

Supplementary Information for

Electrochemical synthesis of some 2-aminobenzofuran-3-carbonitrile and 2-aminobenzofuran-3-carboxylate derivatives: Product diversity by changing the applied current density †

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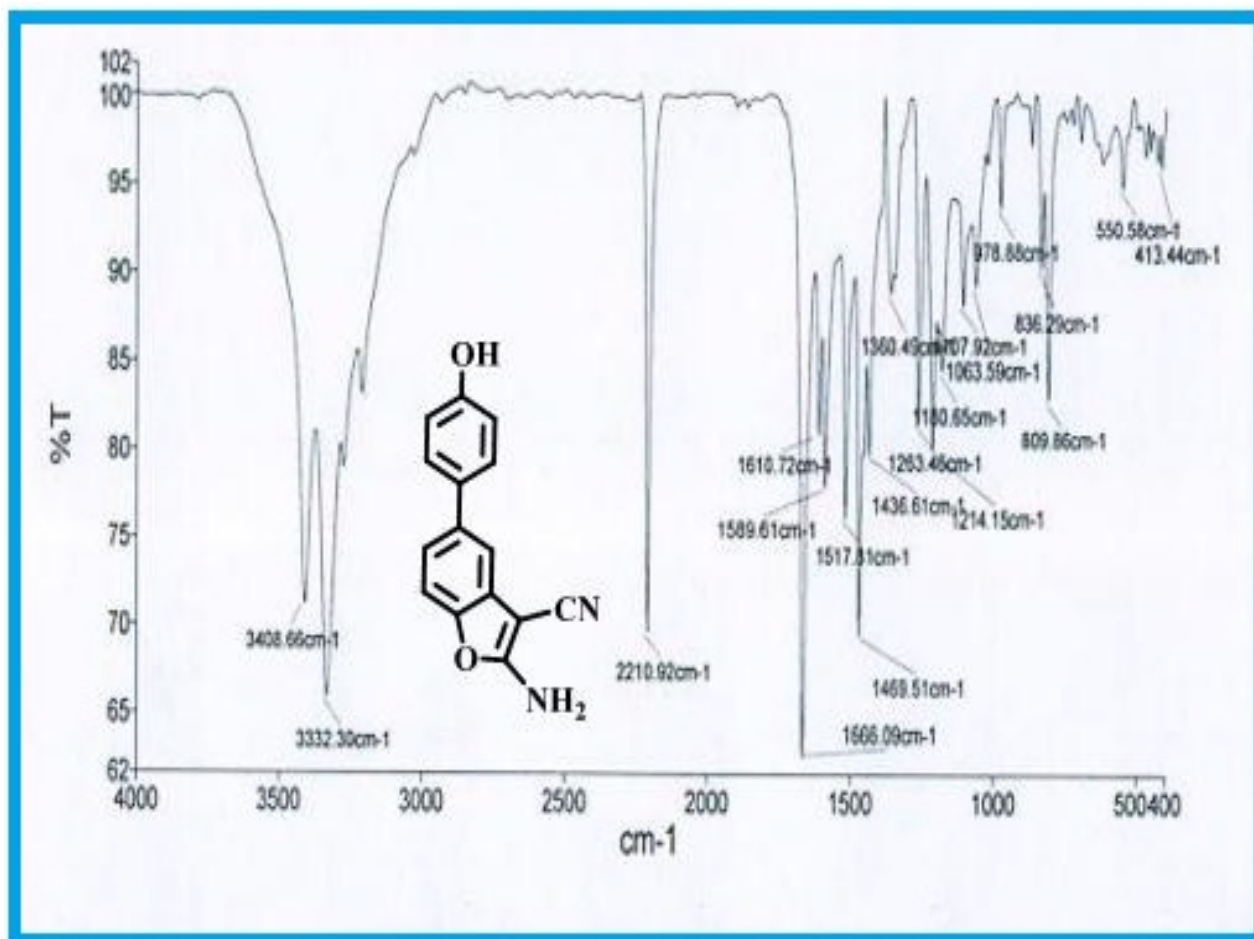
Control experiments: We initiated our studies by using **4BP** and **1b** in aqueous media, as model substrates to identify the optimized reaction conditions. As shown in Table below, when constant current electrolysis (CCE) of **4BP** and **1b** was performed in carbonate buffer (0.2M, pH= 9.0)/ ethanol (50:50) and at the current density 0.6 mA cm⁻² (**3b**) and 1.2 mA cm⁻² (**4b**), the desired products **3b** and **4b** were isolated on the best yield 90-95% yield (entry 4). Therefore, the following optimization experiments were carried out under this condition.

Table S1. Optimization for the synthesis of 3b and 4b.

Entry	Solvent	Yield (%) 3b			
		0.3 mA/cm ²	0.6 mA/cm ²	1.0 mA/cm ²	1.2 mA/cm ²
1	Phosphate buffer solution (0.2 M, pH=5.0)	20	25	Trace	Trace
2	Phosphate buffer solution (0.2 M, pH=7.0)	40	60	30	Trace
3	Carbonate buffer solution (0.2 M, pH=9.0)	60	75	20	20
4	Carbonate buffer (0.2M, pH=9.0) / Ethanol mixture (50:50)	80	95	30	15

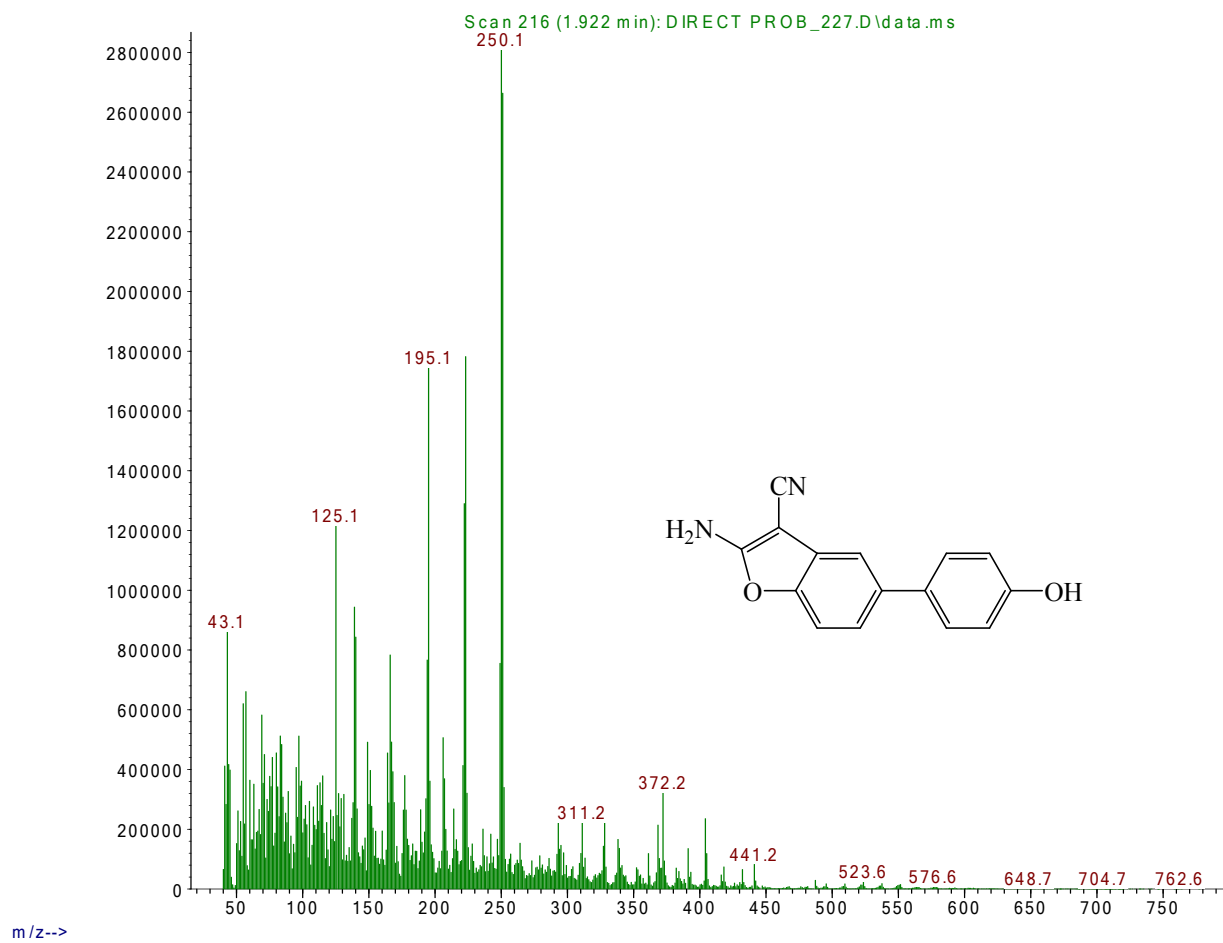
Entry	Solvent	Yield (%) 4b			
		0.6 mA/cm ²	1.0 mA/cm ²	1.2 mA/cm ²	1.5 mA/cm ²
1	Phosphate buffer solution (0.2 M, pH=5.0)	Trace	Trace	30	20
2	Phosphate buffer solution (0.2 M, pH=7.0)	Trace	30	40	30
3	Carbonate buffer solution (0.2 M, pH=9.0)	10	60	70	50
4	Carbonate buffer (0.2M, pH=9.0) / Ethanol mixture (50:50)	20	80	90	75

FT-IR spectrum of 3a

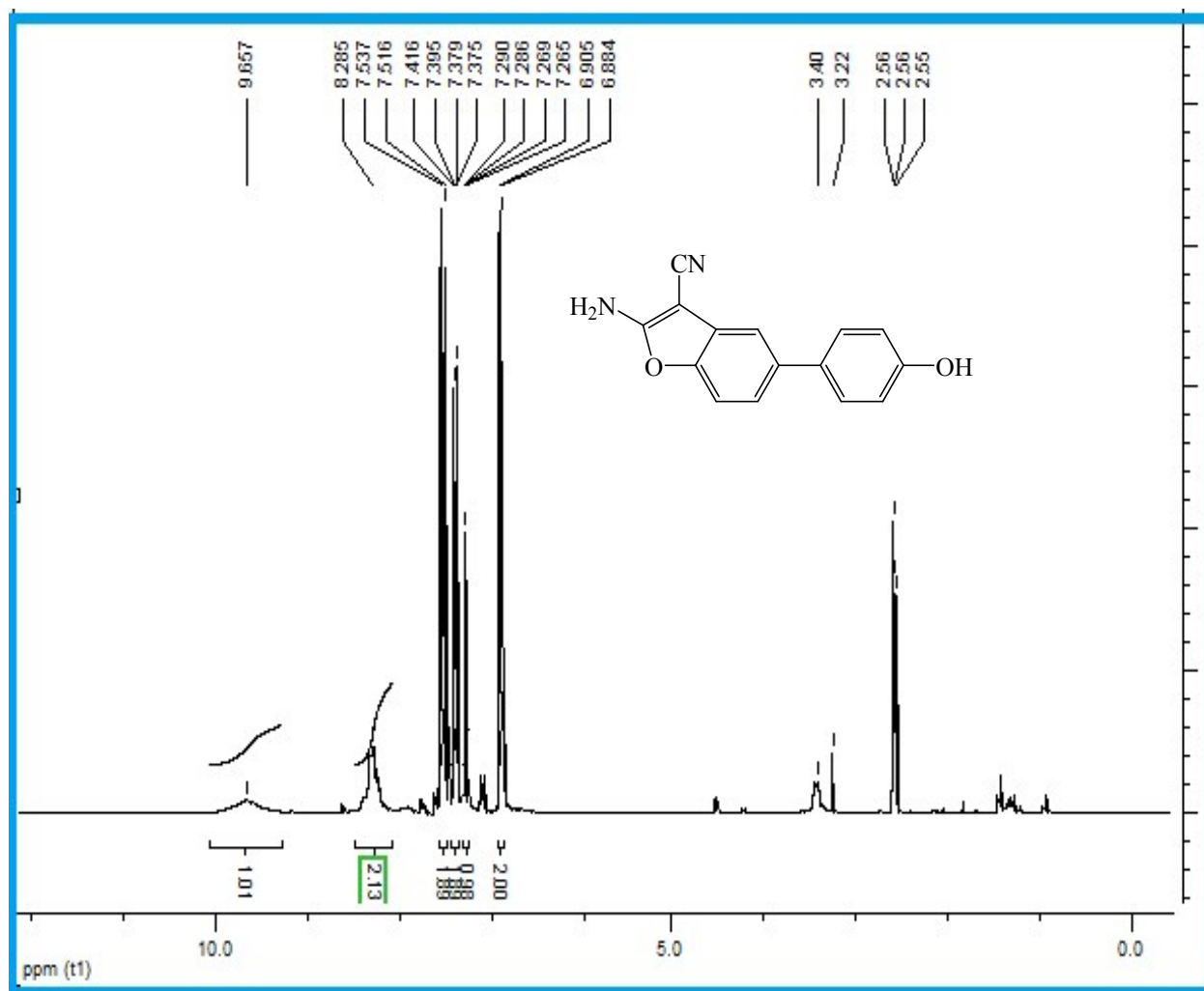


MS spectrum of 3a

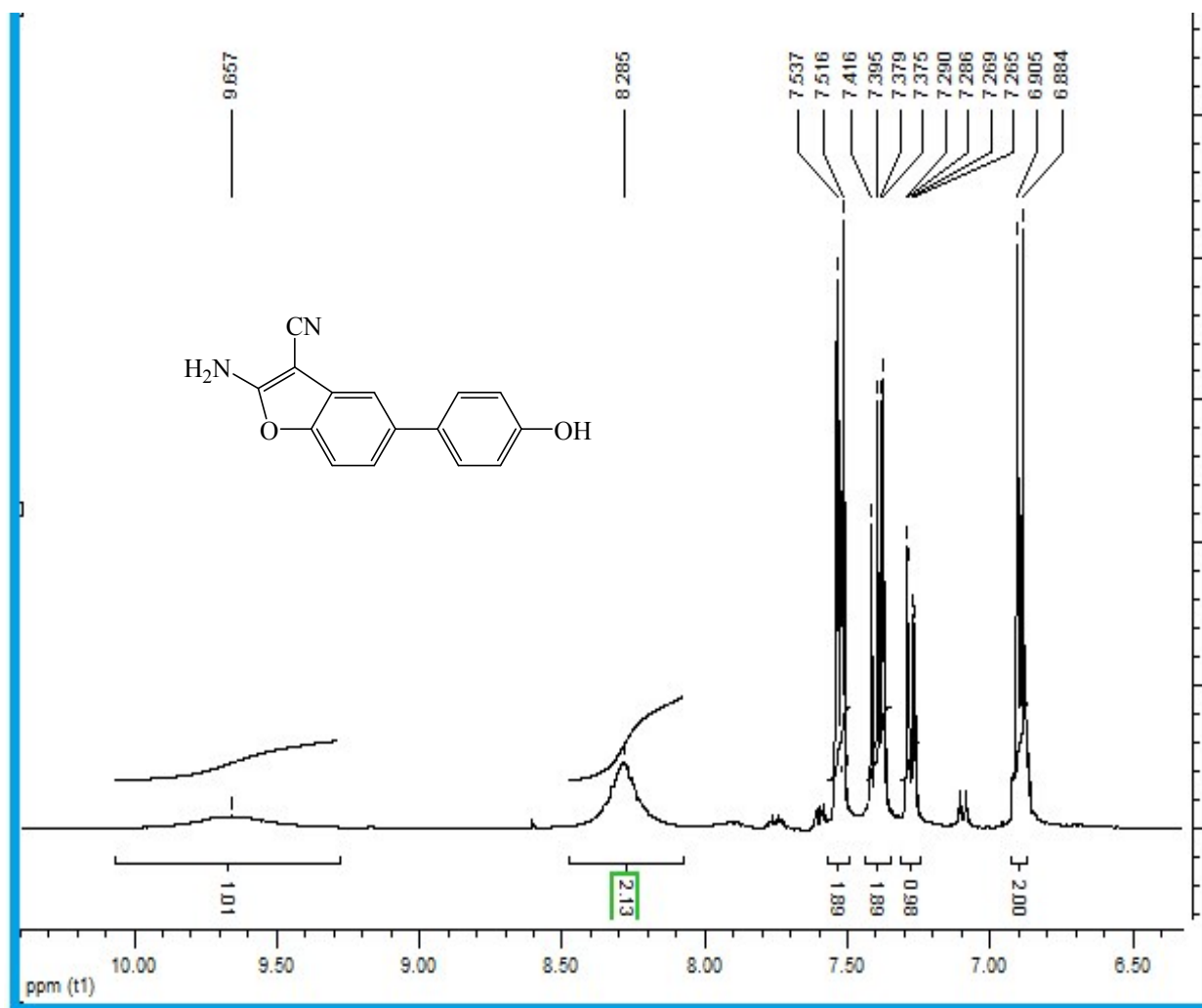
Abundance



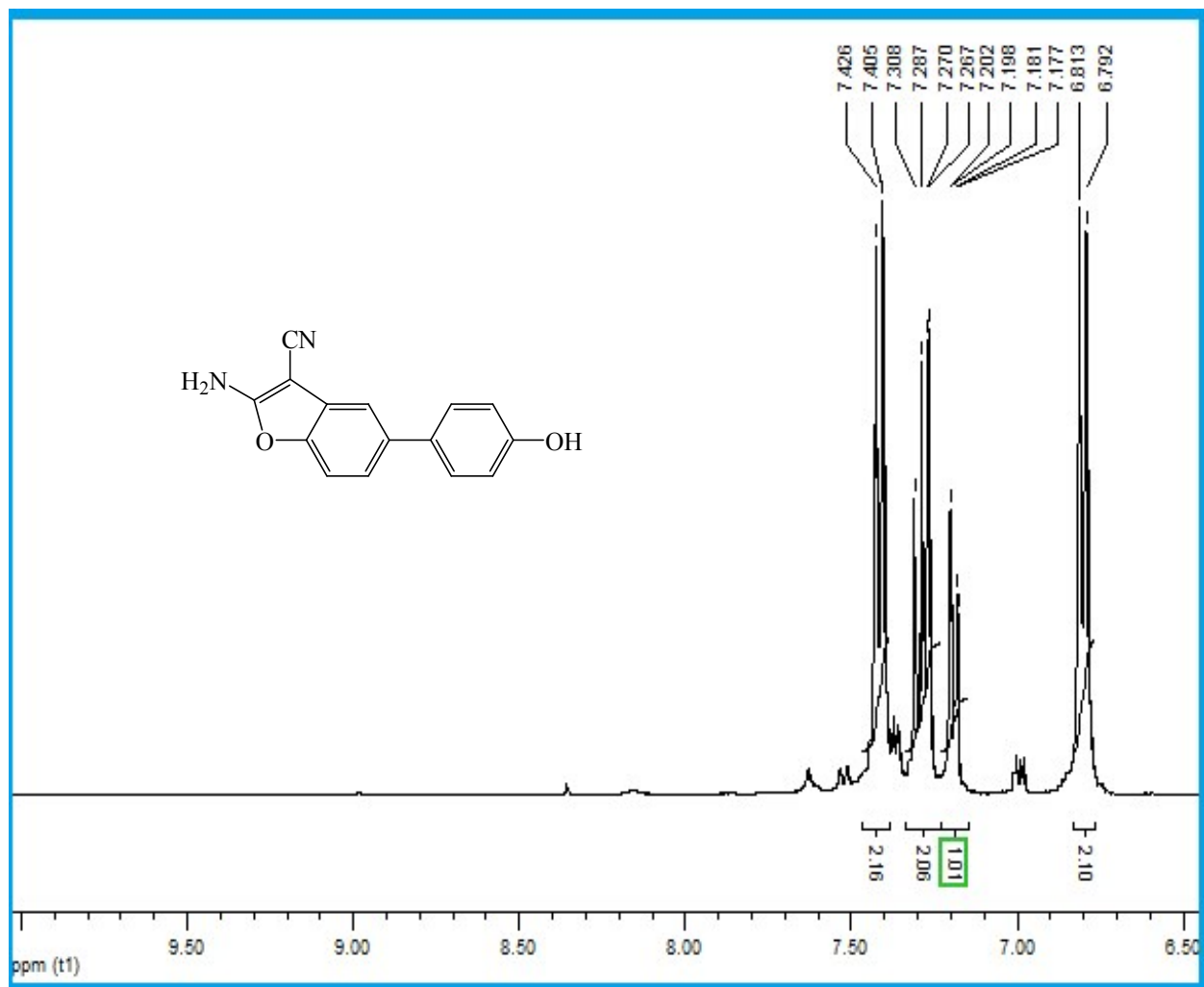
¹H NMR spectrum of 3a



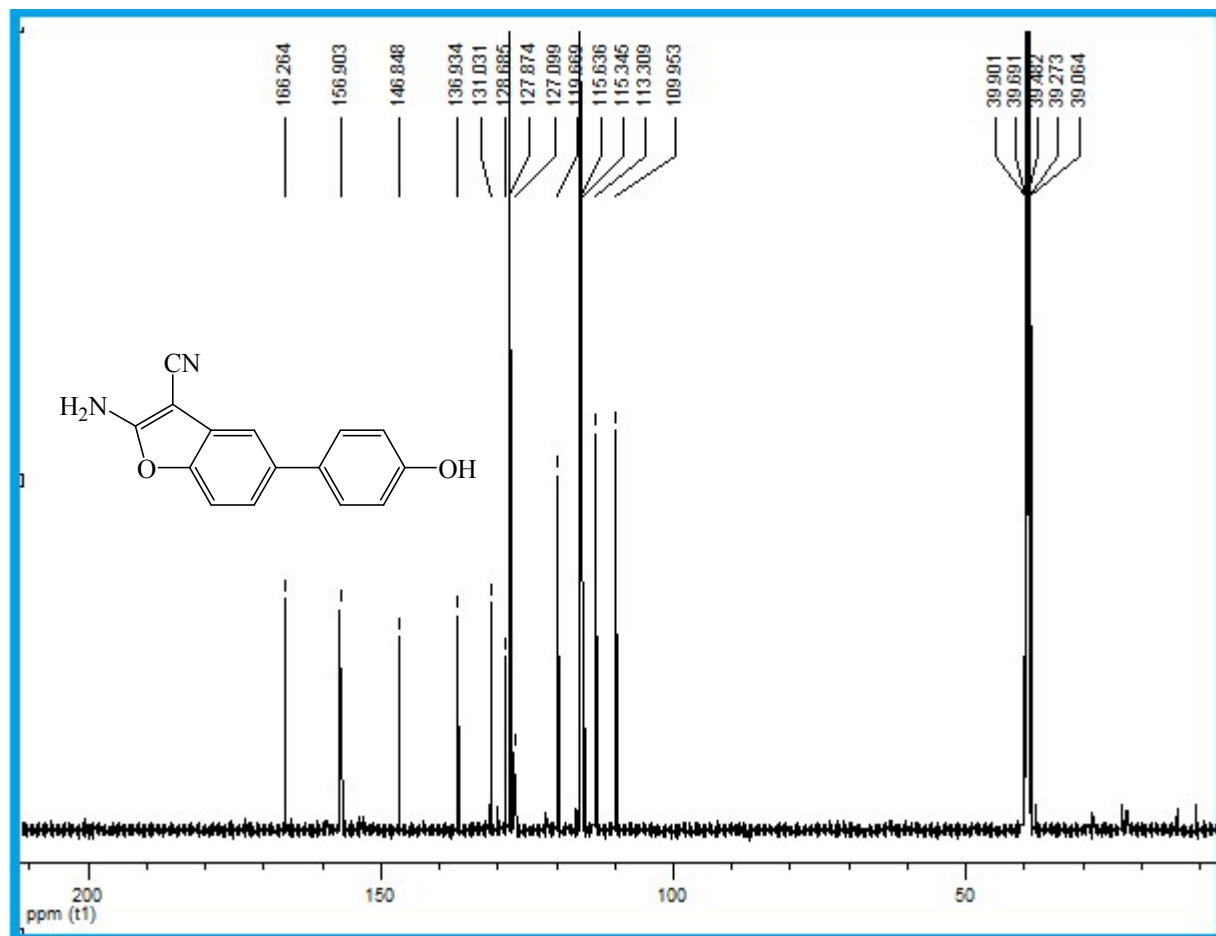
Expanded ¹H NMR spectrum of 3a



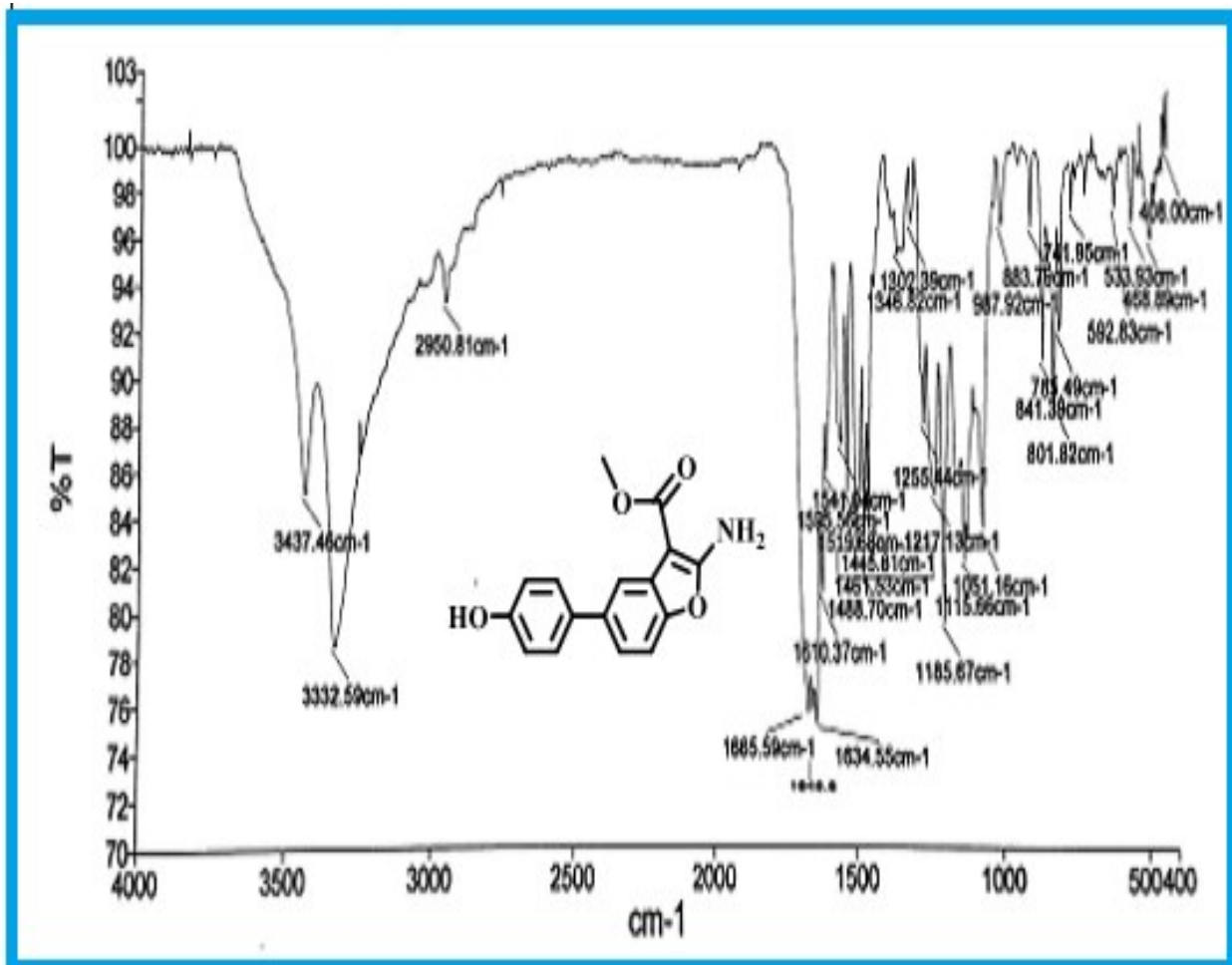
¹H NMR spectrum of 3a (with D₂O)



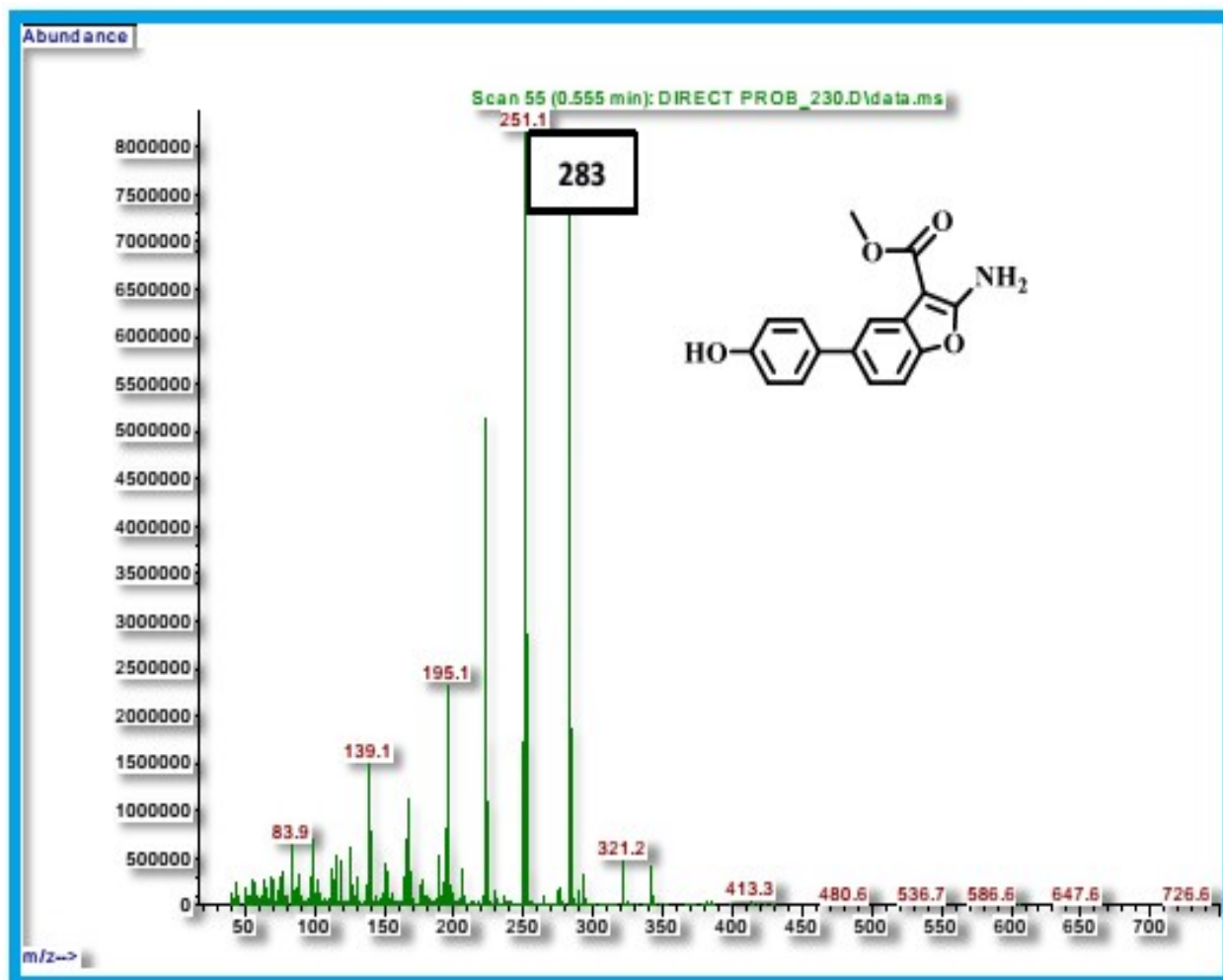
¹³C NMR spectrum of 3a



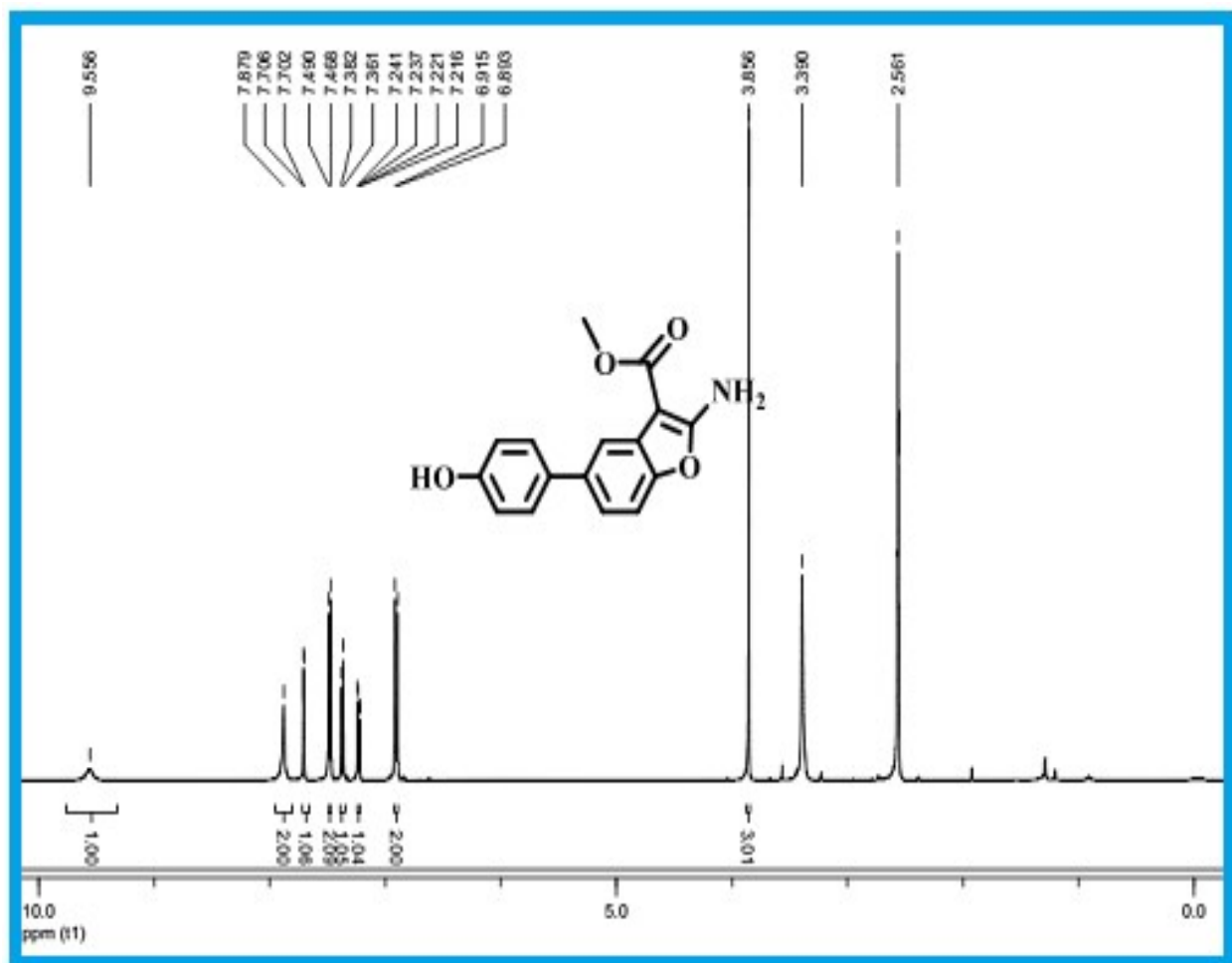
FT-IR spectrum of 3b



MS spectrum of 3b



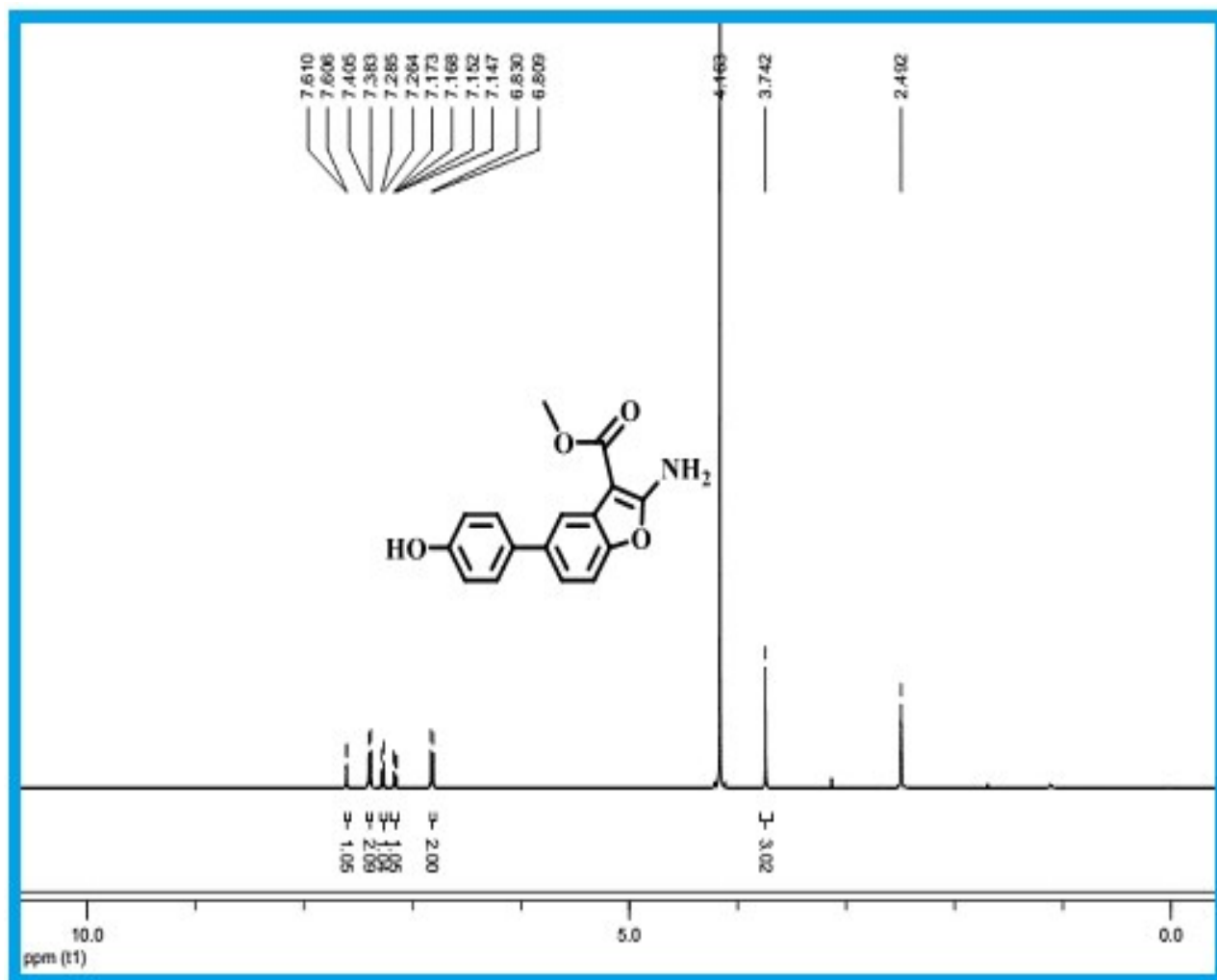
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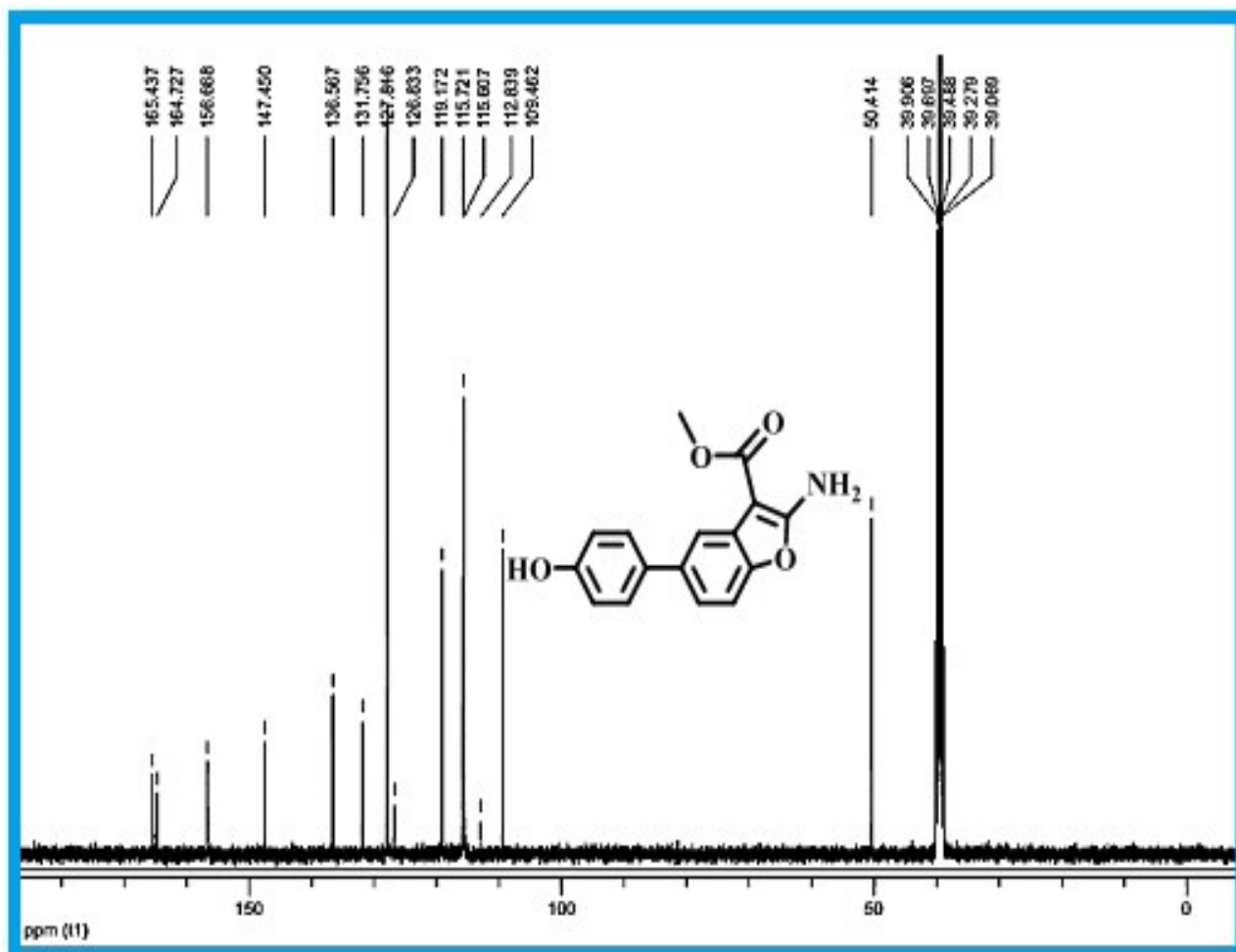
Expanded ^1H NMR spectrum of 3b



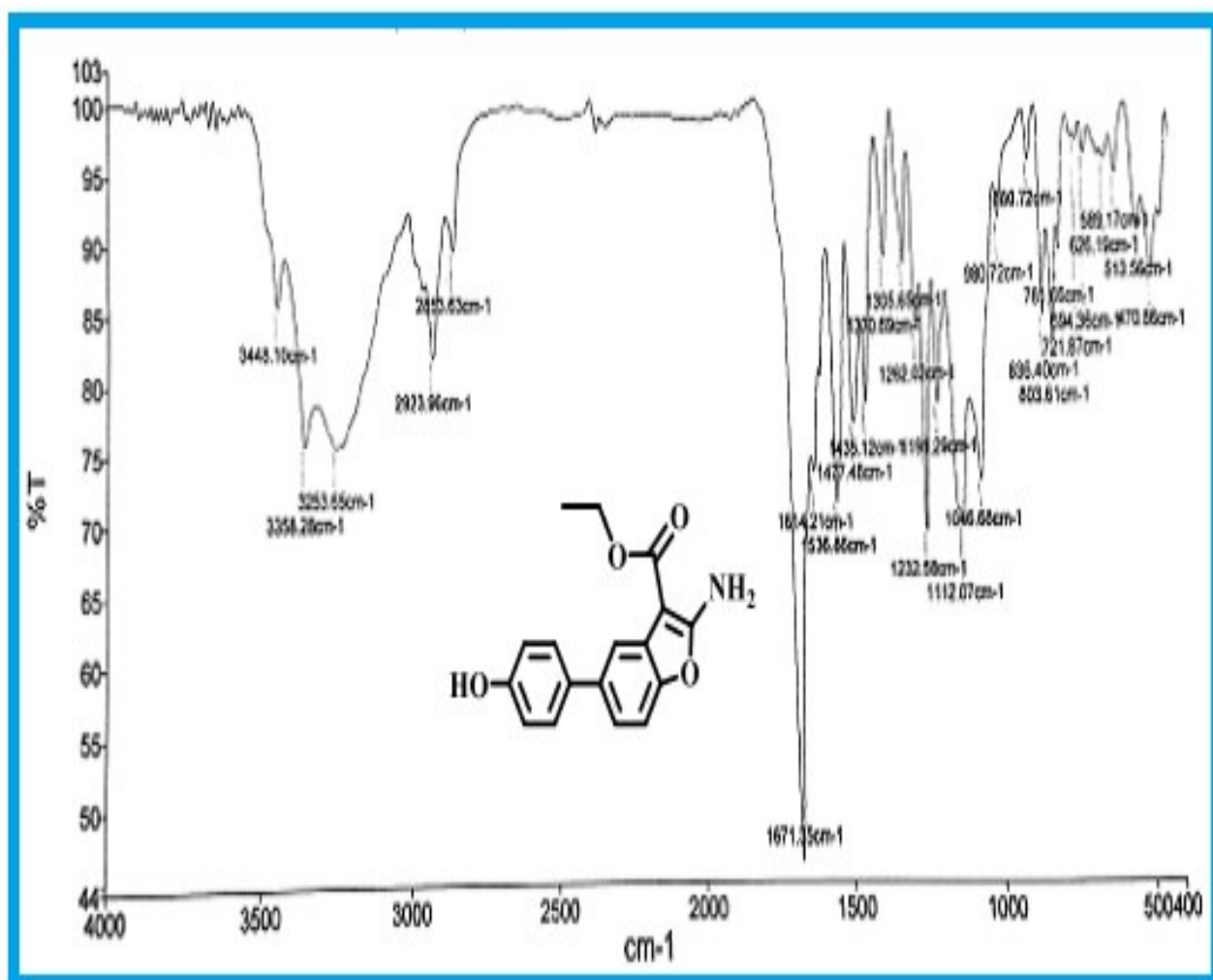
¹H NMR spectrum of 3b (with D₂O)



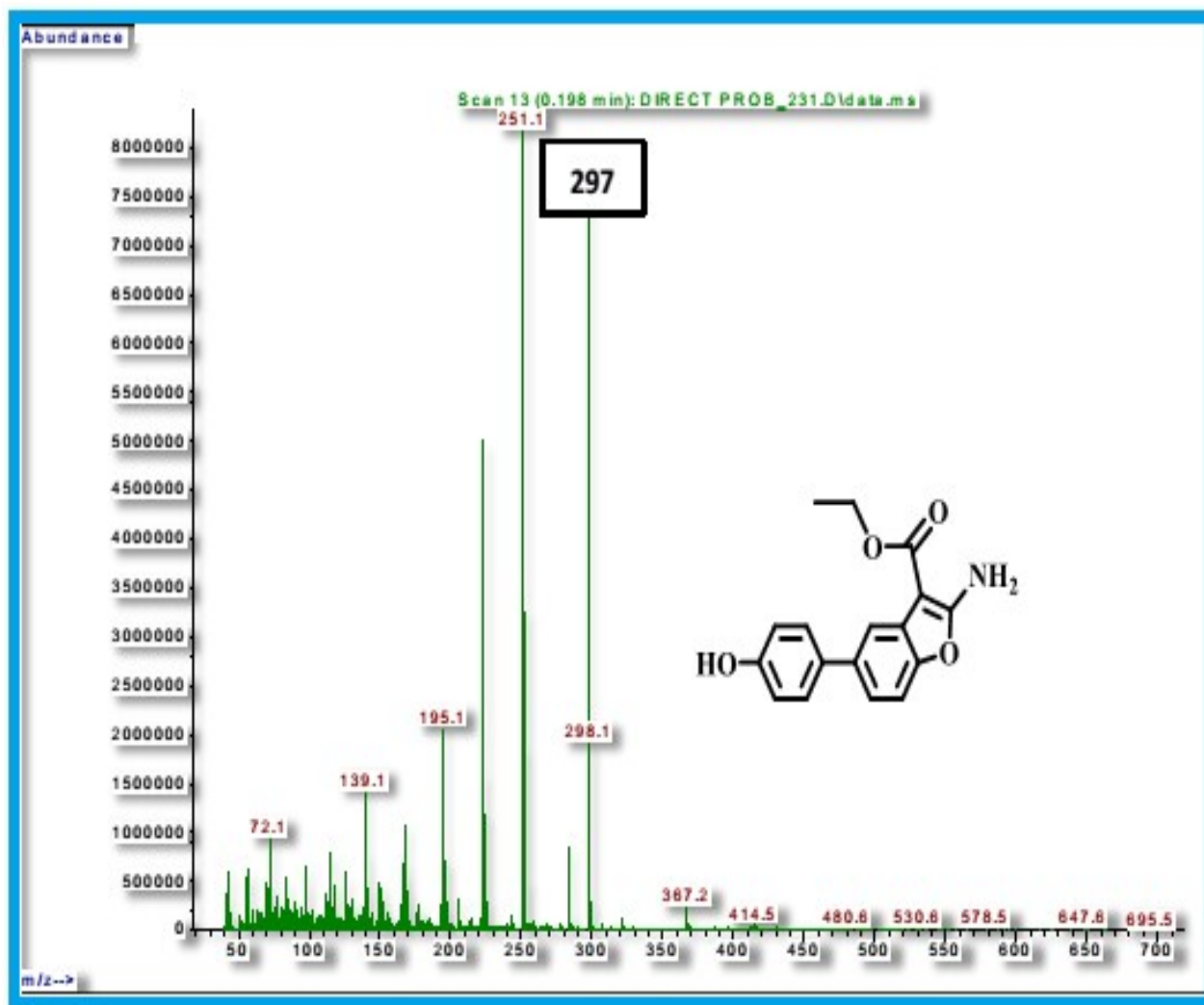
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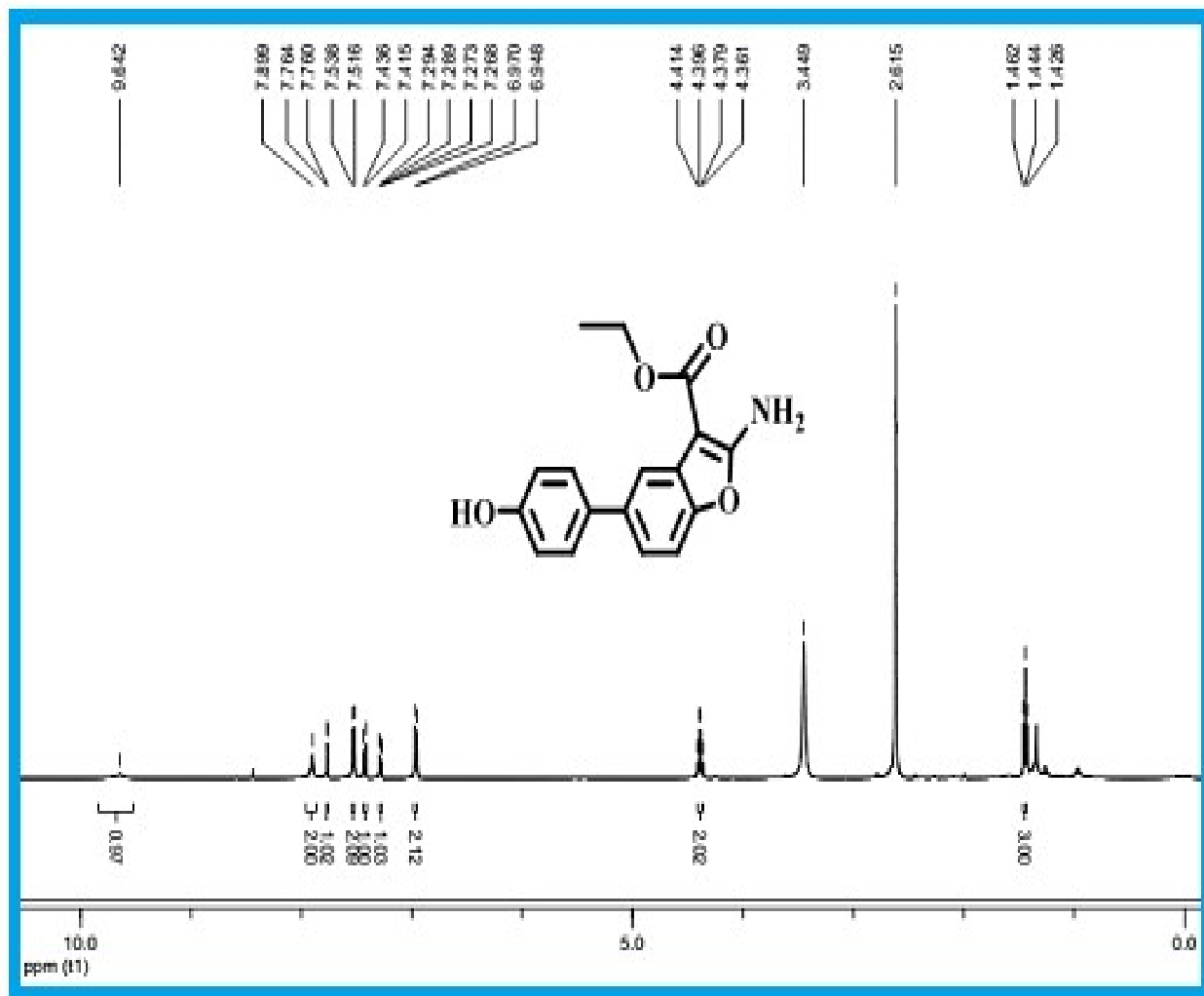
FT-IR spectrum of 3c



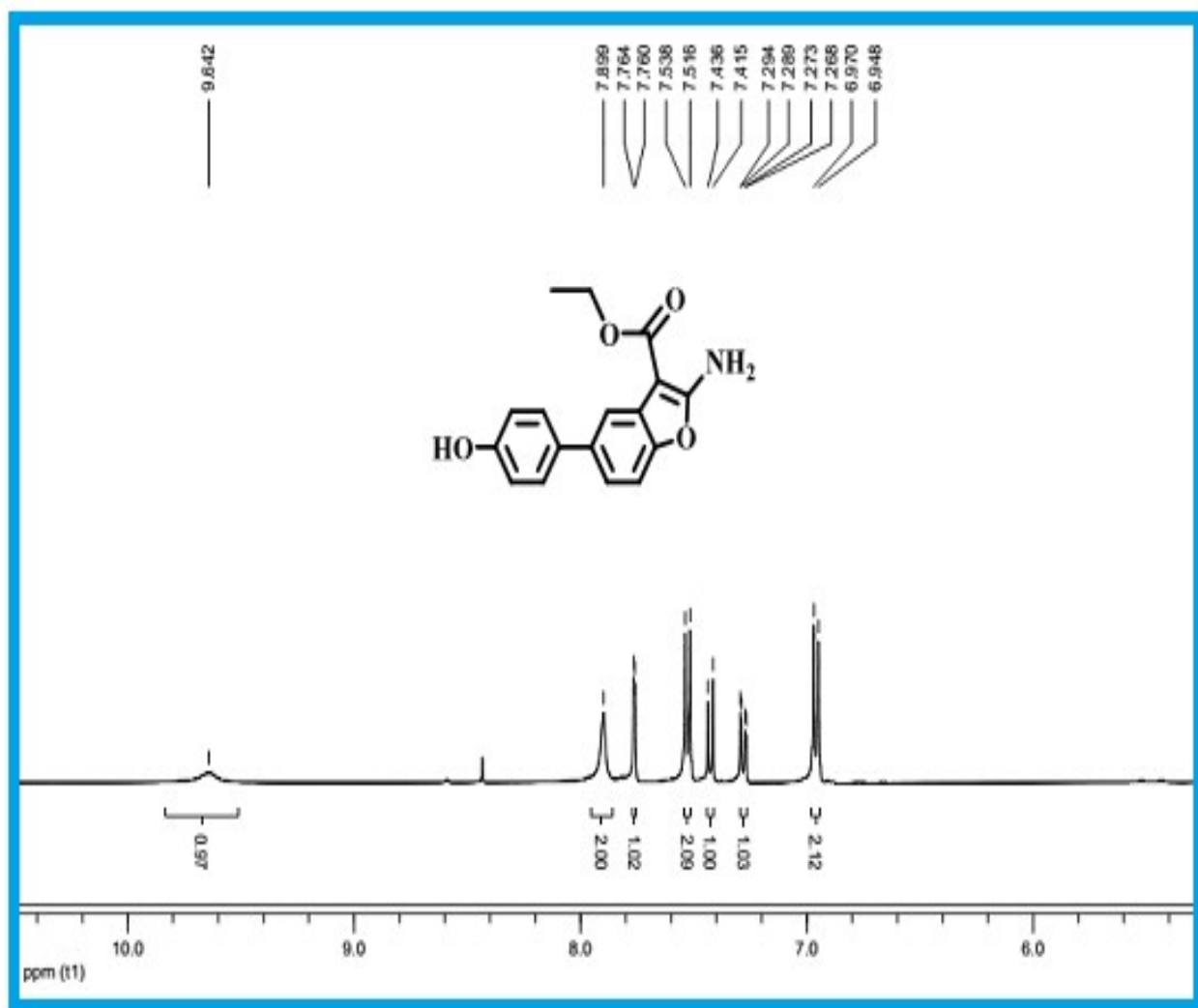
MS spectrum of 3c



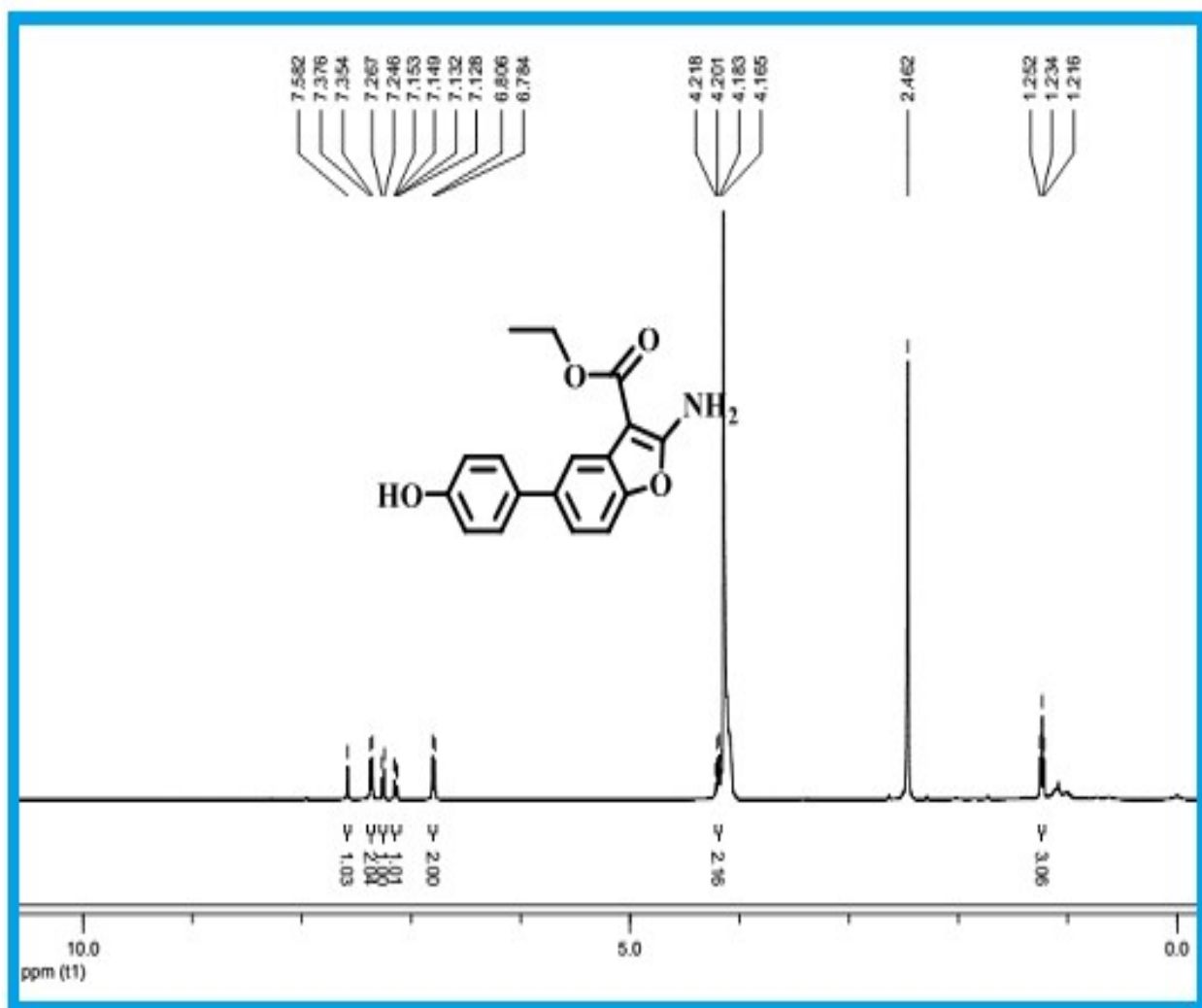
¹H NMR spectrum of 3c



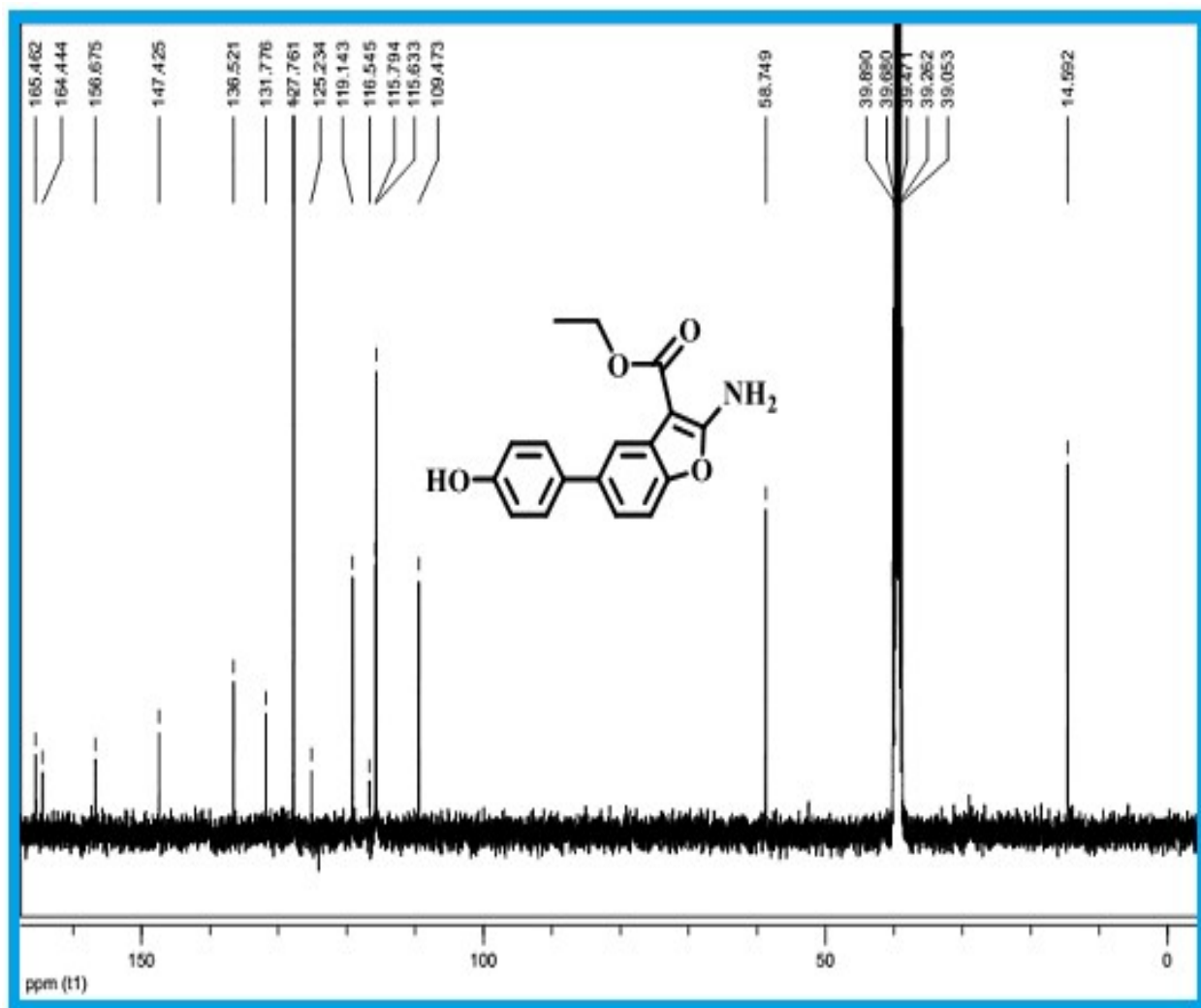
Expanded ^1H NMR spectrum of 3c



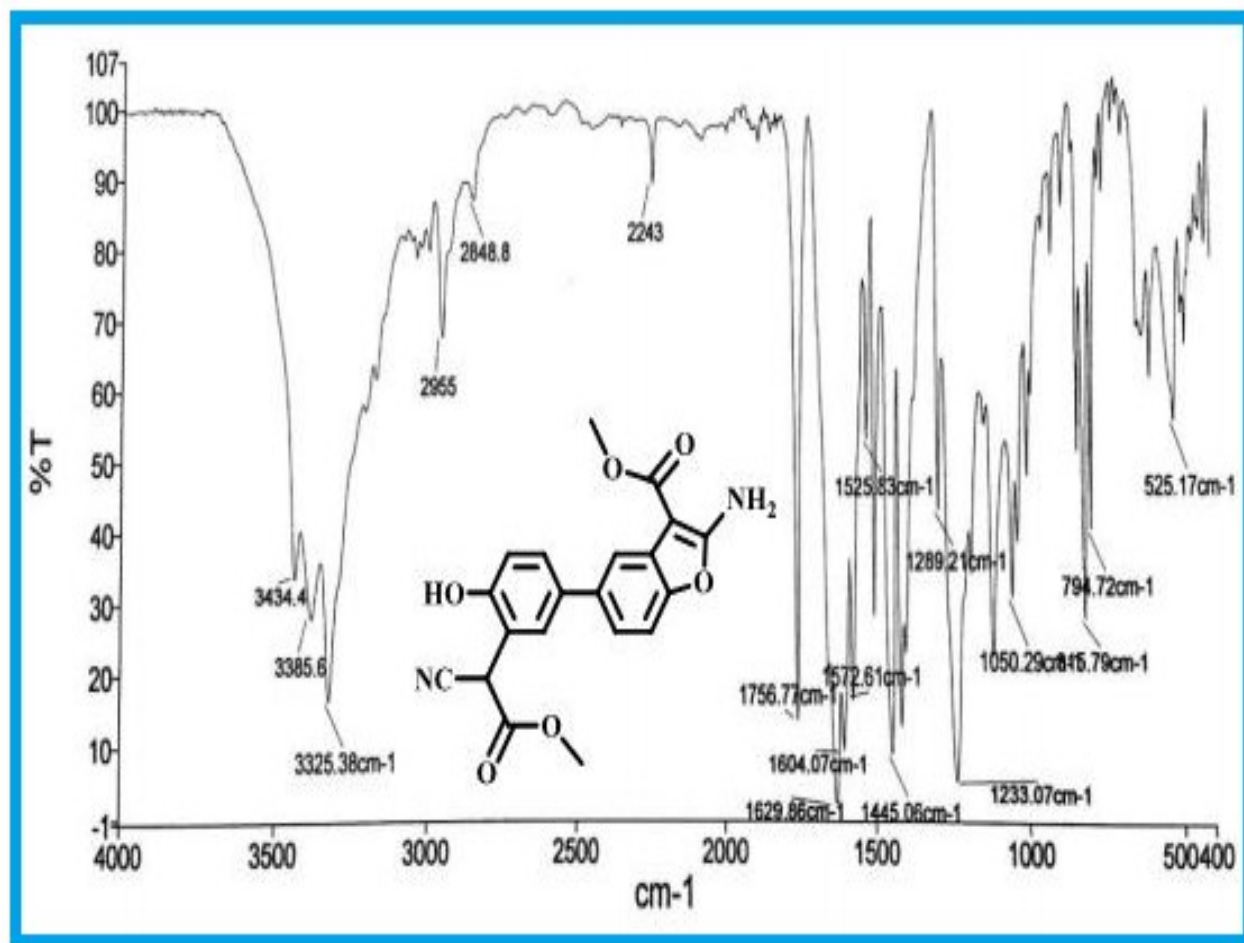
¹H NMR spectrum of 3c (with D₂O)



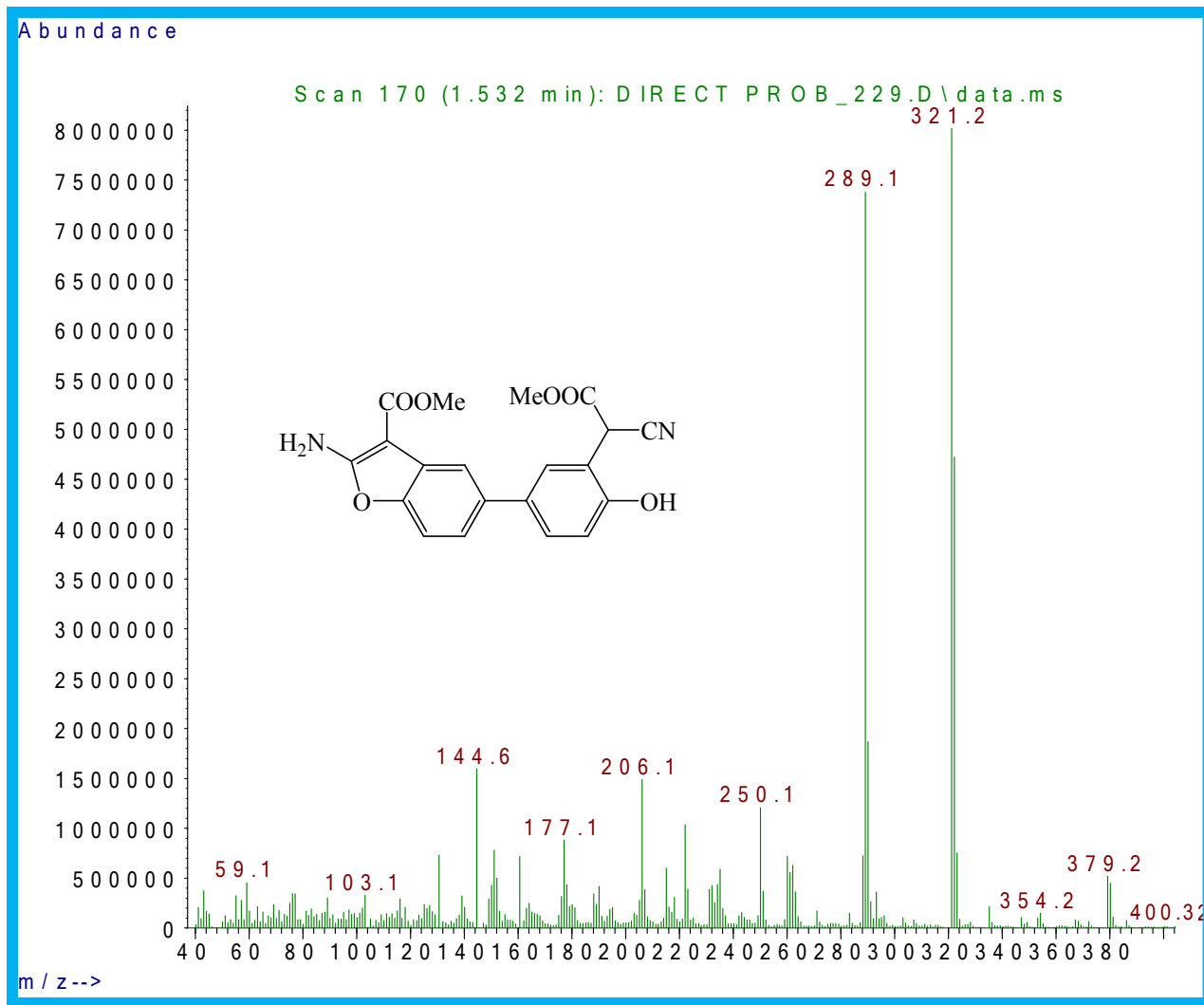
¹³C NMR spectrum of 3c



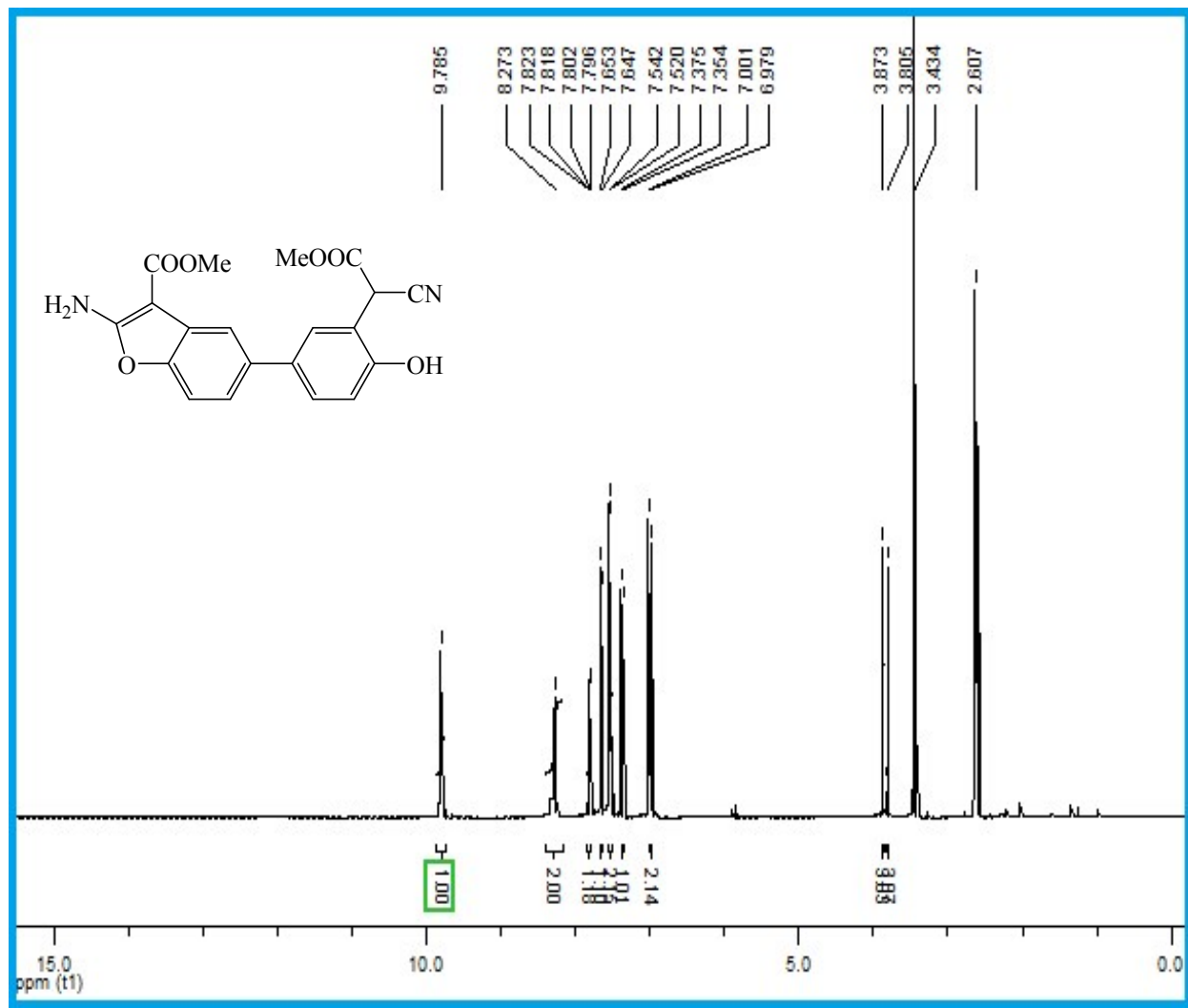
FT-IR spectrum of 4b



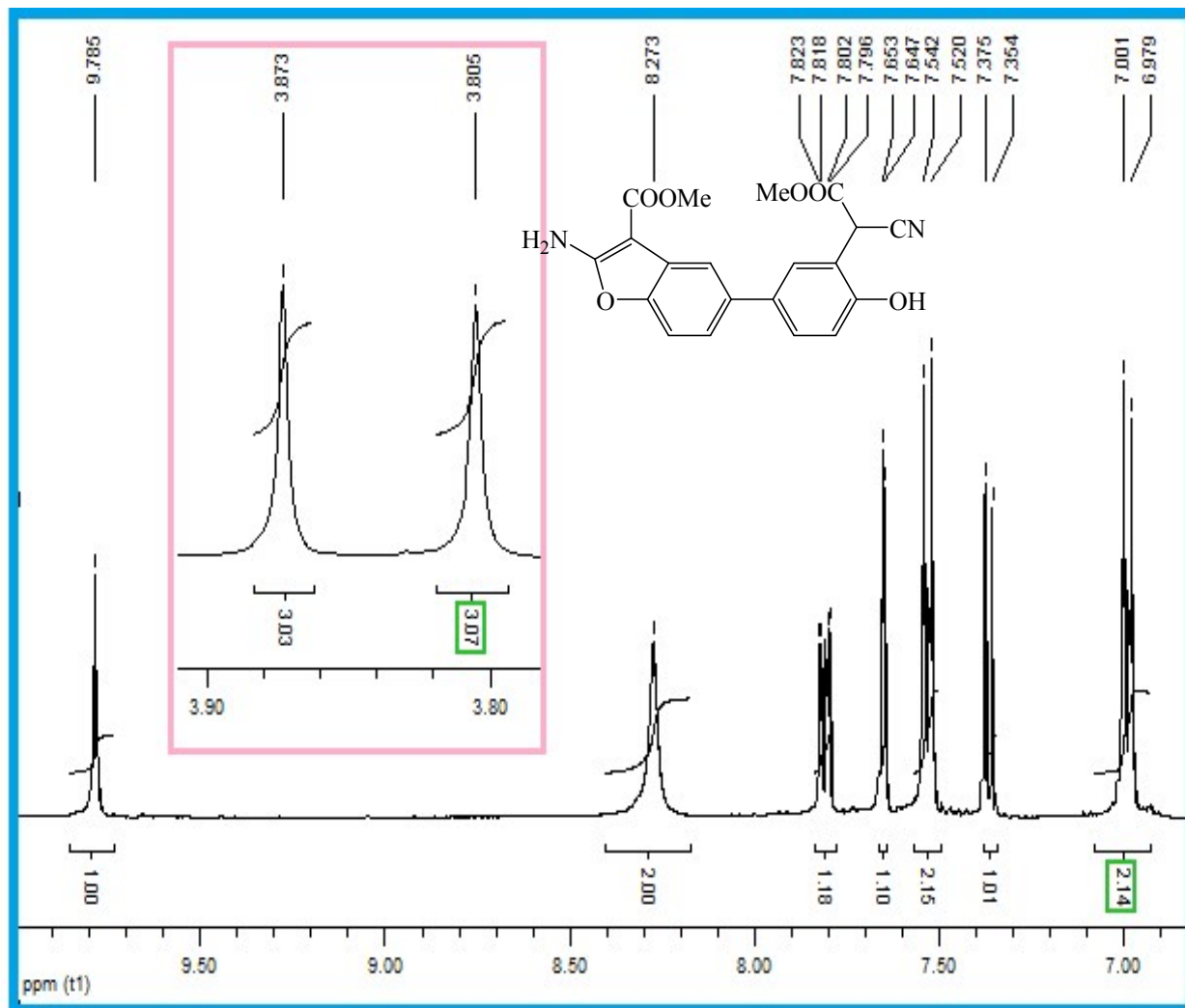
MS spectrum of 4b



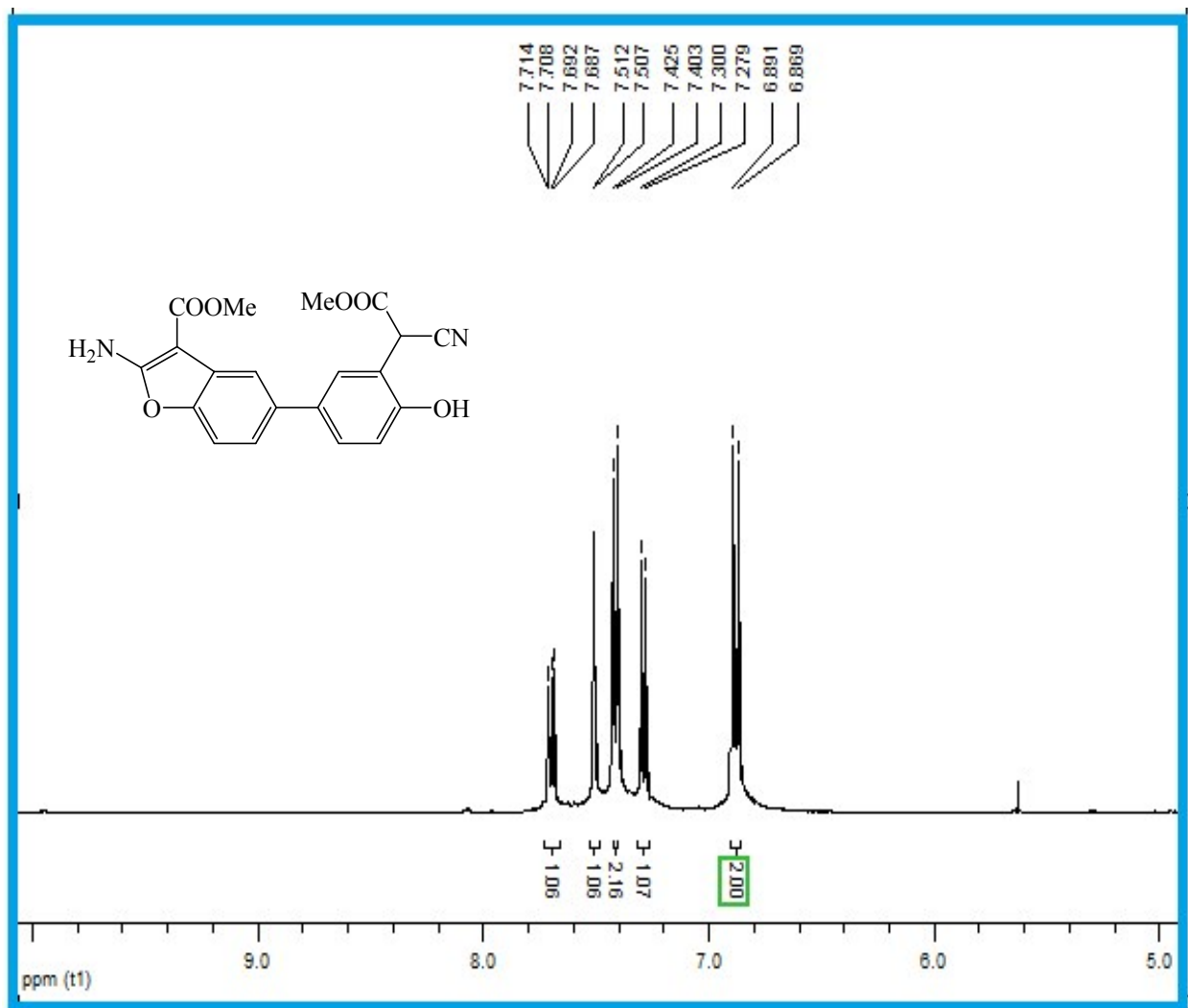
¹H NMR spectrum of 4b



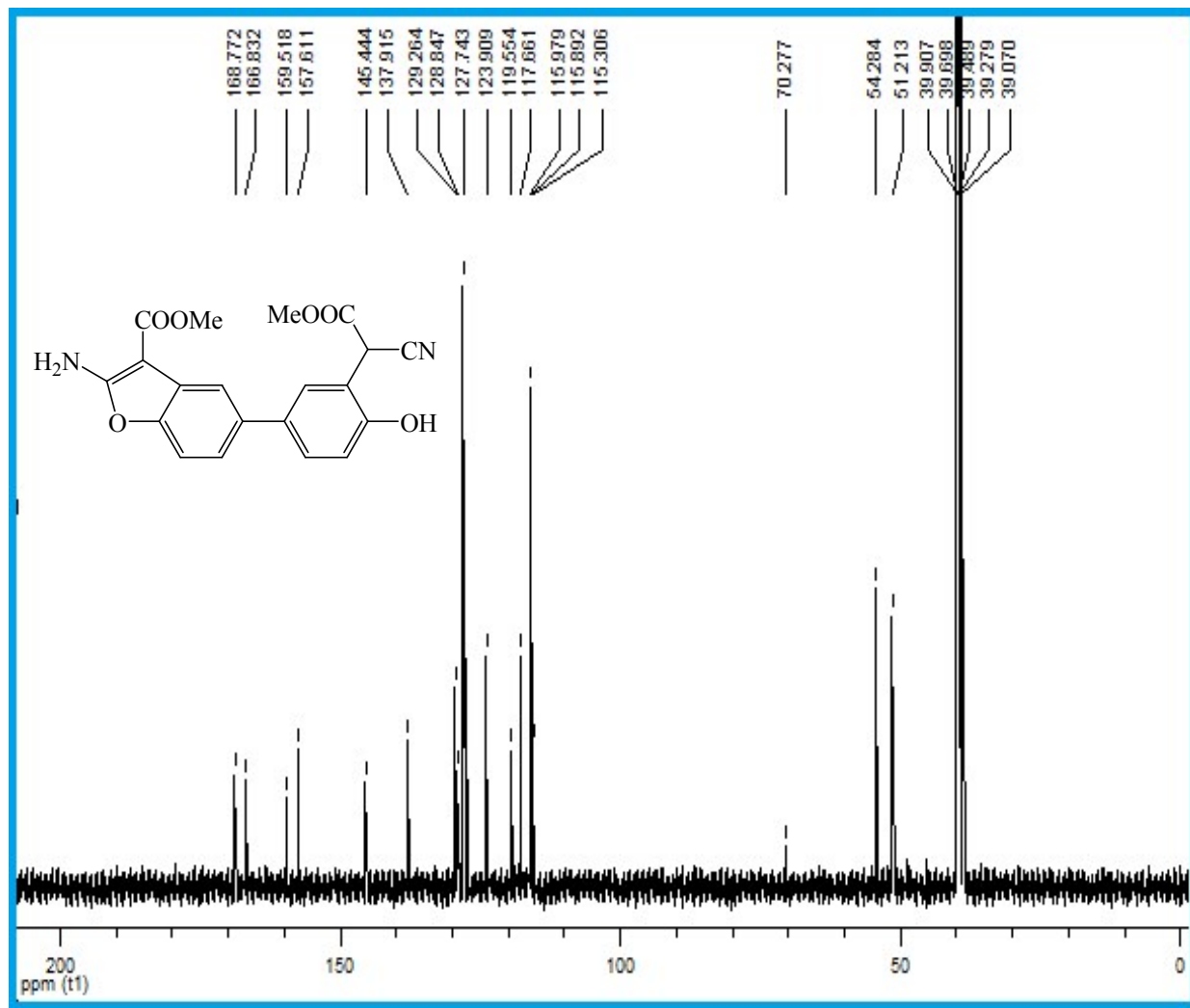
Expanded ^1H NMR spectrum of 4b



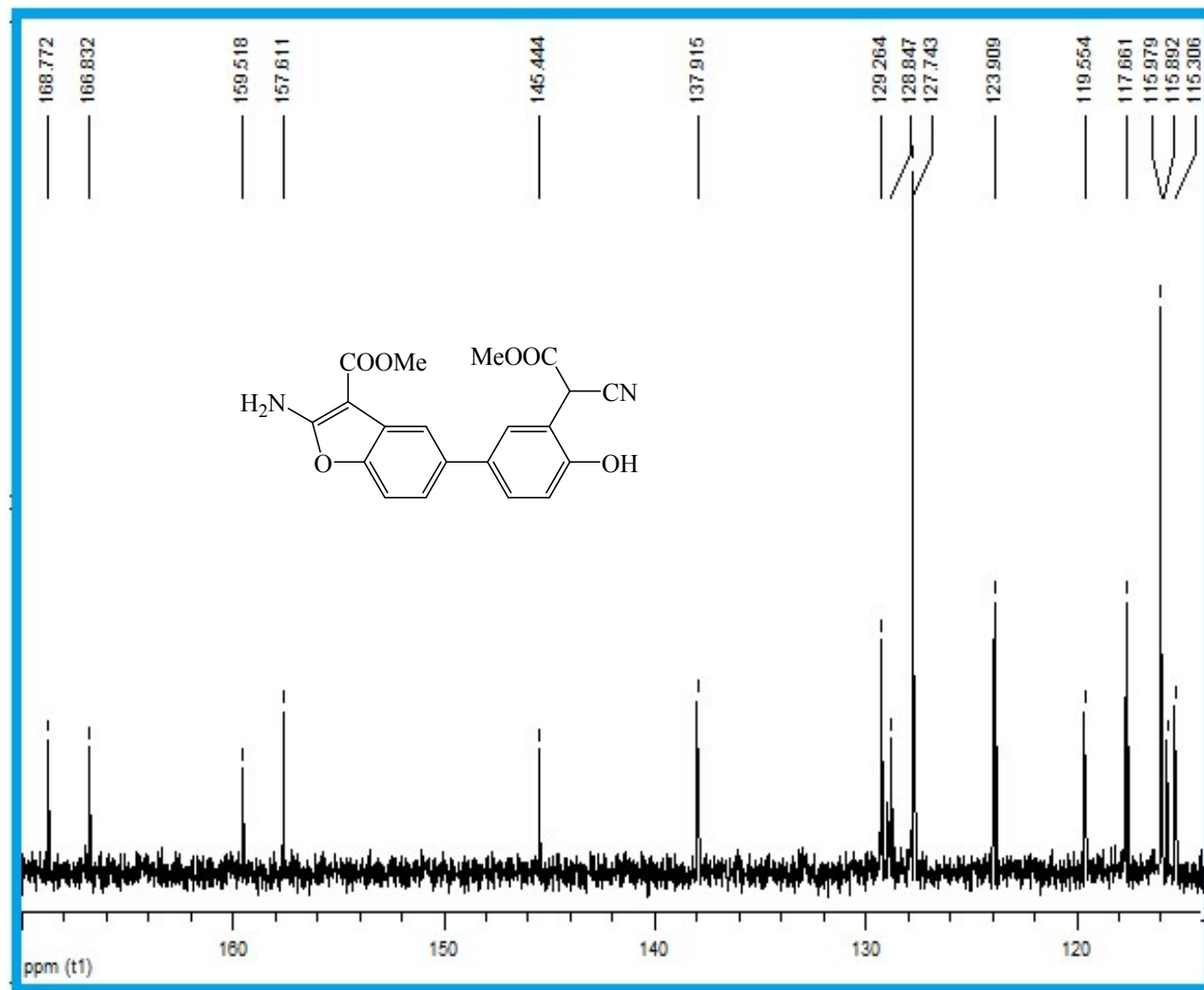
¹H NMR spectrum of 4b (with D₂O)



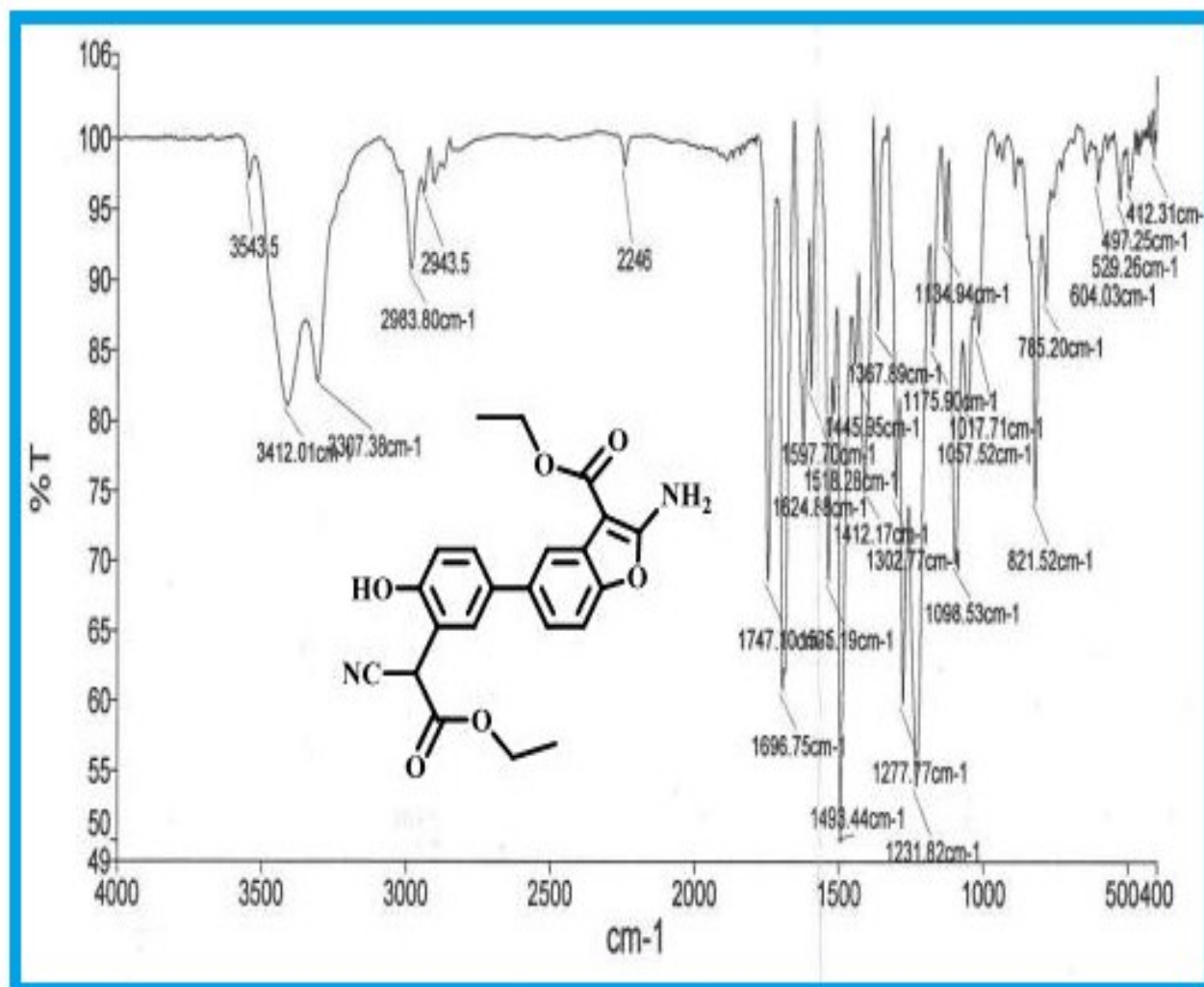
¹³C NMR spectrum of 4b



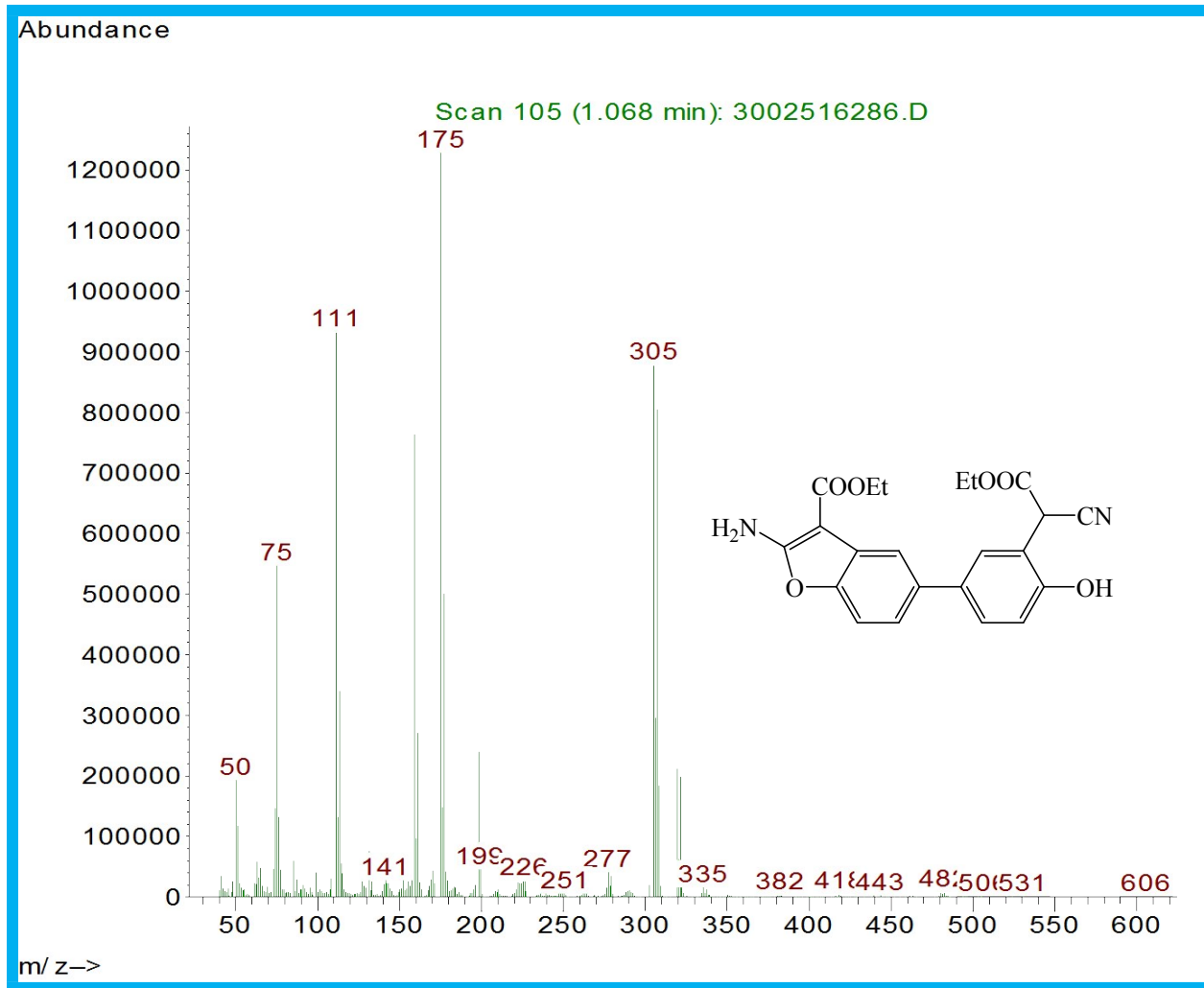
Expanded ^{13}C NMR spectrum of 4b



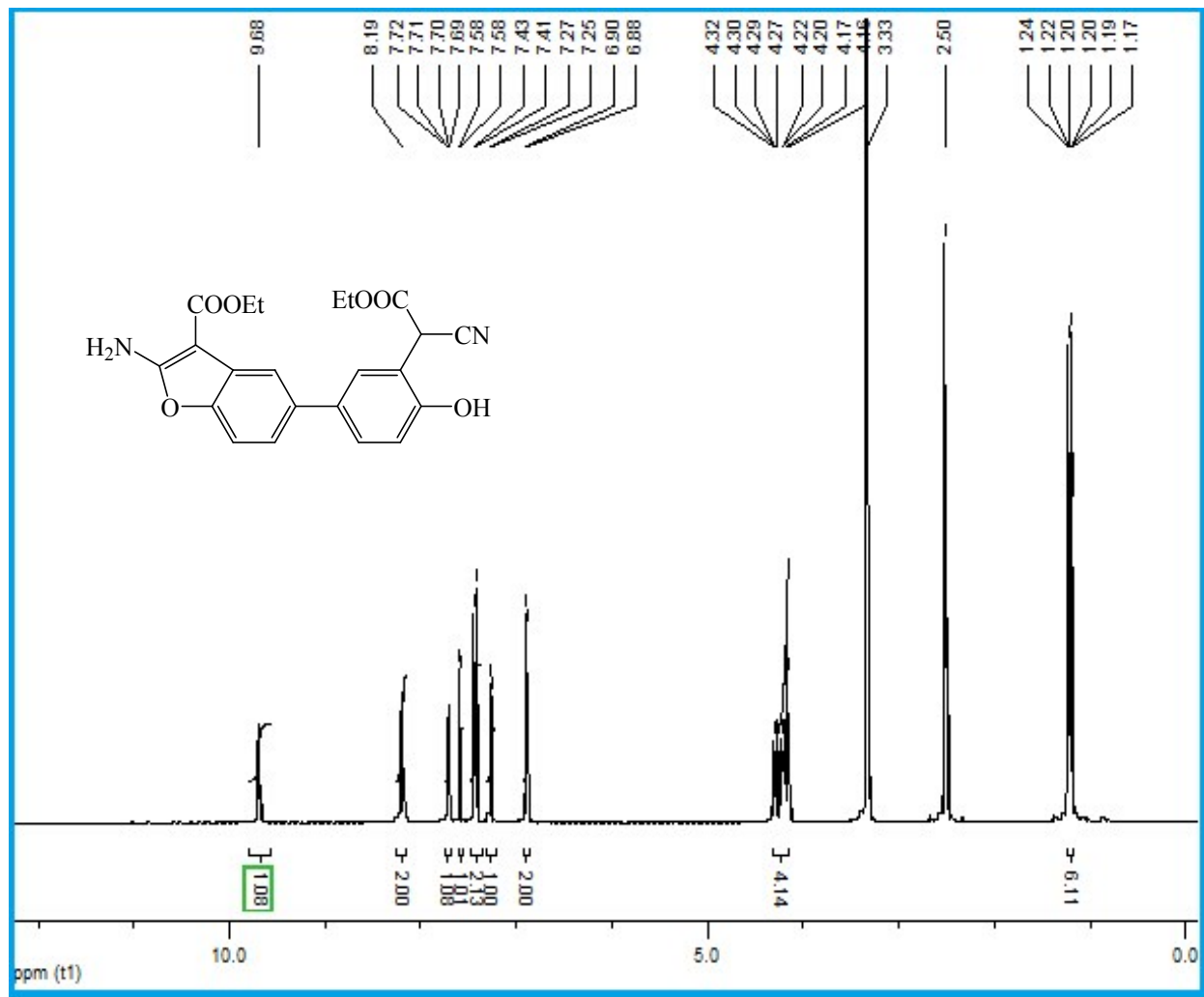
FT-IR spectrum of 4c



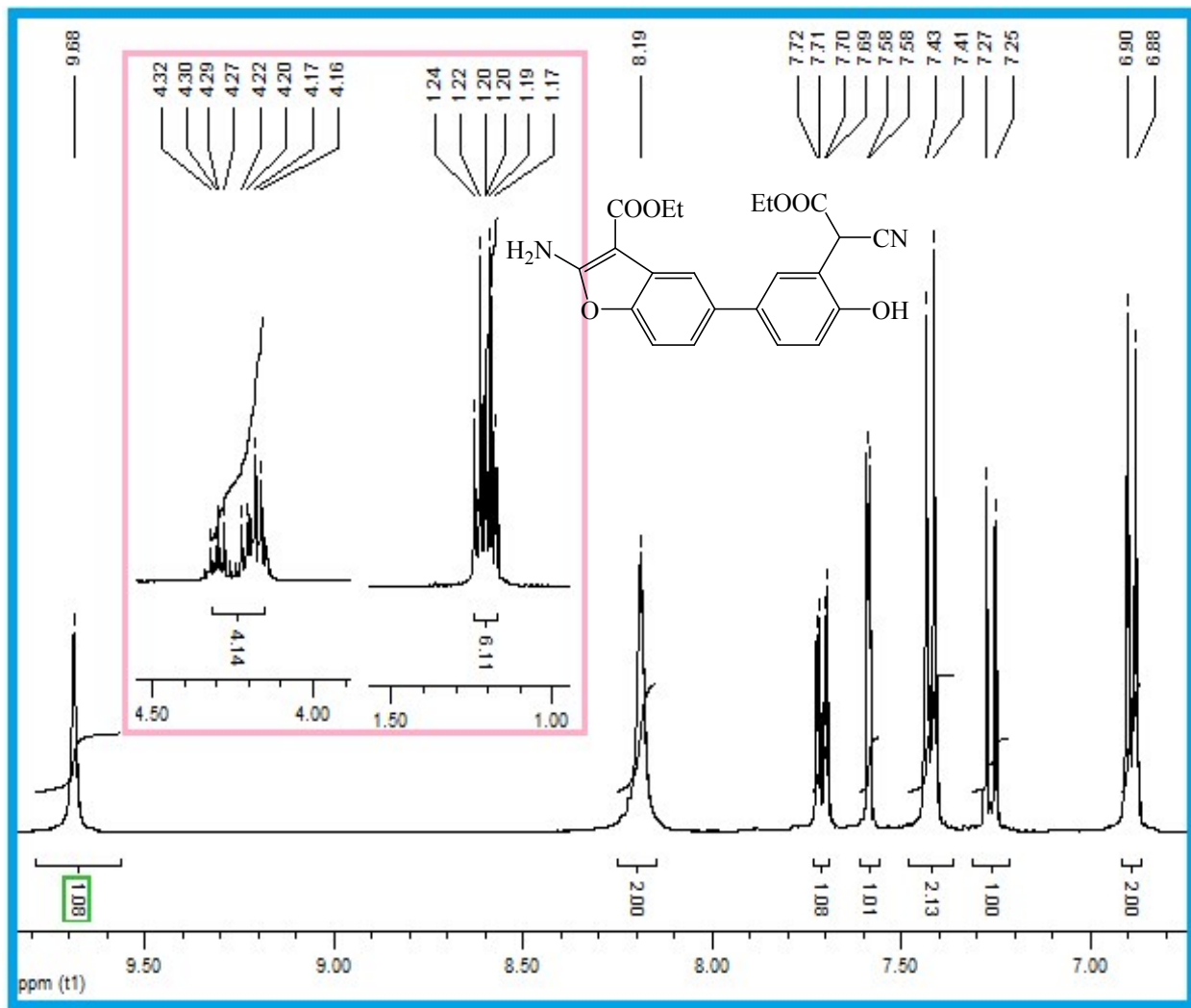
MS spectrum of 4c



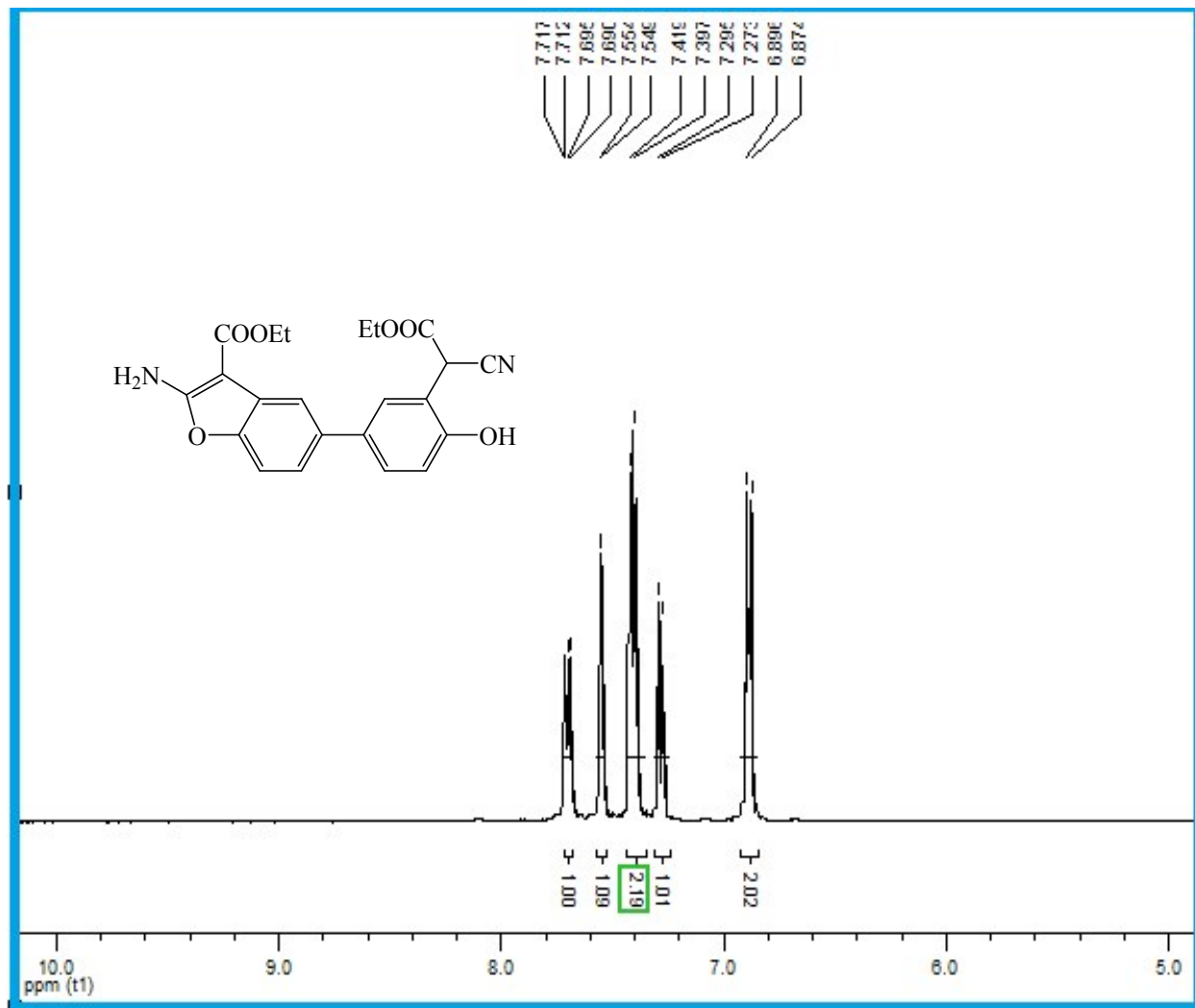
¹H NMR spectrum of 4c



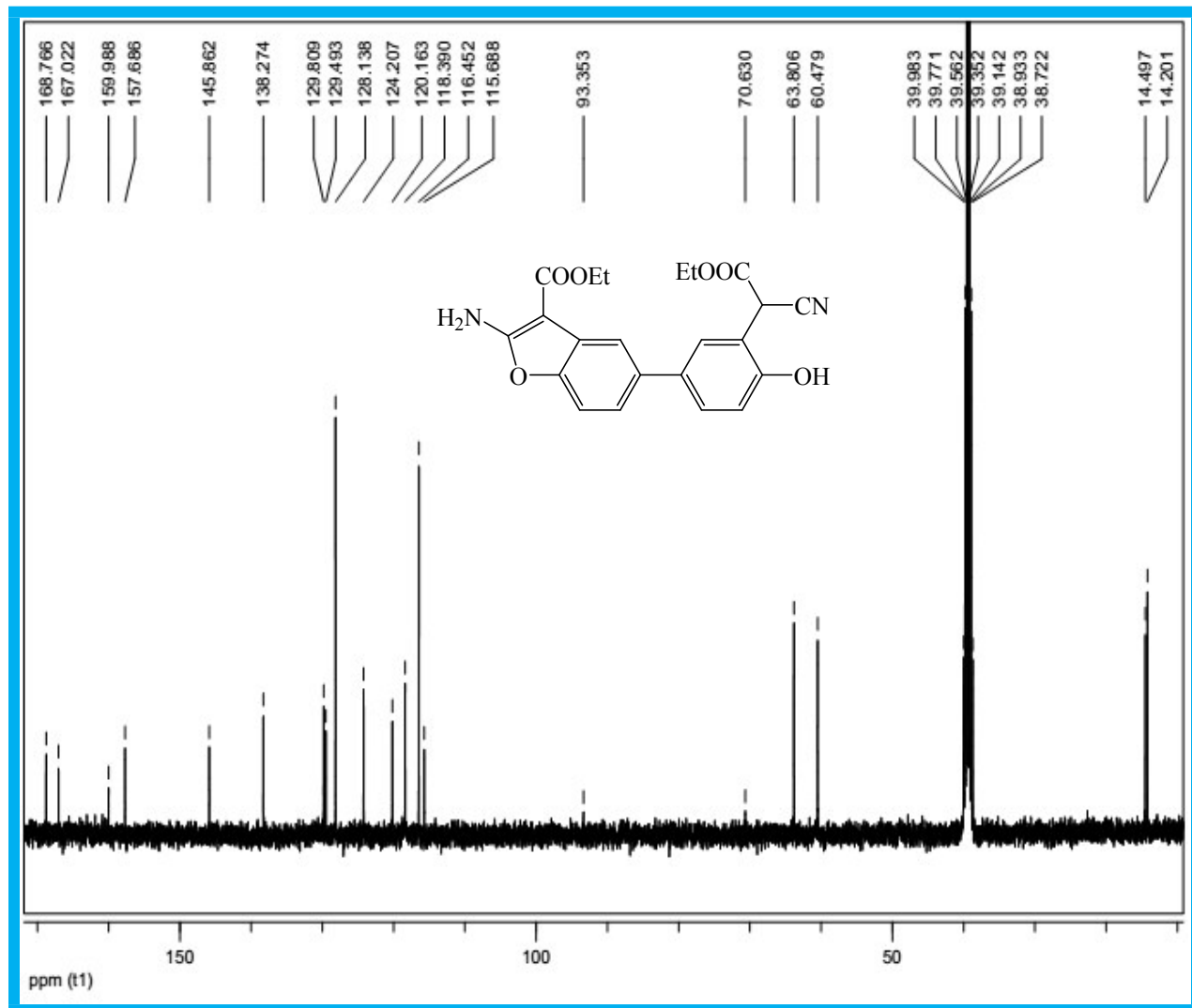
Expanded ^1H NMR spectrum of 4c



¹H NMR spectrum of 4c (with D₂O)



¹³C NMR spectrum of 4c



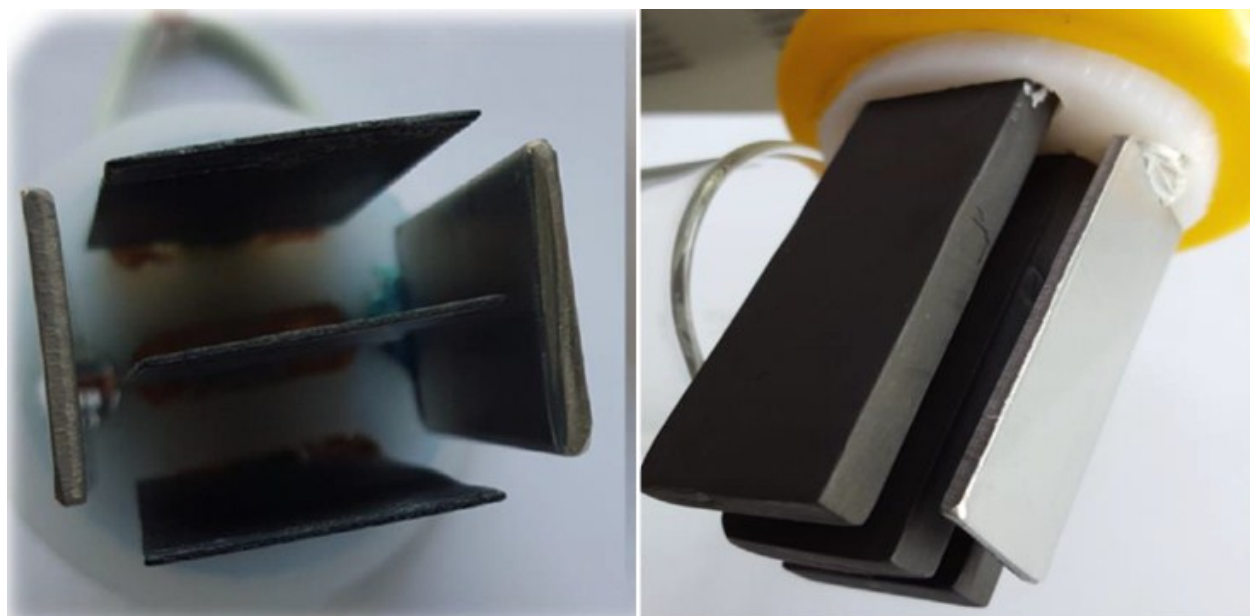


Fig. S1. The cell designed for electrochemical synthesis