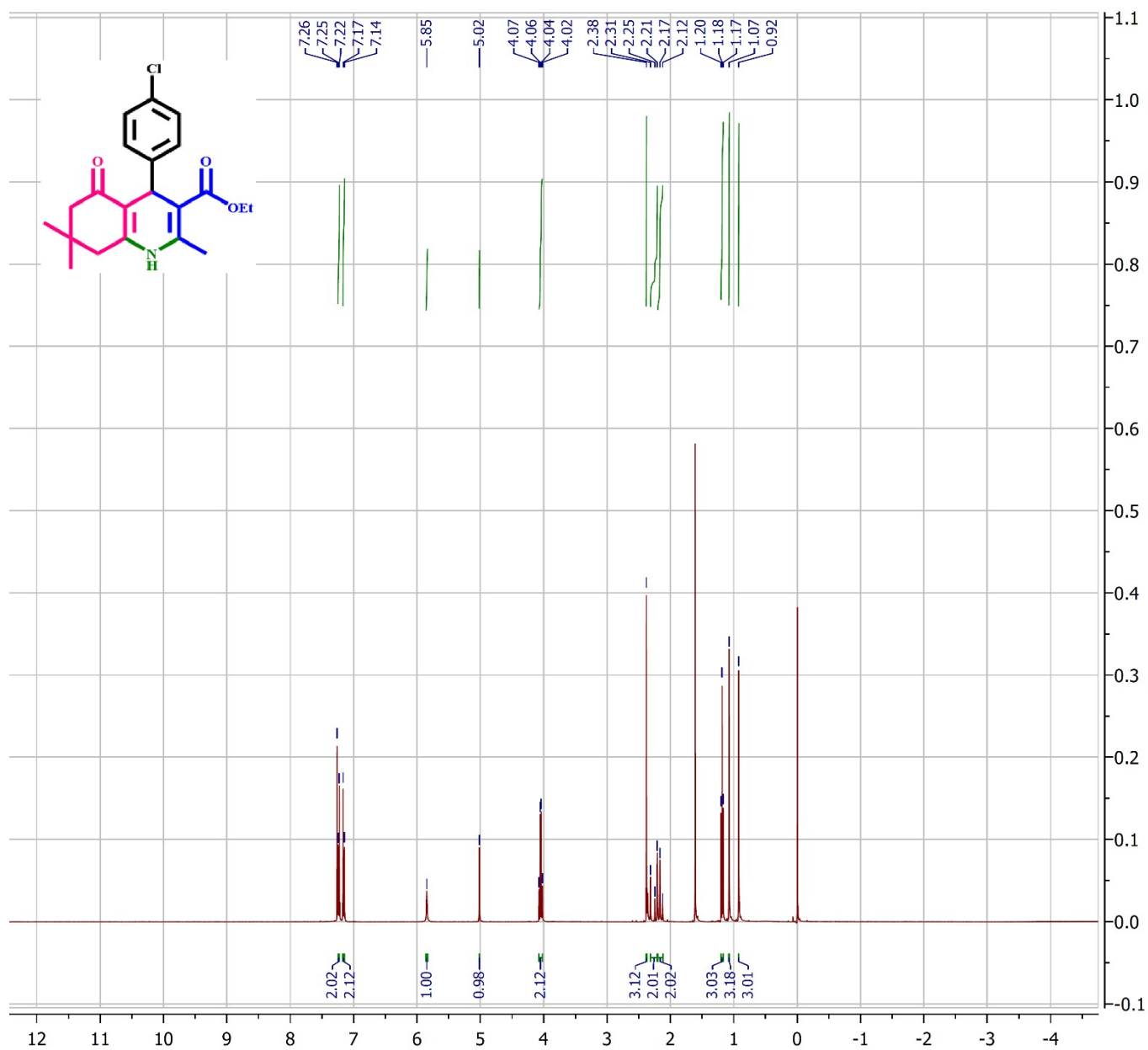
$^1\text{H}$  spectrum of Ethyl 2,7,7-trimethyl-5-oxo-4-phenyl-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4a)



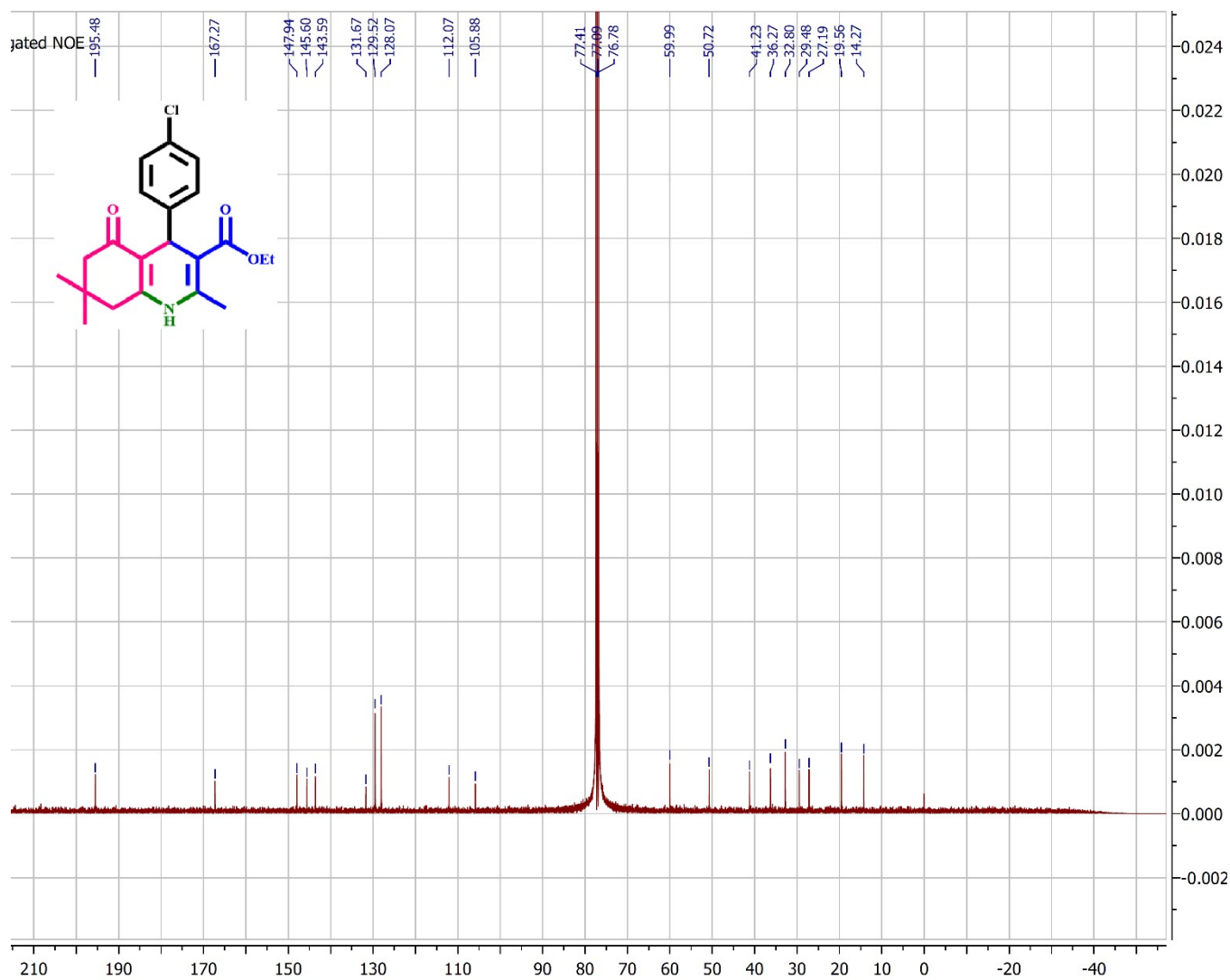
<sup>13</sup>C spectrum of Ethyl 2,7,7-trimethyl-5-oxo-4-phenyl-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4a)



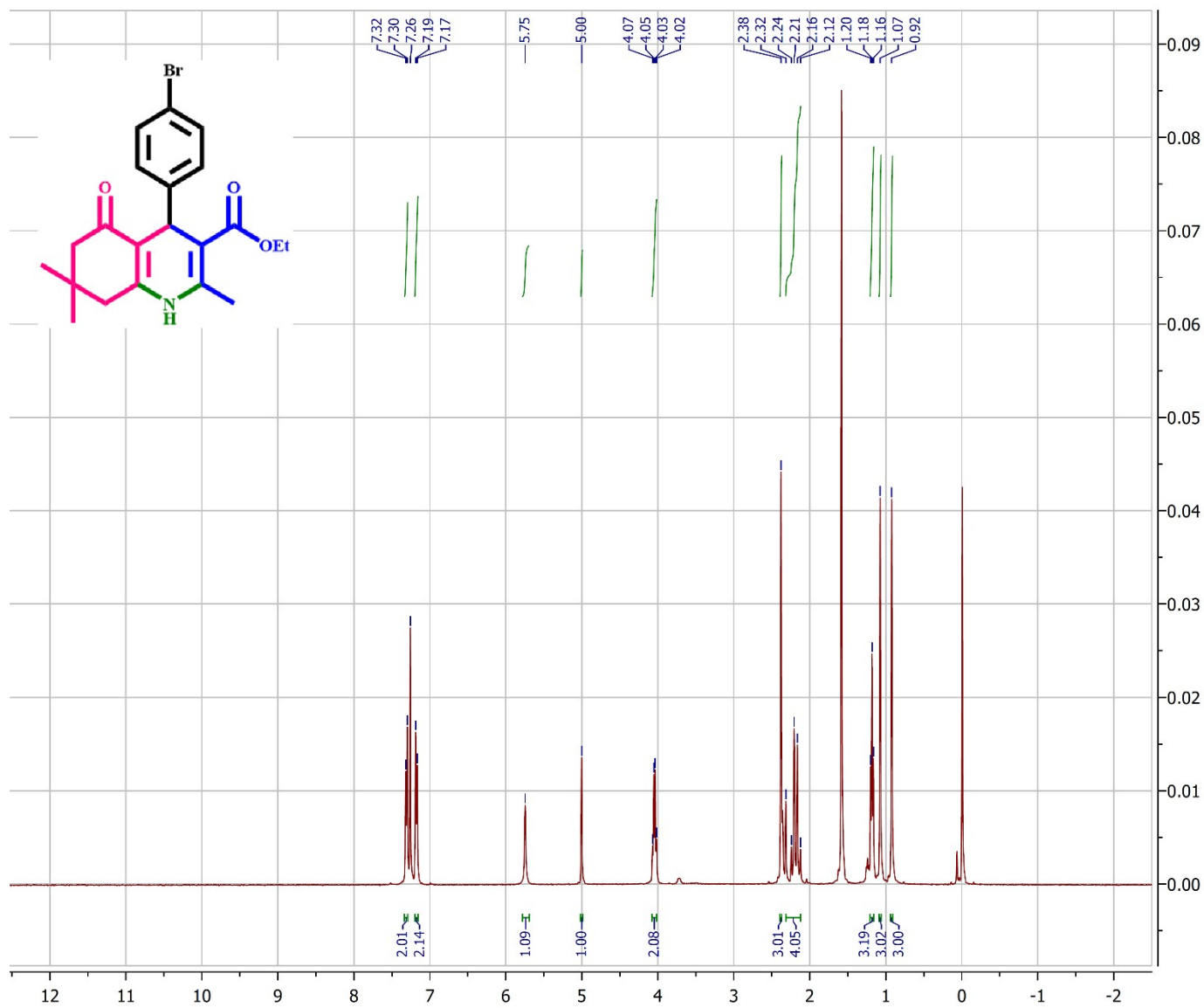
<sup>1</sup>H spectrum of Ethyl 4-(4-chlorophenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4b)



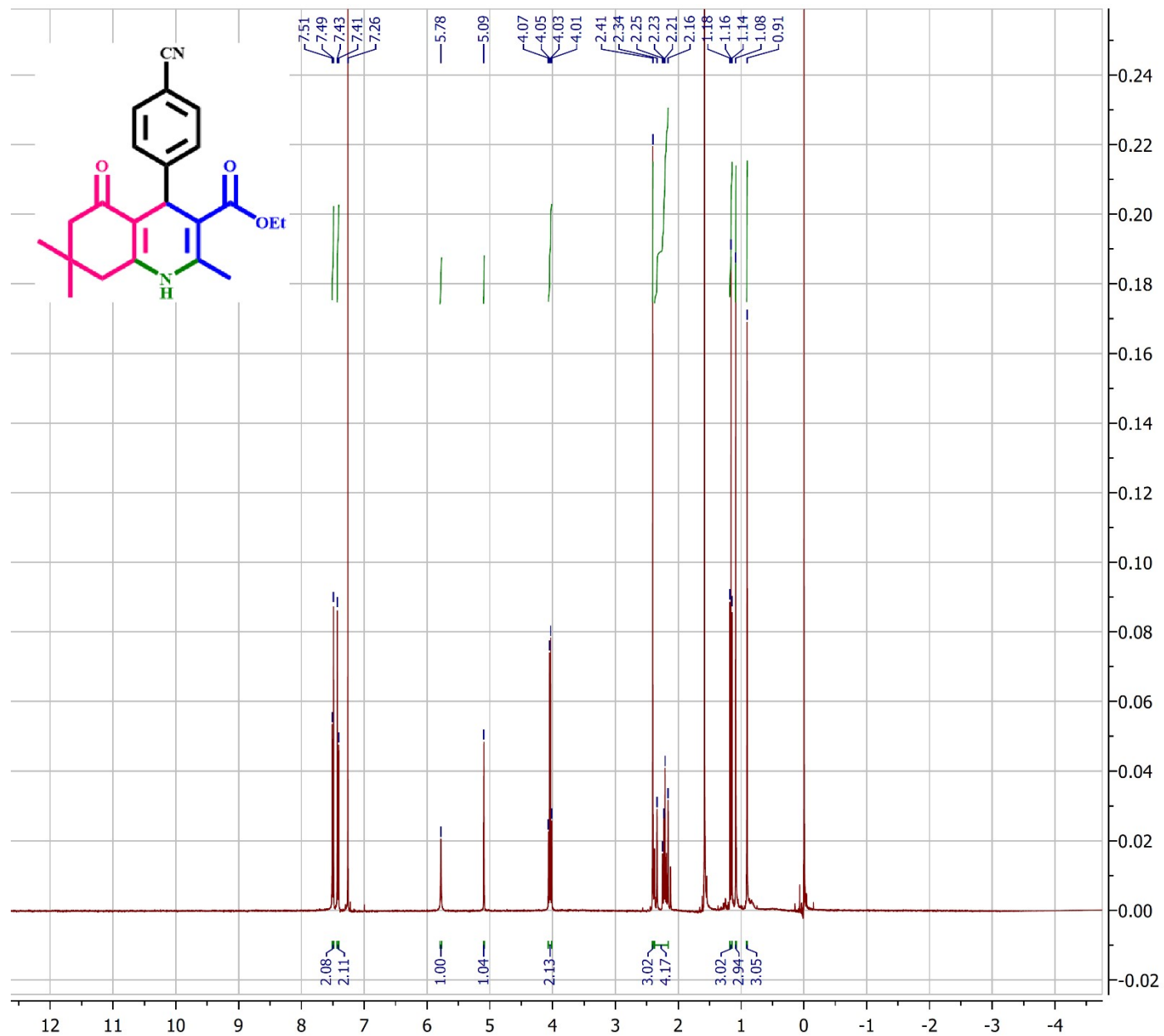
<sup>13</sup>C spectrum of Ethyl 4-(4-chlorophenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4b)



<sup>1</sup>H spectrum of Ethyl 4-(4-bromophenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4c)

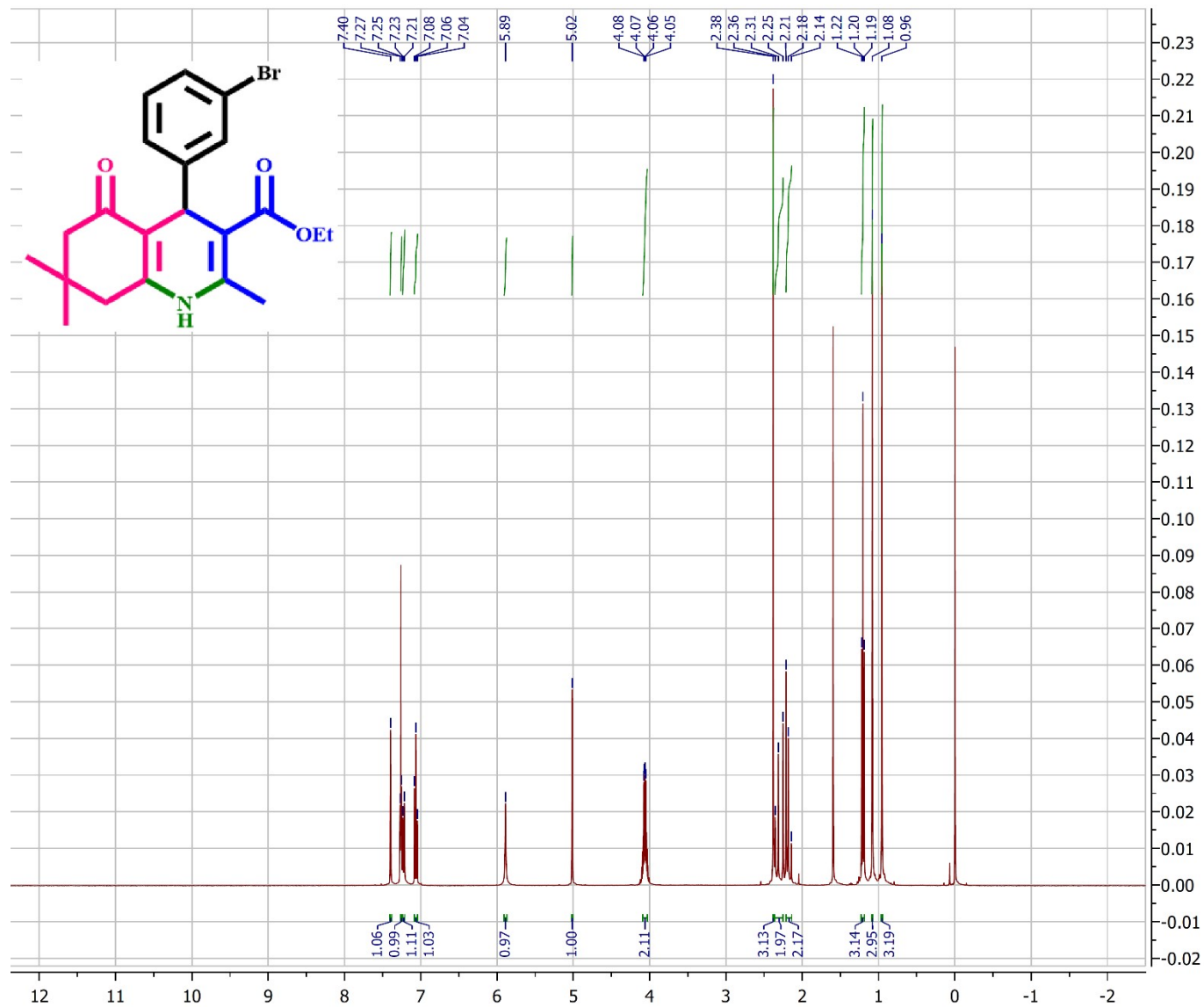


<sup>1</sup>H spectrum of Ethyl 4-(4-cyanophenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4d)

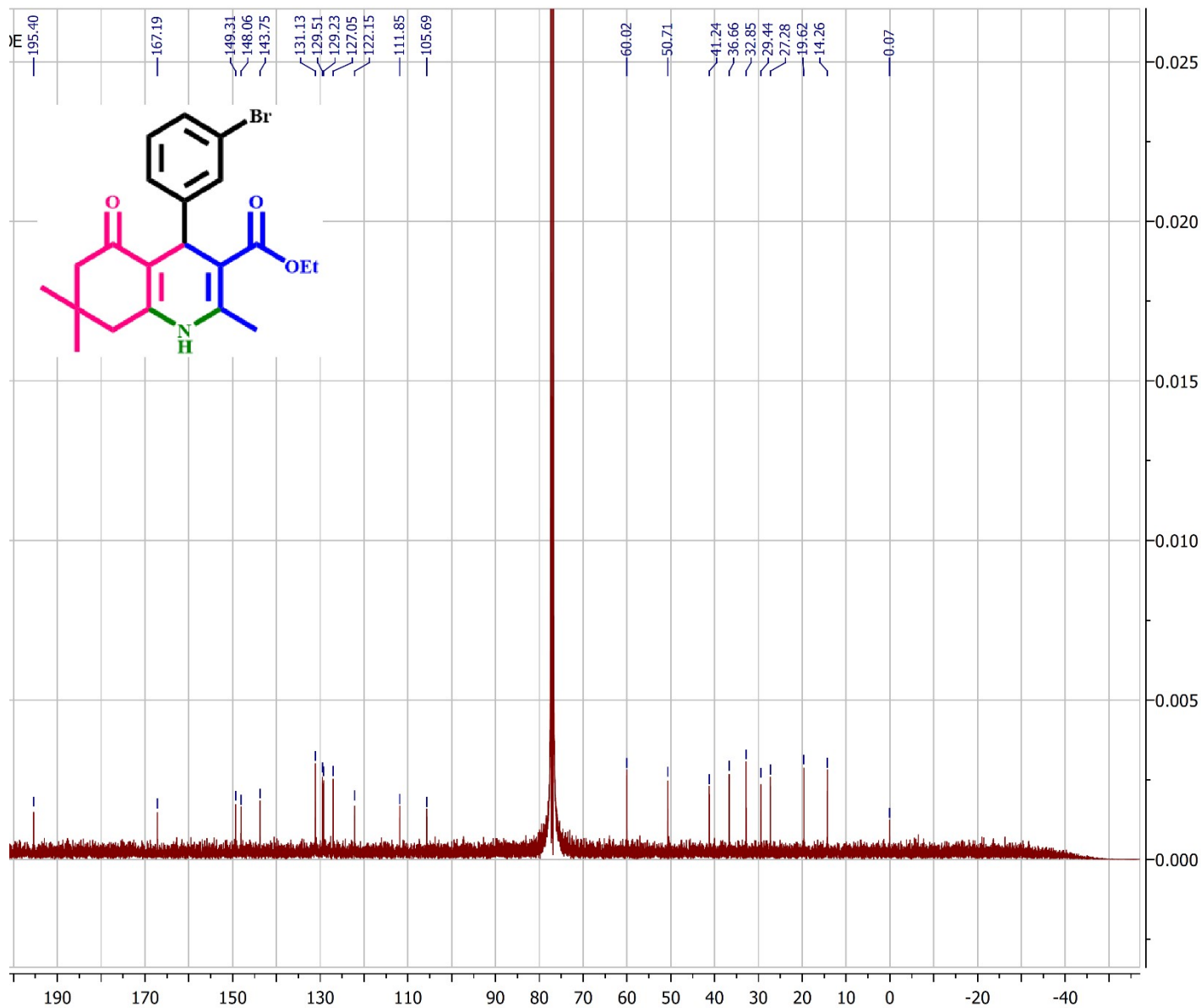




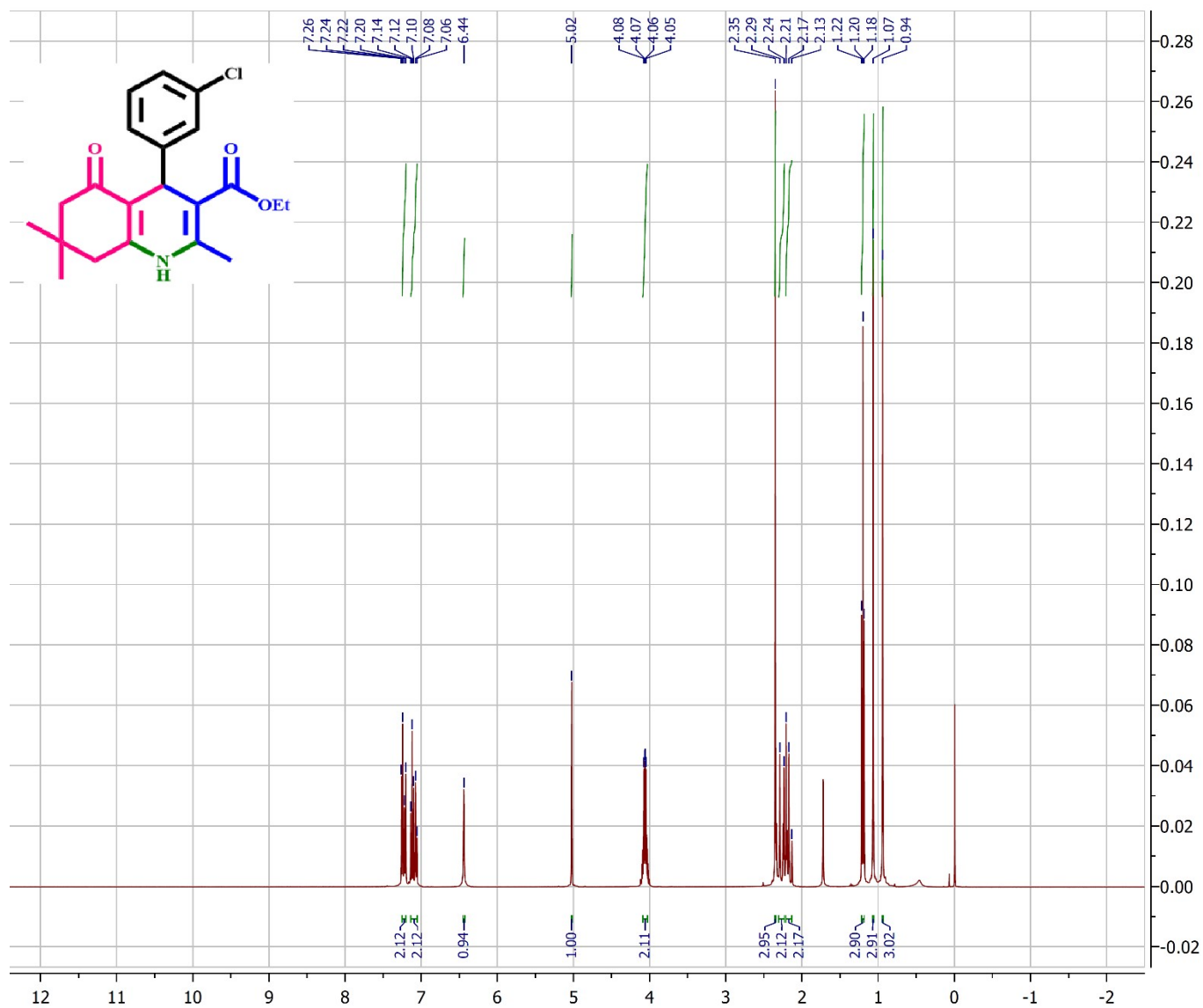
<sup>1</sup>H spectrum of Ethyl 2,7,7-trimethyl-4-(3-bromophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4e)



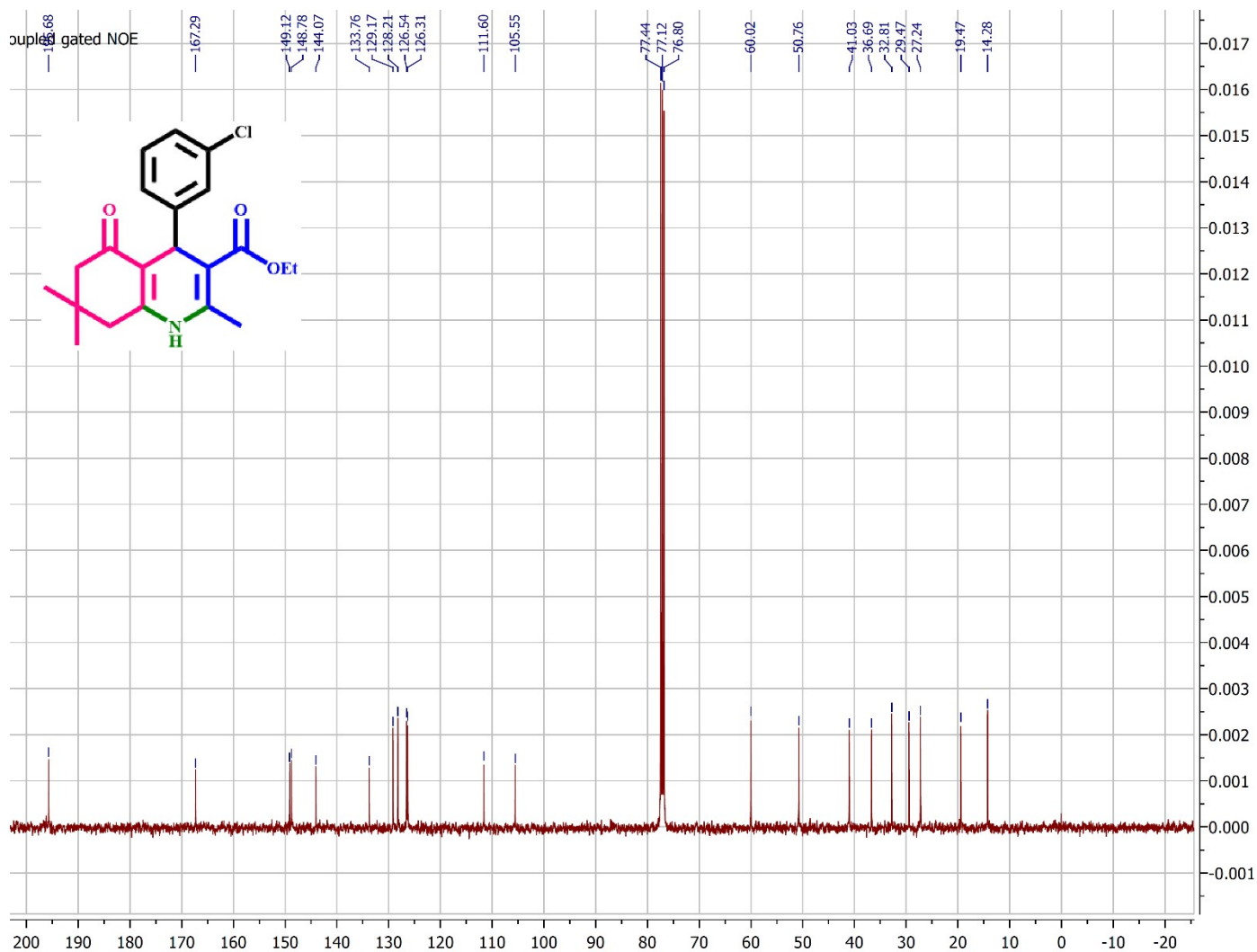
<sup>13</sup>C spectrum of Ethyl 2,7,7-trimethyl-4-(3-bromophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4e)



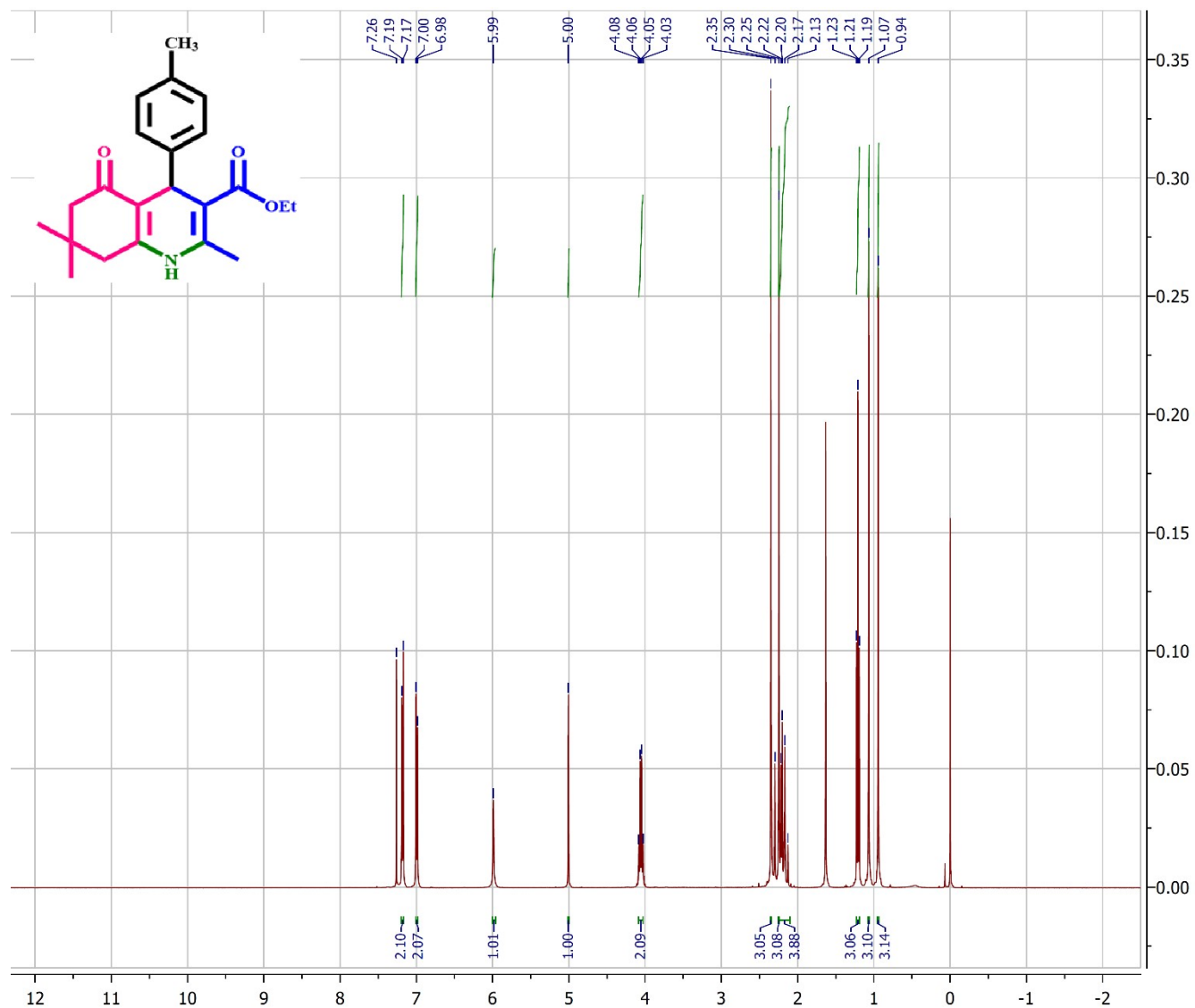
<sup>1</sup>H spectrum of Ethyl 2,7,7-trimethyl-4-(3-chlorophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4f)



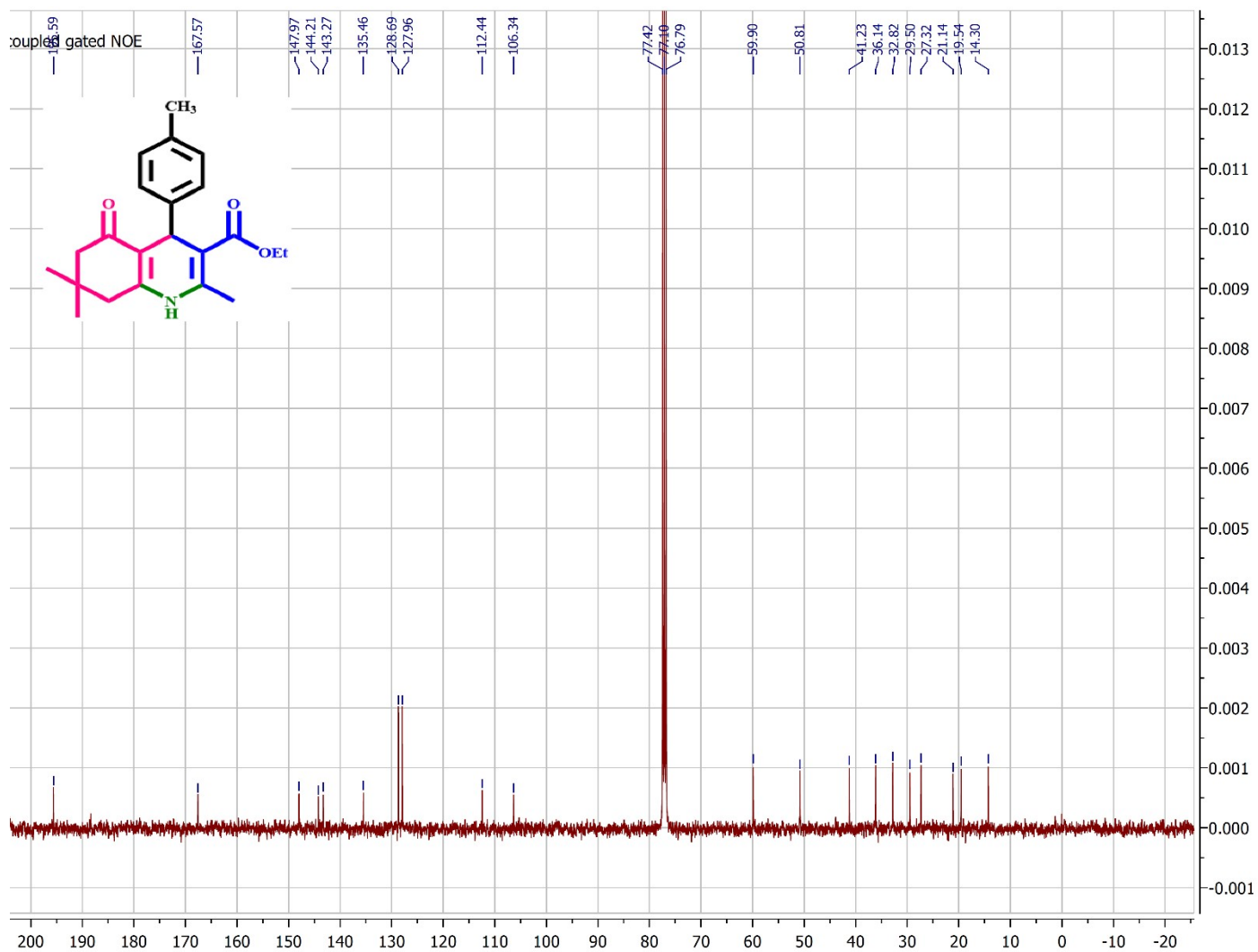
<sup>13</sup>C spectrum of Ethyl 2,7,7-trimethyl-4-(3-chlorophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4f)



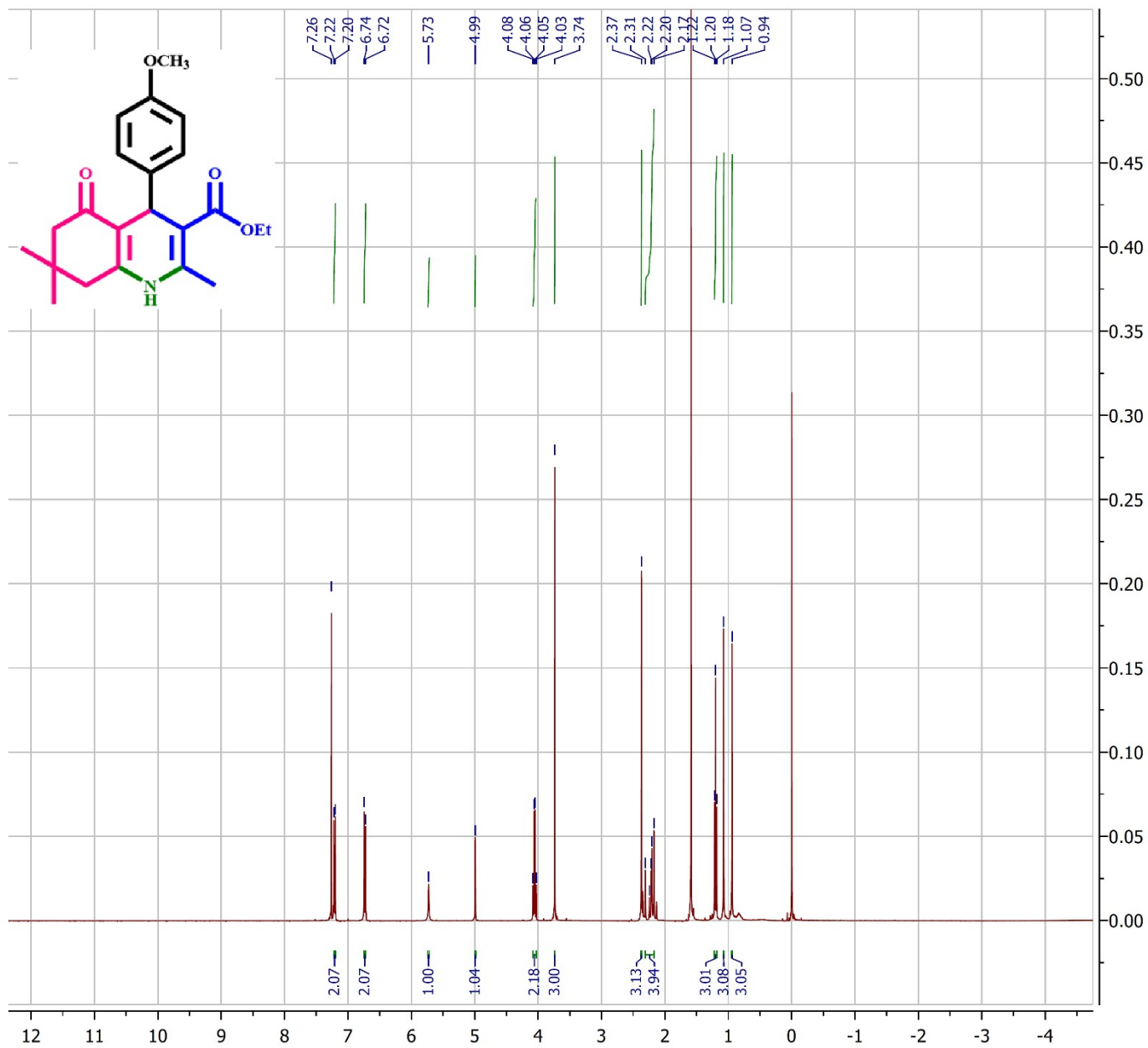
<sup>1</sup>H spectrum of Ethyl 4-(4-methylphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4g)



<sup>13</sup>C spectrum of Ethyl 4-(4-methylphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4g)



<sup>1</sup>H spectrum of Ethyl 4-(4-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4h)



<sup>13</sup>C spectrum of Ethyl 4-(4-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate (4h)

