Ionically tagged magnetic nanoparticles with urea linker: Application for preparation of 2-aryl-quinoline-4-carboxylic acids via an anomeric based oxidation mechanism

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Figure S1: FT-IR spectrum of 2-phenylbenzo[*h*]quinoline-4-carboxylic acid (1a)

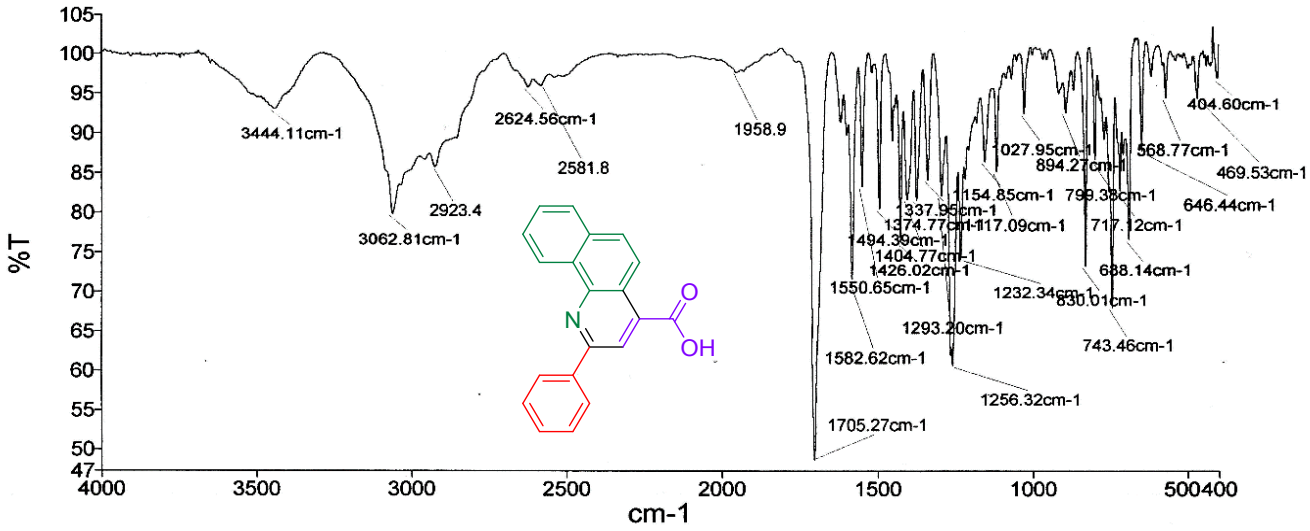

Figure S2: ^{1}H NMR spectrum of 2-phenylbenzo[*h*]quinoline-4-carboxylic acid (1a)

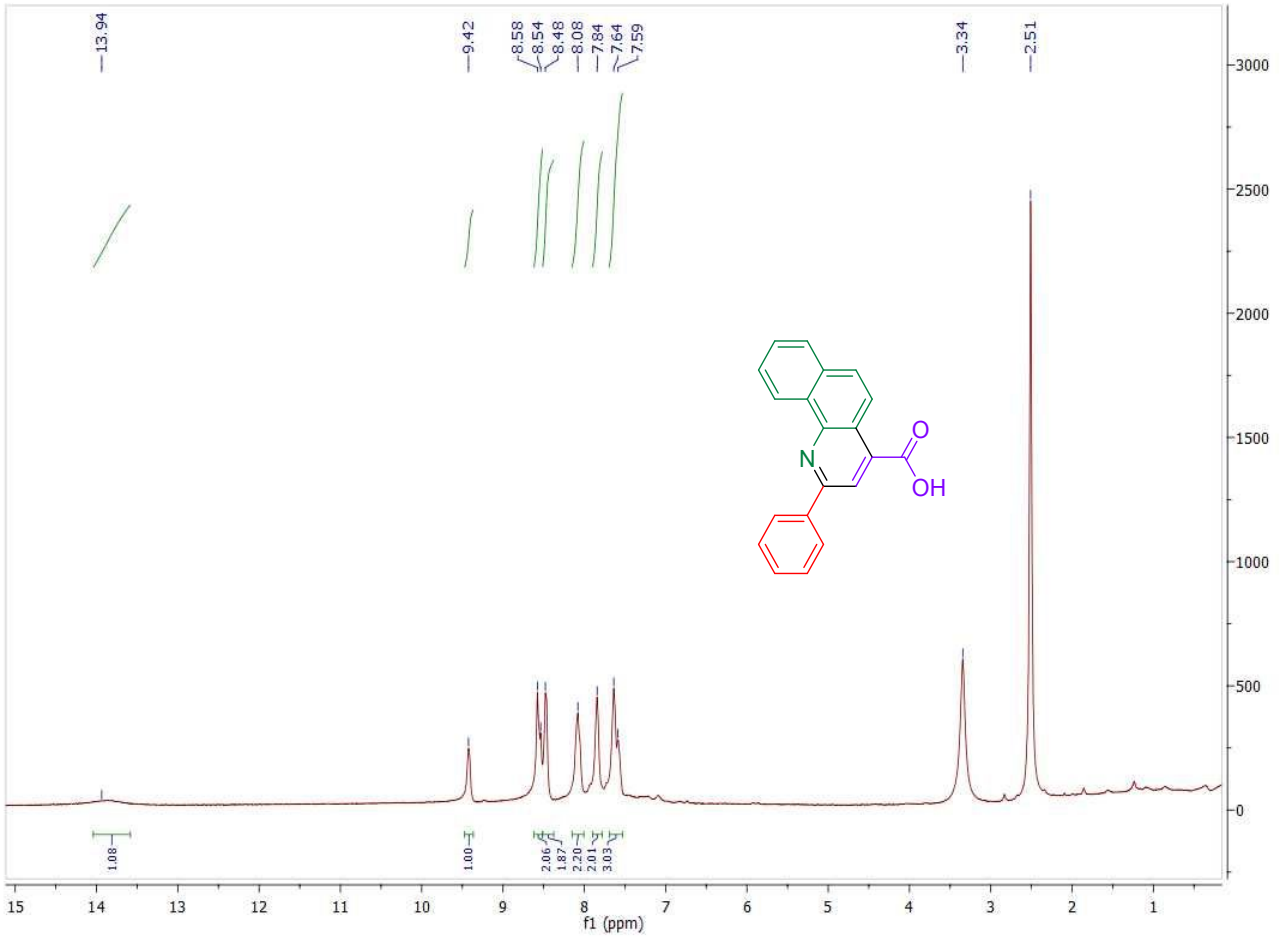

Figure S3: ^{13}C NMR spectrum of 2-phenylbenzo[*h*]quinoline-4-carboxylic acid (1a)

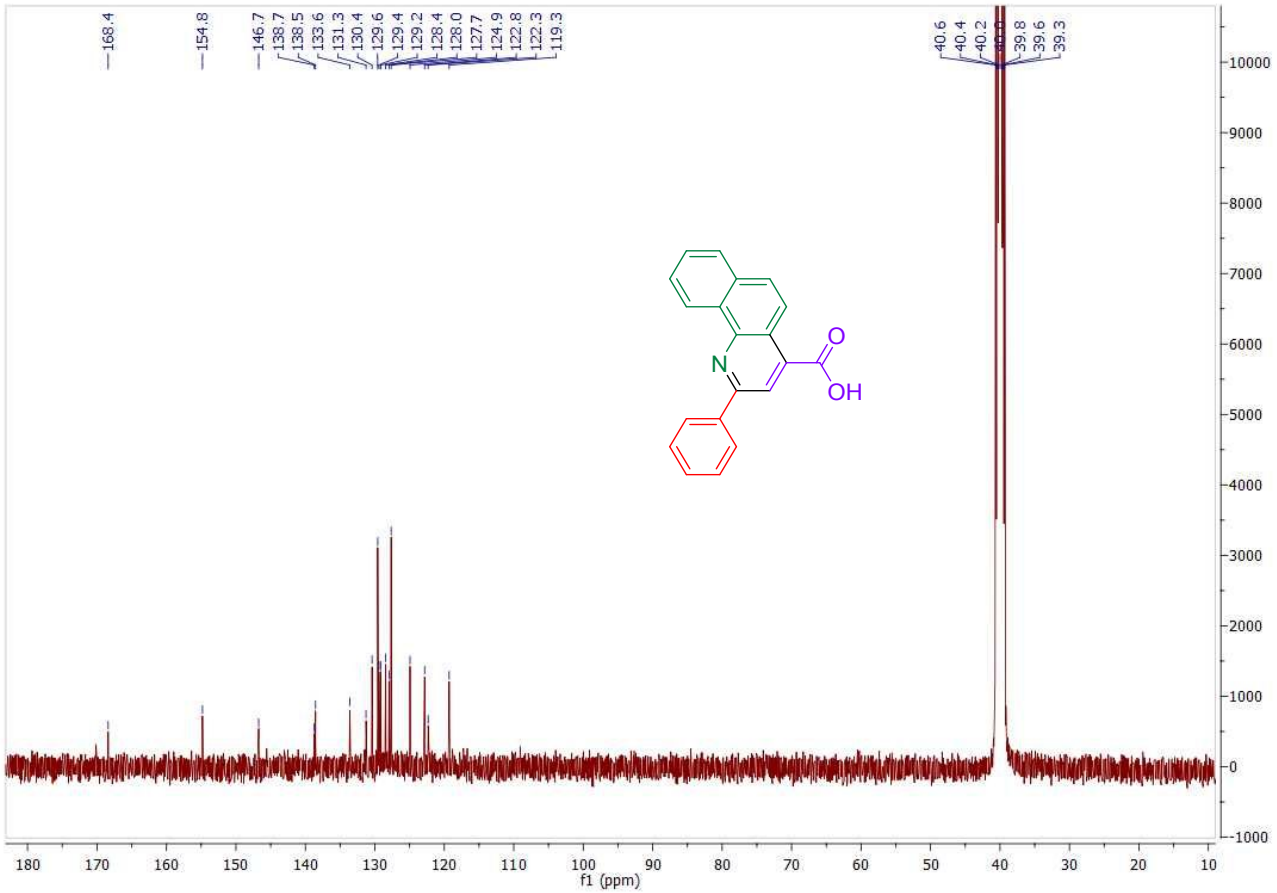

Figure S4: FT-IR spectrum of 2-(*p*-tolyl)benzo[*h*]quinoline-4-carboxylic acid (1b)

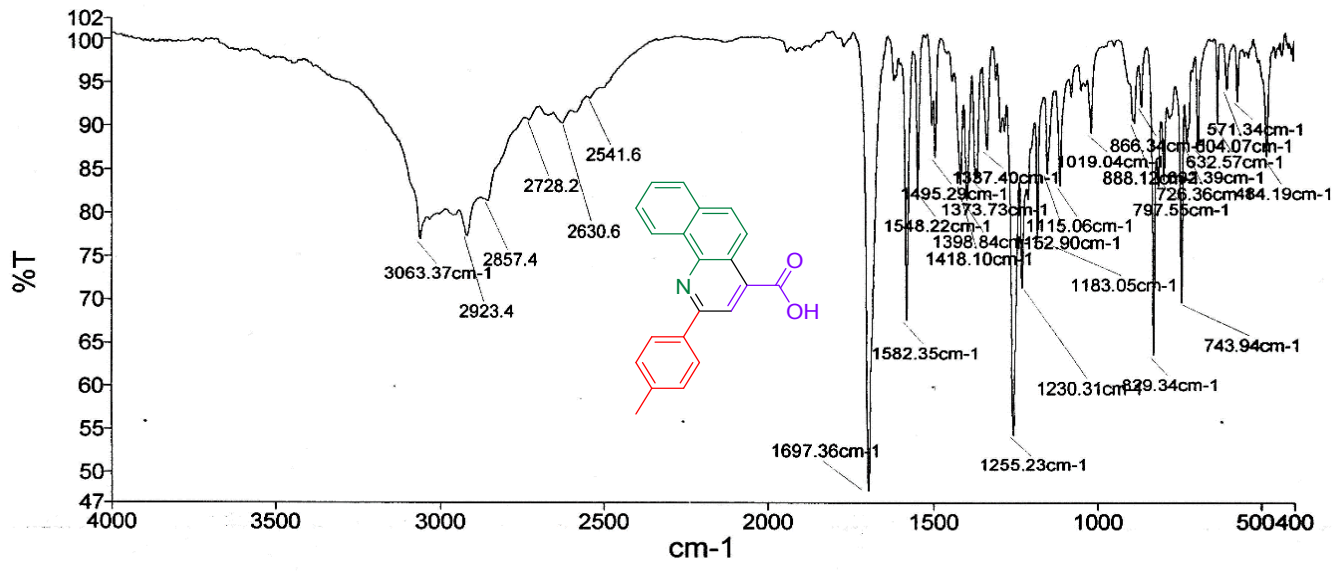

Figure S5: ^{1}H NMR spectrum of 2-(*p*-tolyl)benzo[*h*]quinoline-4-carboxylic acid (1b)

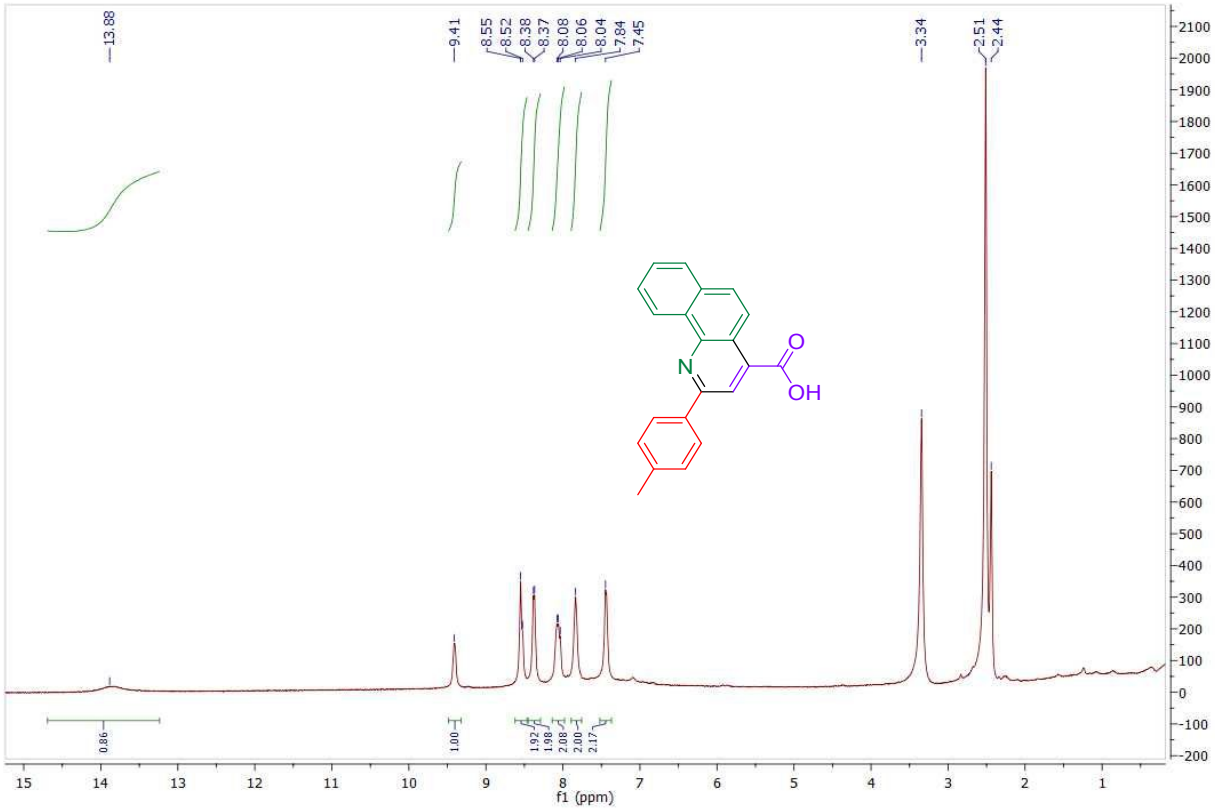

Figure S6: ^{13}C NMR spectrum of 2-(*p*-tolyl)benzo[*h*]quinoline-4-carboxylic acid (1b)

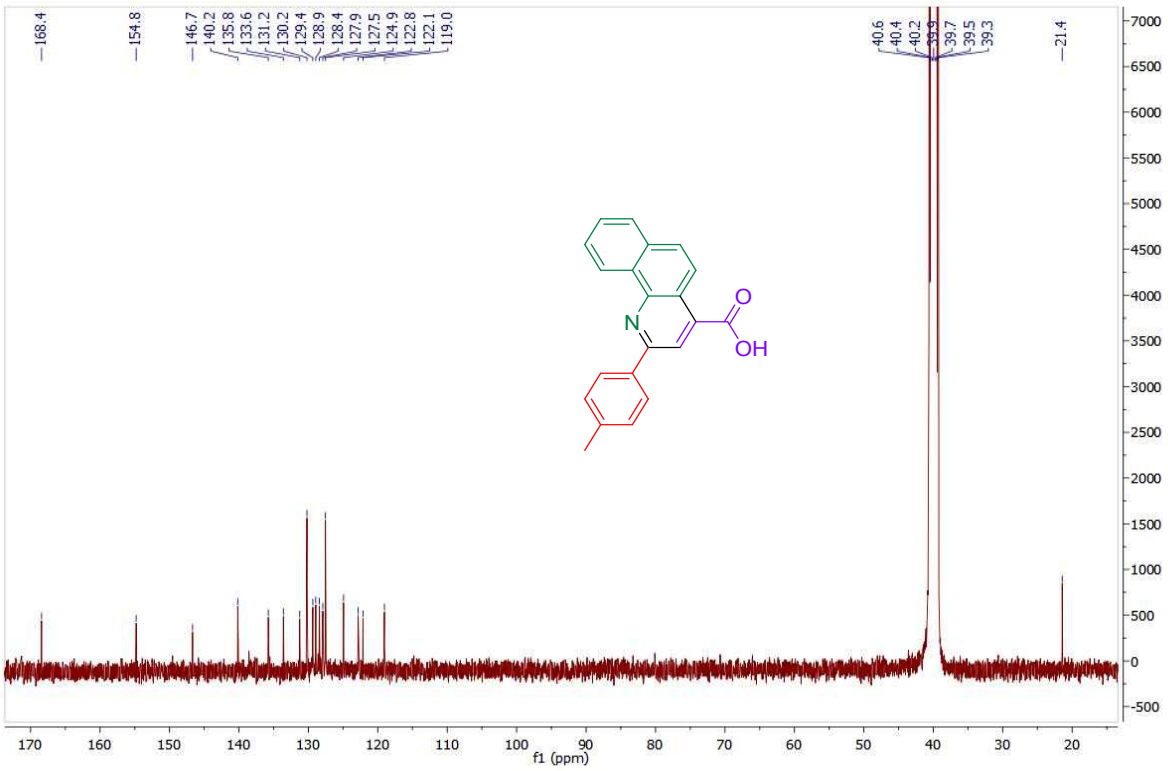

Figure S7: FT-IR spectrum of 2-(4-methoxyphenyl)benzo[*h*]quinoline-4-carboxylic acid (1c)

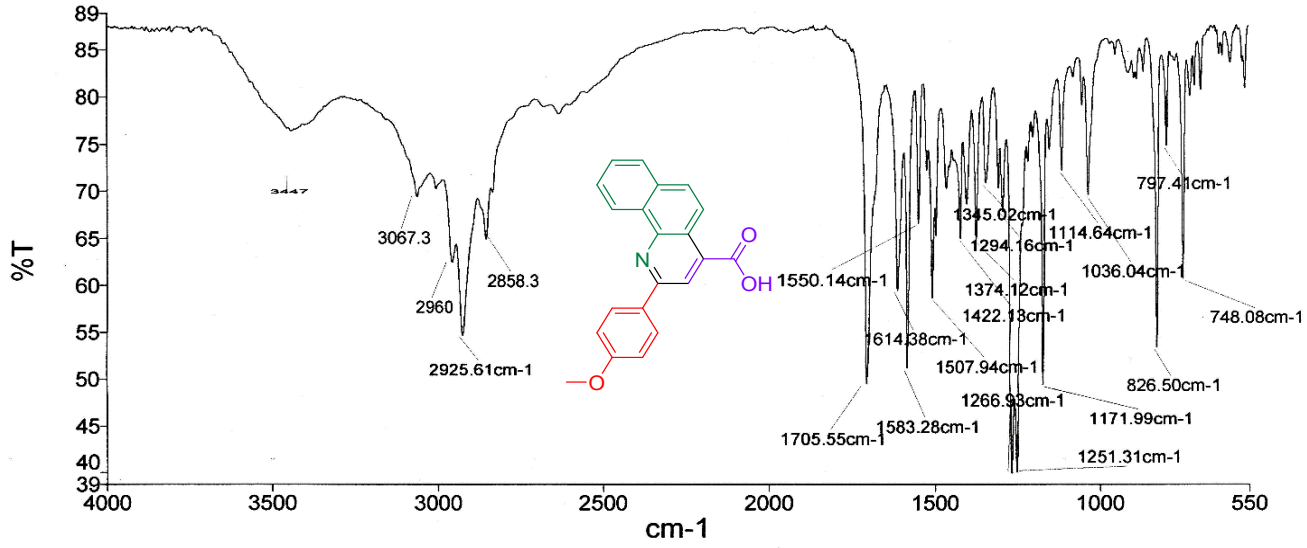

Figure S8: ^{1}H NMR spectrum of 2-(4-methoxyphenyl)benzo[*h*]quinoline-4-carboxylic acid (1c)

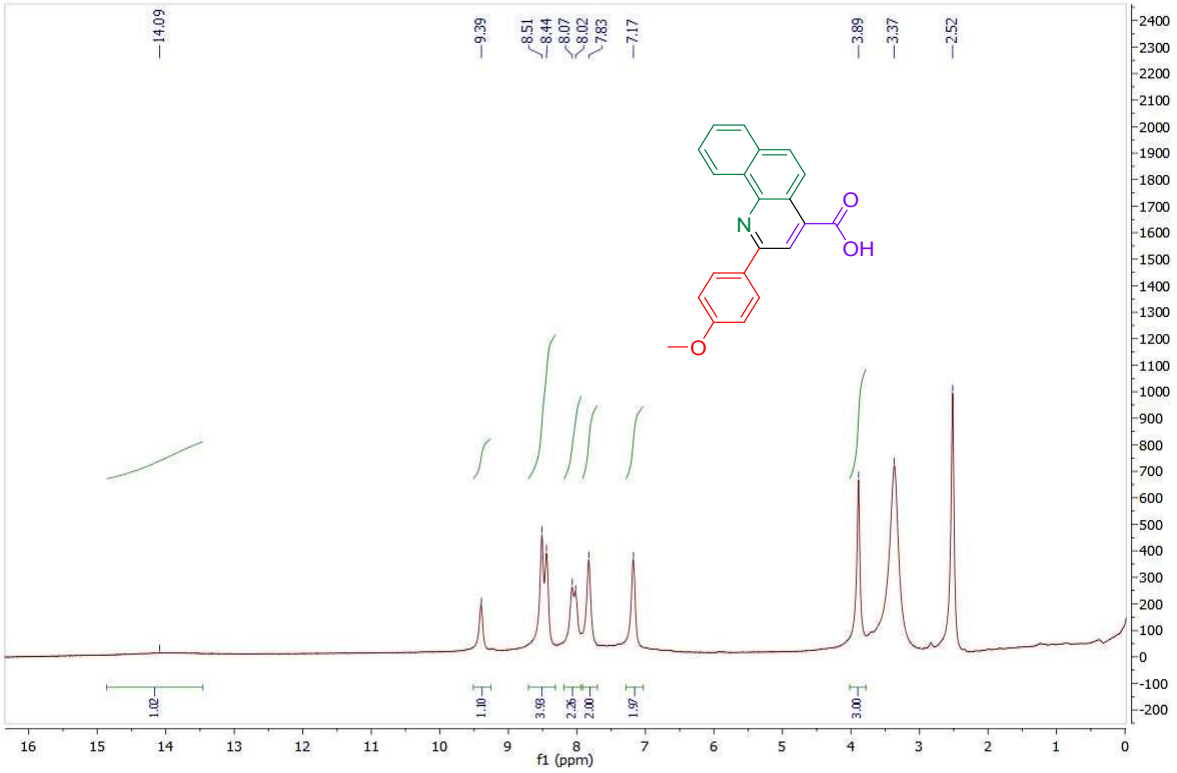

Figure S9: ^{13}C NMR spectrum of 2-(4-methoxyphenyl)benzo[*h*]quinoline-4-carboxylic acid (1c)

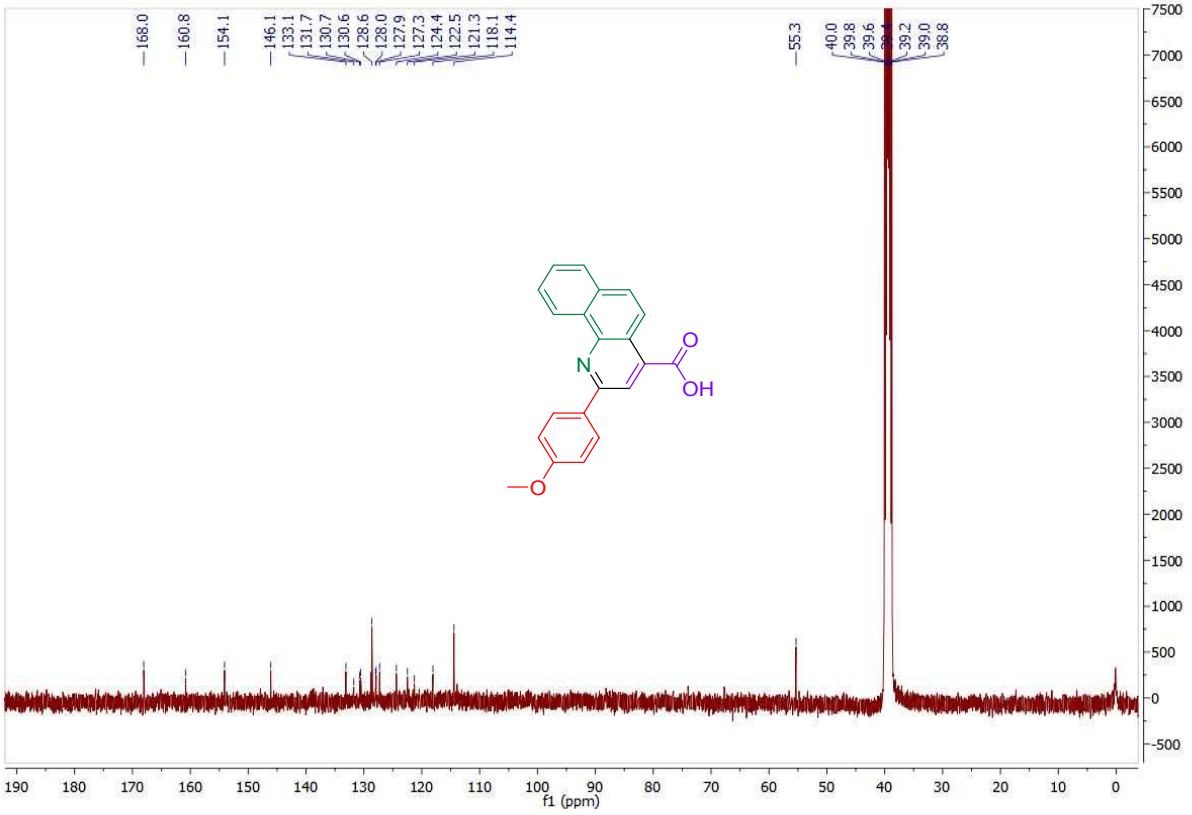

Figure S10: FT-IR spectrum of 2-(3-methoxyphenyl)benzo[*h*]quinoline-4-carboxylic acid (1d)

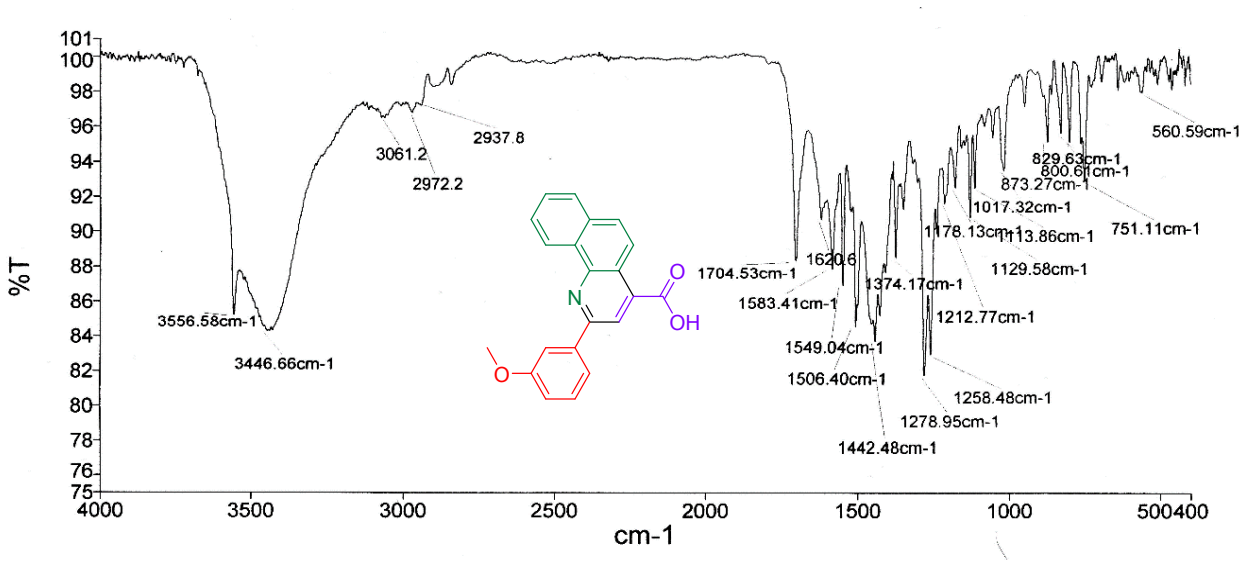

Figure S11: ^{1}H NMR spectrum of 2-(3-methoxyphenyl)benzo[*h*]quinoline-4-carboxylic acid (1d)

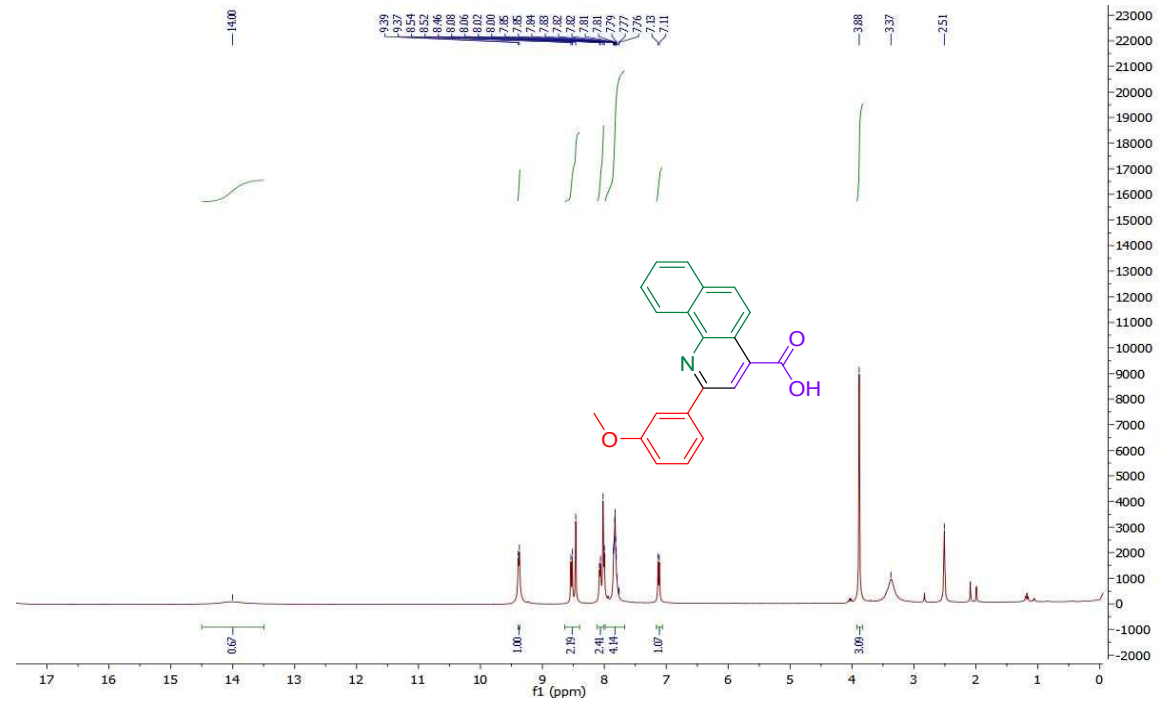

Figure S12: ^{13}C NMR spectrum of 2-(3-methoxyphenyl)benzo[*h*]quinoline-4-carboxylic acid (1d)

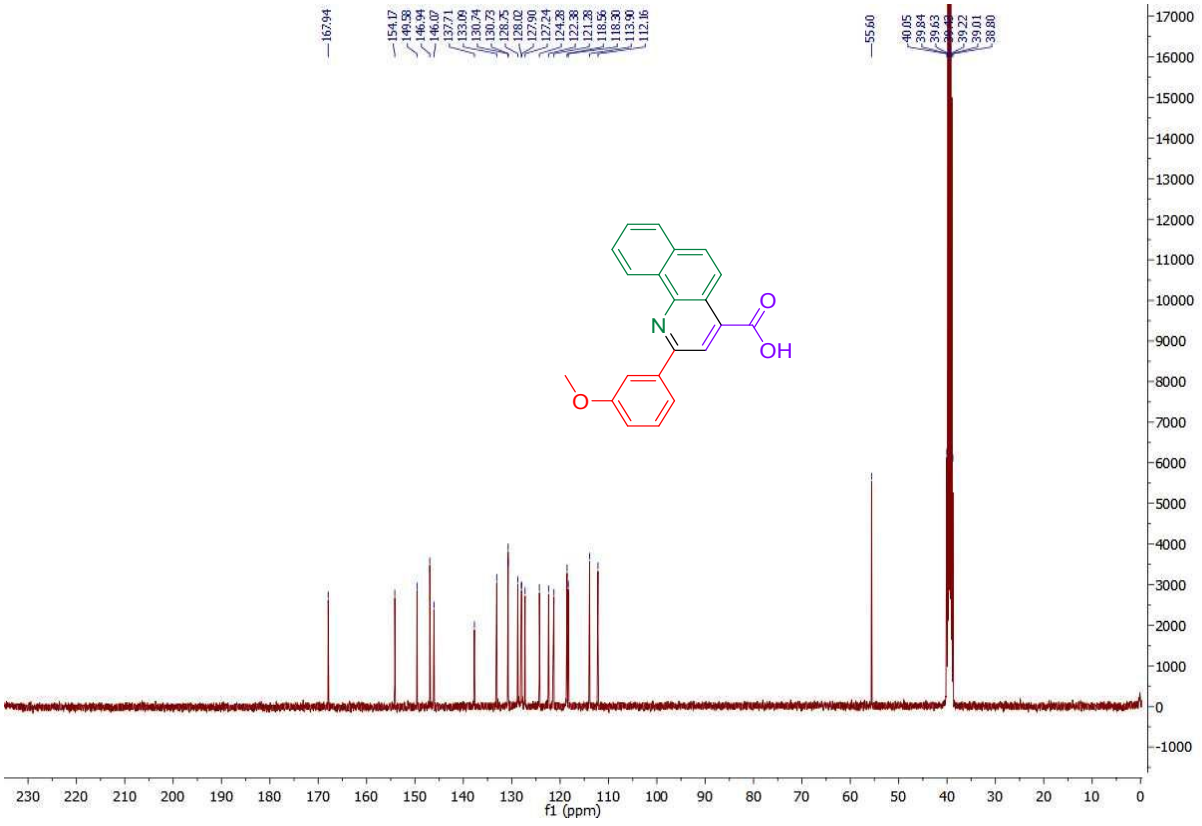

Figure S13: FT-IR spectrum of 2-(4-(dimethylamino)phenyl)benzo[*h*]quinoline-4-carboxylic acid (1e)

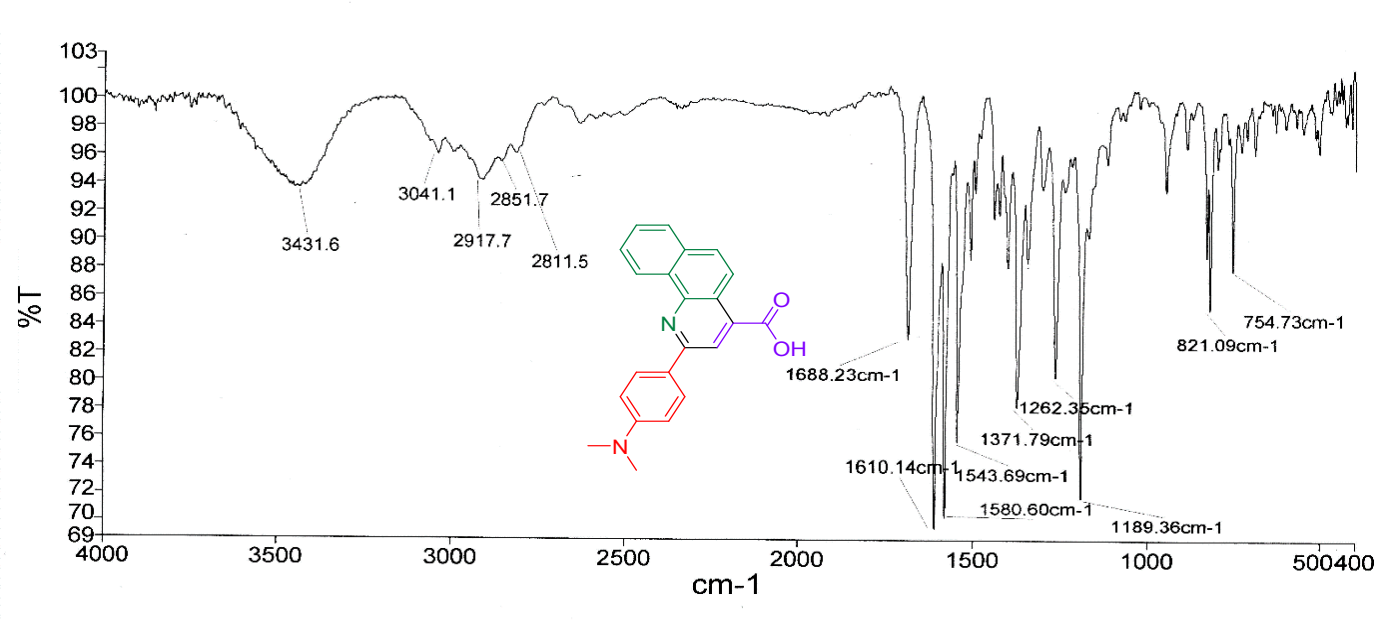

Figure S14: ^{1}H NMR spectrum of 2-(4-(dimethylamino)phenyl)benzo[*h*]quinoline-4-carboxylic acid (1e)

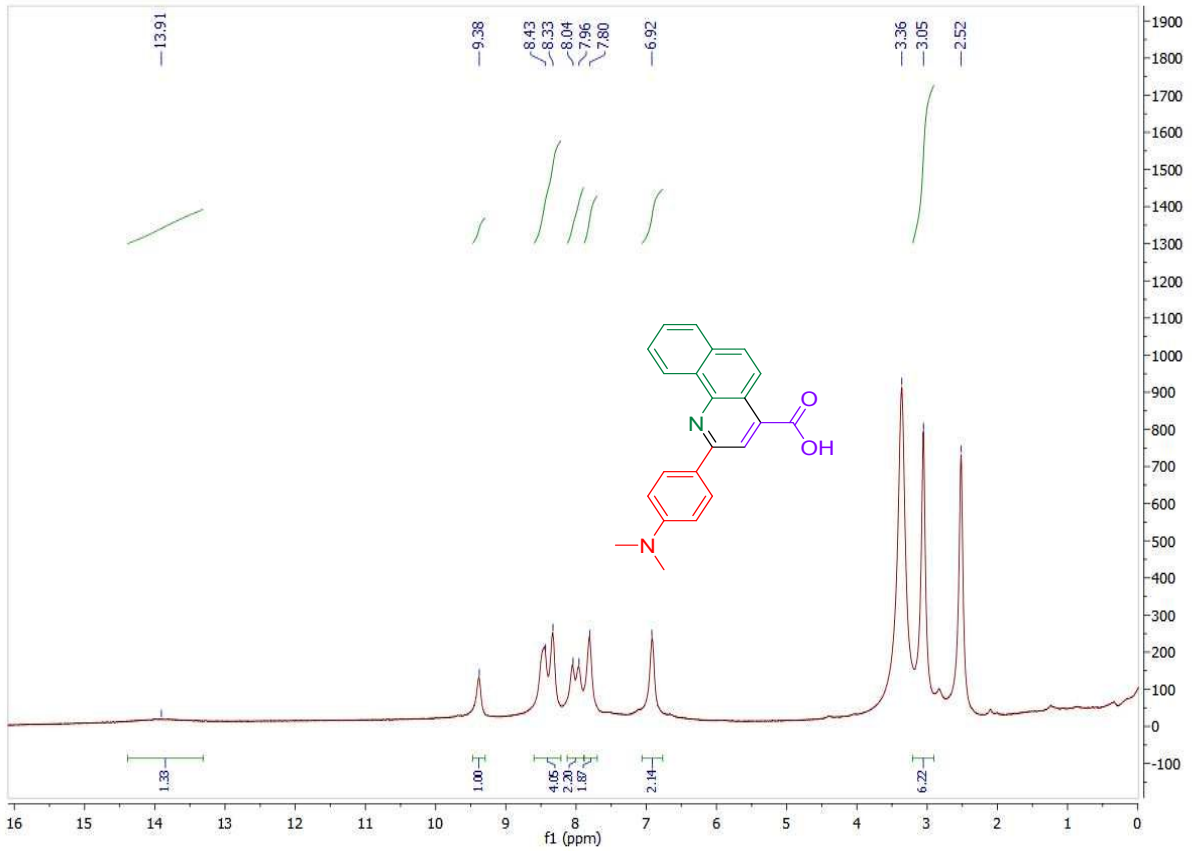

Figure S15: ^{13}C NMR spectrum of 2-(4-(dimethylamino)phenyl)benzo[*h*]quinoline-4-carboxylic acid (1e)

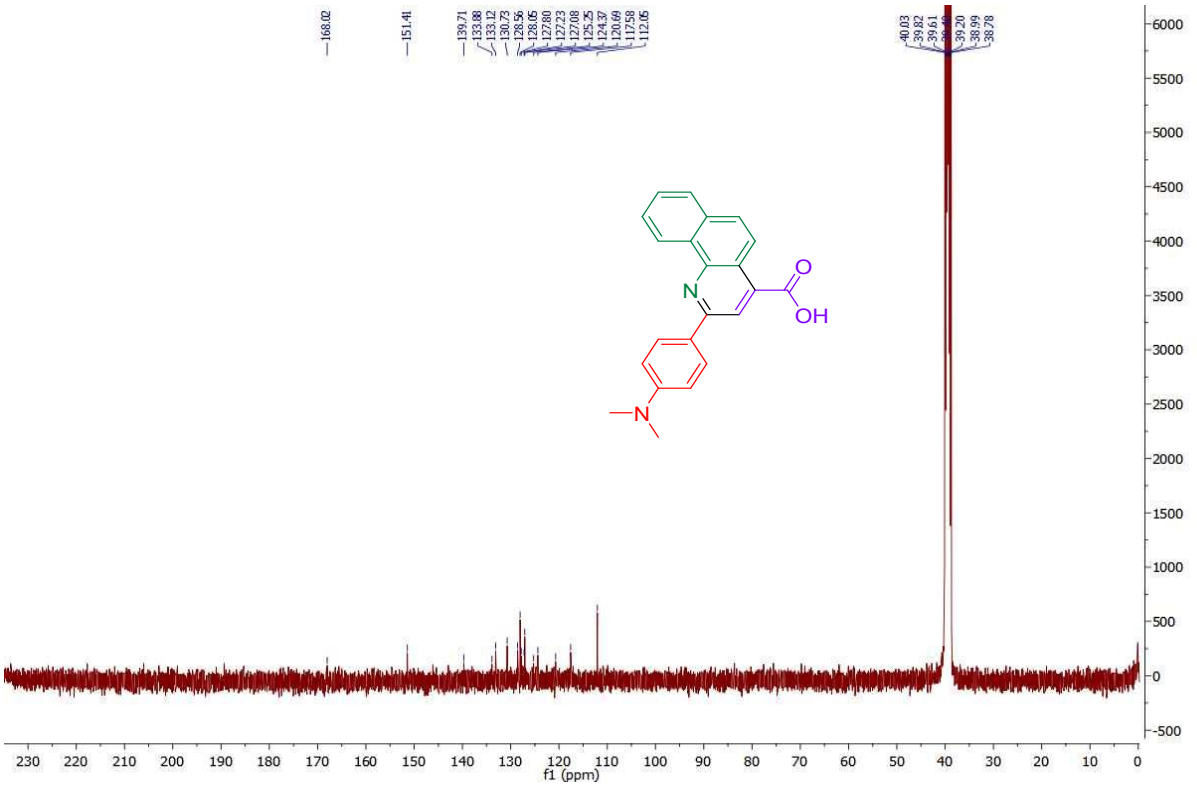

Figure S16: FT-IR spectrum of 2-(2-chlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1f)

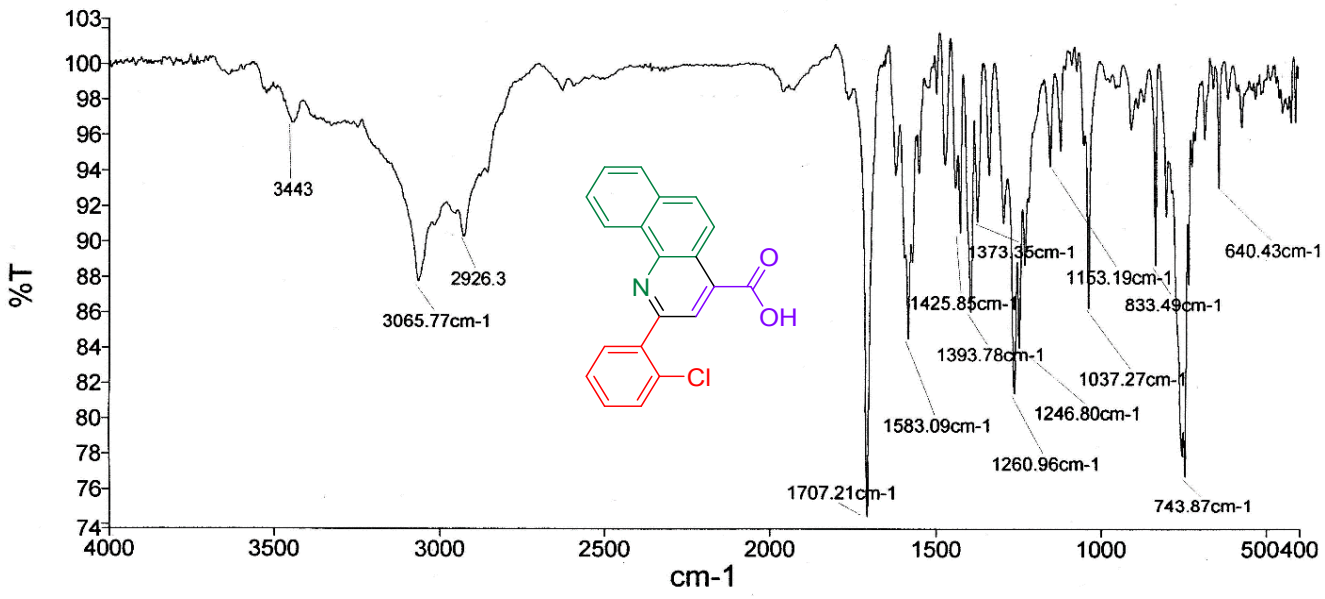

Figure S17: ^{1}H NMR spectrum of 2-(2-chlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1f)

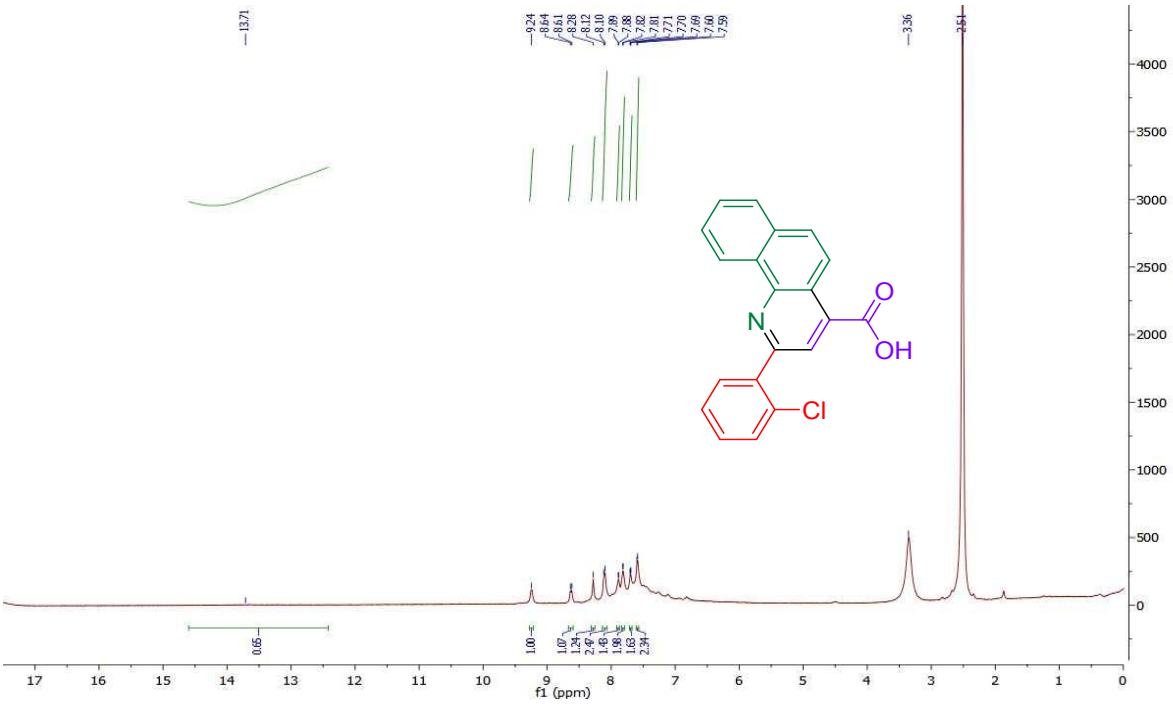

Figure S18: ^{13}C NMR spectrum of 2-(2-chlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1f)

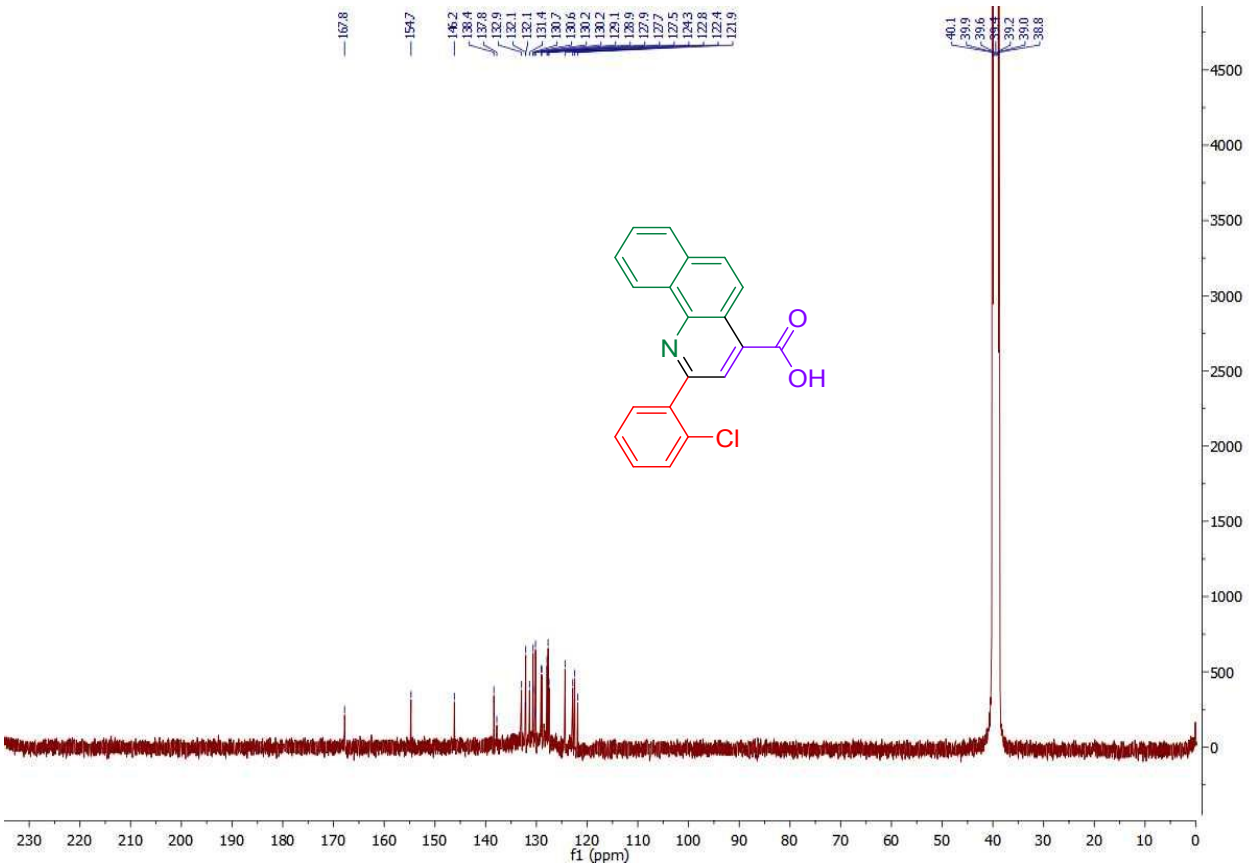

Figure S19: FT-IR spectrum of 2-(4-chlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1g)

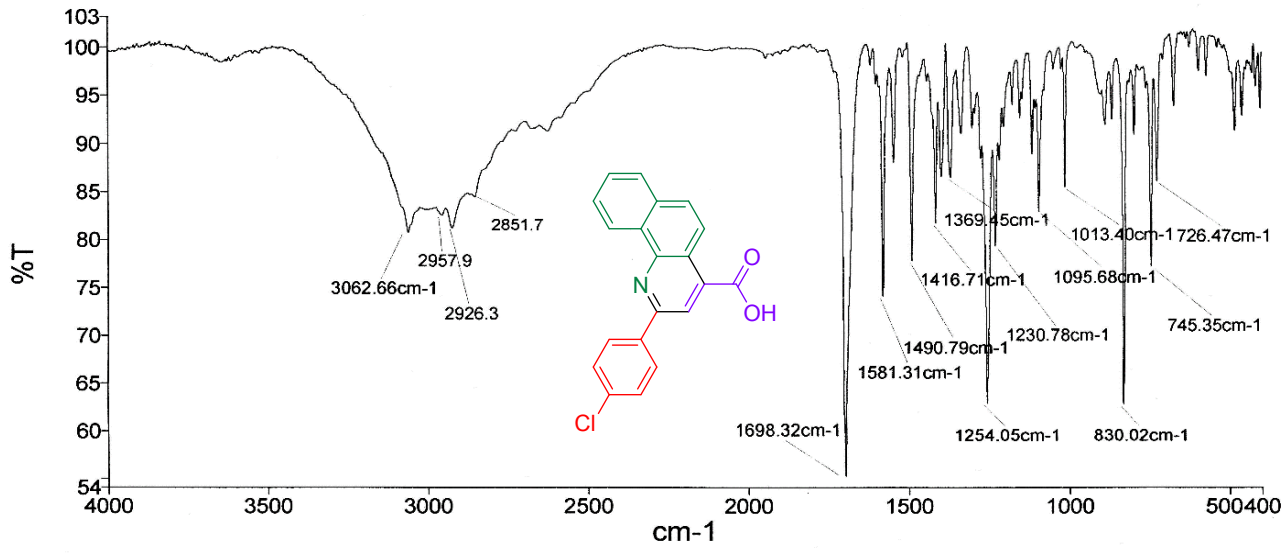

Figure S20: ^{1}H NMR spectrum of 2-(4-chlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1g)

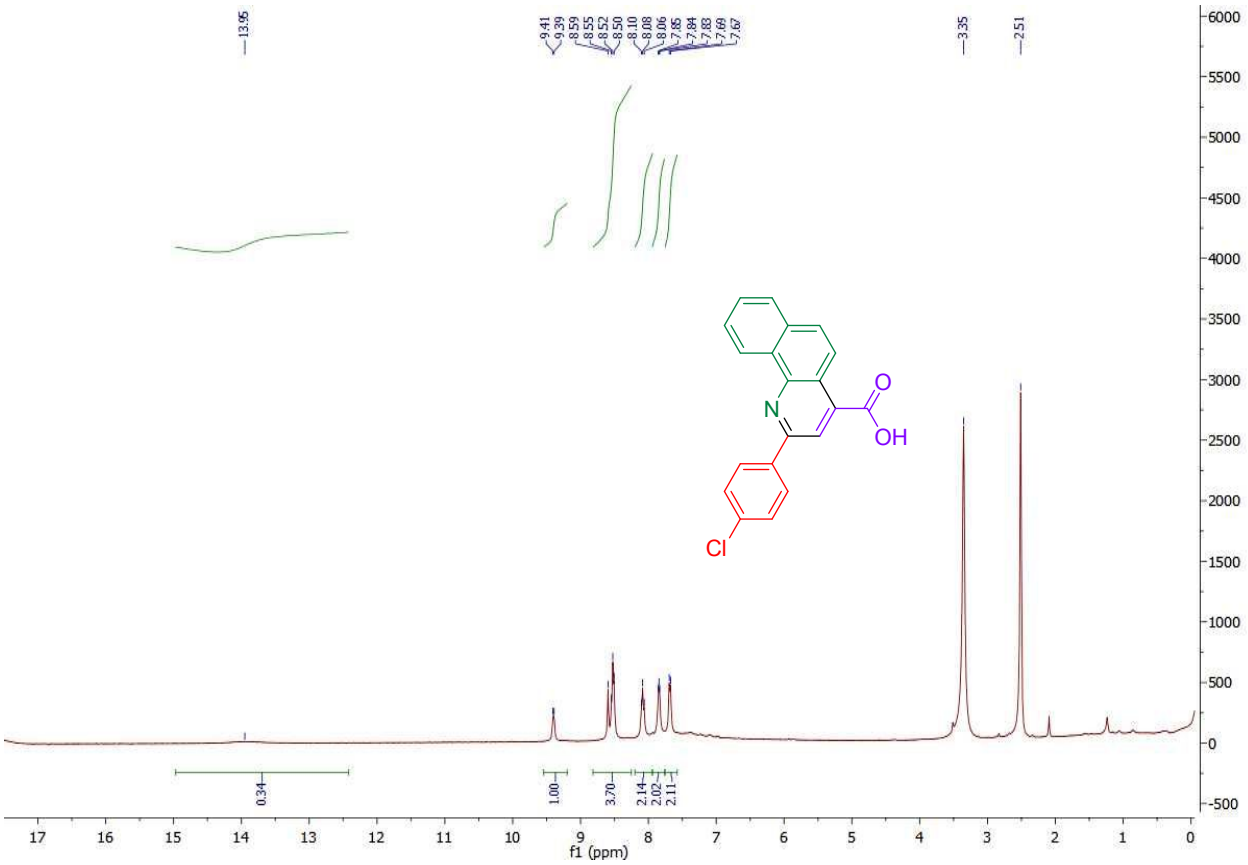

Figure S21: ^{13}C NMR spectrum of 2-(4-chlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1g)

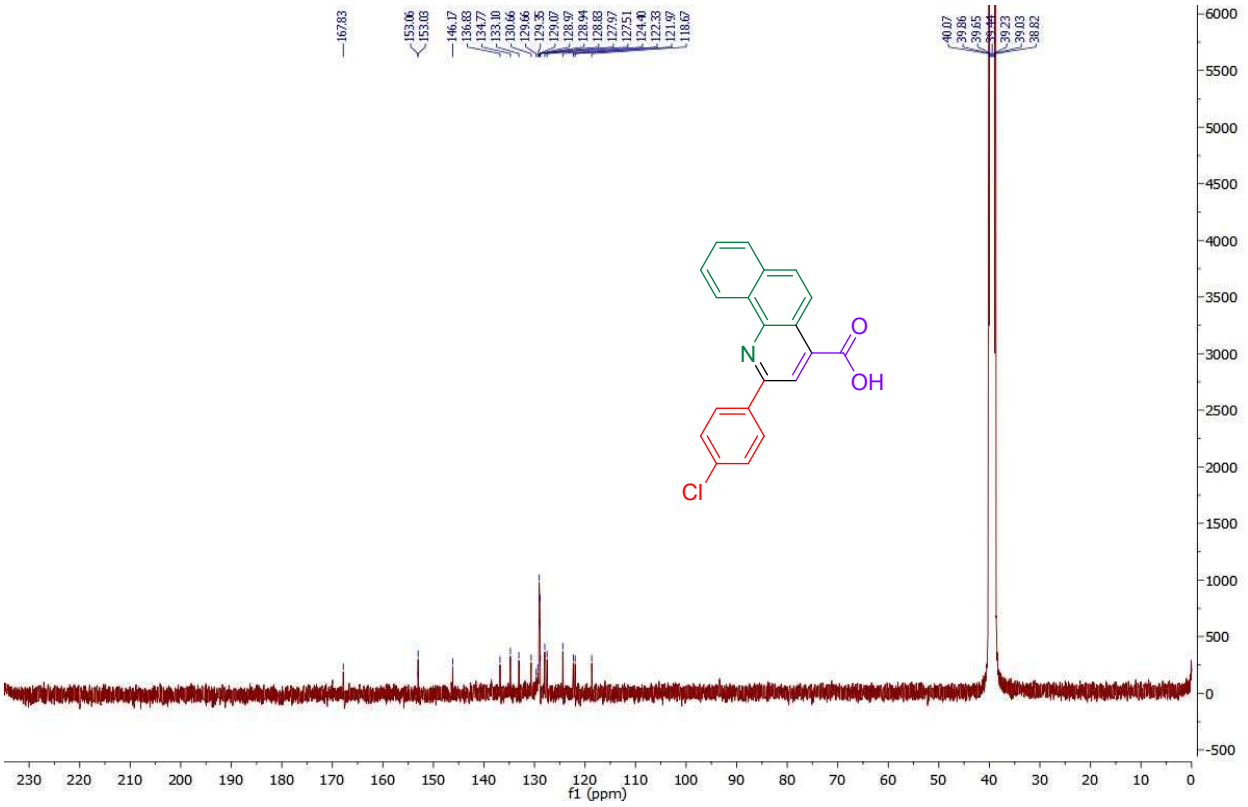

Figure S22: FT-IR spectrum of 2-(2,4-dichlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1h)

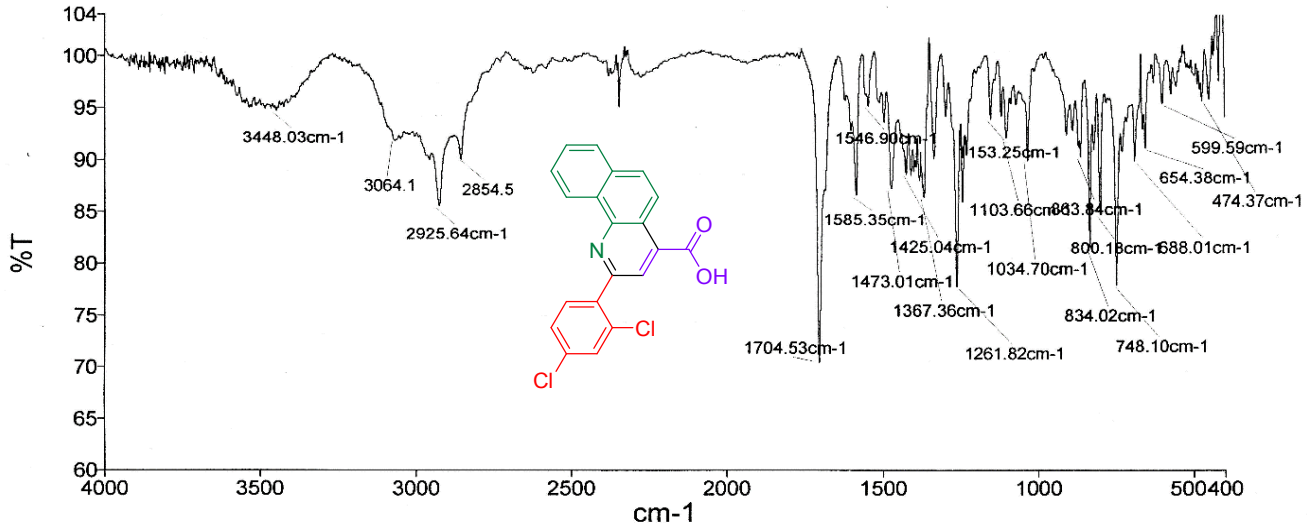

Figure S23: ^{1}H NMR spectrum of 2-(2,4-dichlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1h)

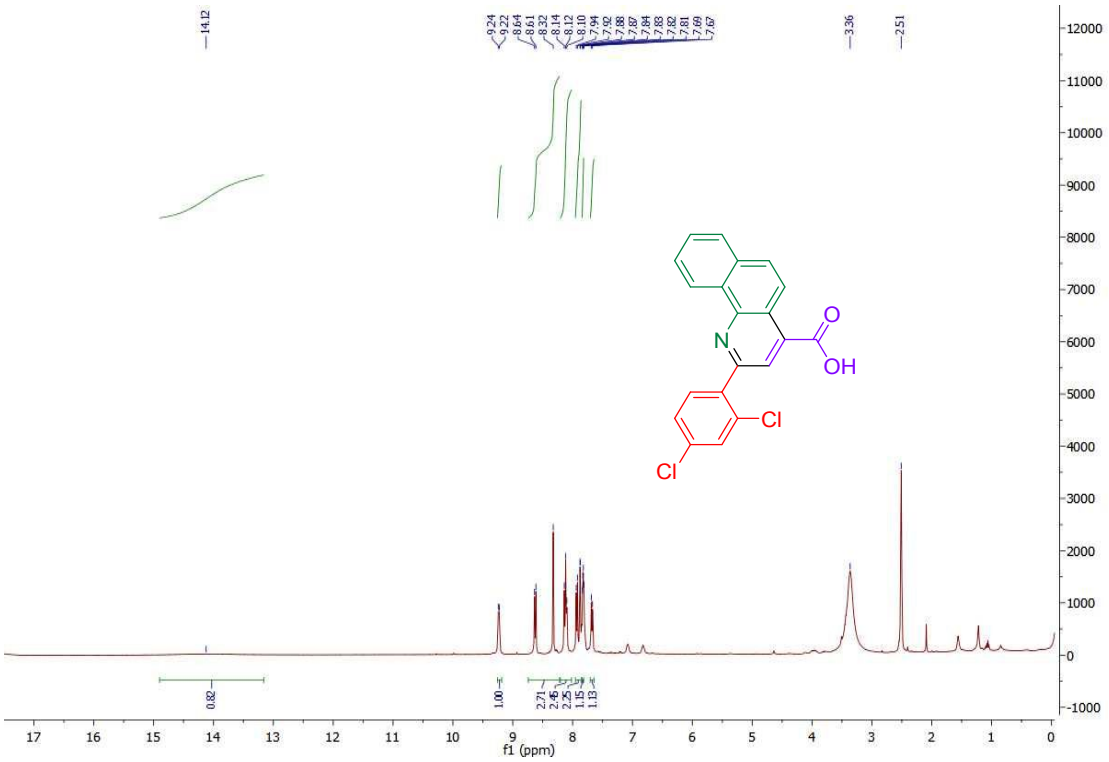

Figure S24: ^{13}C NMR spectrum of 2-(2,4-dichlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1h)

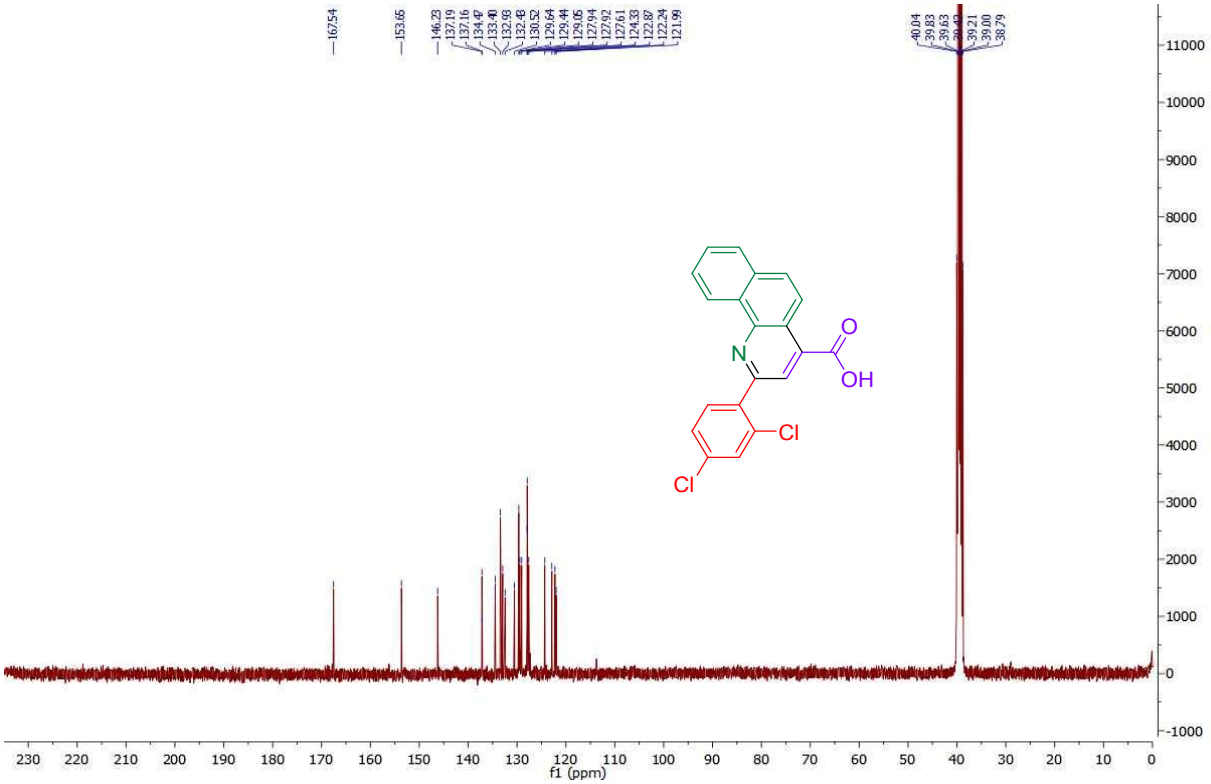

Figure S25: FT-IR spectrum of 2-(2,6-dichlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1i)

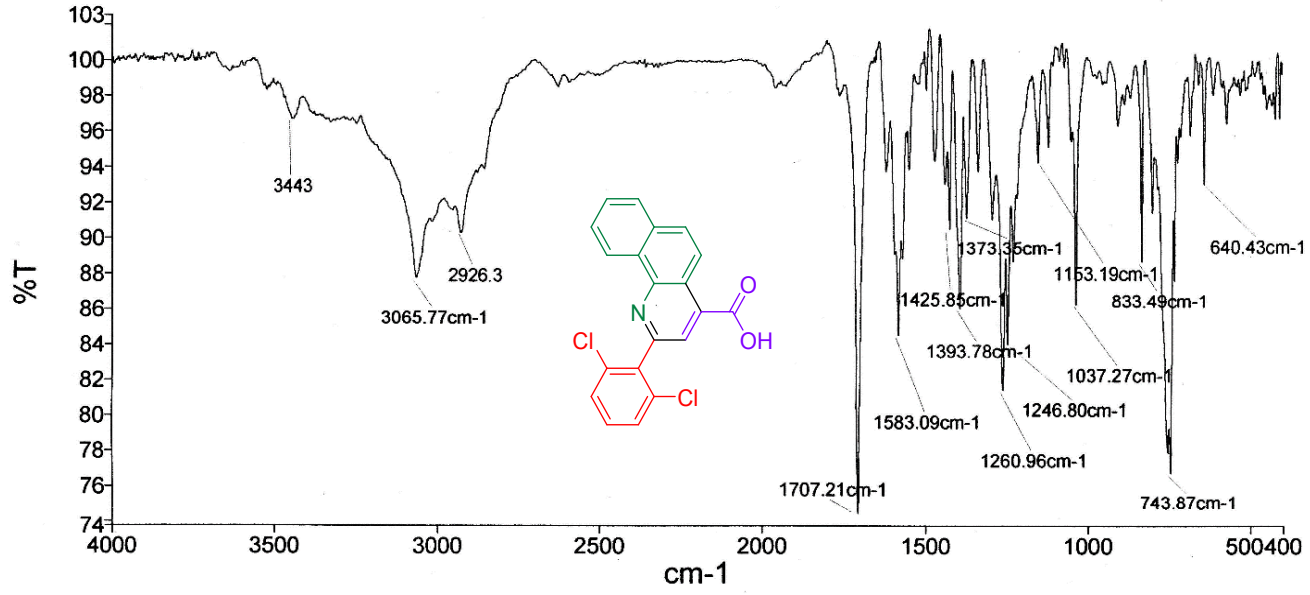

Figure S26: ^{1}H NMR spectrum of 2-(2,6-dichlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1i)

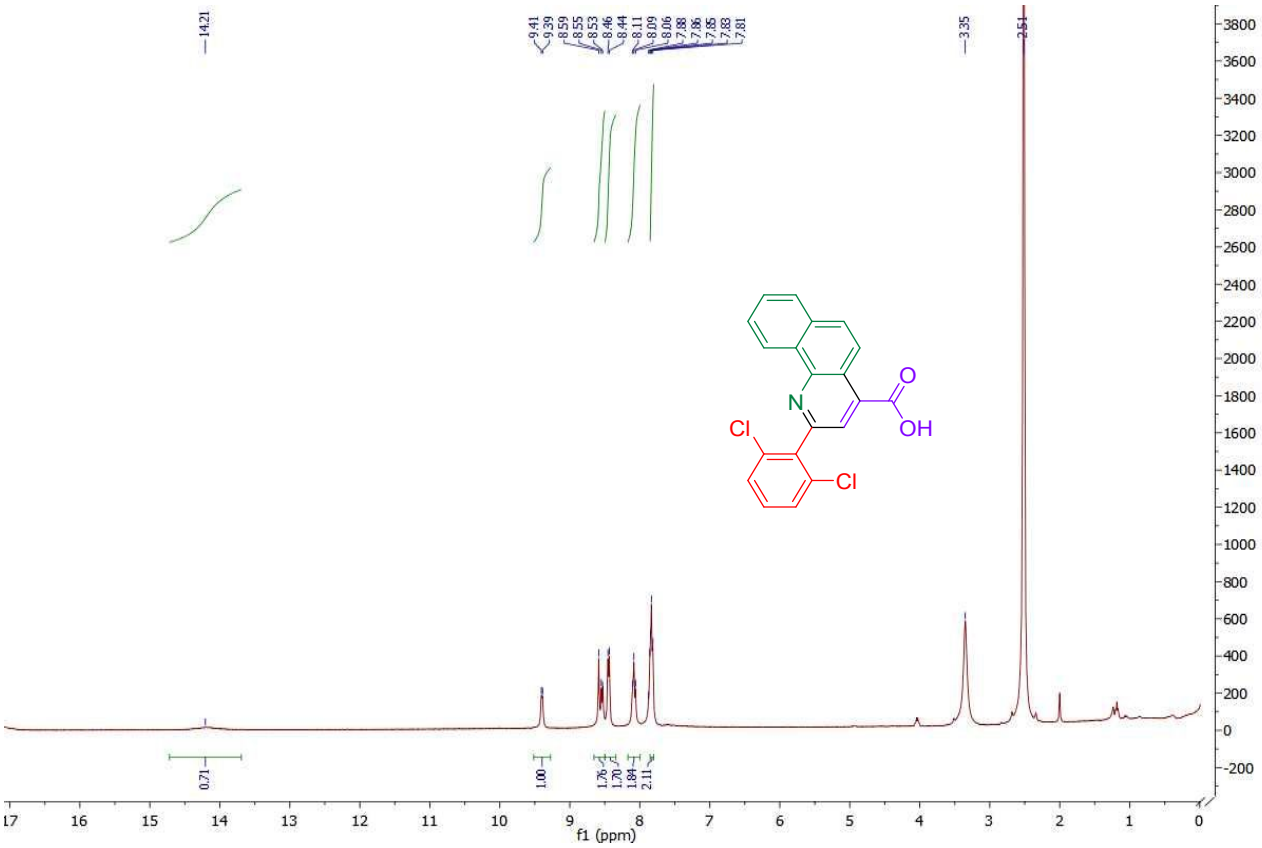

Figure S27: ^{13}C NMR spectrum of 2-(2,6-dichlorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1i)

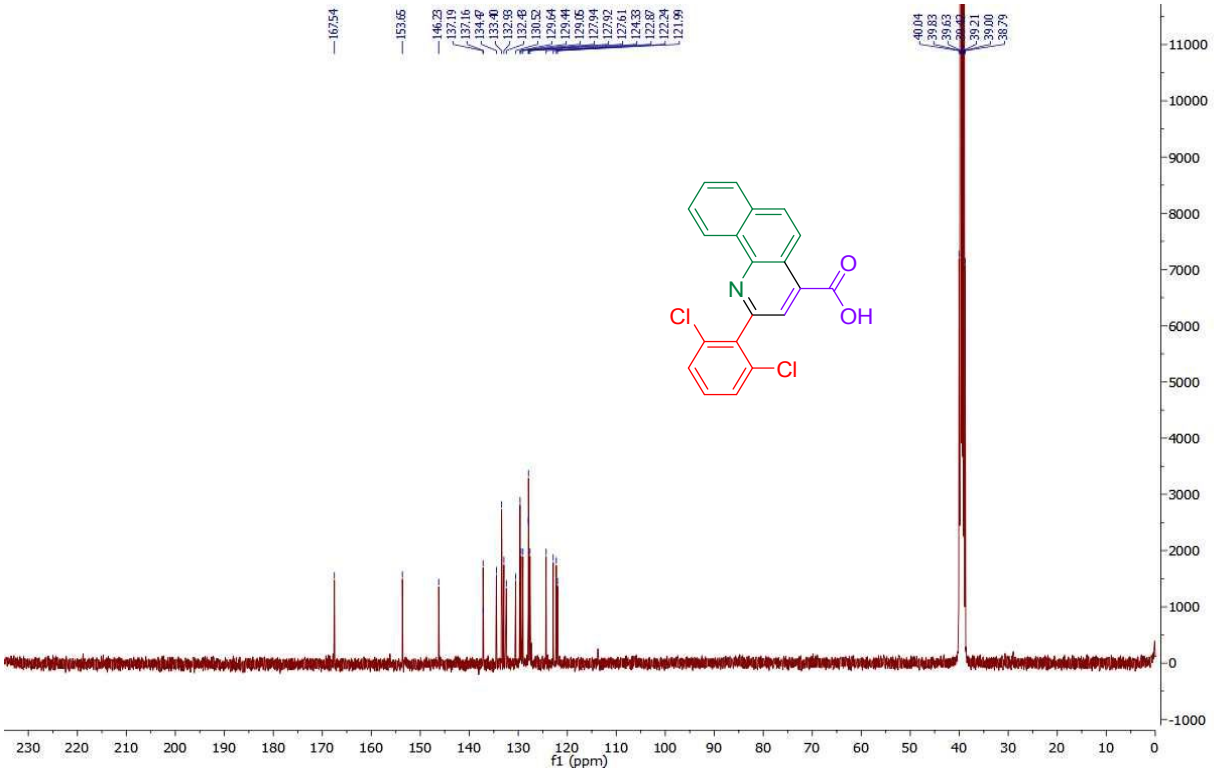

Figure S28: FT-IR spectrum of 2-(3-fluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1j)

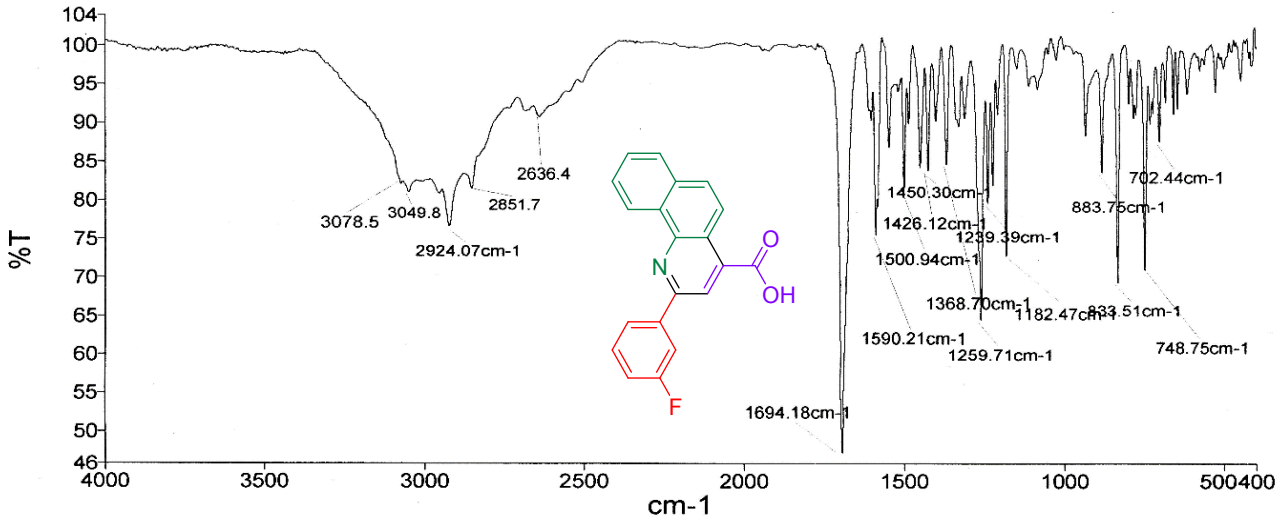

Figure S29: ^{1}H NMR spectrum of 2-(3-fluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1j)

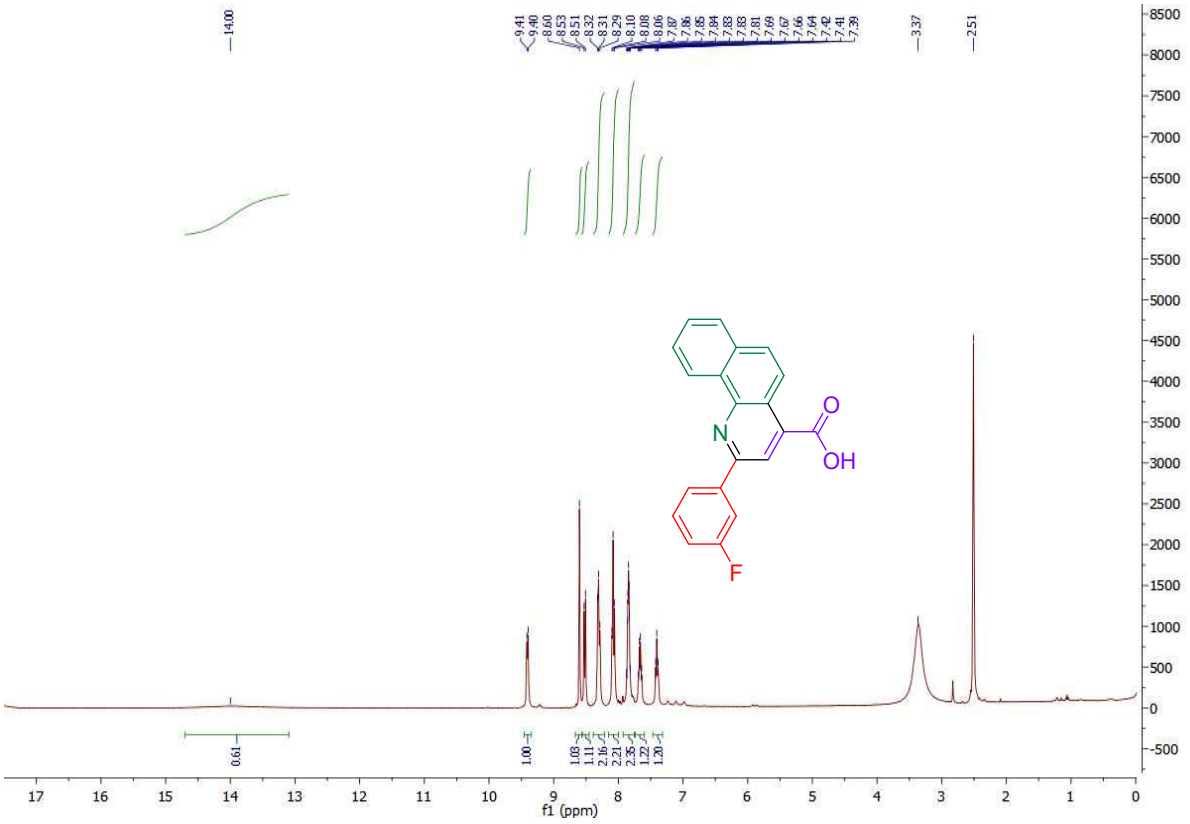

Figure S30: ^{13}C NMR spectrum of 2-(3-fluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1j)

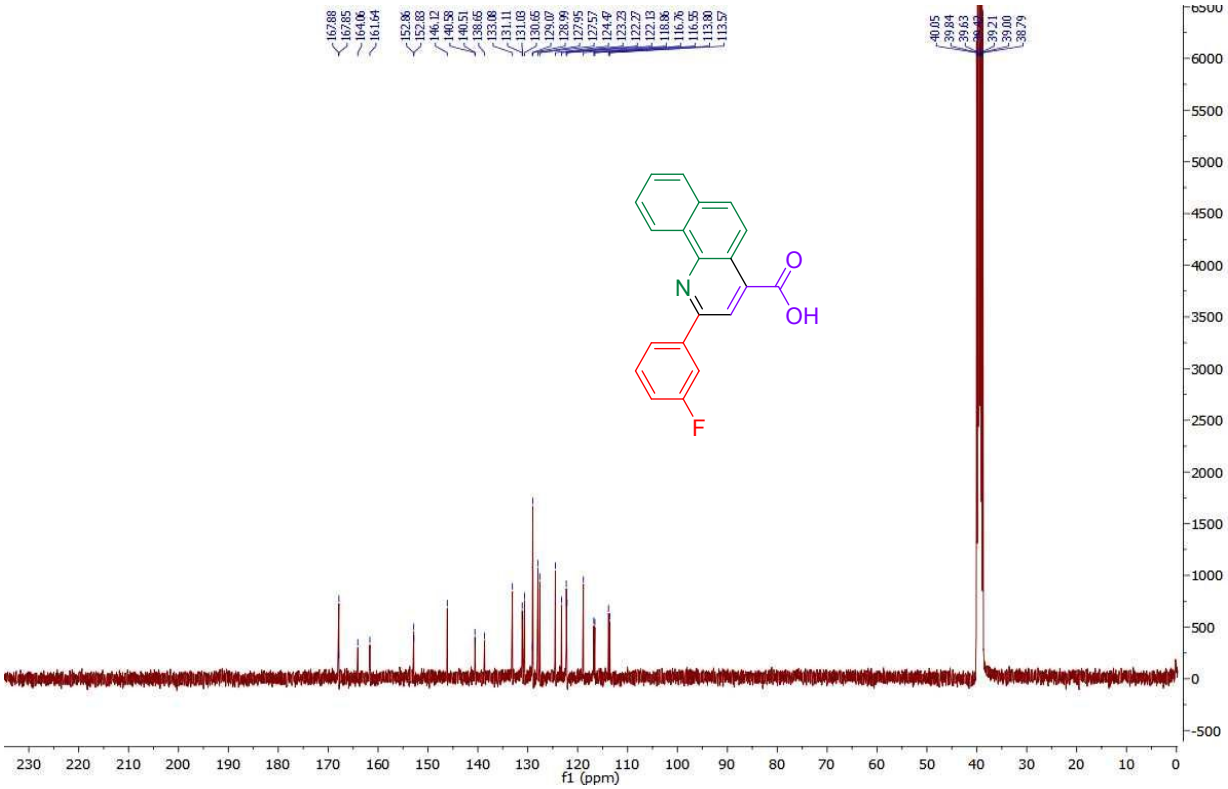

Figure S31: FT-IR spectrum of 2-(3,4-difluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1l)

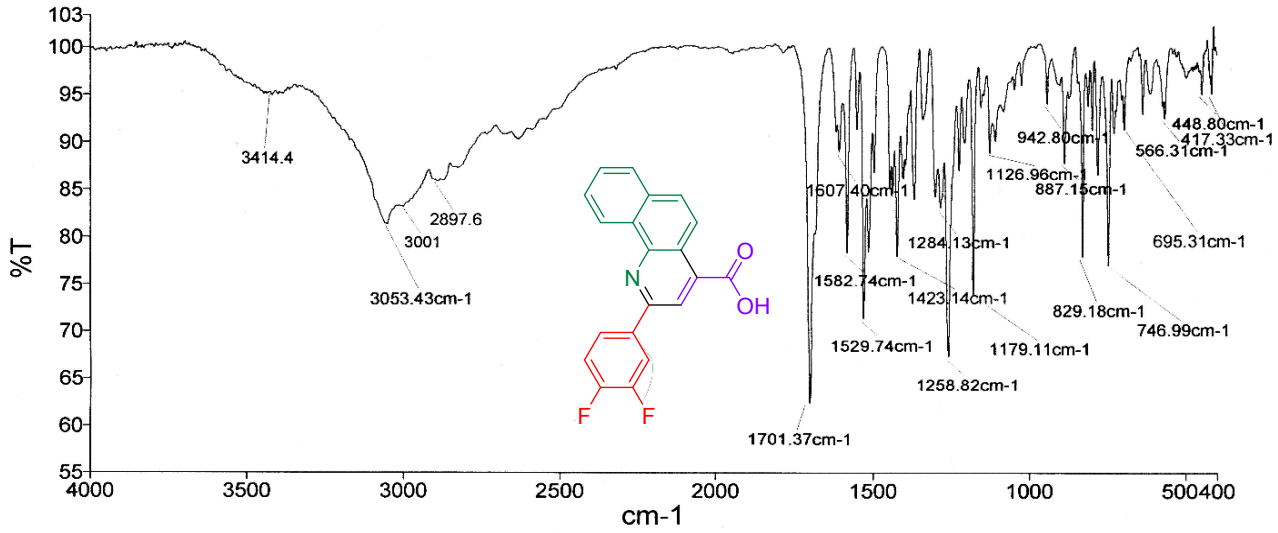

Figure S32: ^{1}H NMR spectrum of 2-(3,4-difluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1l)

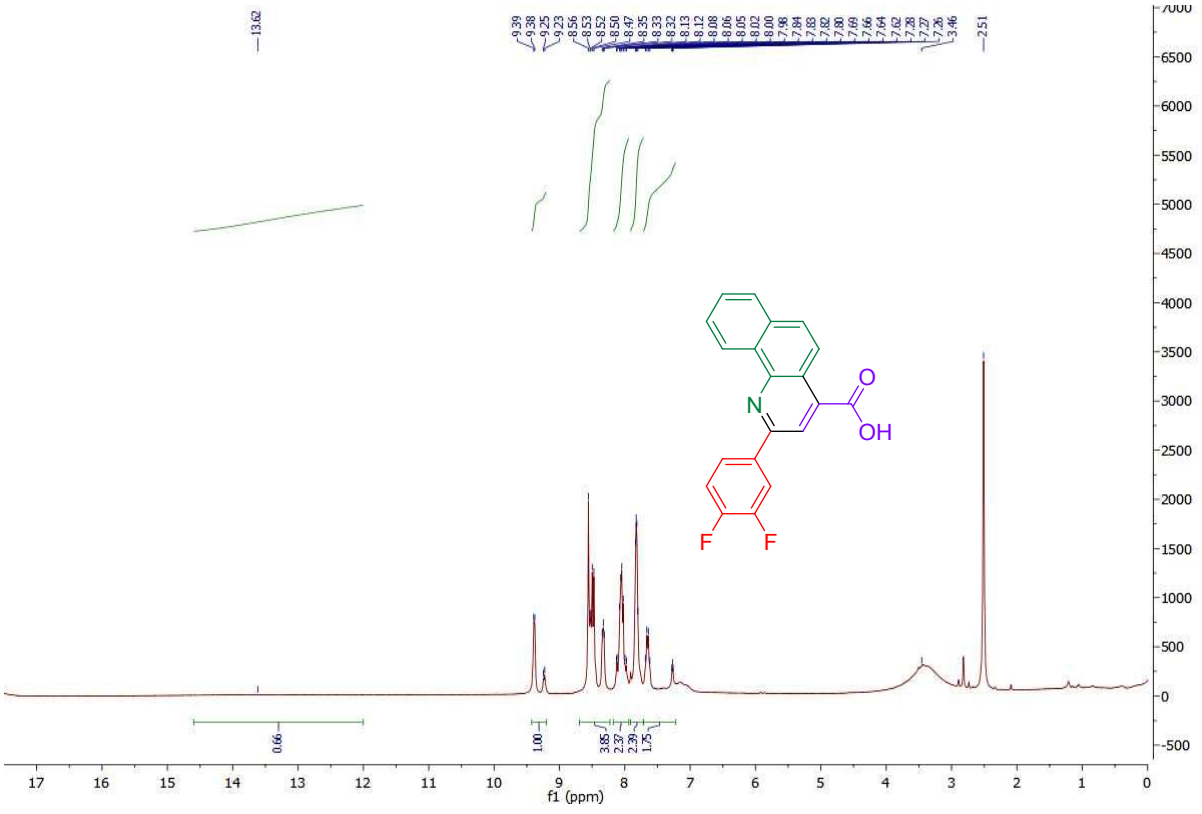

Figure S33: ^{13}C NMR spectrum of 2-(3,4-difluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1l)

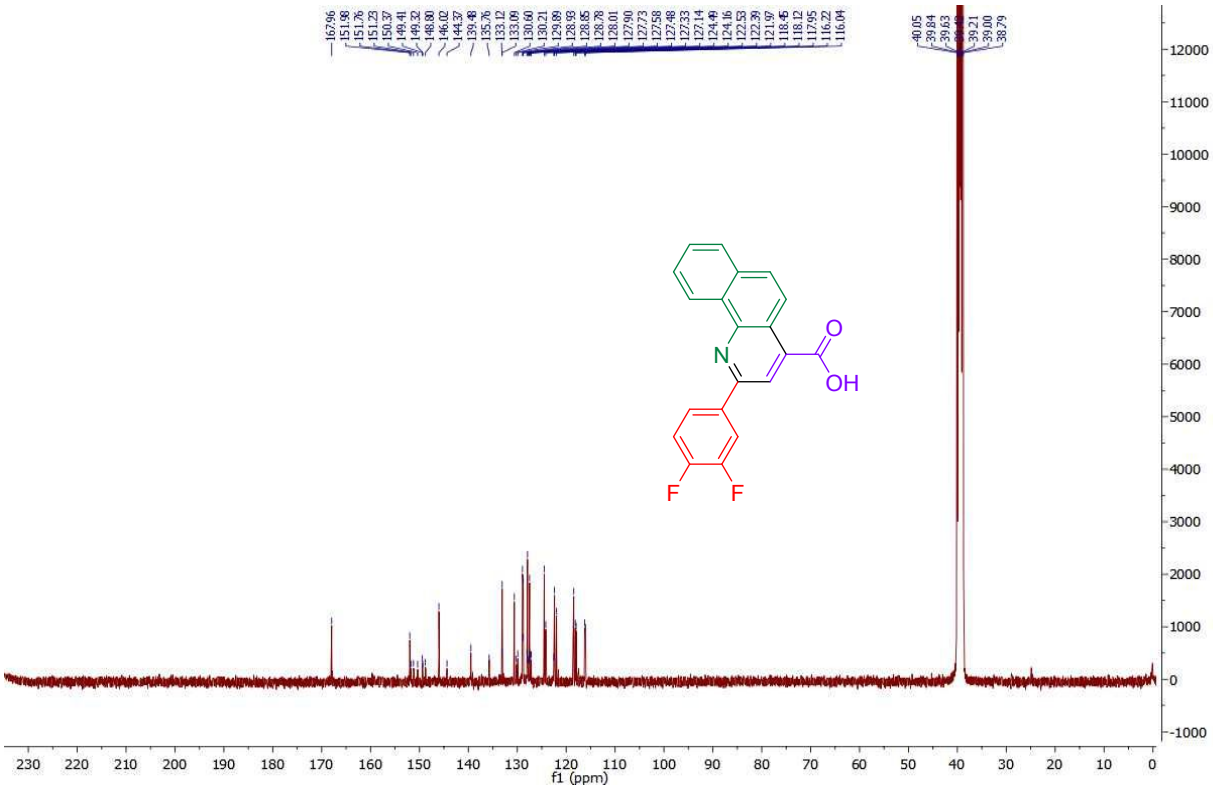

Figure S34: FT-IR spectrum of 2-(3,5-difluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1m)

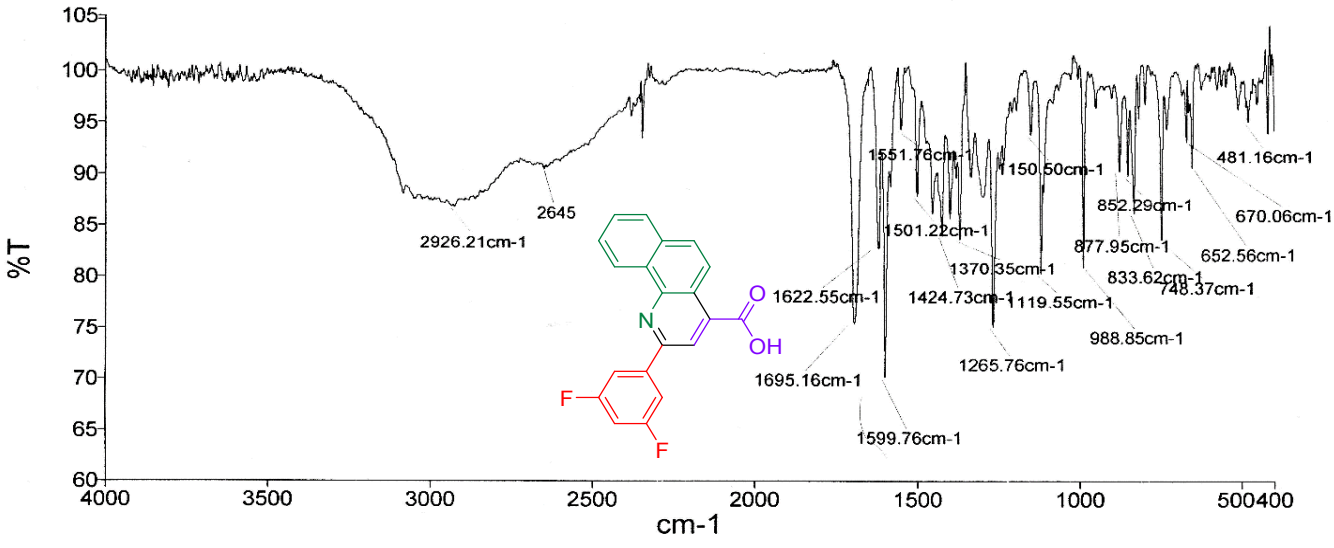

Figure S35: ^{1}H NMR spectrum of 2-(3,5-difluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1m)

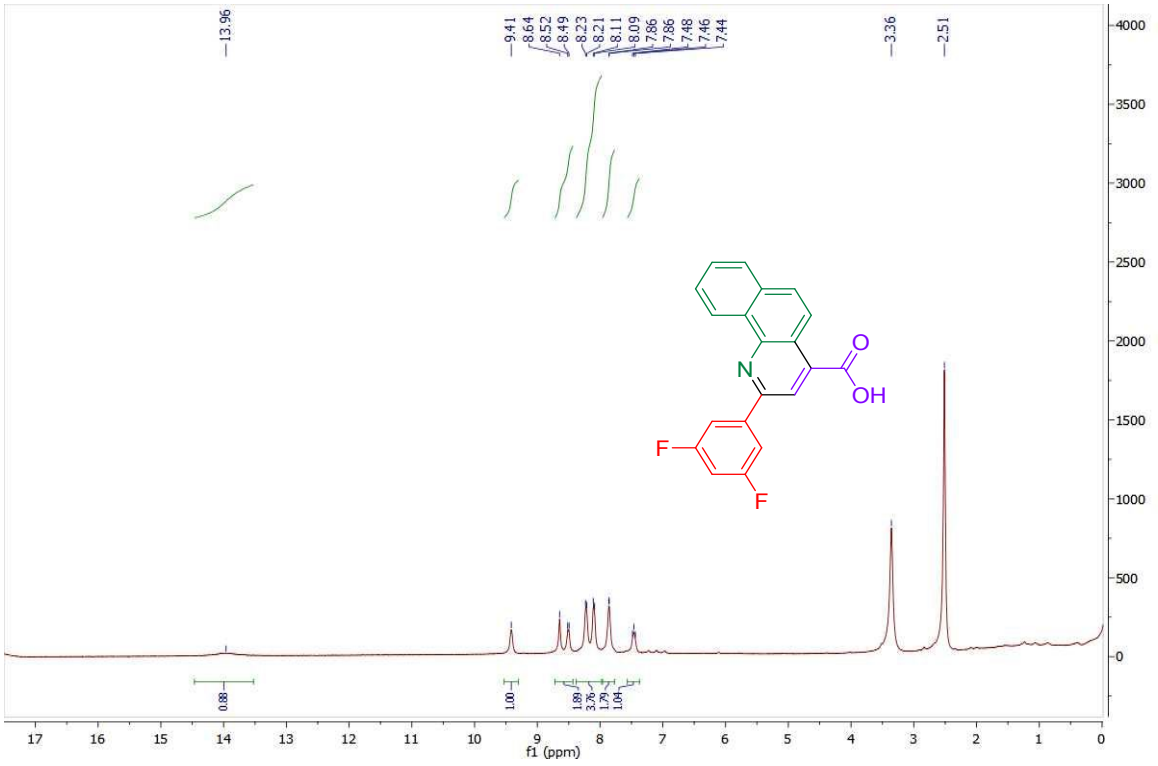

Figure S36: ^{13}C NMR spectrum of 2-(3,5-difluorophenyl)benzo[*h*]quinoline-4-carboxylic acid (1m)

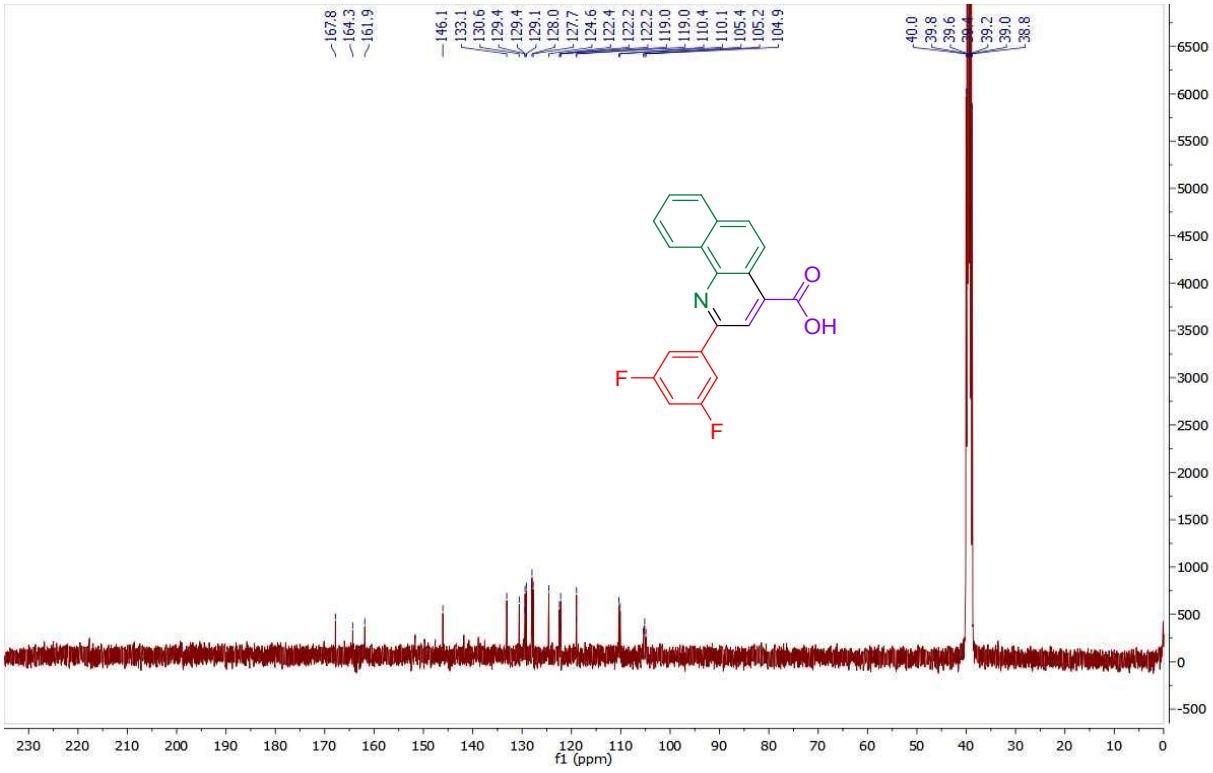

Figure S37: FT-IR spectrum of 2-(pyridin-3-yl)benzo[*h*]quinoline-4-carboxylic acid (1n)

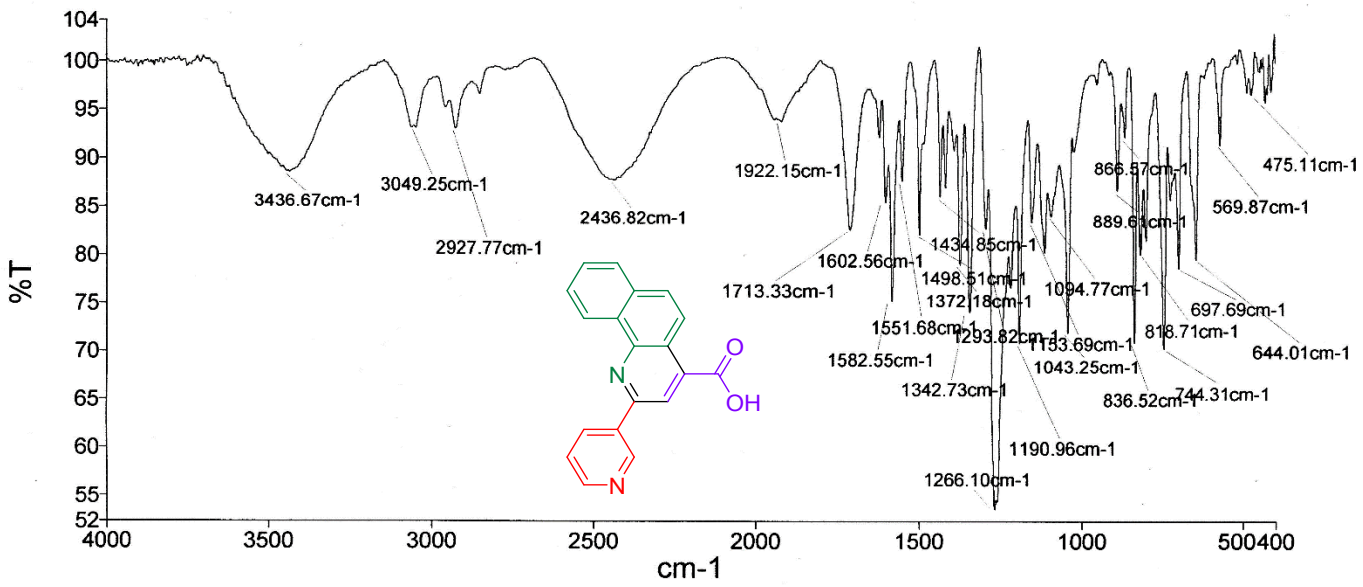

Figure S38: ^{1}H NMR spectrum of 2-(pyridin-3-yl)benzo[*h*]quinoline-4-carboxylic acid (1n)

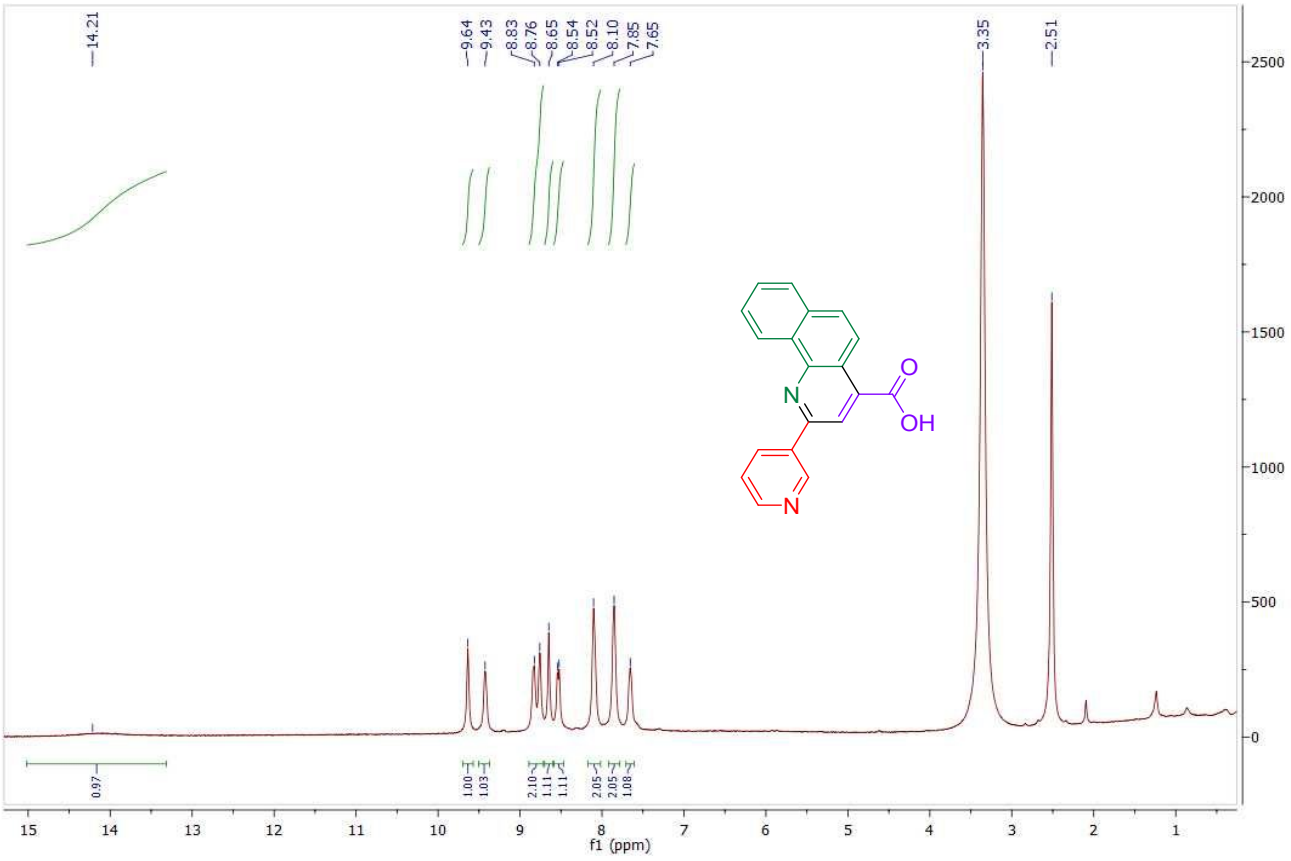

Figure S39: ^{13}C NMR spectrum of 2-(pyridin-3-yl)benzo[*h*]quinoline-4-carboxylic acid (1n)

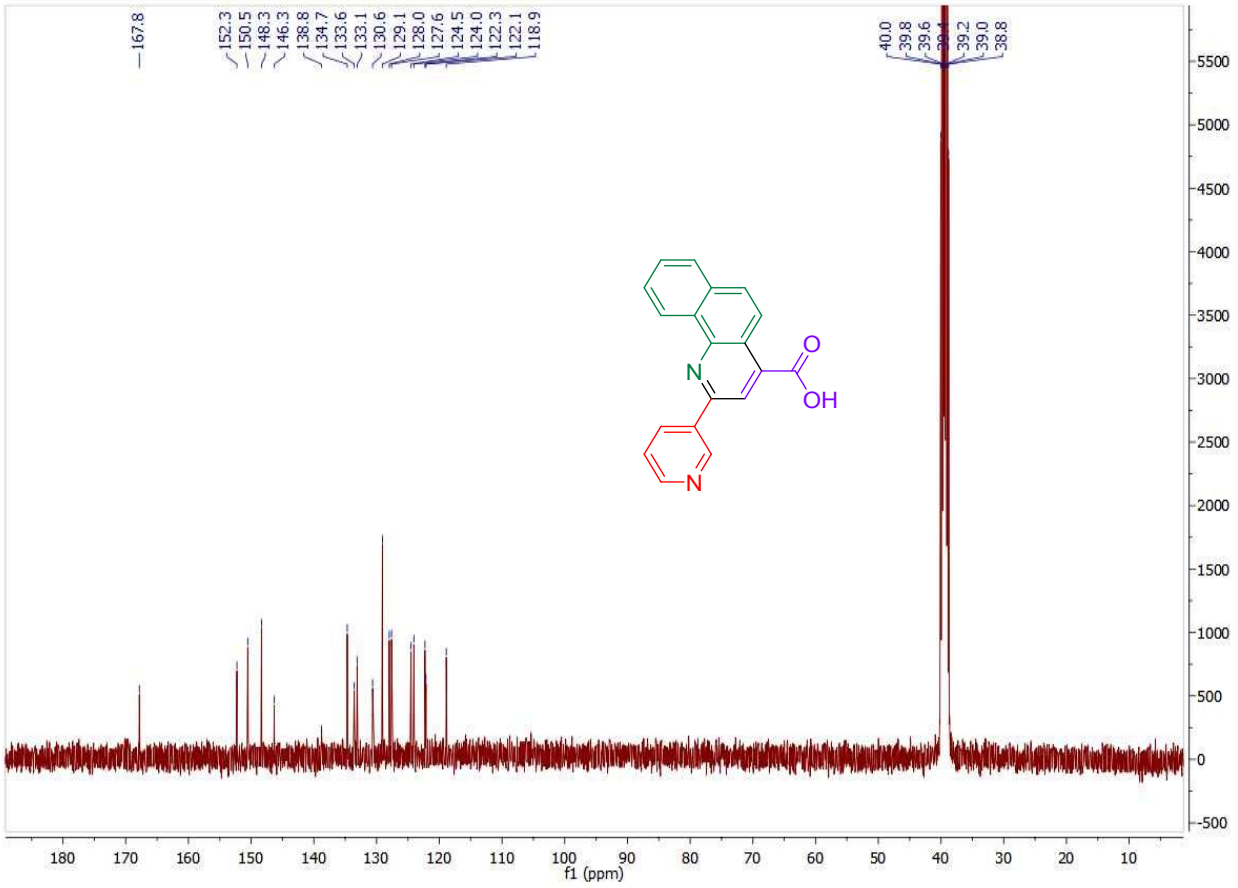

Figure S40: FT-IR spectrum of 2-(naphthalen-2-yl)benzo[*h*]quinoline-4-carboxylic acid (1o)

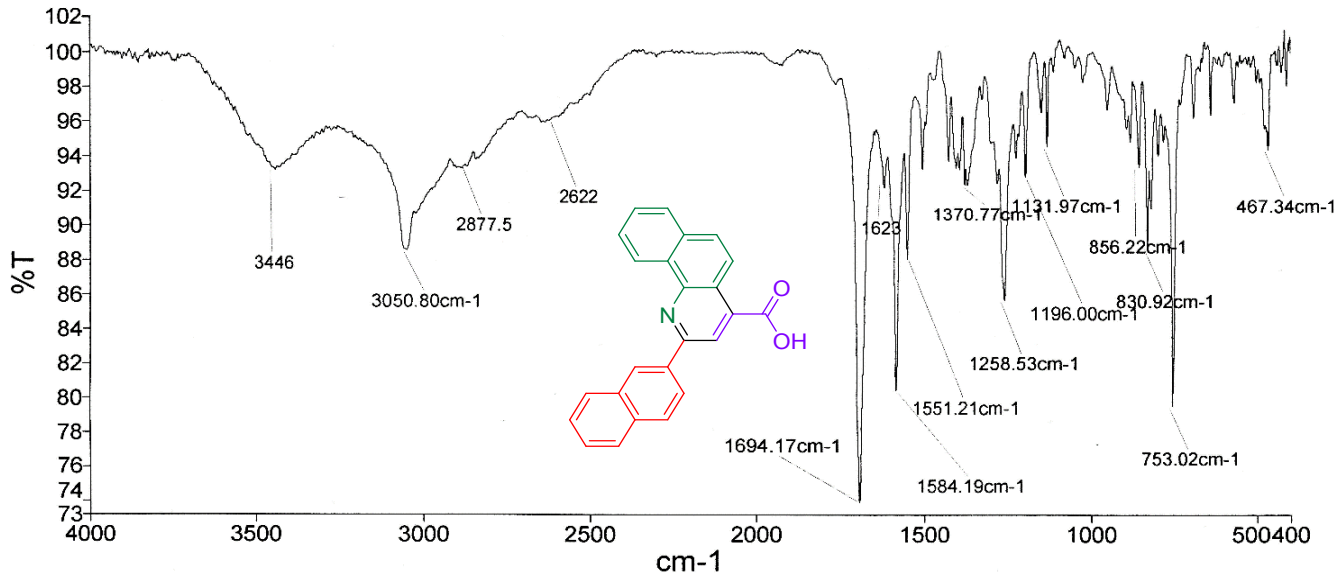

Figure S41: ^{1}H NMR spectrum of 2-(naphthalen-2-yl)benzo[*h*]quinoline-4-carboxylic acid (1o)

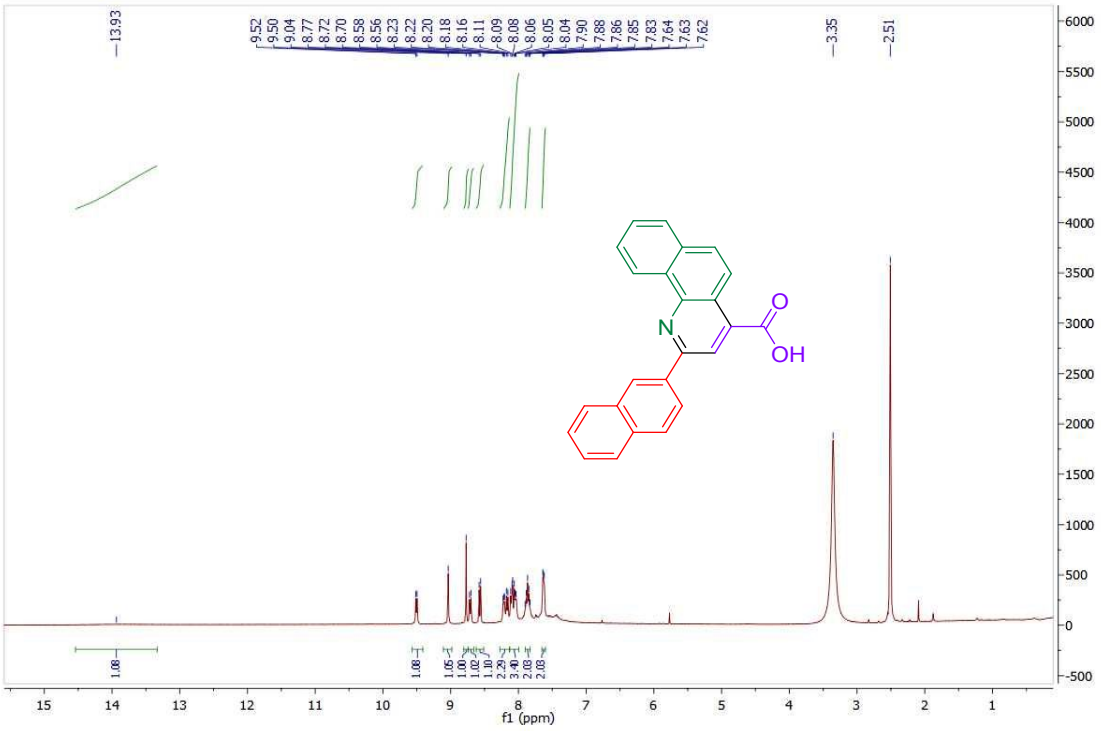

Figure S42: ^{13}C NMR spectrum of 2-(naphthalen-2-yl)benzo[*h*]quinoline-4-carboxylic acid (1o)

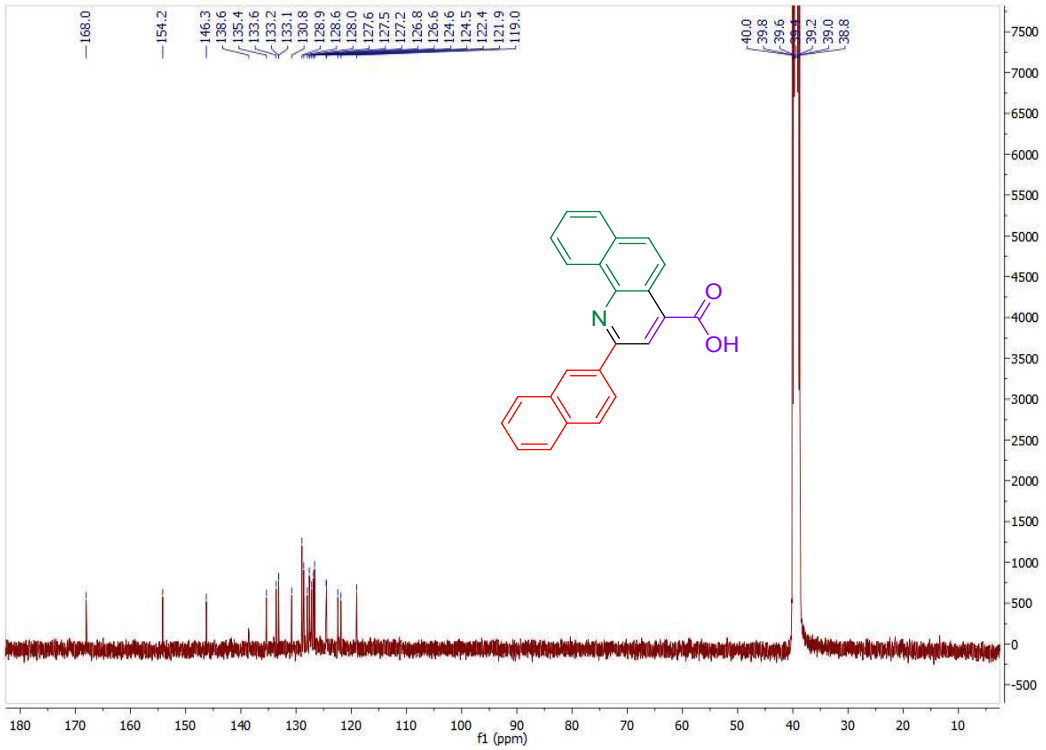

Figure S43: ^{1}H NMR spectrum of urea based ligand

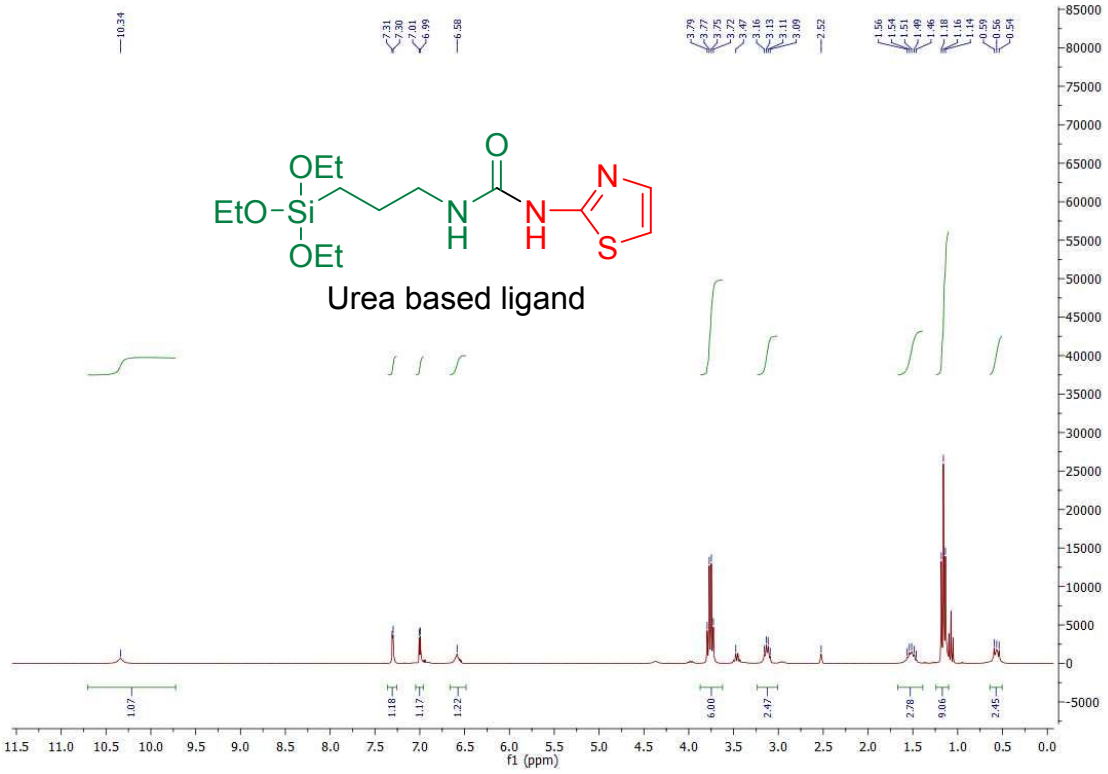

Figure S44: ^{13}C NMR spectrum of urea based ligand