

Supplementary Information

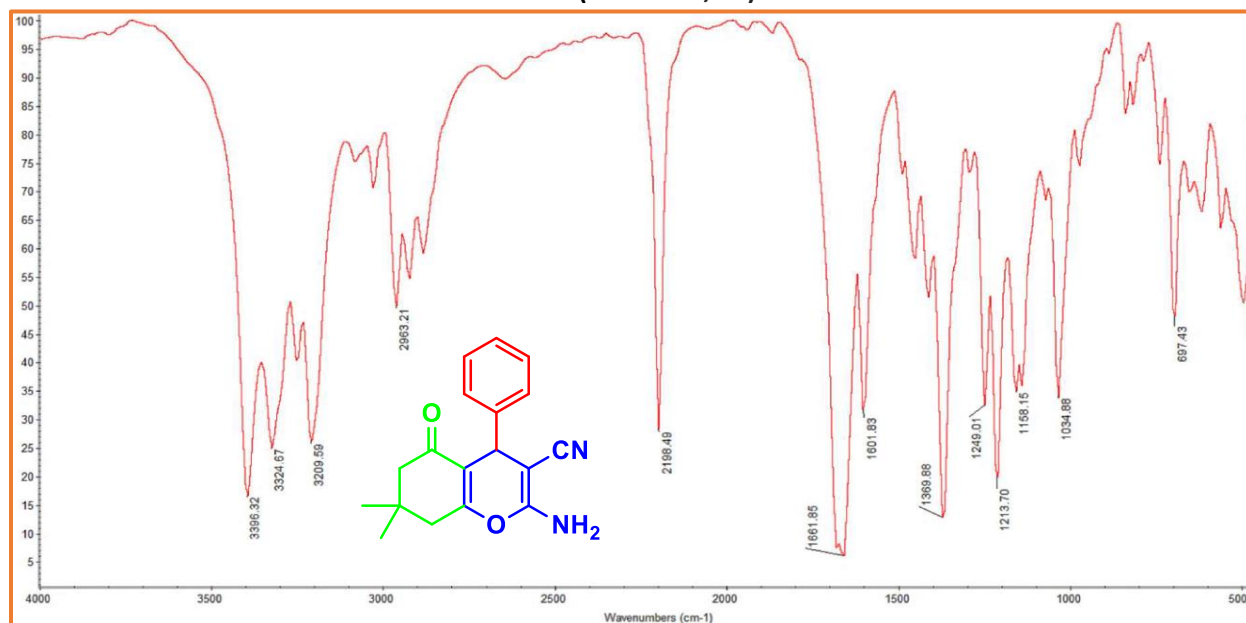
**Magnetically Recoverable Fe₃O₄@Chitosan@Ni₂B: A Bio-Based Catalyst for One-Pot
Green and Efficient Synthesis of Tetrahydrobenzo[*b*]pyrans**

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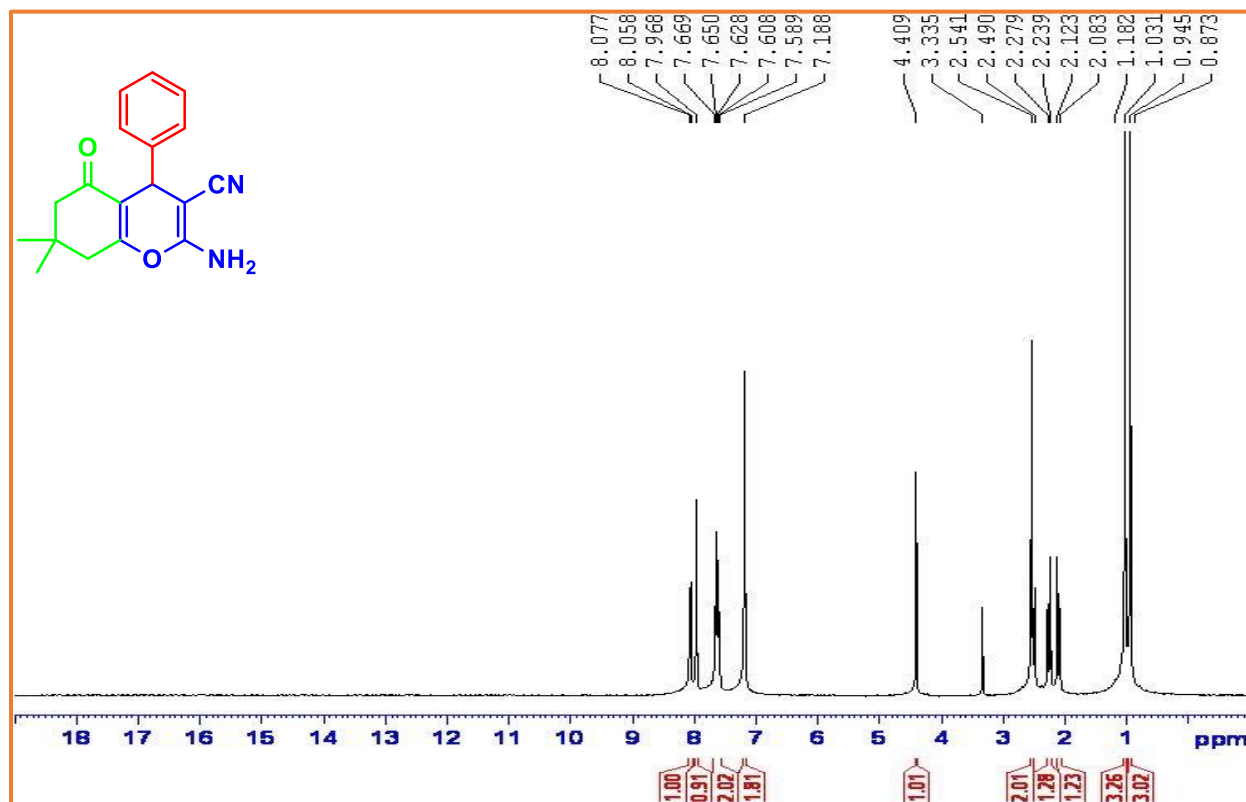
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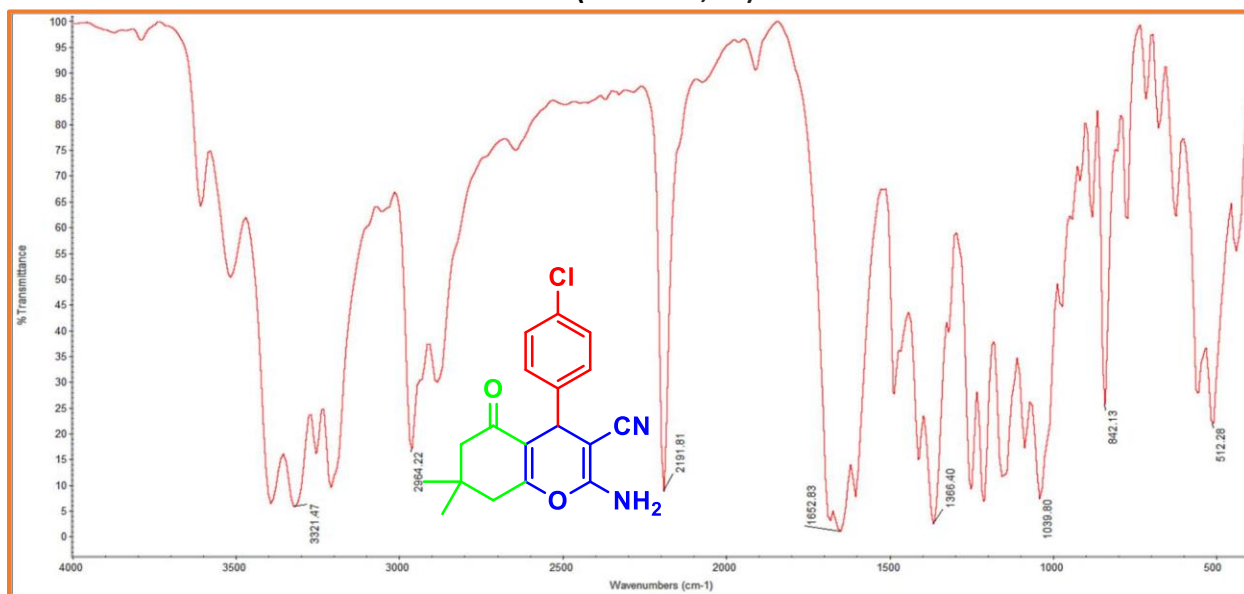
2-Amino-7,7-dimethyl-5-oxo-4-phenyl-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
FT-IR (Scheme 3, 4a)



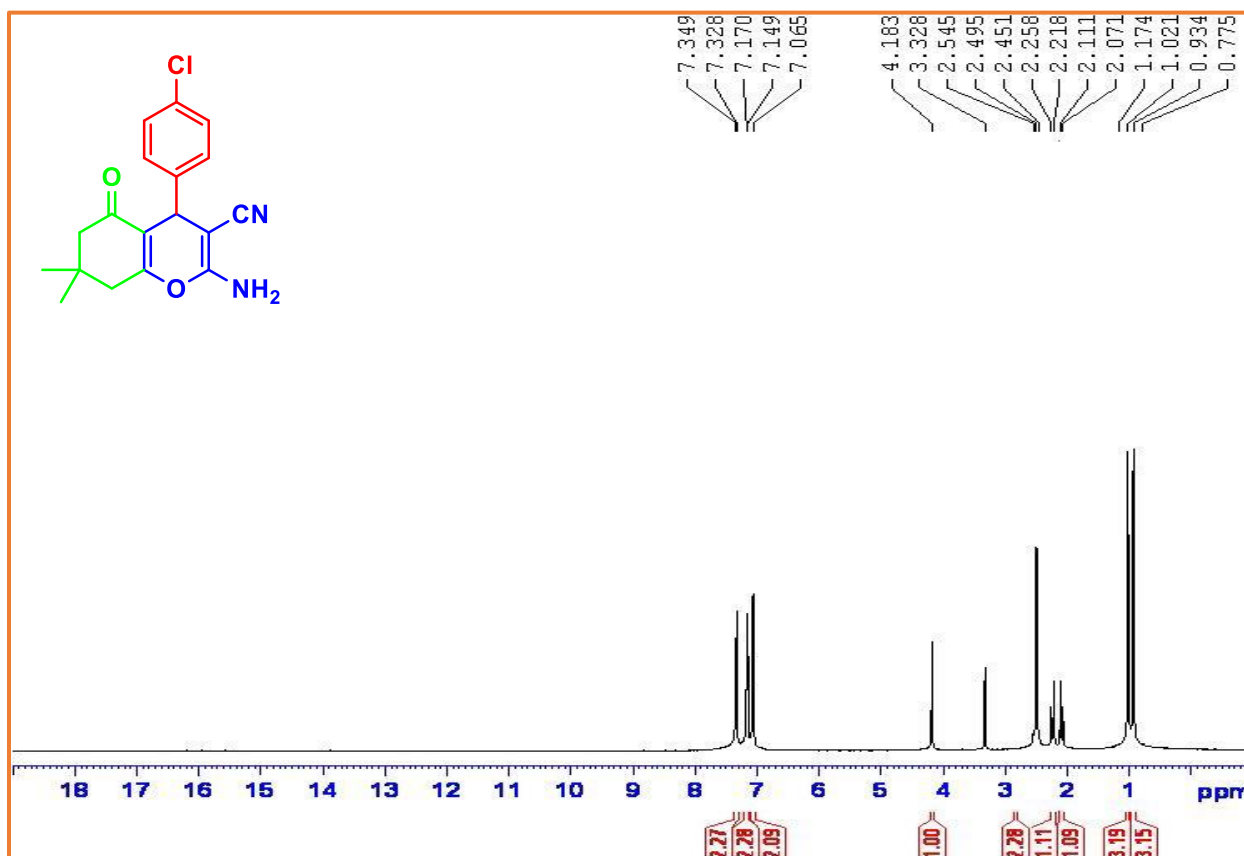
¹H NMR (Scheme 3, 4a)(DMSO)



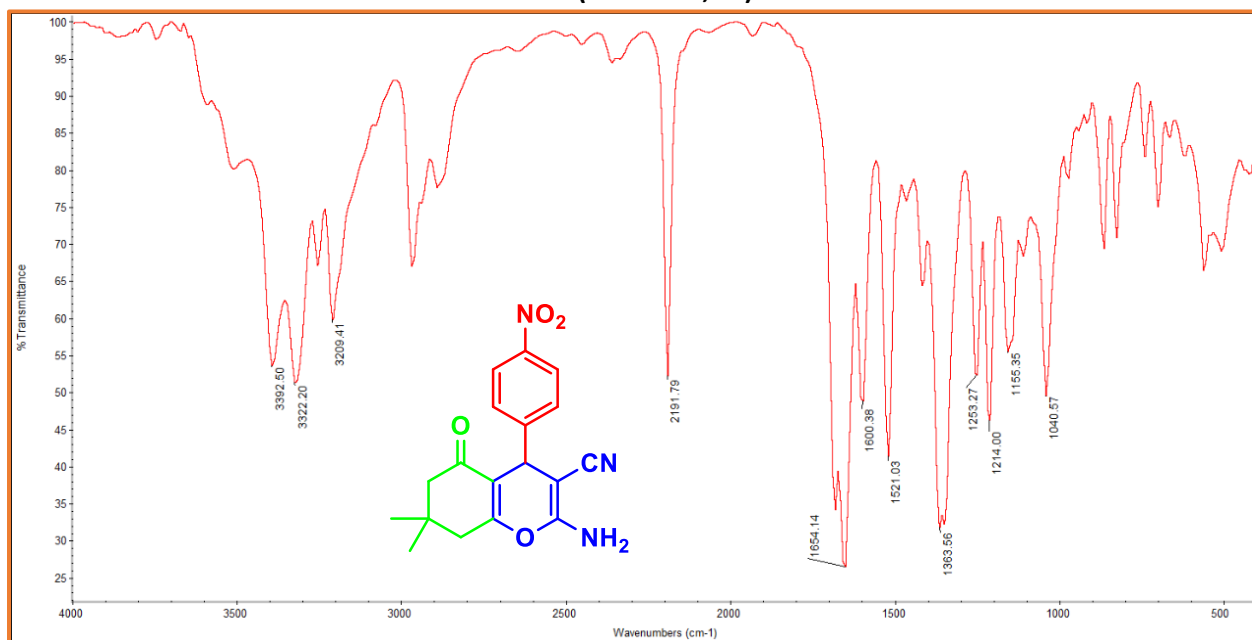
2-Amino-7,7-dimethyl-4-(4-chlorophenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
FT-IR (Scheme 3, 4b)



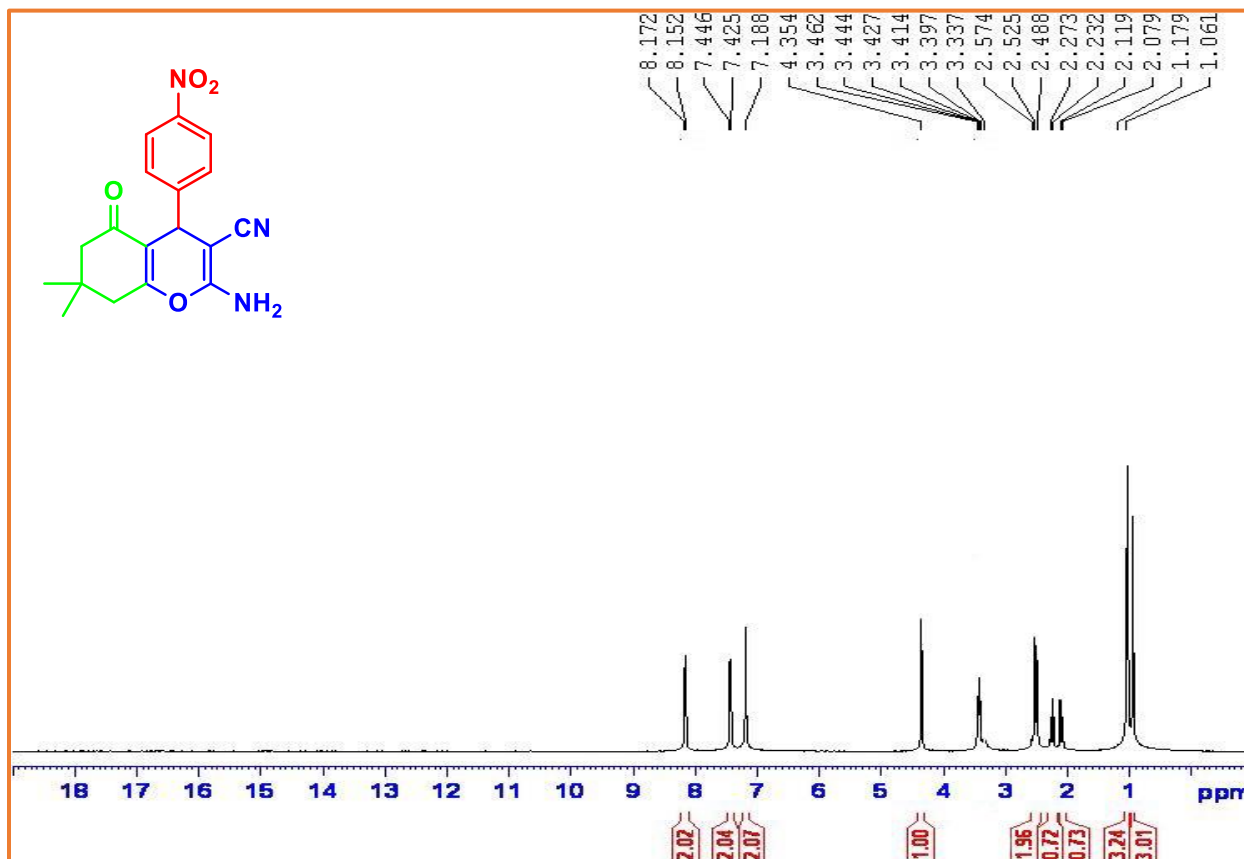
¹H NMR (Scheme 3, 4b)(DMSO)



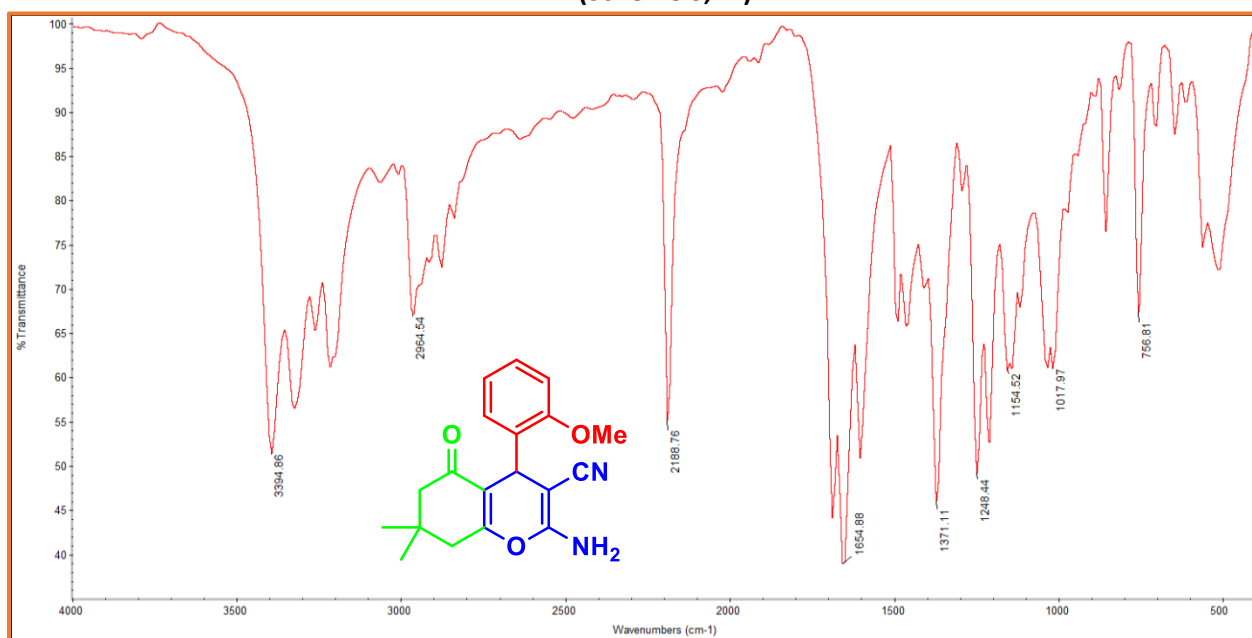
2-Amino-7,7-dimethyl-4-(4-nitrophenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
FT-IR (Scheme 3, 4c)



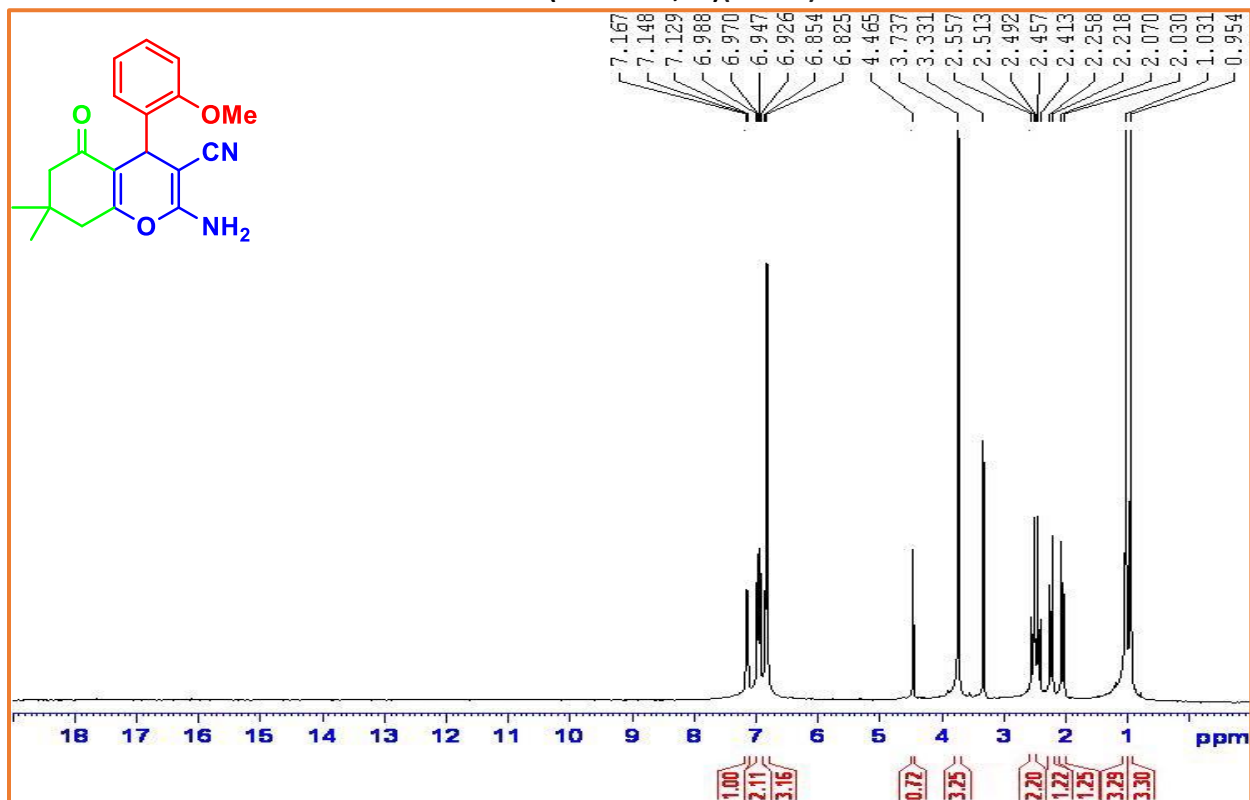
¹H NMR (Scheme 3, 4c)(DMSO)



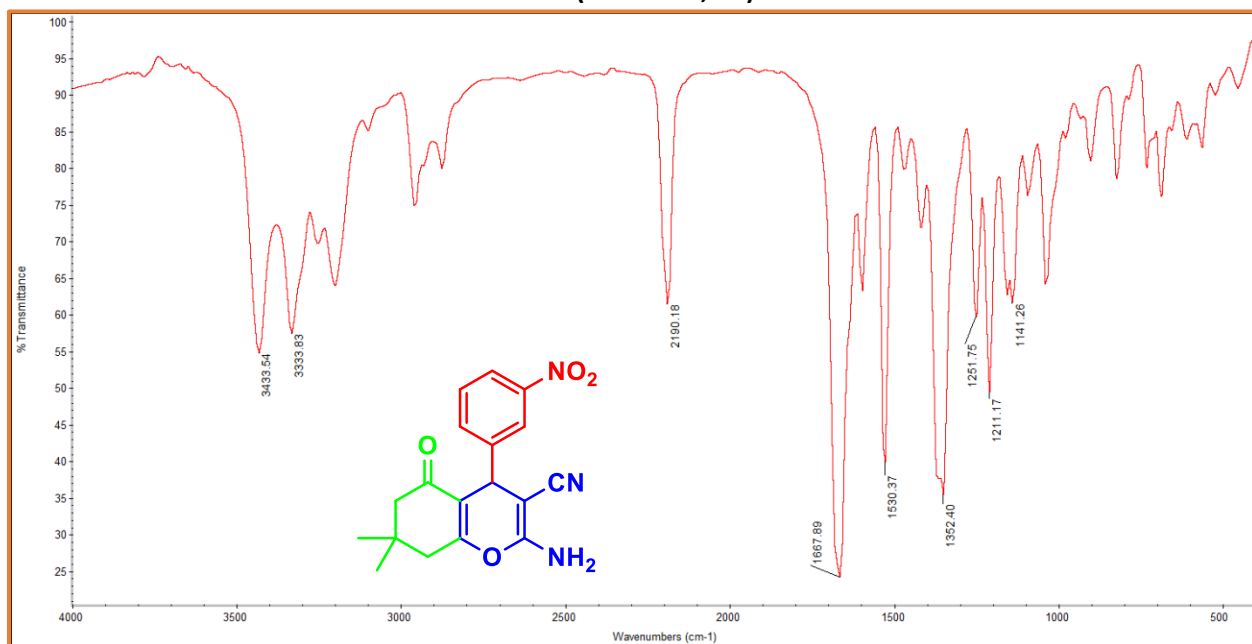
2-Amino-7,7-dimethyl-4-(2-methoxyphenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
FT-IR (Scheme 3, 4f)



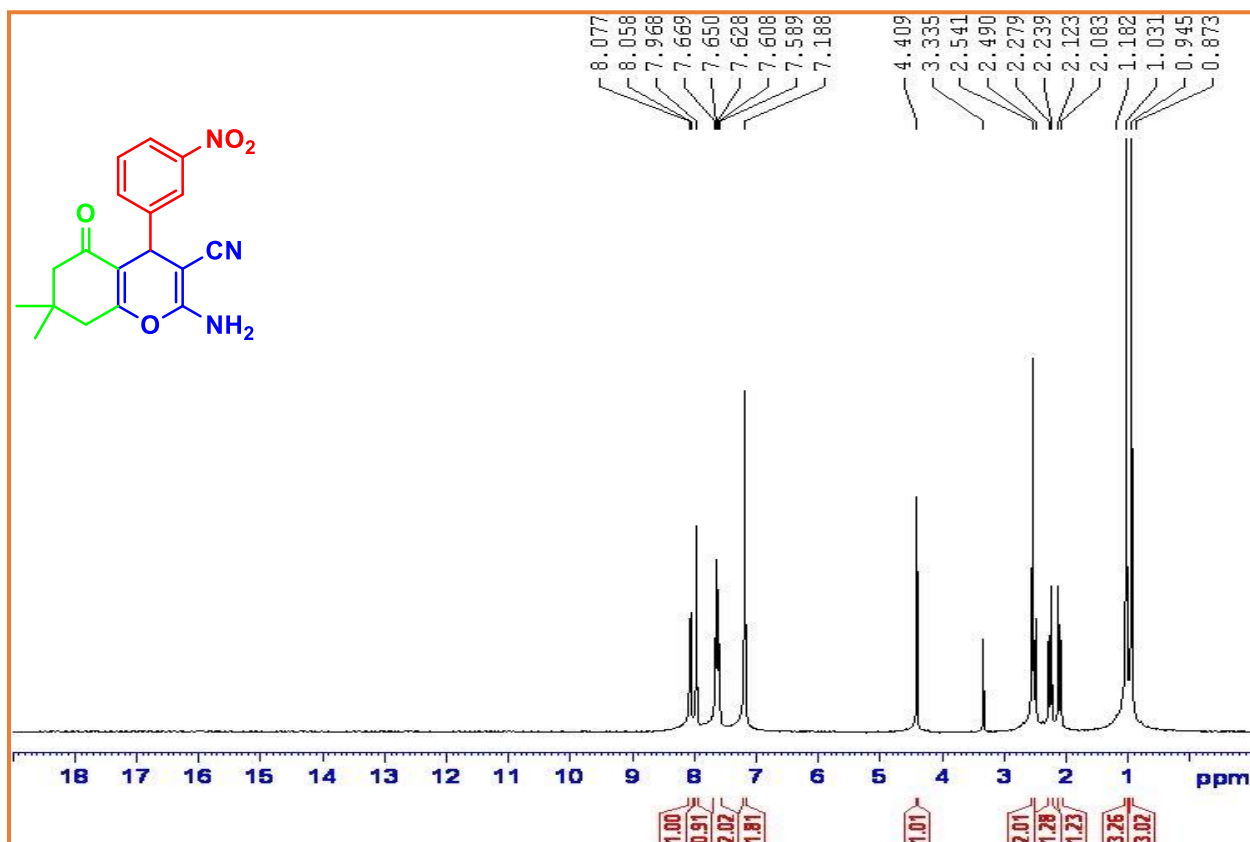
¹H NMR (Scheme 3, 4f)(DMSO)



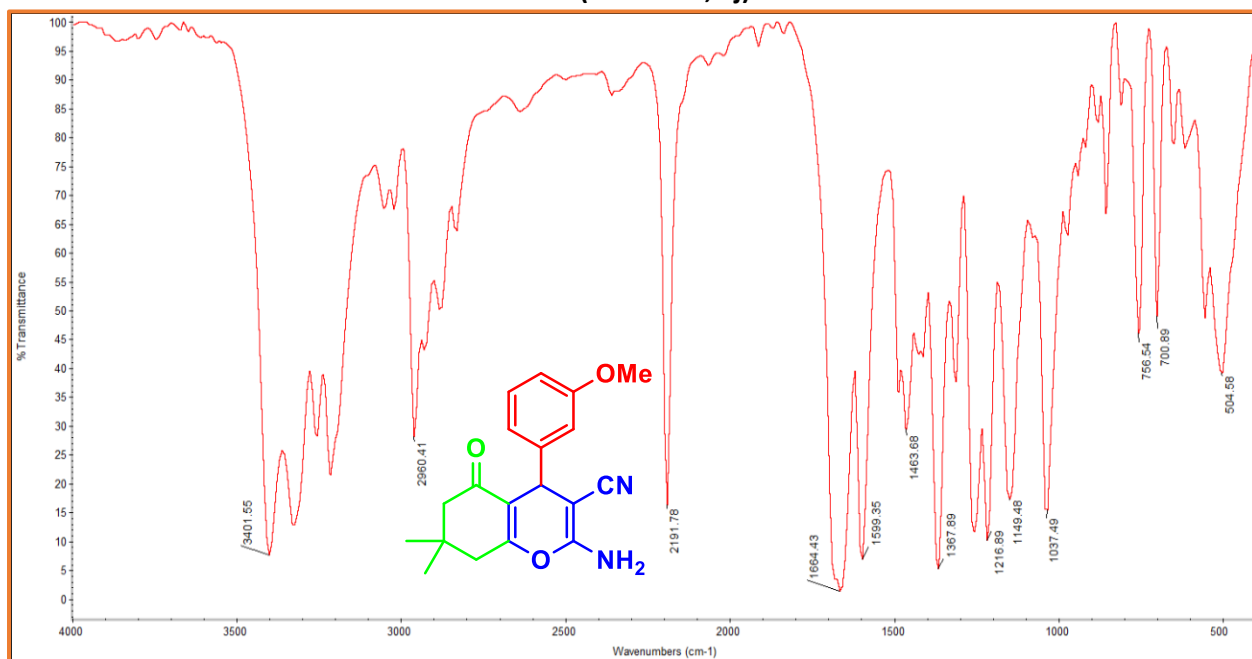
2-Amino-7,7-dimethyl-4-(3-nitrophenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
FT-IR (Scheme 3, 4h)



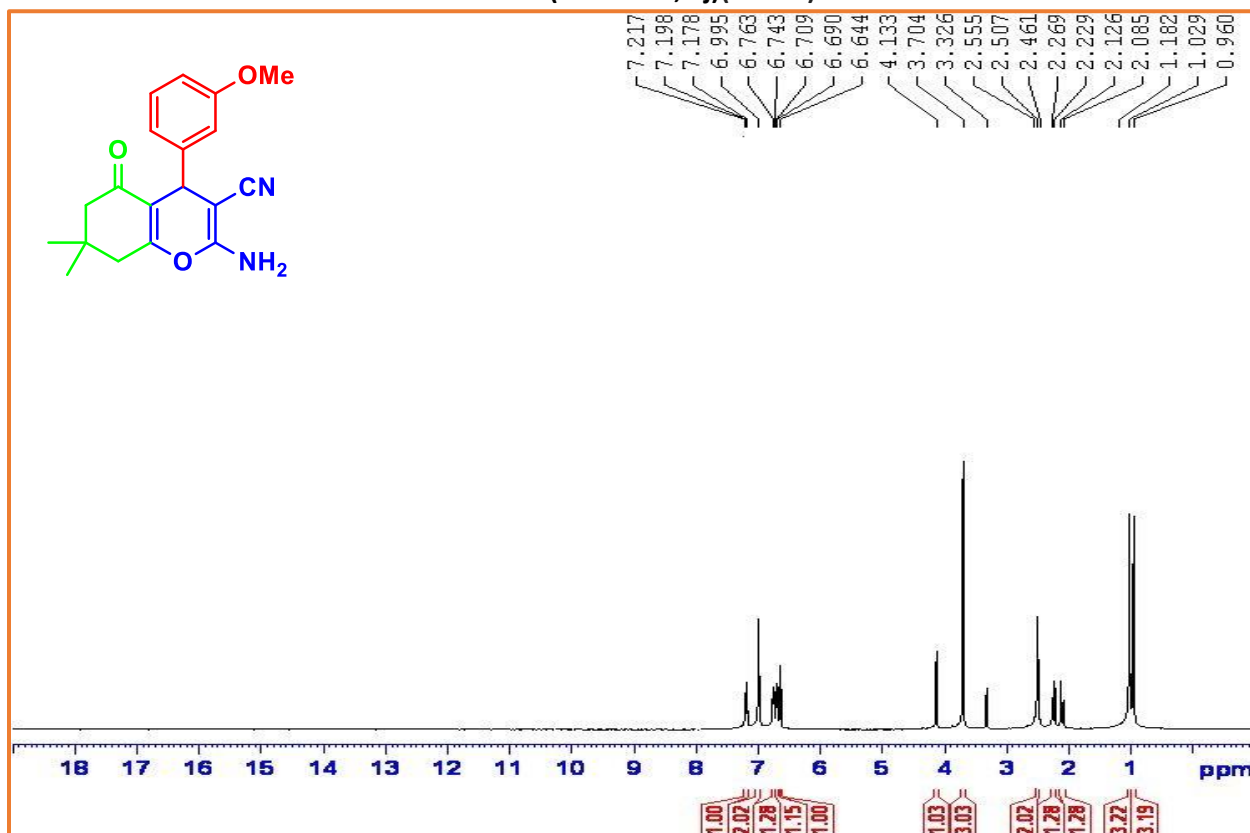
¹H NMR (Scheme 3, 4h)(DMSO)



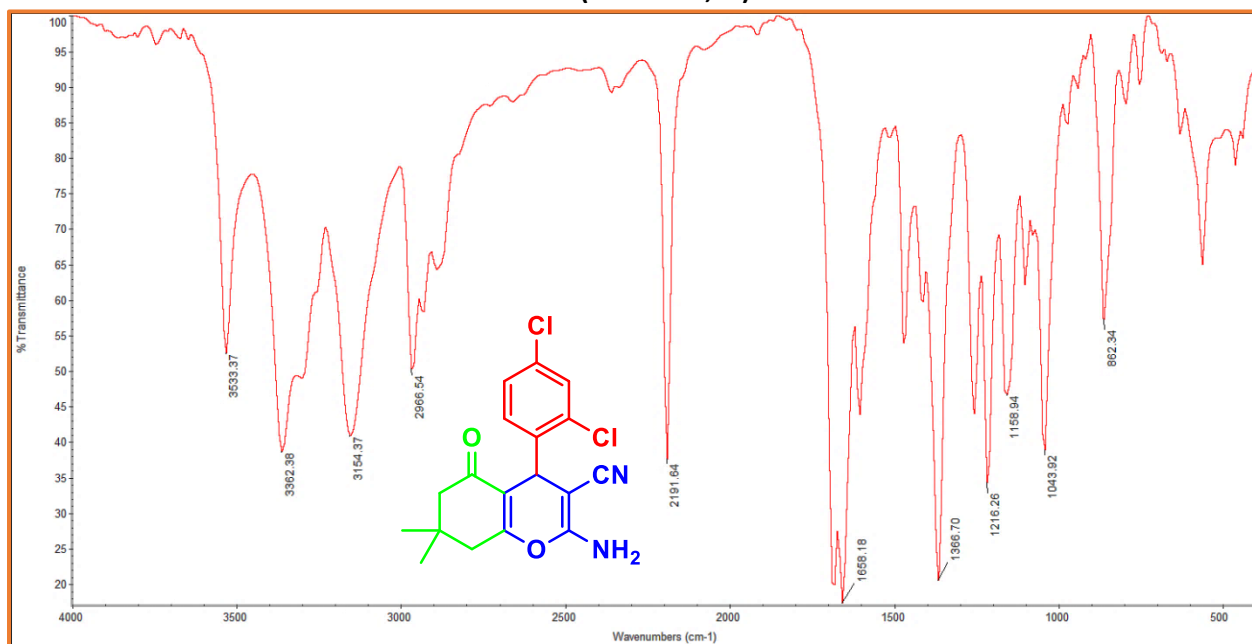
2-Amino-7,7-dimethyl-4-(3-methoxyphenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3- carbonitrile
FT-IR (Scheme 3, 4j)



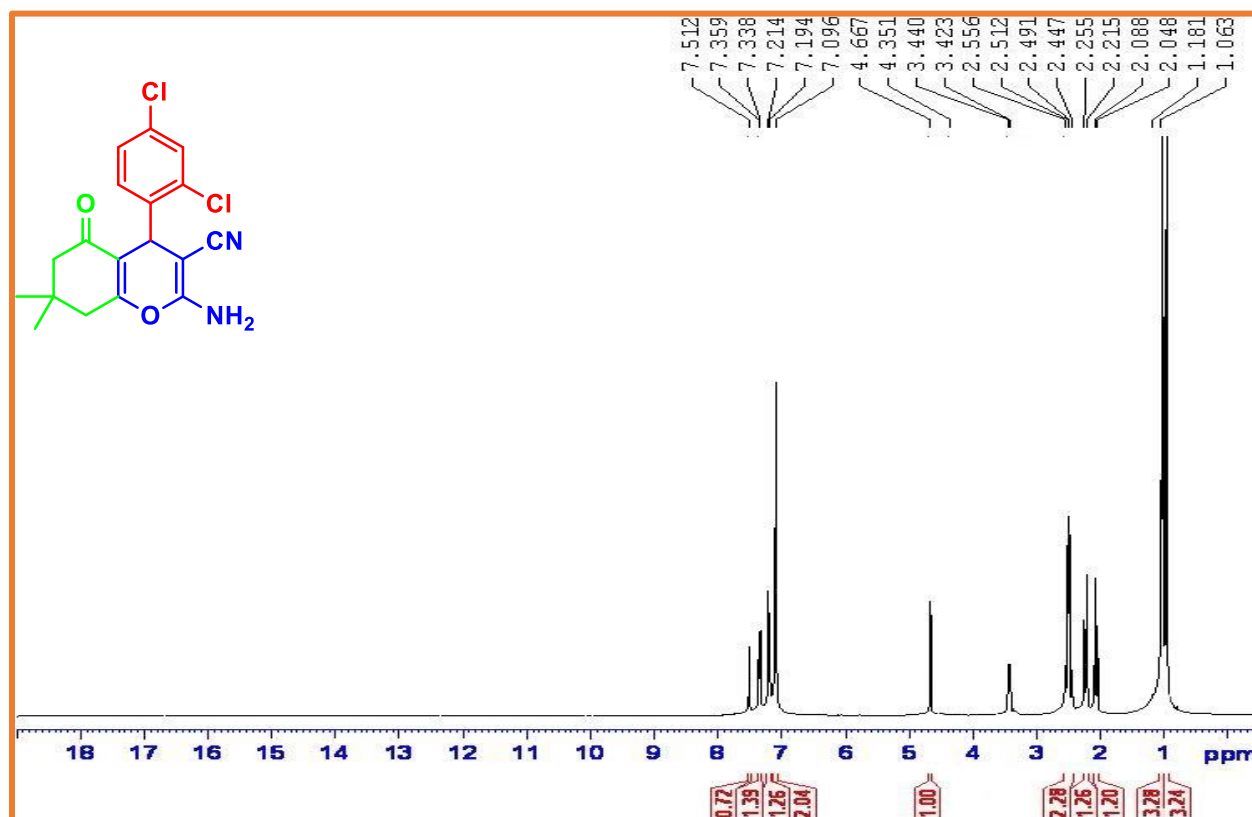
¹H NMR (Scheme 3, 4j)(DMSO)



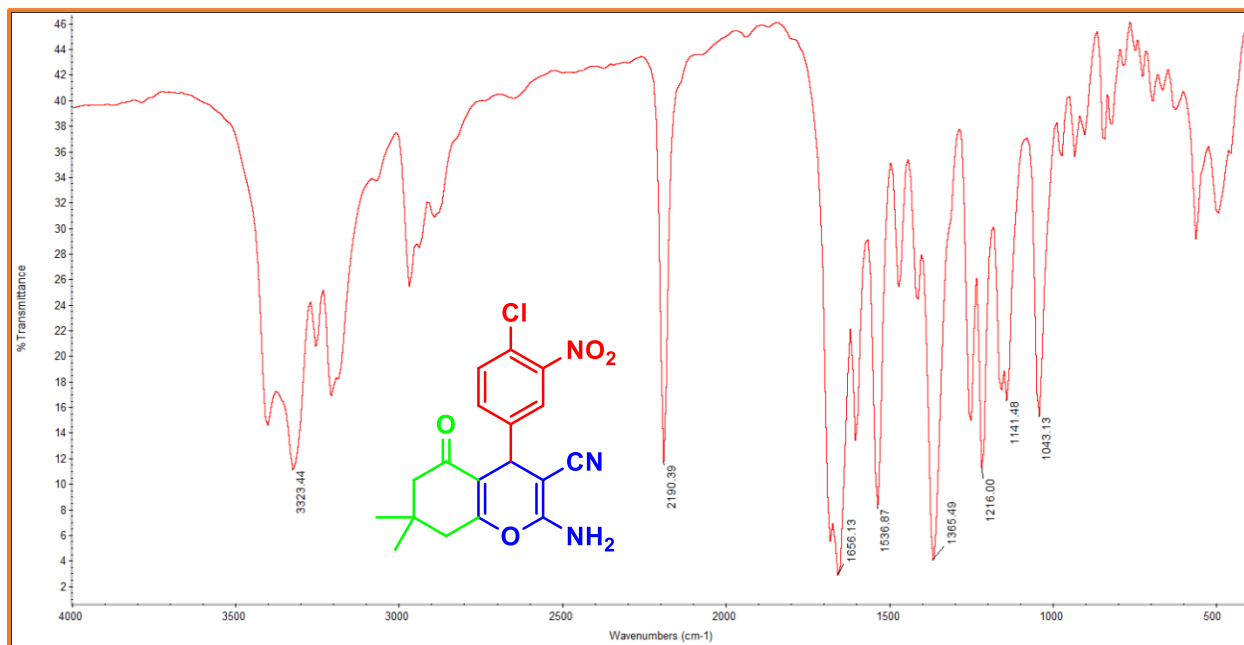
2-Amino-7,7-dimethyl-4-(2,4-dichlorophenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
FT-IR (Scheme 3, 4I)



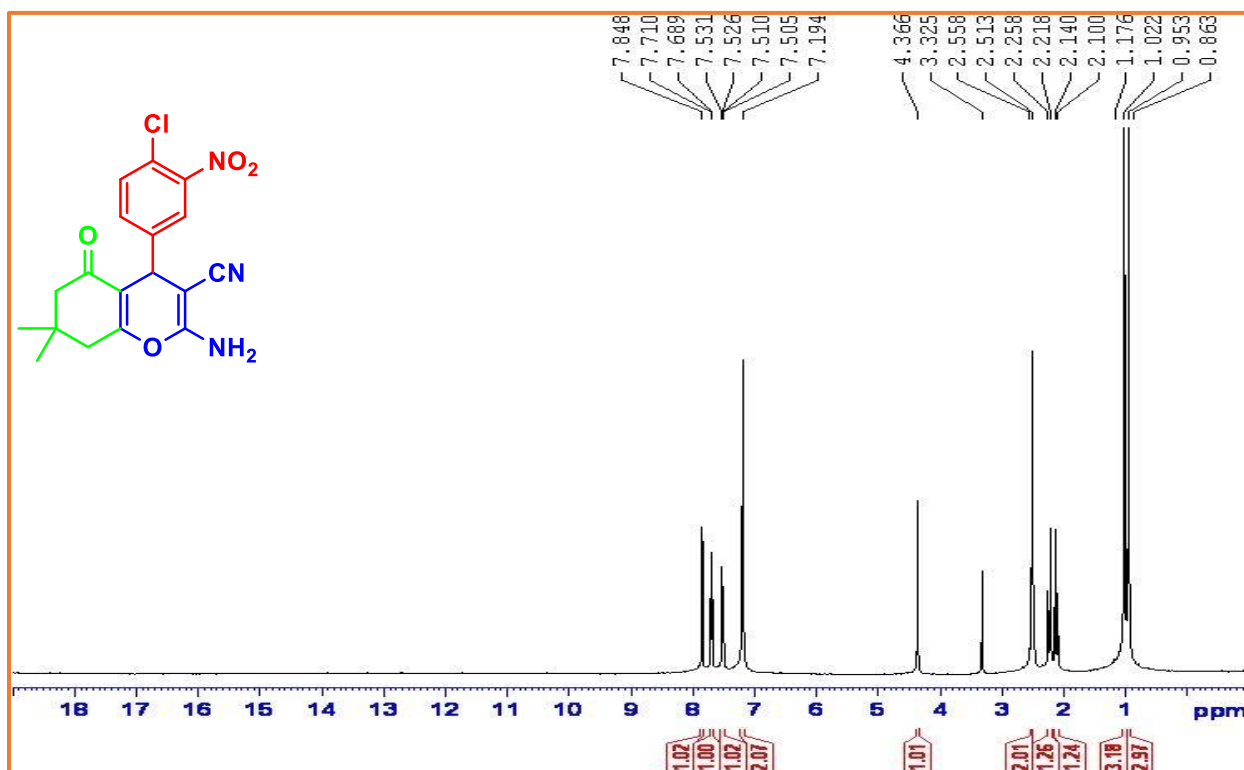
¹H NMR (Scheme 3, 4I)(DMSO)



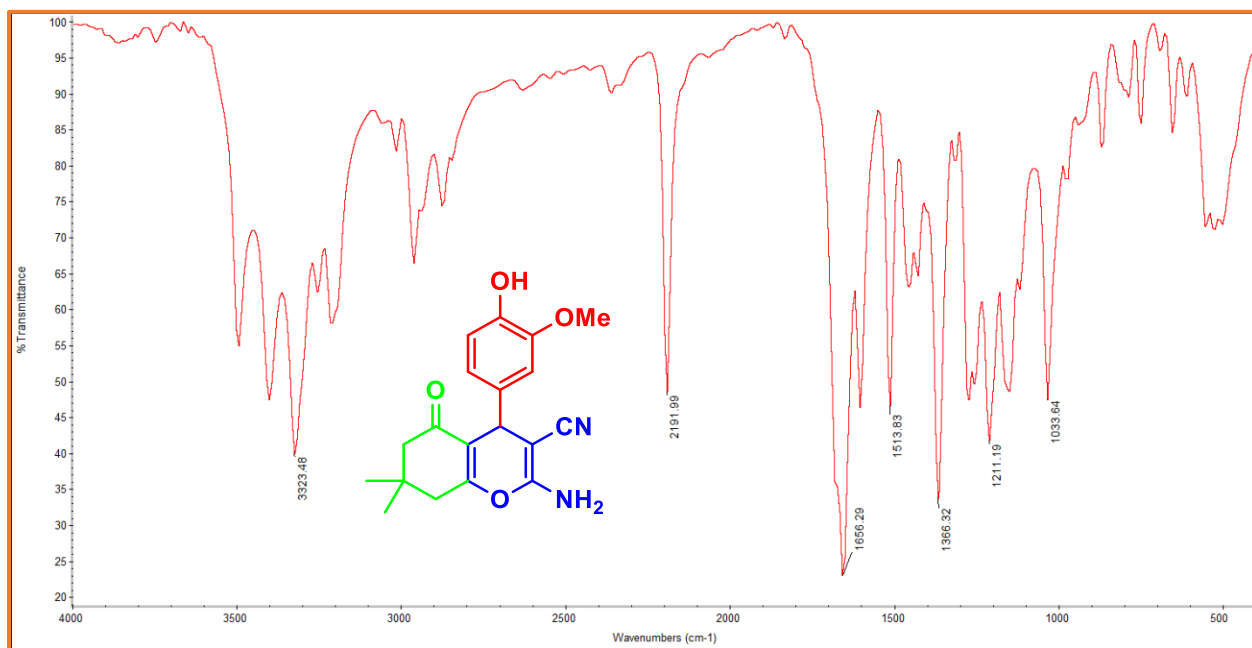
2-Amino-7,7-dimethyl-4-(4-chloro-3-nitrophenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile FT-IR (Scheme 3, 4m)



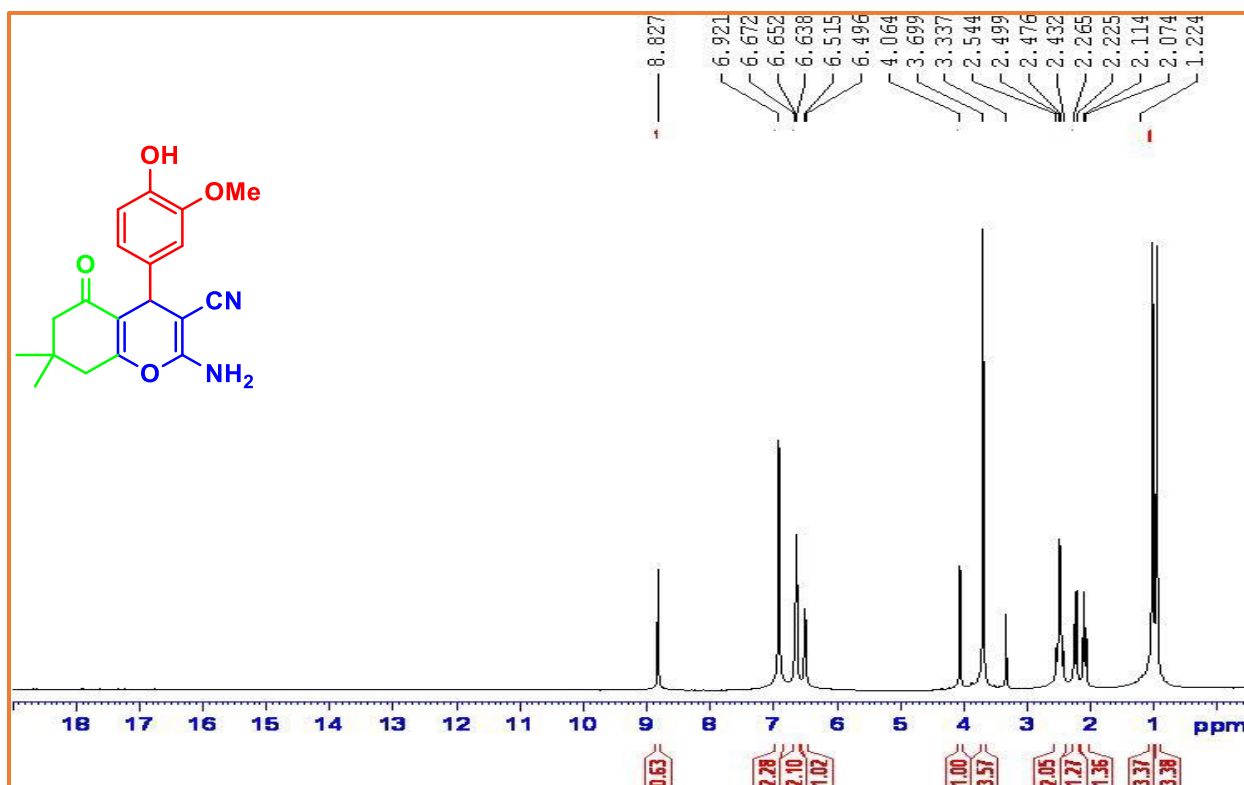
¹H NMR (Scheme 3, 4m)(DMSO)



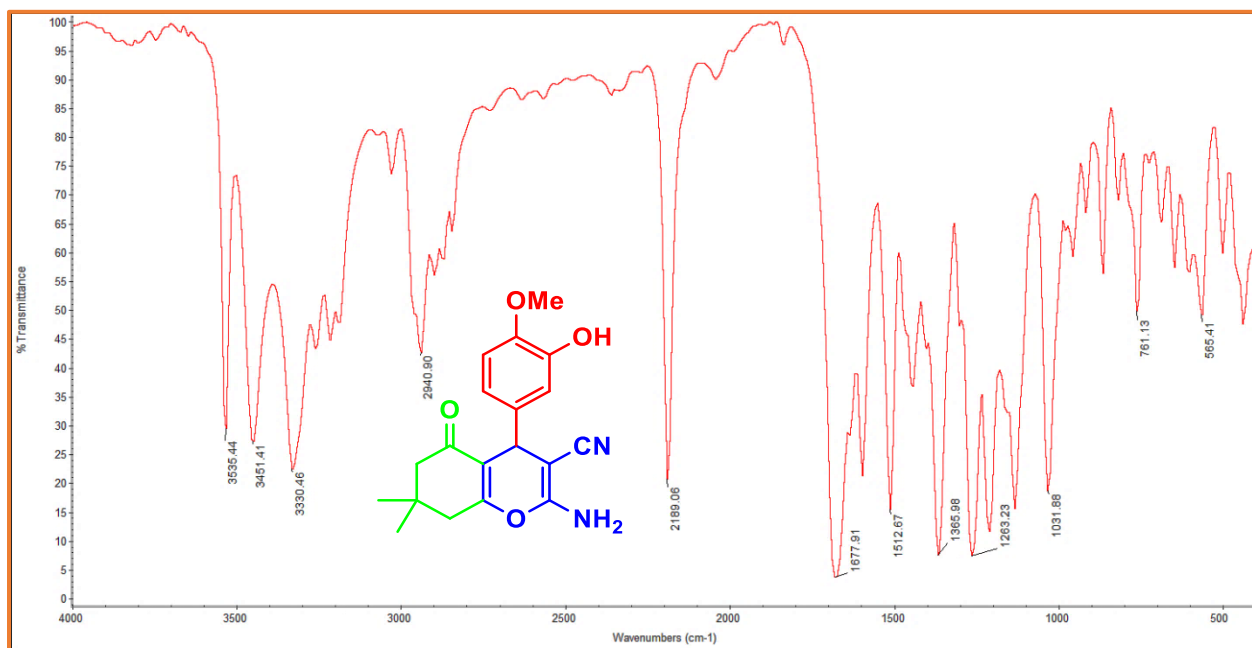
2-Amino-4-(4-hydroxy-3-methoxyphenyl)-7,7-dimethyl-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile FT-IR (Scheme 3, 4n)



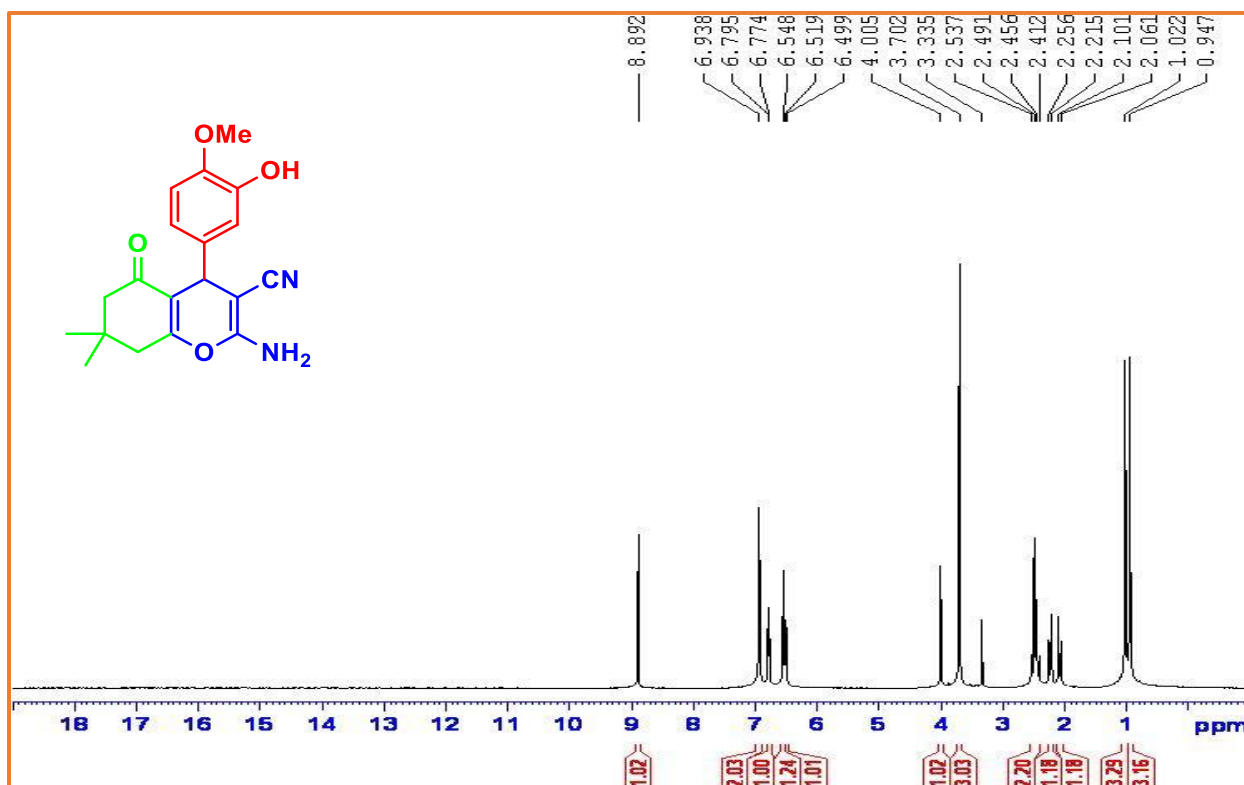
¹H NMR (Scheme 3, 4n)(DMSO)



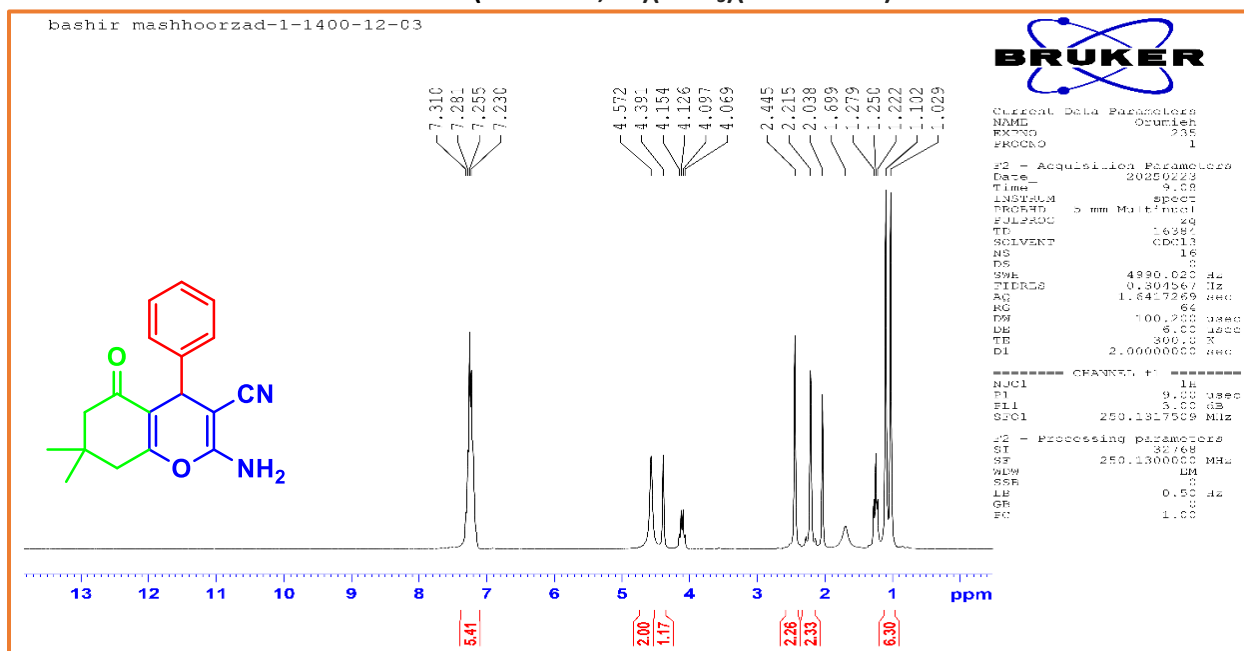
2-Amino-4-(3-hydroxy-4-methoxyphenyl)-7,7-dimethyl-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile FT-IR (Scheme 3, 4o)



¹H NMR (Scheme 3, 4o)(DMSO)



2-Amino-7,7-dimethyl-5-oxo-4-phenyl-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
¹H NMR (Scheme 3, 4a)(CDCl₃)(after 5 runs)



2-Amino-7,7-dimethyl-4-(3-nitrophenyl)-5-oxo-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile
¹H NMR (Scheme 3, 4h)(CDCl₃)(after 5 runs)

