

Supporting Information

Copper-catalyzed oxidative coupling of quinoxalin-2(1*H*)-ones with alcohols: An access to hydroxyalkylation of quinoxalin-2(1*H*)-ones

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1. Copies of spectra of products

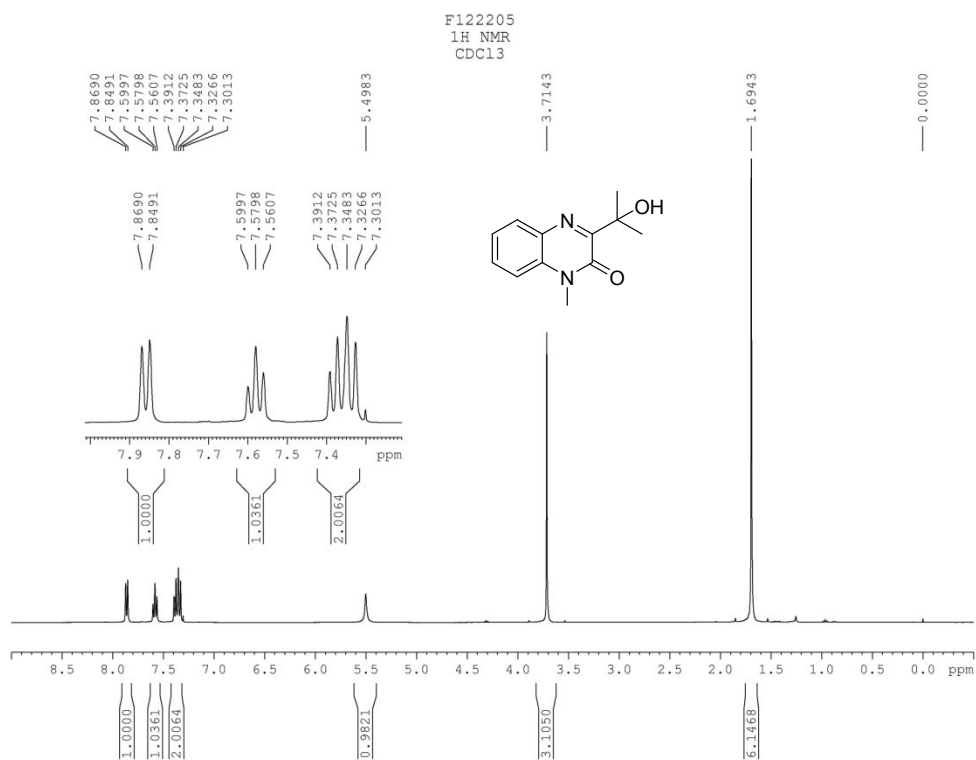


Fig. 1 ^1H NMR spectrum of compound 3aa

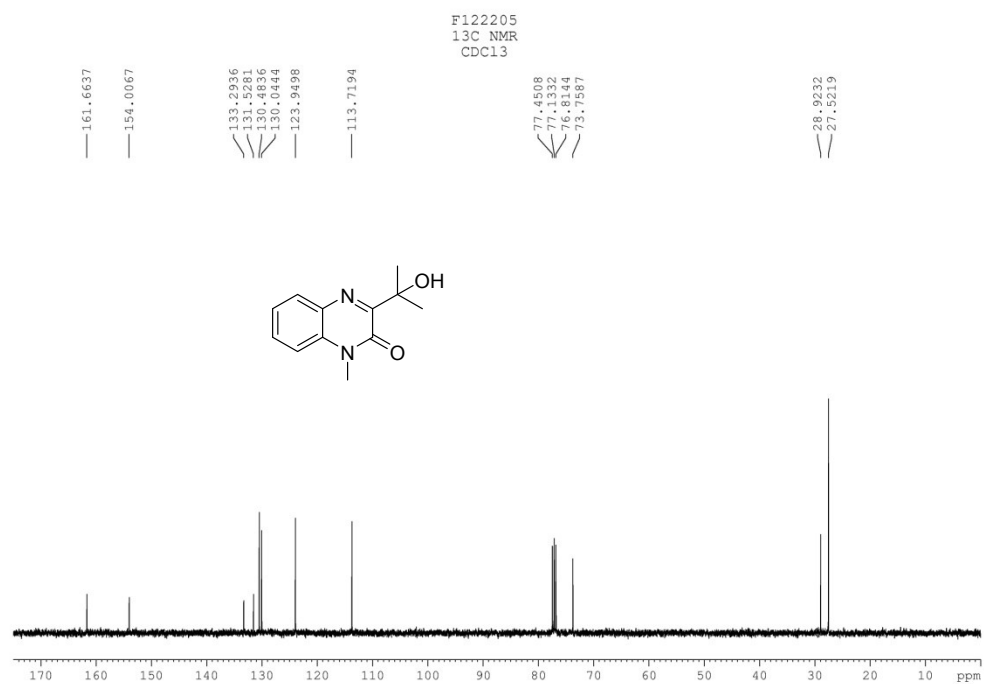


Fig. 2 ^{13}C NMR spectrum of compound 3aa

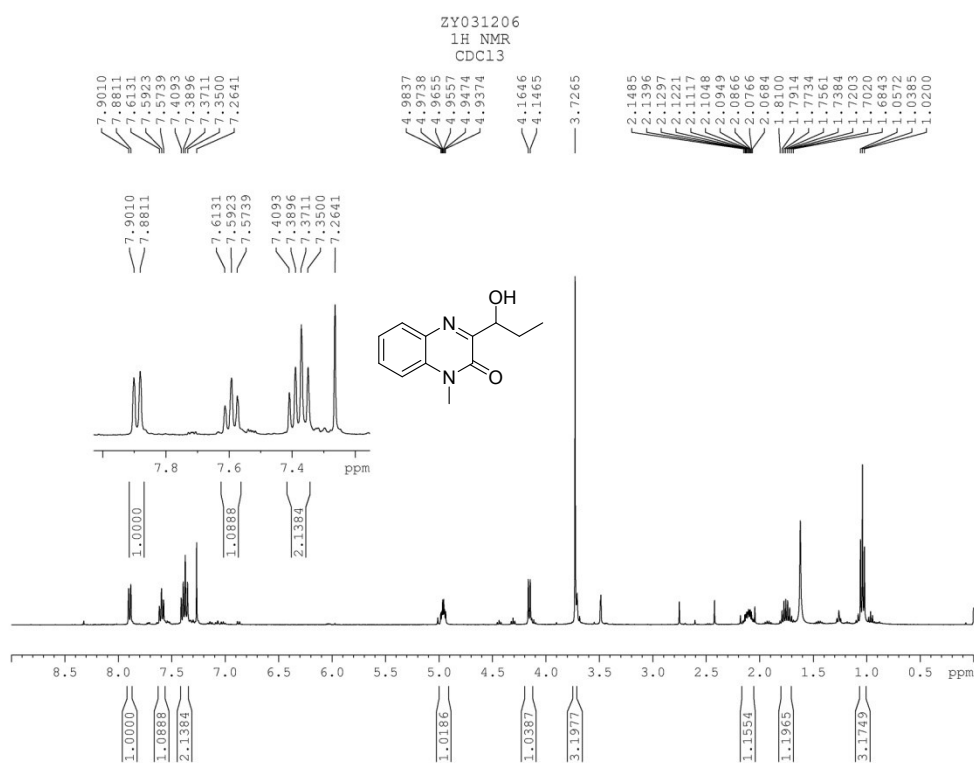


Fig. 3 ^1H NMR spectrum of compound **3ab**

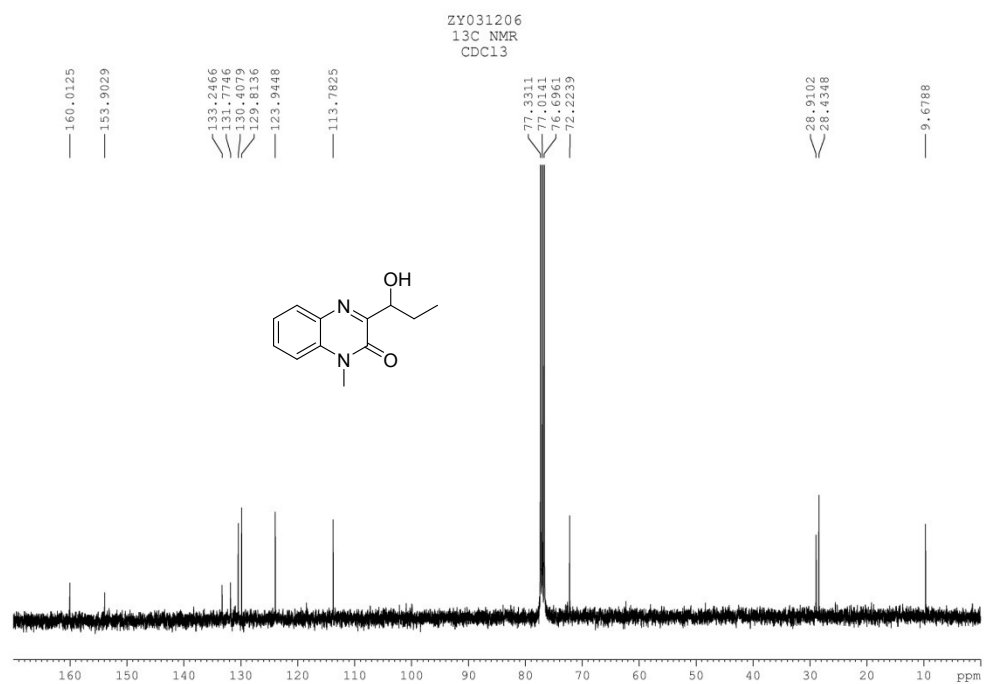
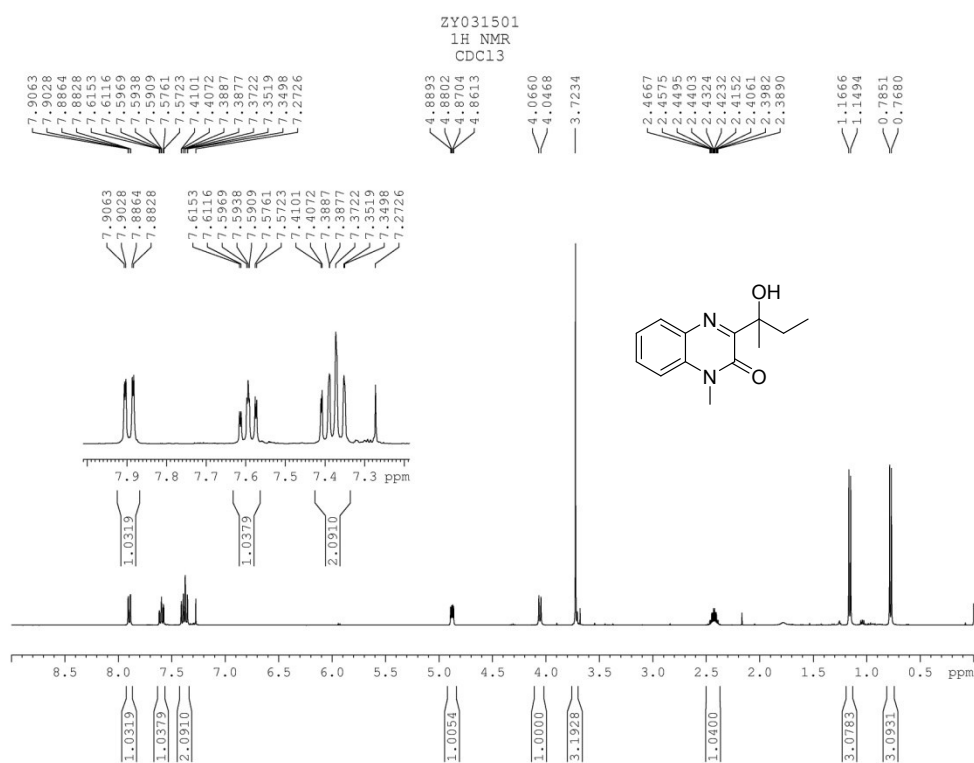


Fig. 4 ^{13}C NMR spectrum of compound **3ab**



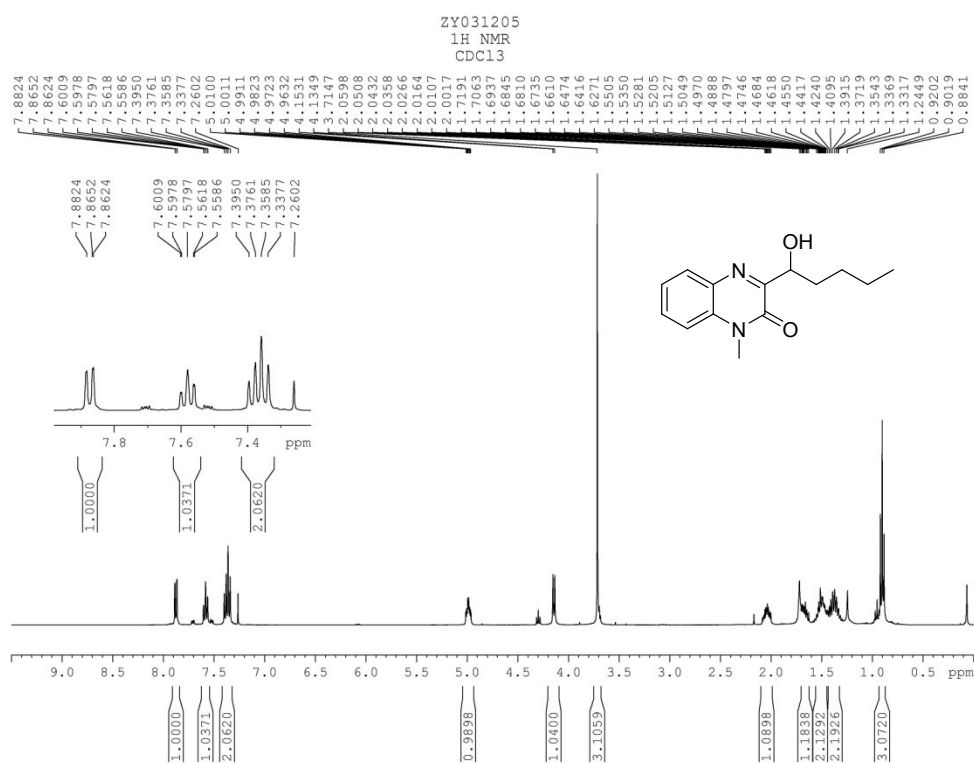


Fig. 7 ^1H NMR spectrum of compound **3ad**

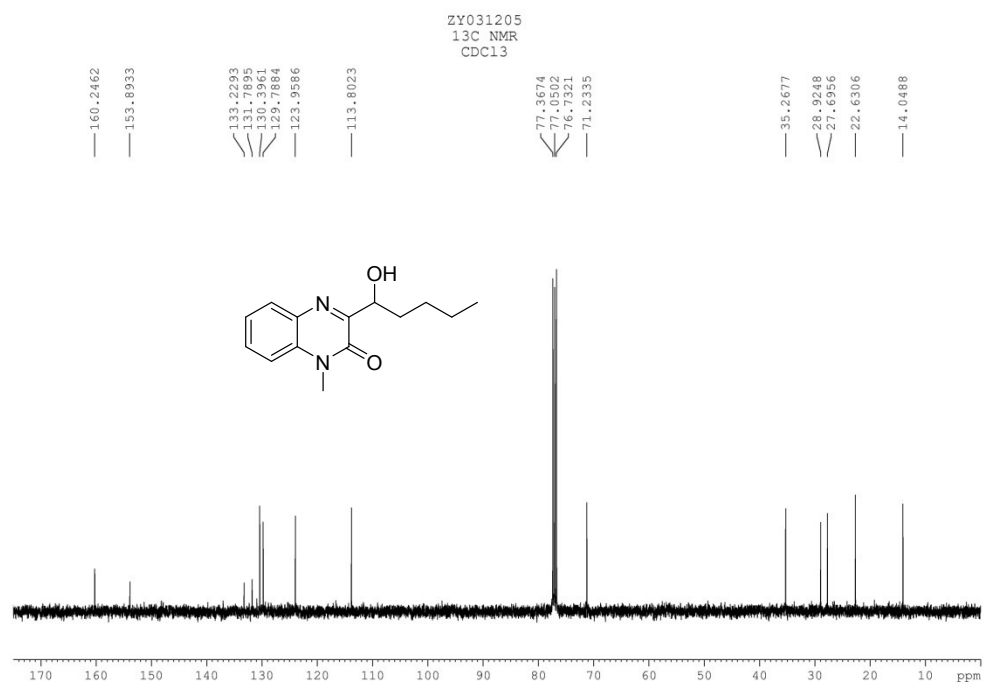


Fig. 8 ^{13}C NMR spectrum of compound **3ad**

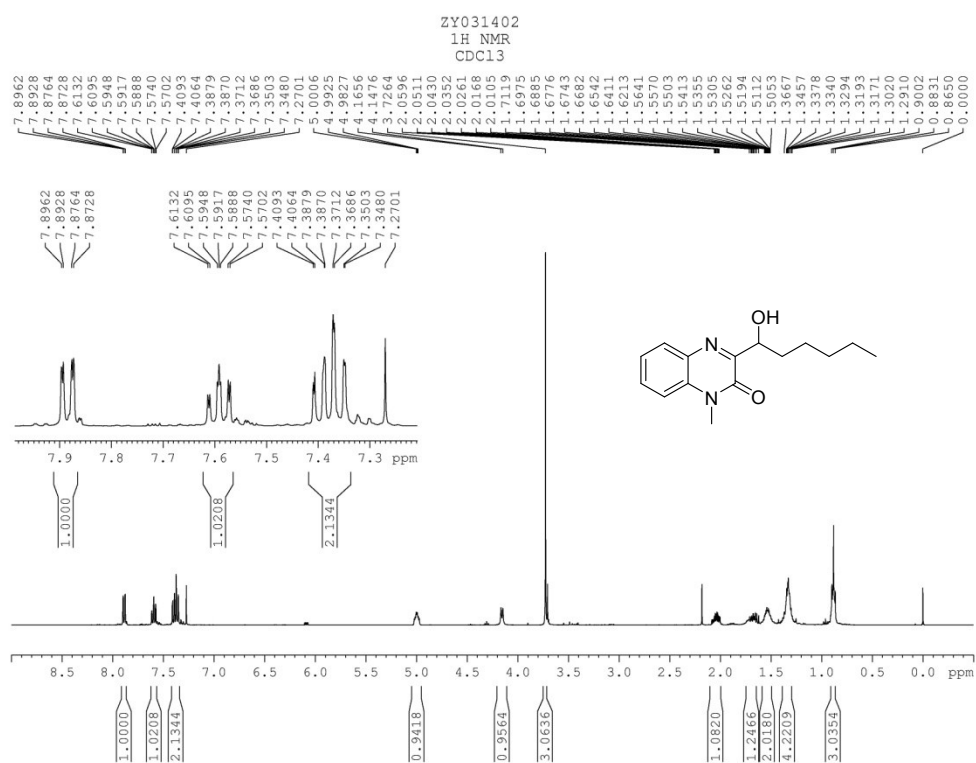


Fig. 9 ¹H NMR spectrum of compound 3ae

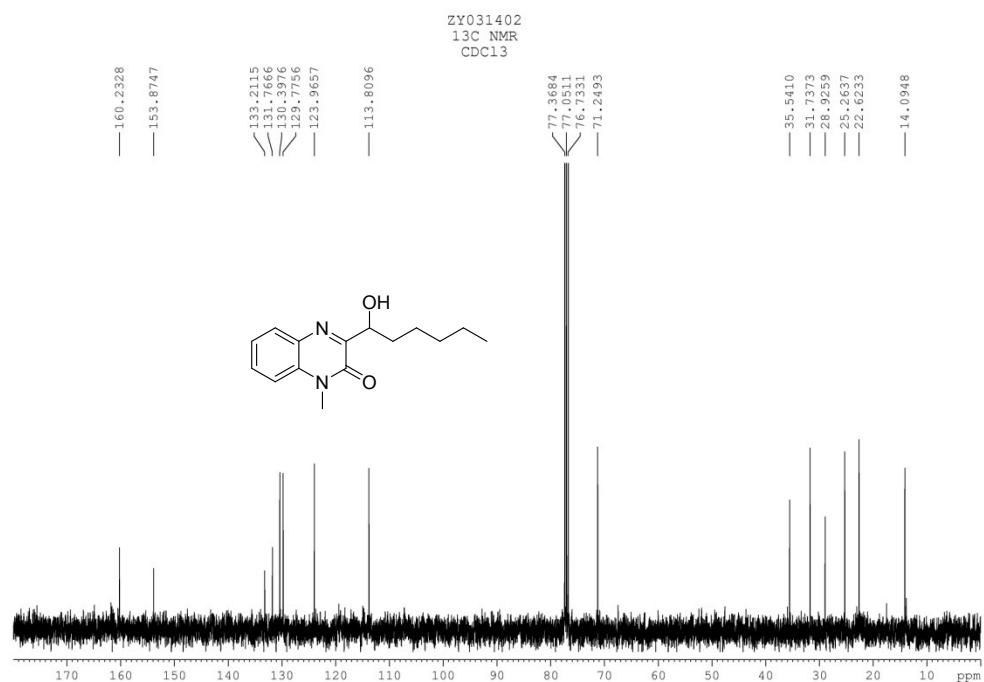
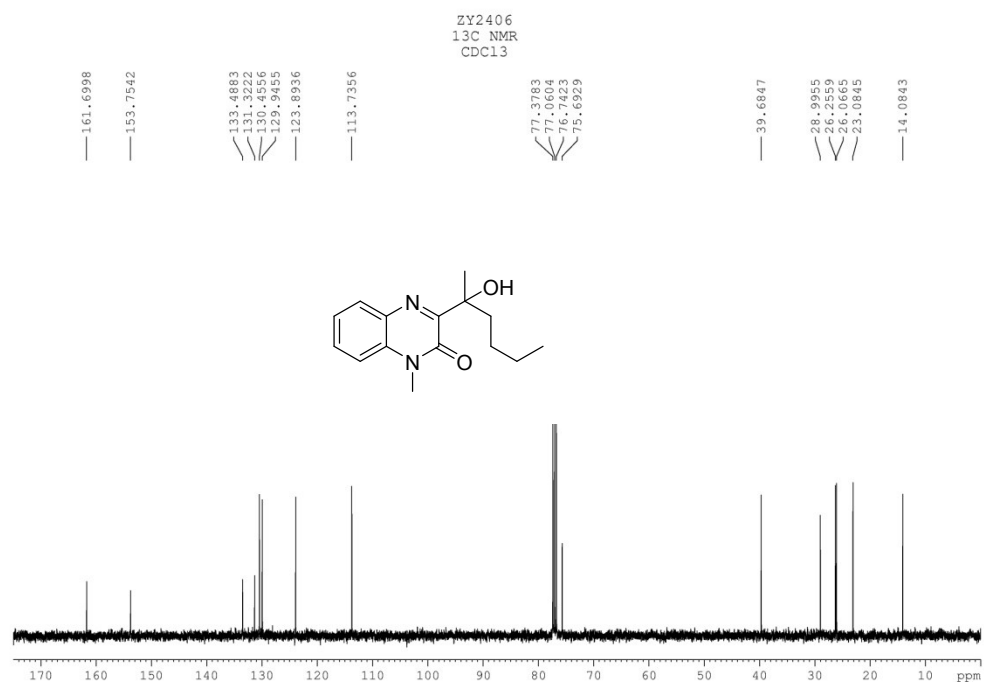
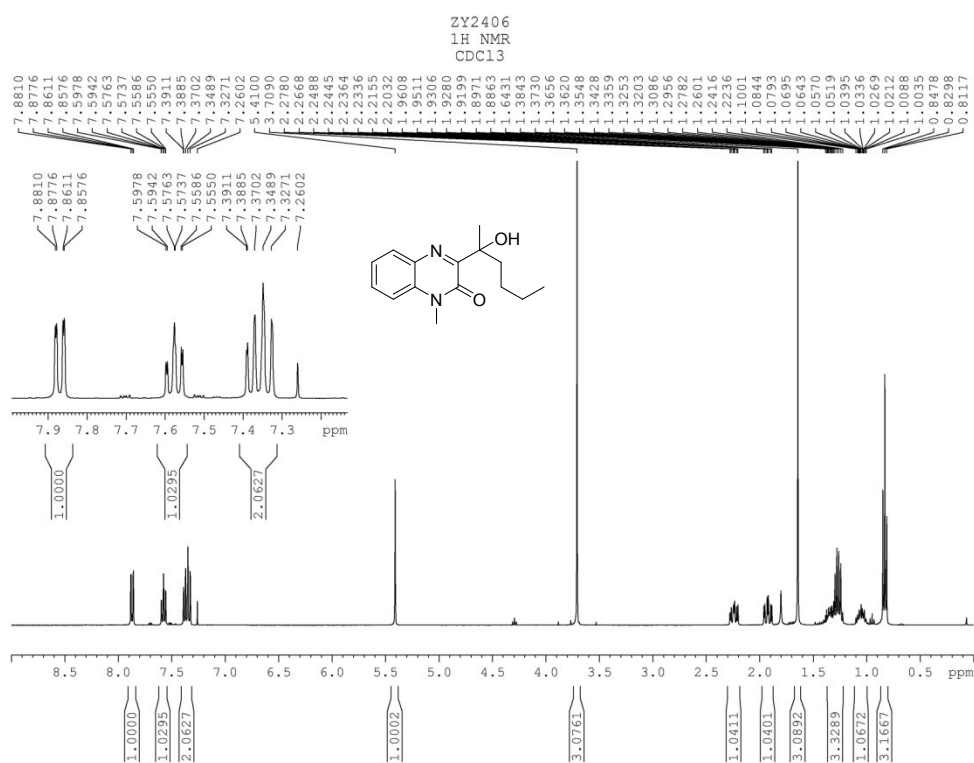


Fig. 10 ¹³C NMR spectrum of compound 3ae



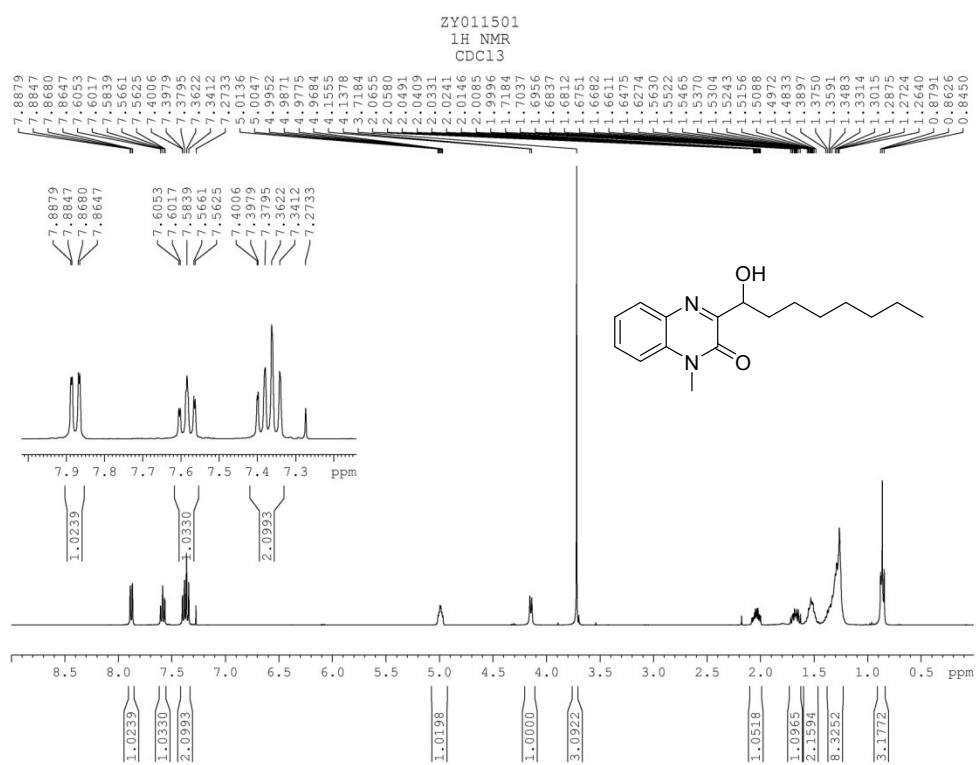


Fig. 13 ^1H NMR spectrum of compound 3ag

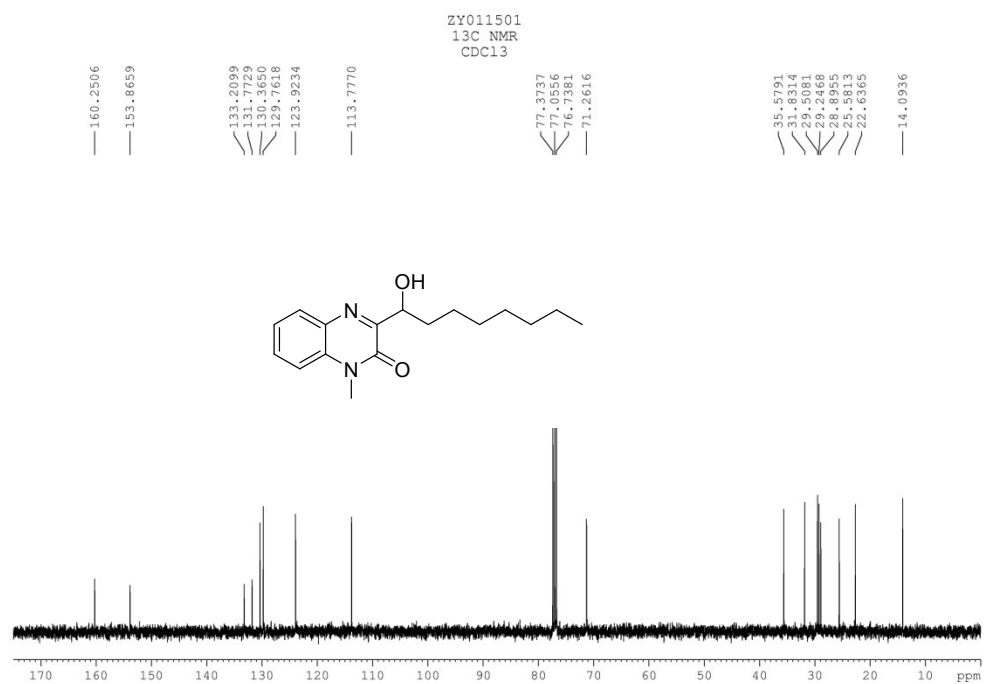


Fig. 14 ^{13}C NMR spectrum of compound 3ag

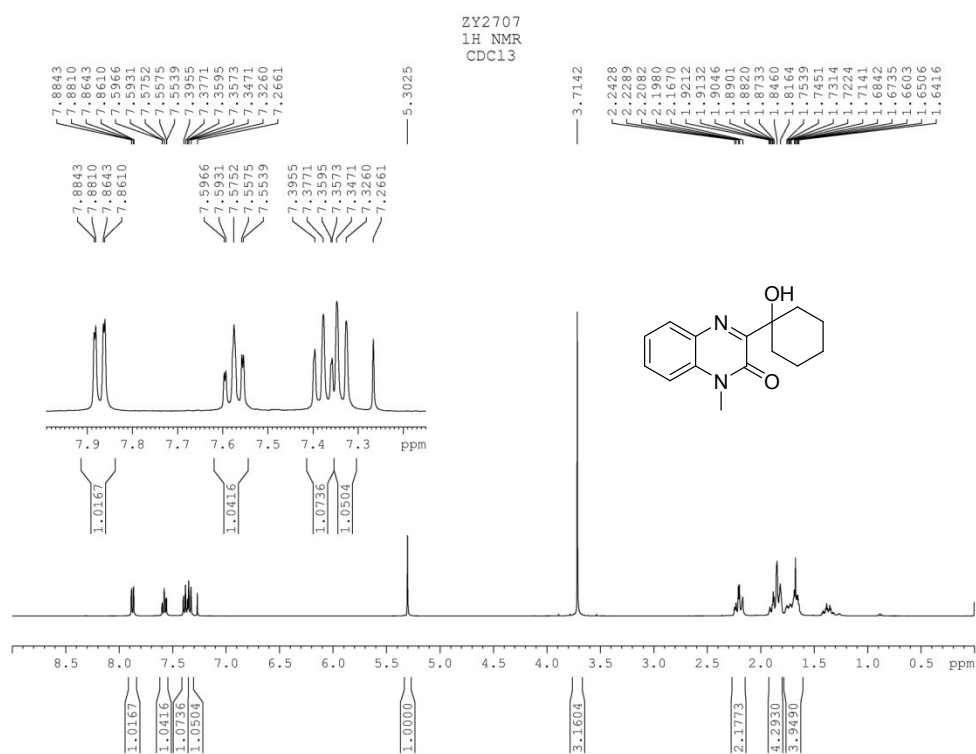


Fig. 17 ¹H NMR spectrum of compound **3ai**

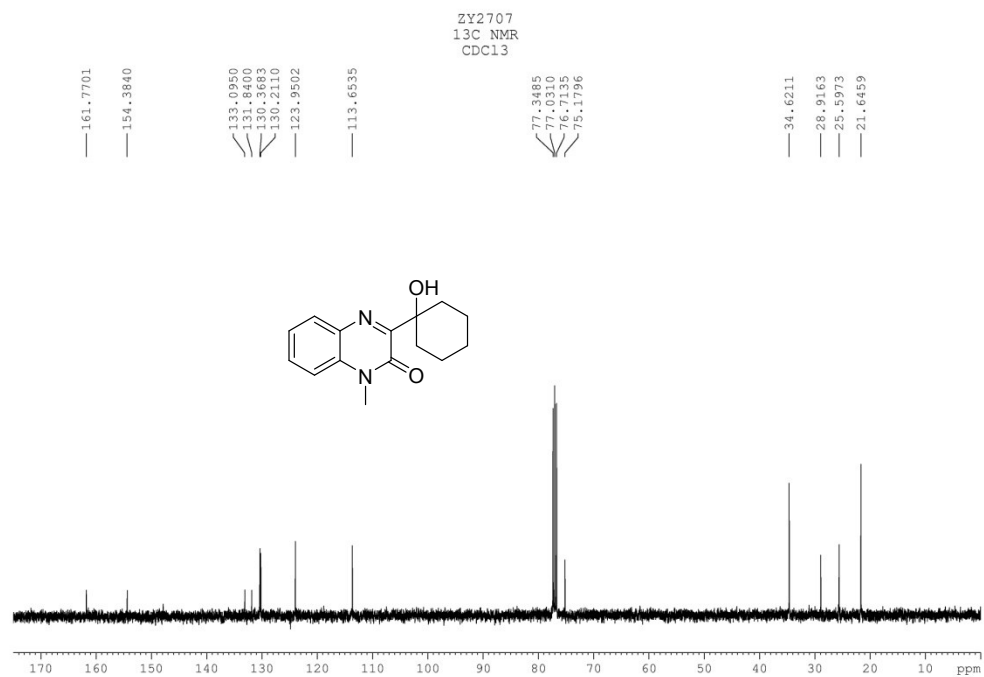


Fig. 18 ¹³C NMR spectrum of compound **3ai**

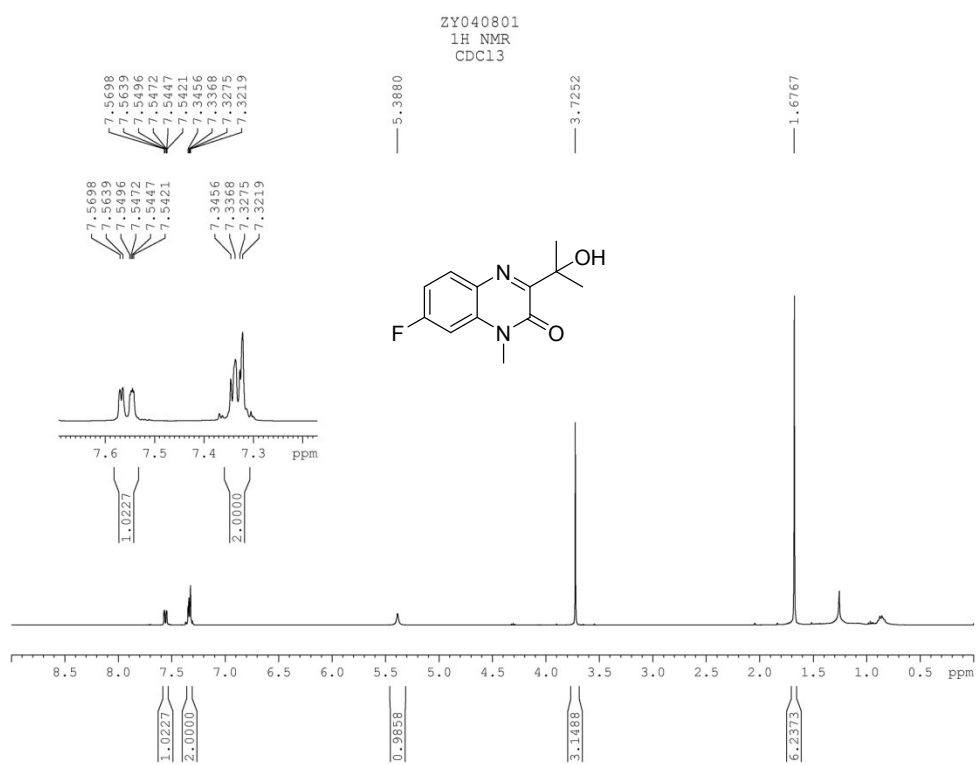


Fig. 19 ¹H NMR spectrum of compound 3ba

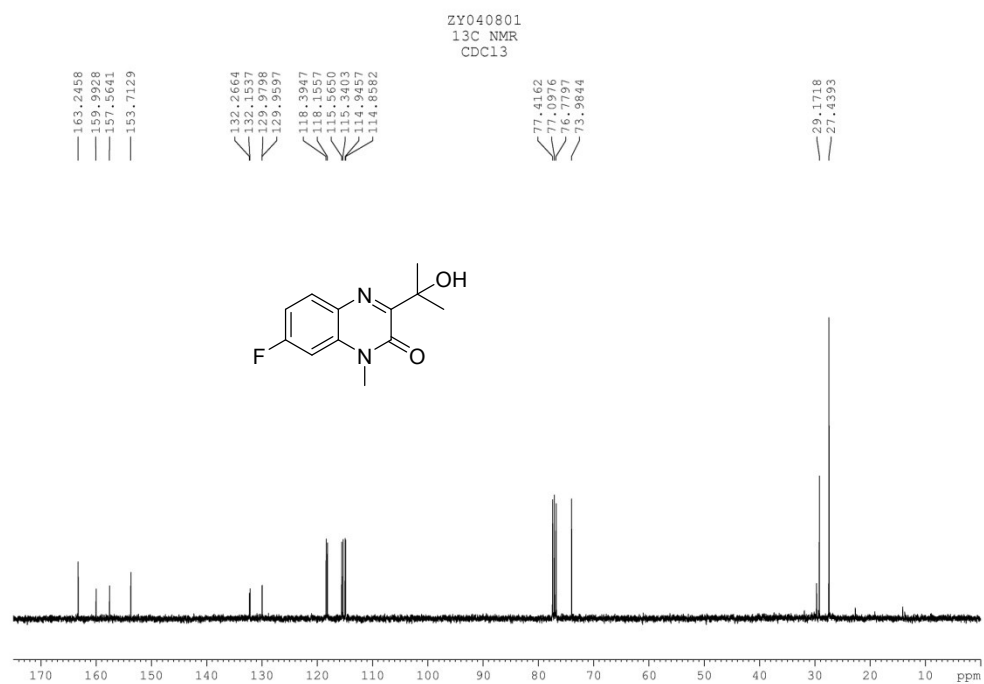


Fig. 20 ¹³C NMR spectrum of compound 3ba

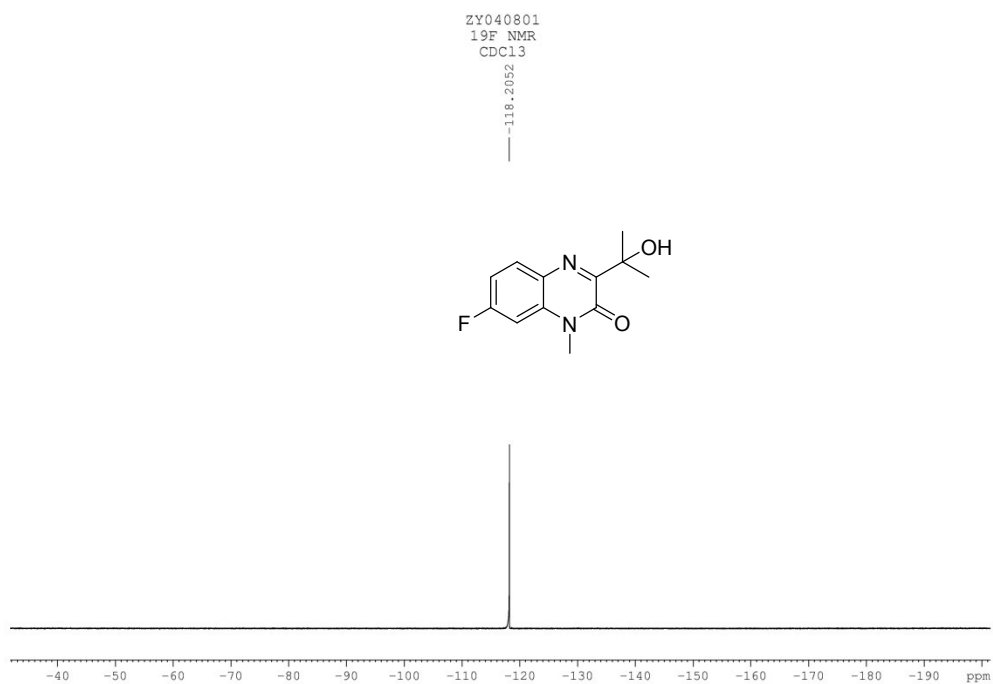


Fig. 21 ¹⁹F NMR spectrum of compound 3ba

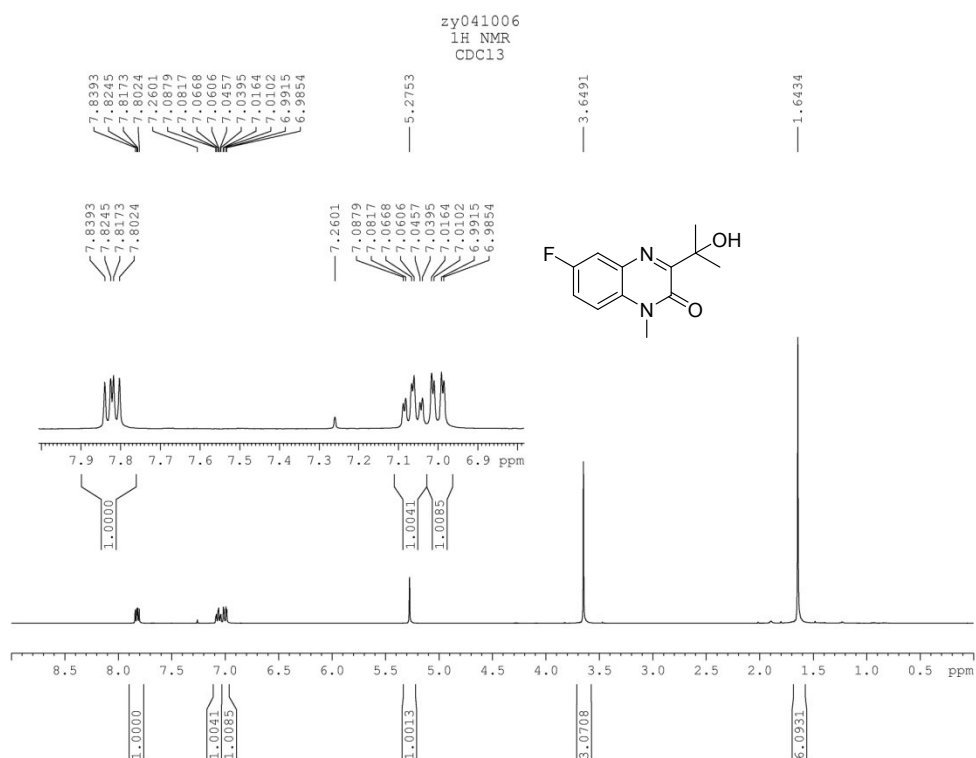


Fig. 22 ¹H NMR spectrum of compound 3ca

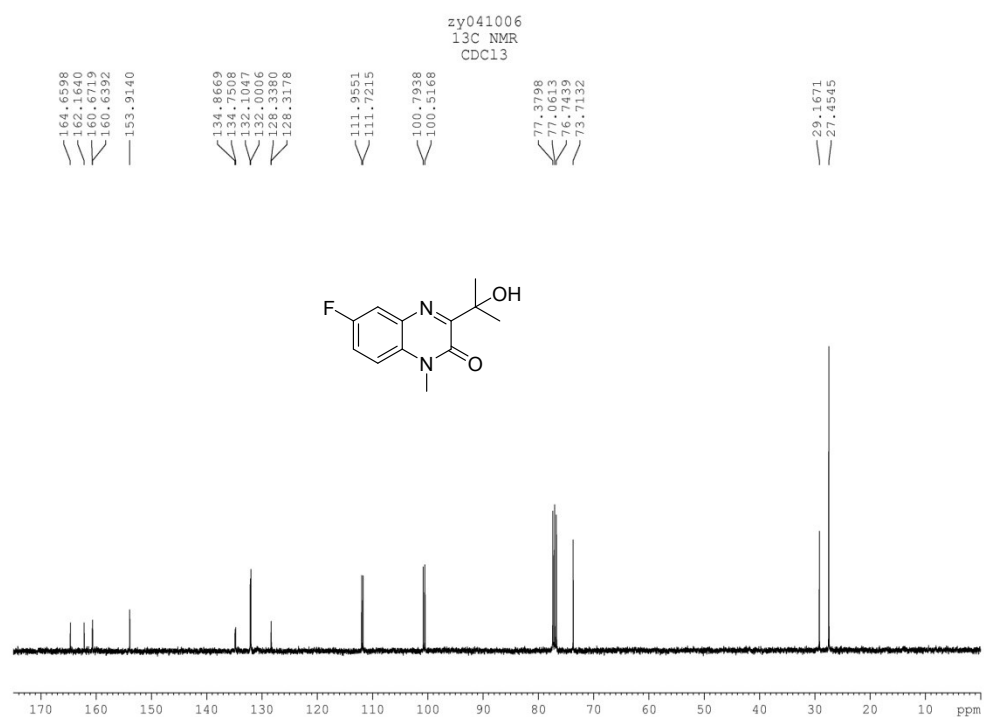


Fig. 23 ¹³C NMR spectrum of compound 3ca

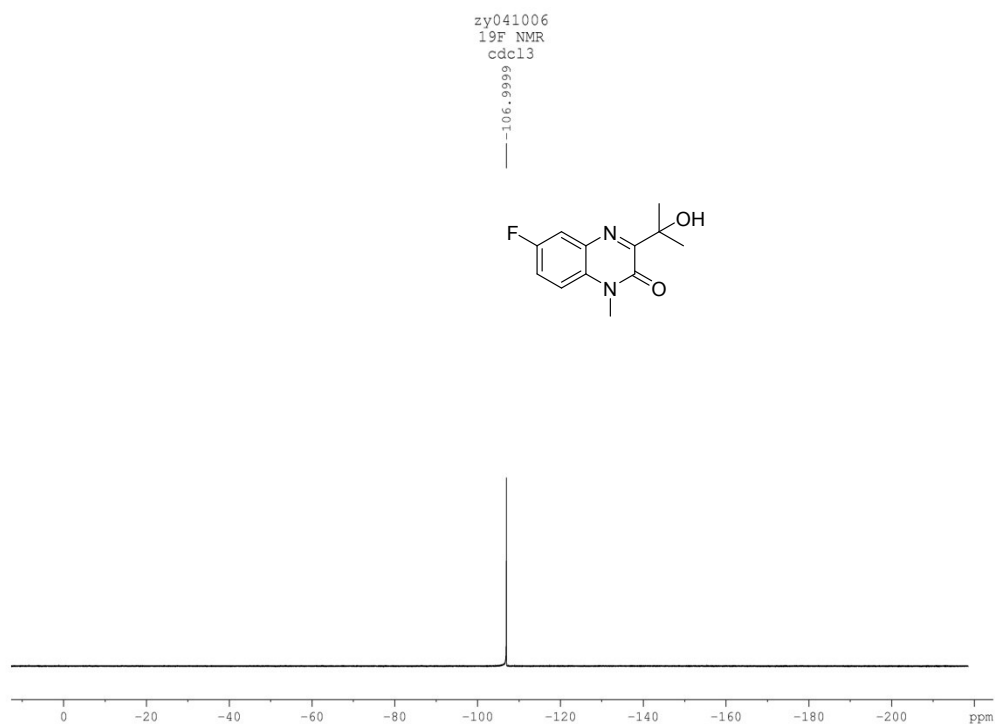


Fig. 24 ¹⁹F NMR spectrum of compound 3ca

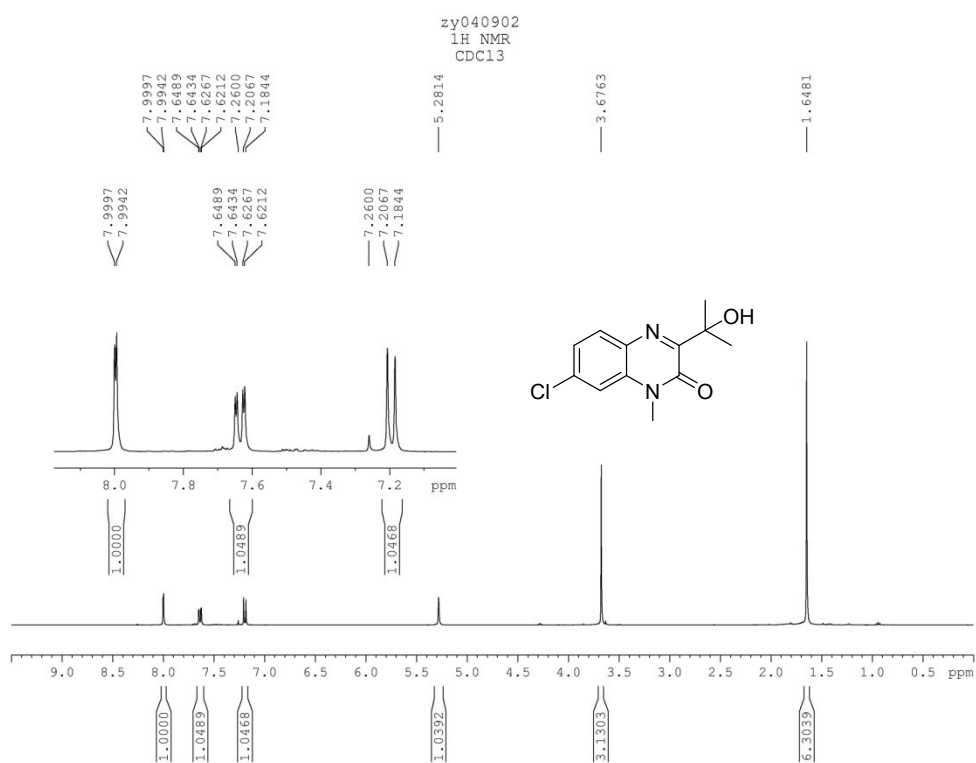


Fig. 25 ¹H NMR spectrum of compound 3da

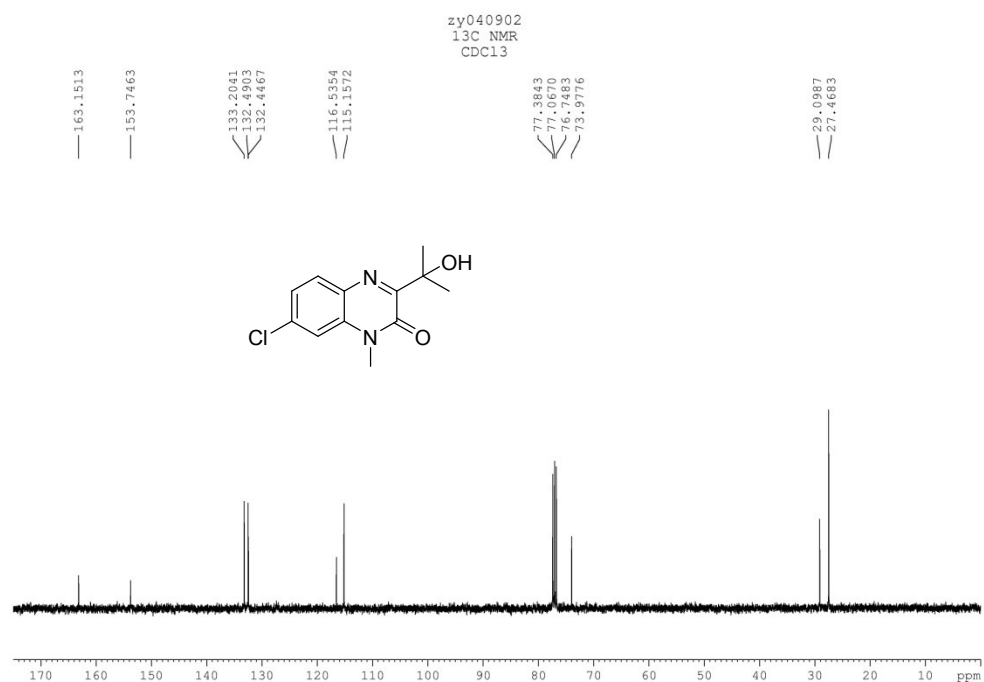


Fig. 26 ¹³C NMR spectrum of compound 3da

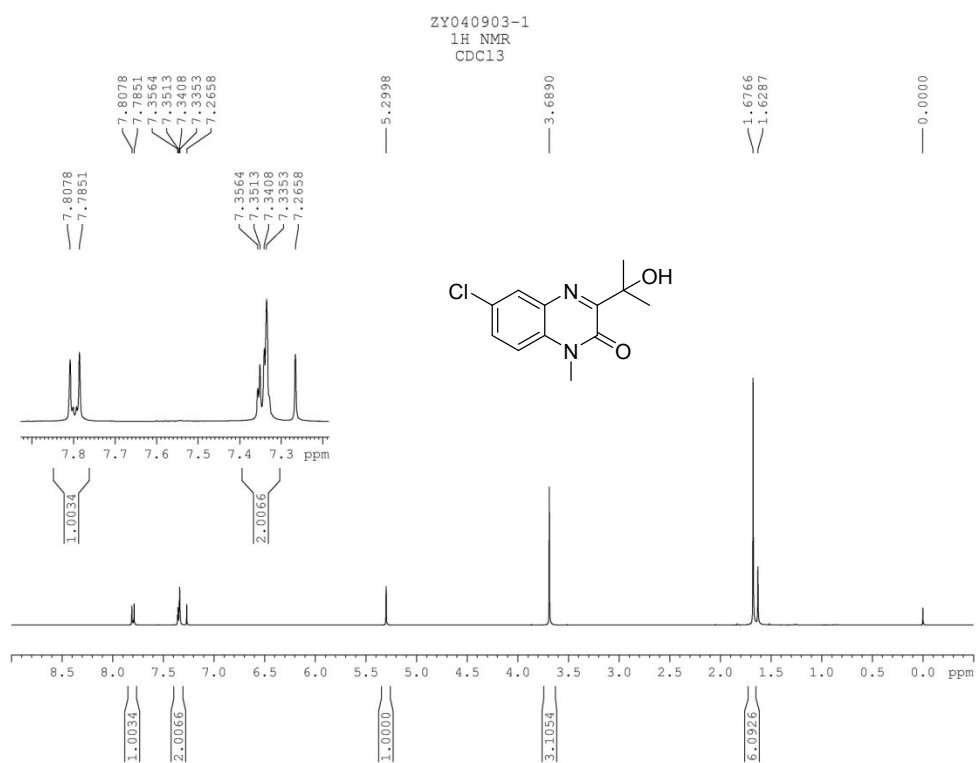


Fig. 27 ¹H NMR spectrum of compound 3ea

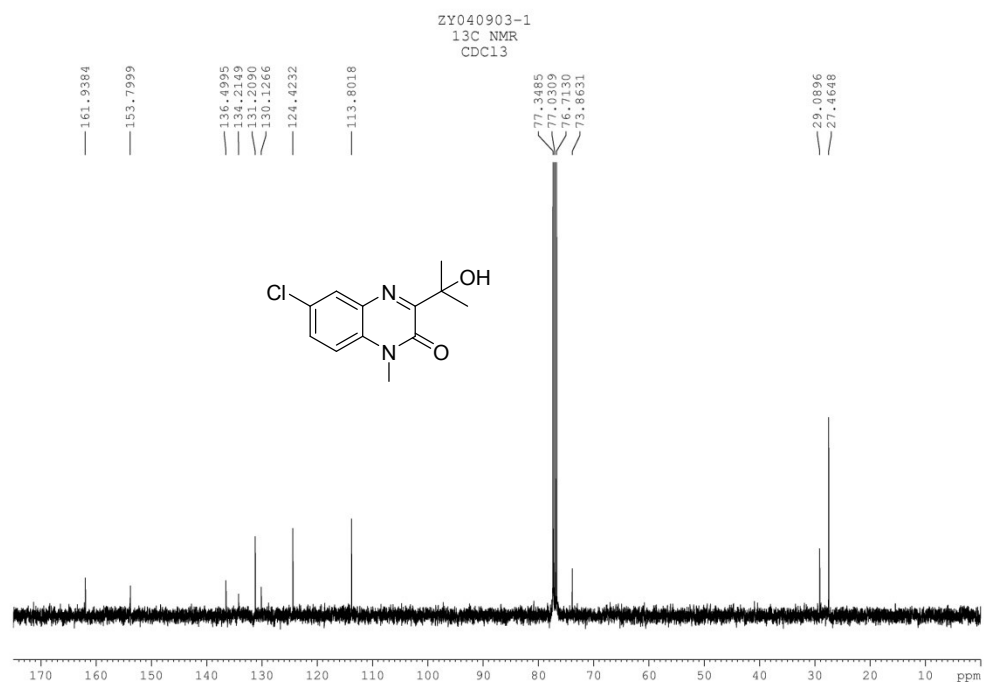


Fig. 28 ¹³C NMR spectrum of compound 3ea

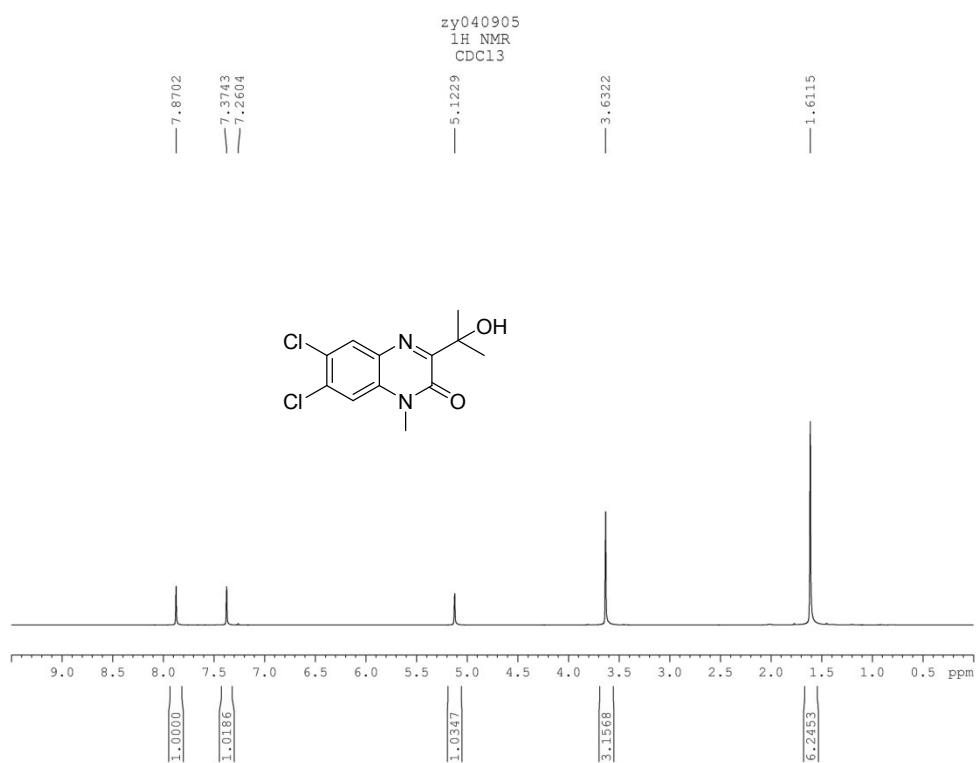


Fig. 29 ^1H NMR spectrum of compound **3fa**

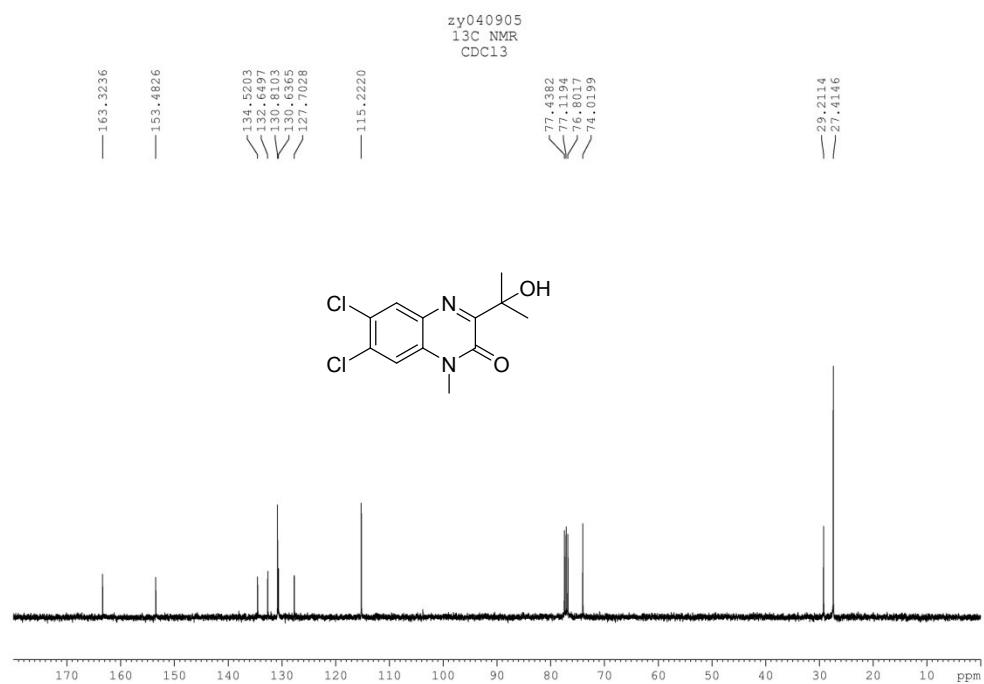


Fig. 30 ^{13}C NMR spectrum of compound **3fa**

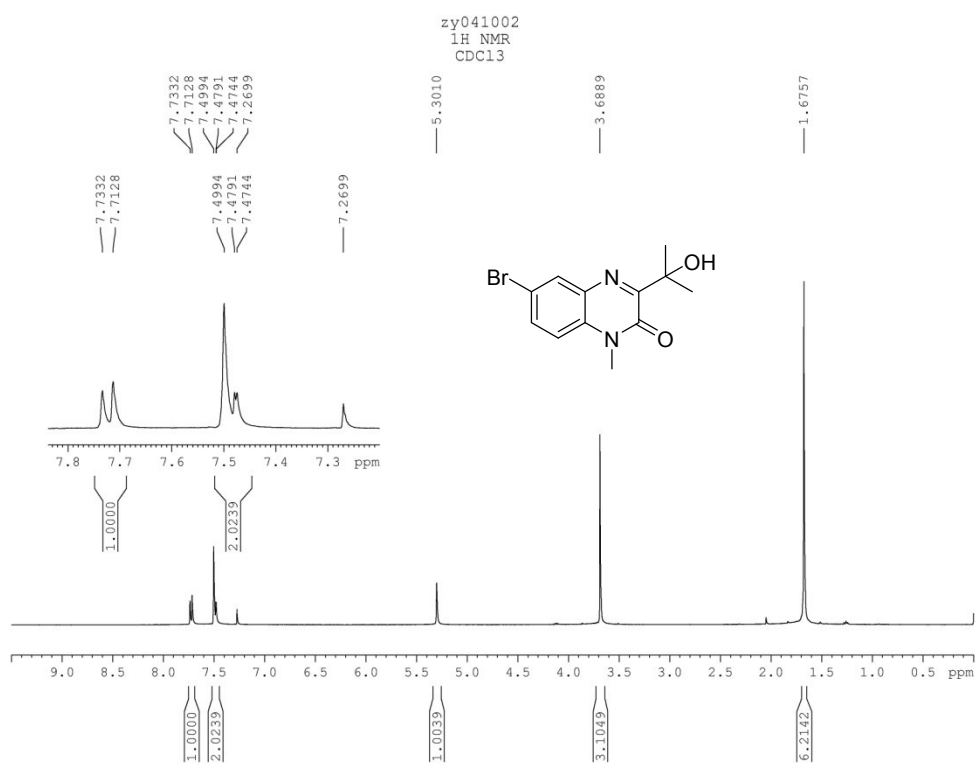


Fig. 31 ¹H NMR spectrum of compound 3ga

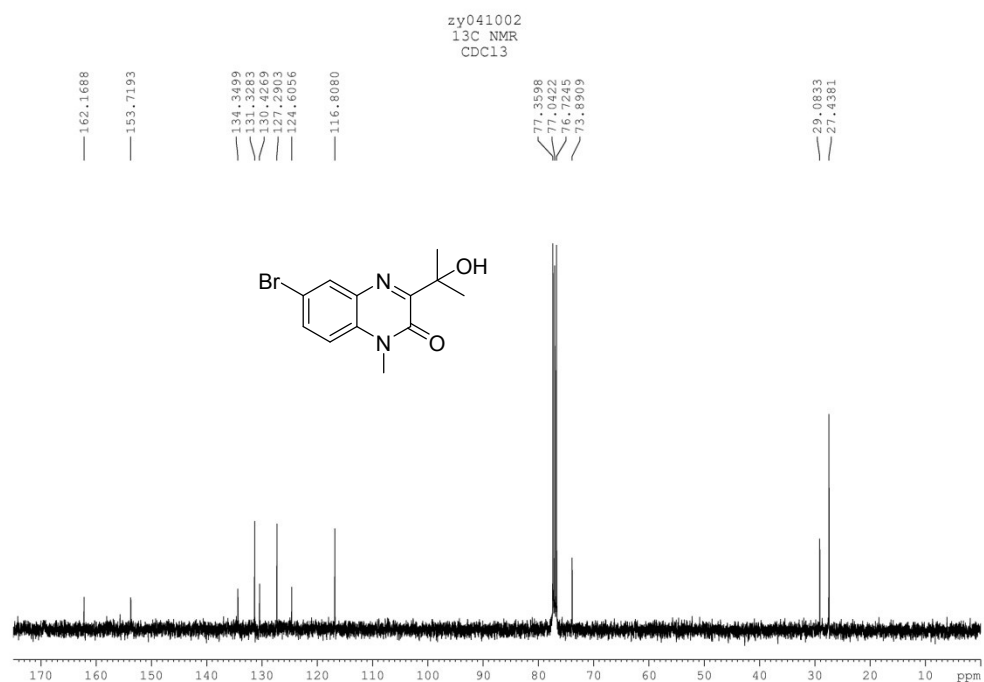


Fig. 32 ¹³C NMR spectrum of compound 3ga

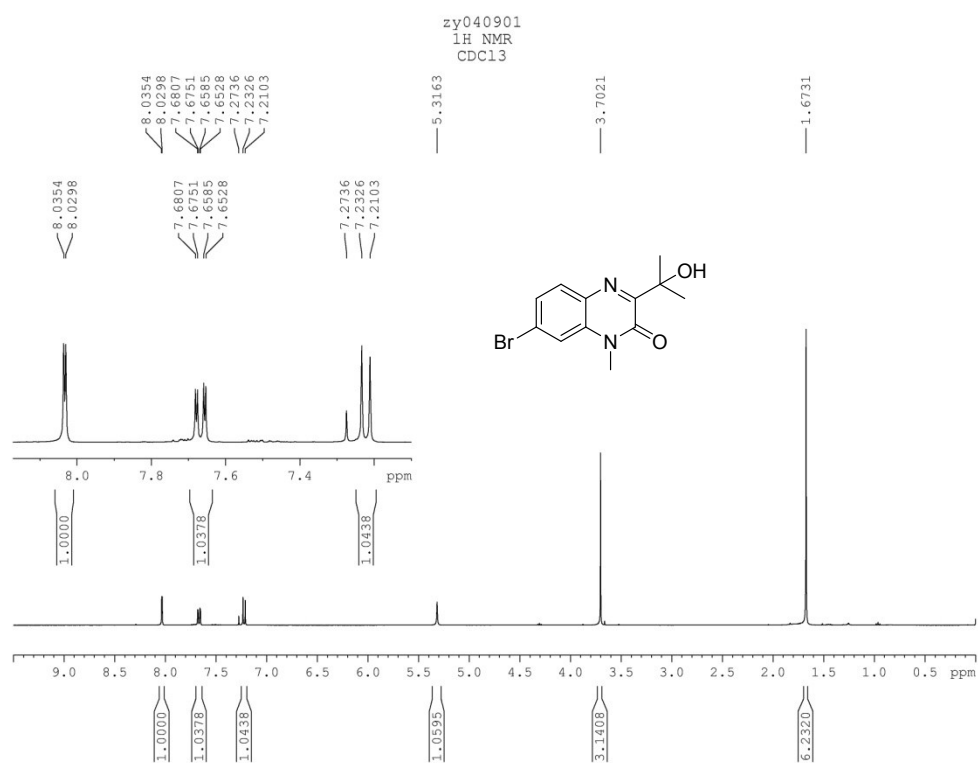


Fig. 33 ¹H NMR spectrum of compound 3ha

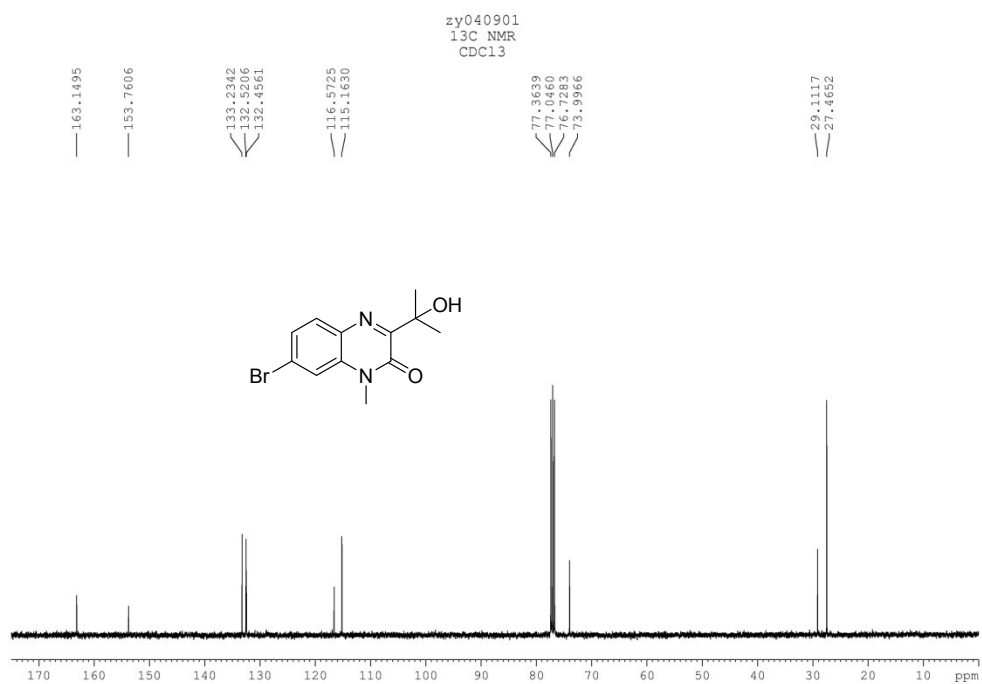


Fig. 34 ¹³C NMR spectrum of compound 3ha

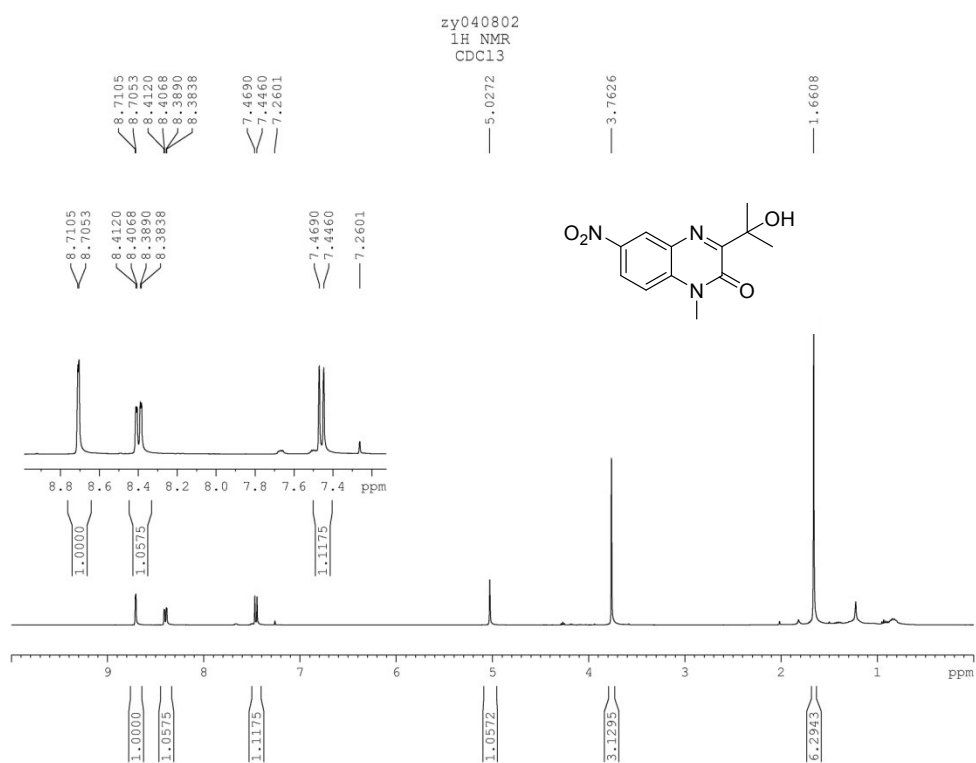


Fig. 35 ^1H NMR spectrum of compound **3ia**

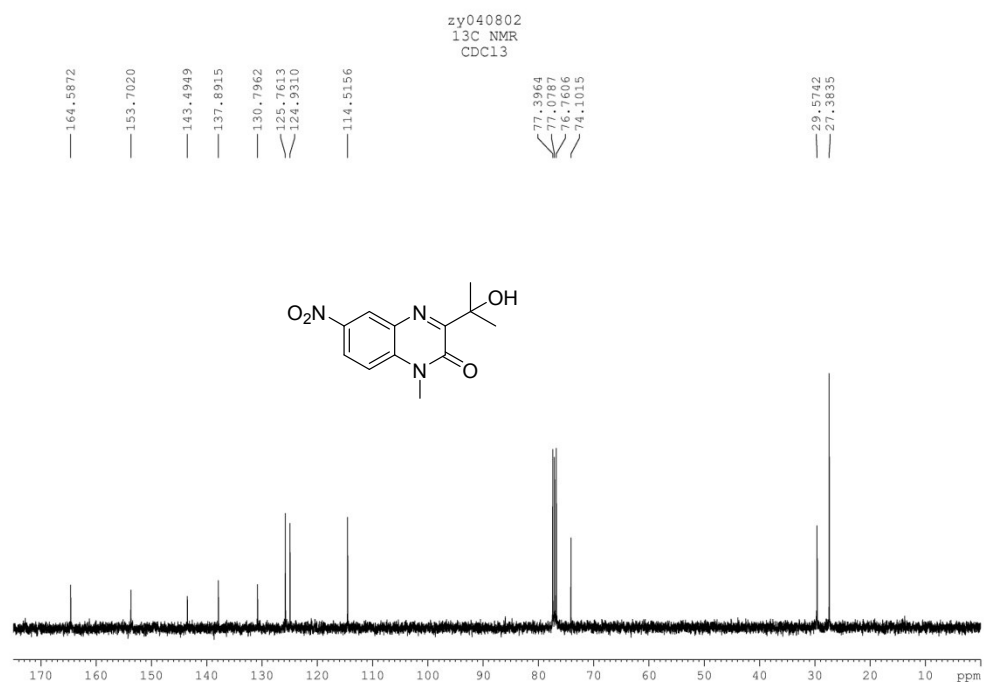


Fig. 36 ^{13}C NMR spectrum of compound **3ia**

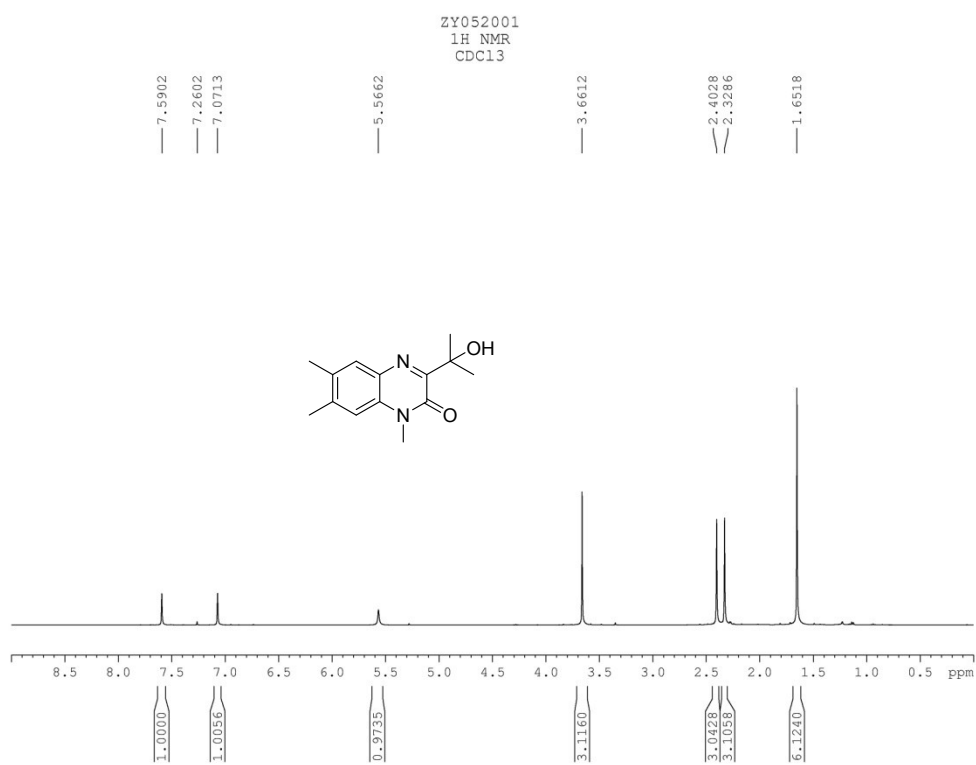


Fig. 37 ¹H NMR spectrum of compound **3ja**

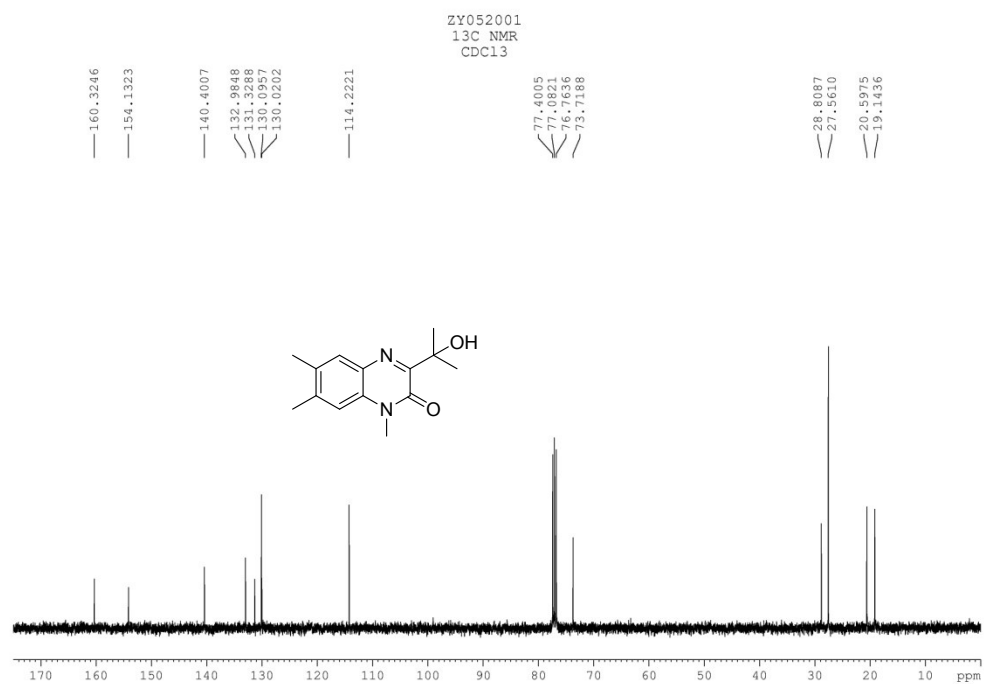


Fig. 38 ¹³C NMR spectrum of compound **3ja**

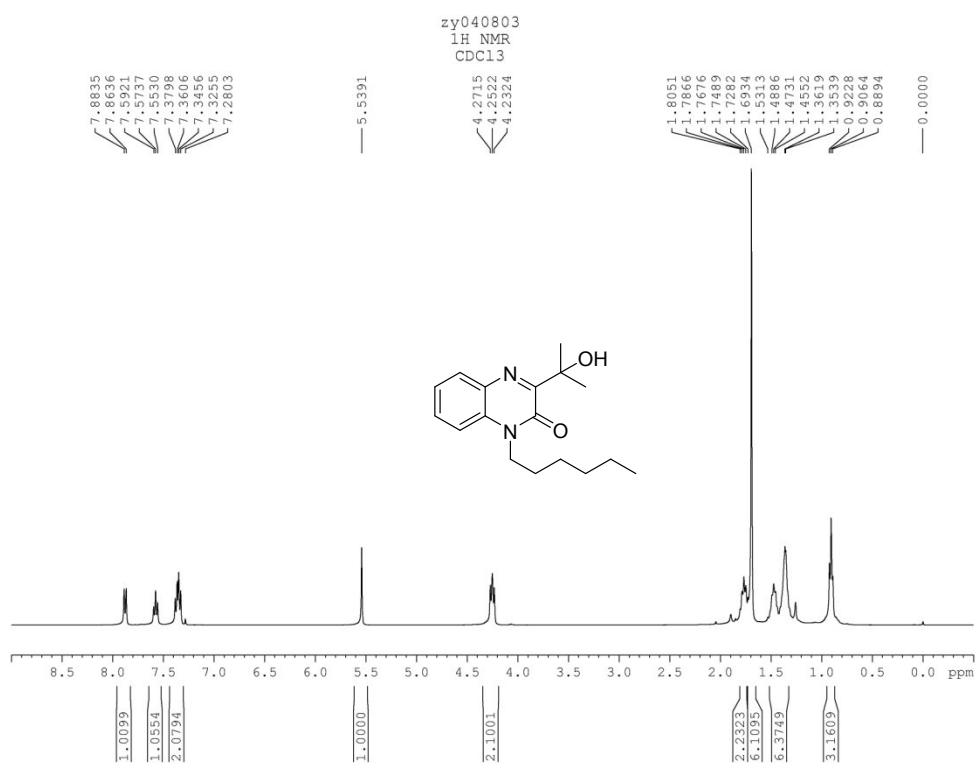


Fig. 39 ¹H NMR spectrum of compound 3ka

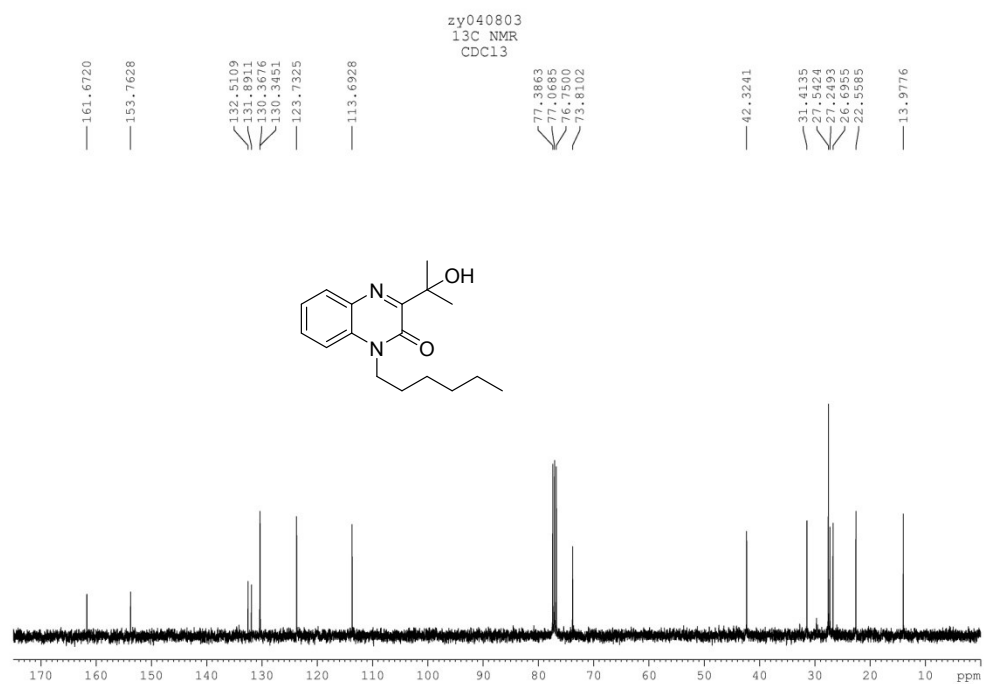


Fig. 40 ¹³C NMR spectrum of compound 3ka

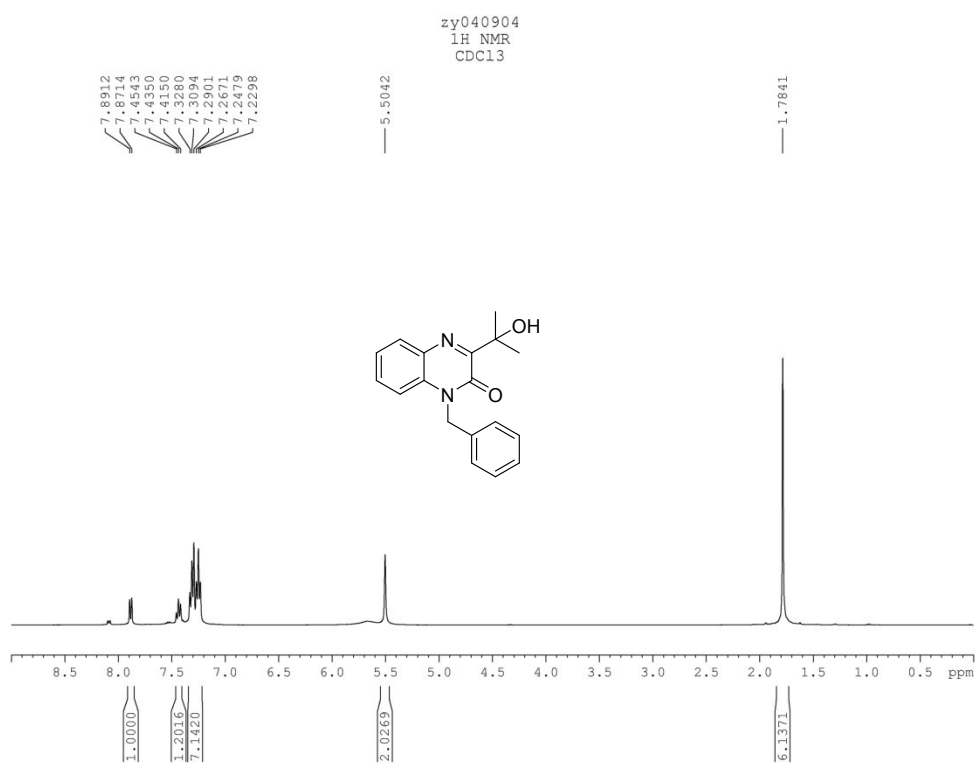


Fig. 41 ^1H NMR spectrum of compound 3la

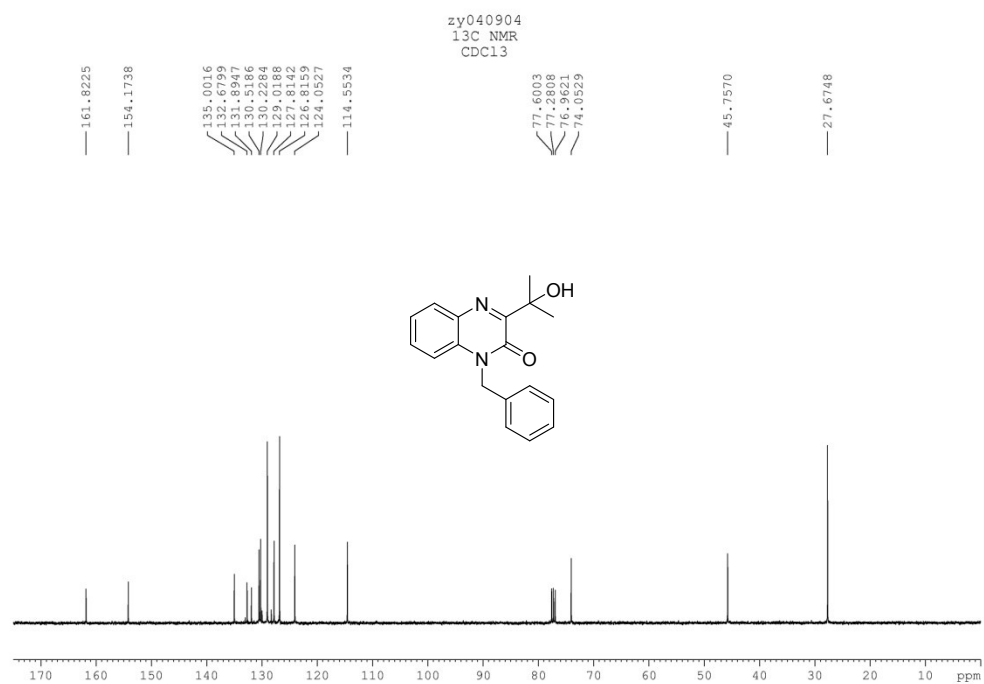


Fig. 42 ^{13}C NMR spectrum of compound 3la

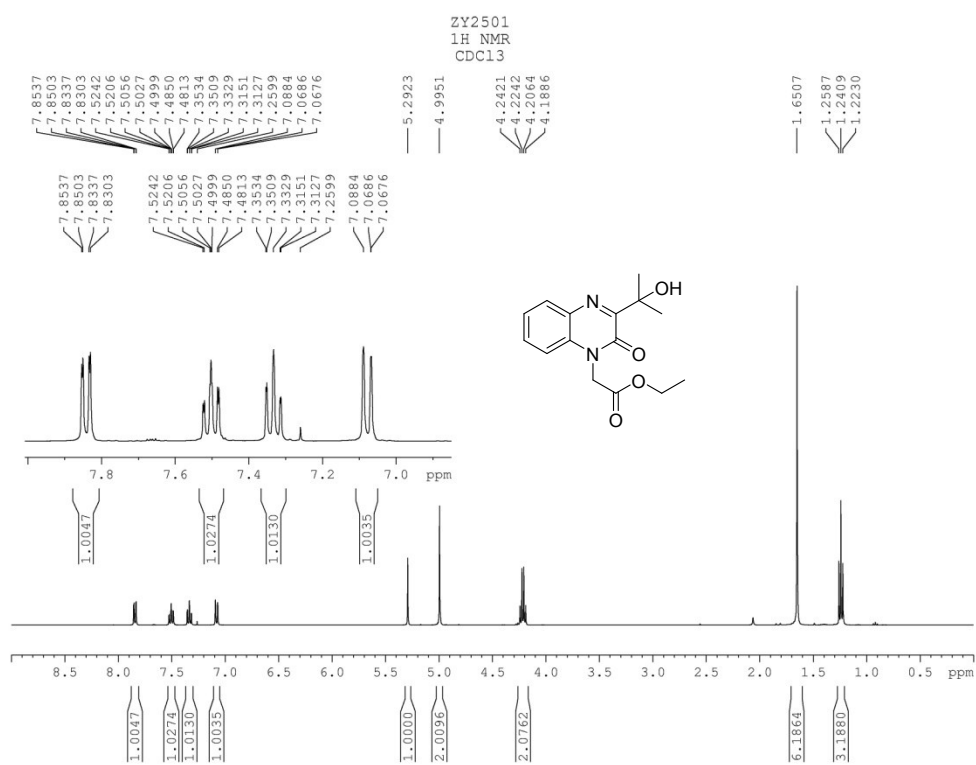


Fig. 43 ¹H NMR spectrum of compound **3ma**



Fig. 44 ¹³C NMR spectrum of compound **3ma**

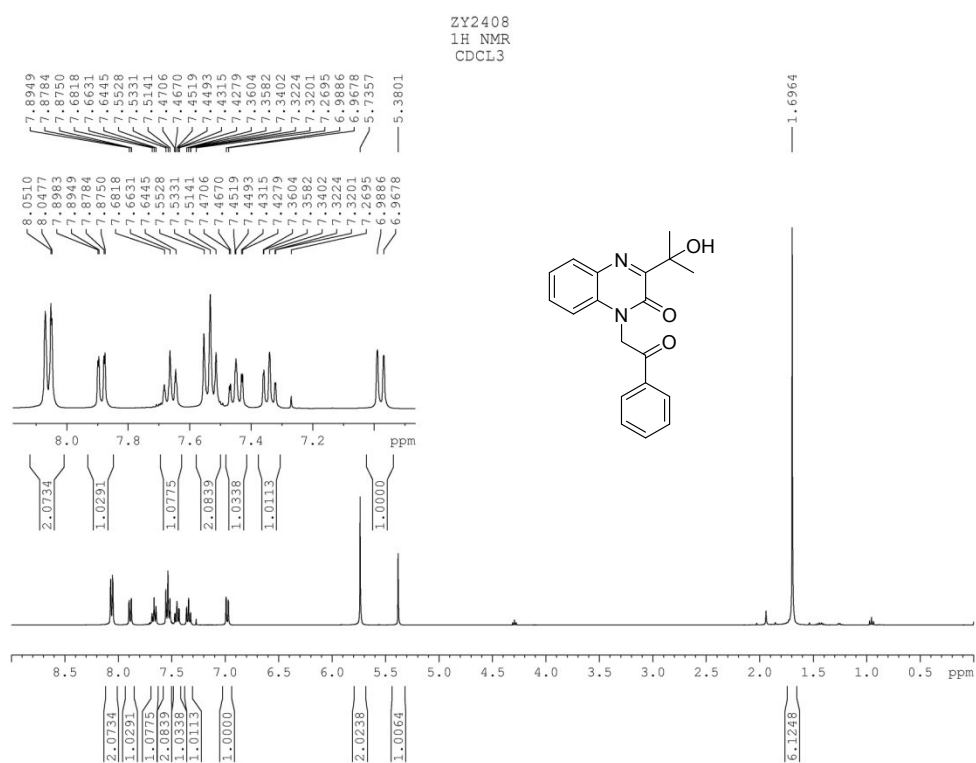


Fig. 45 ^1H NMR spectrum of compound **3na**

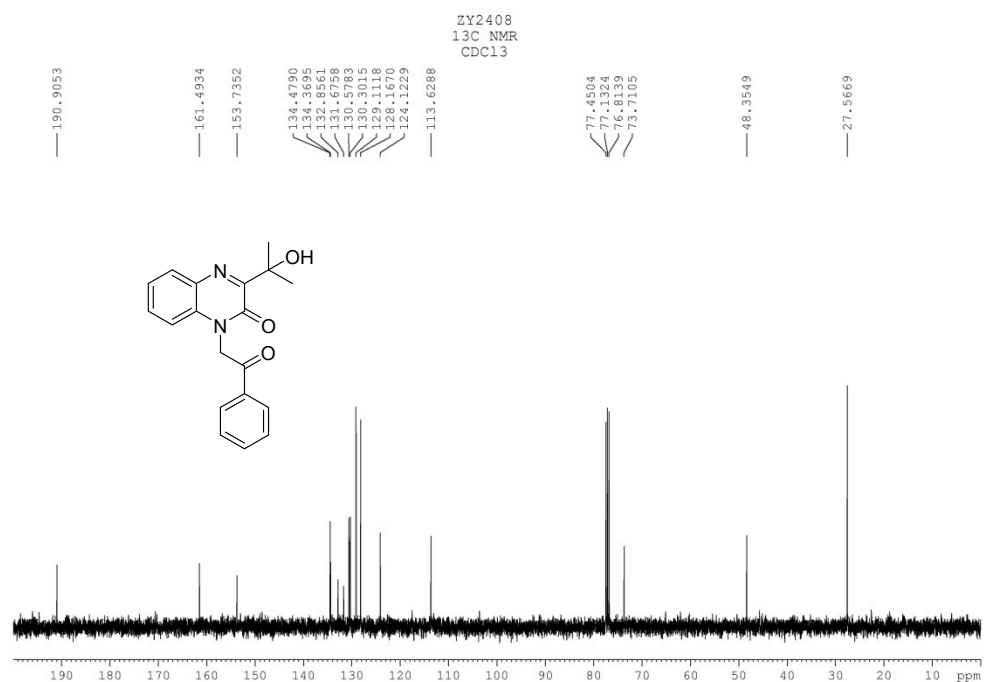


Fig. 46 ^{13}C NMR spectrum of compound **3na**

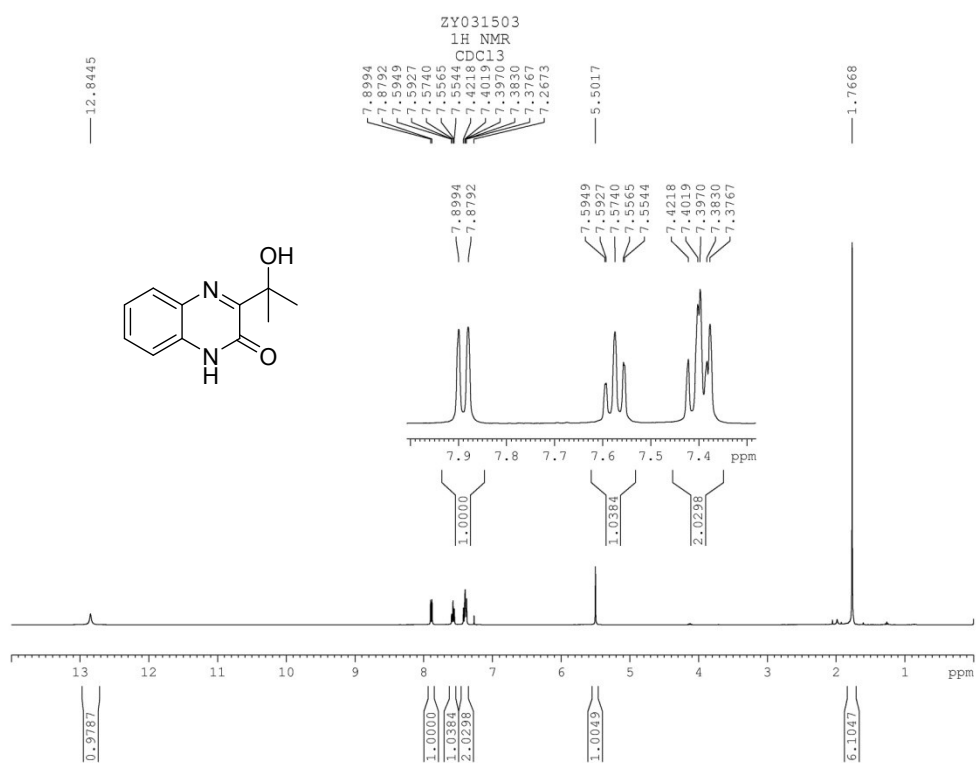


Fig. 47 ¹H NMR spectrum of compound 30a

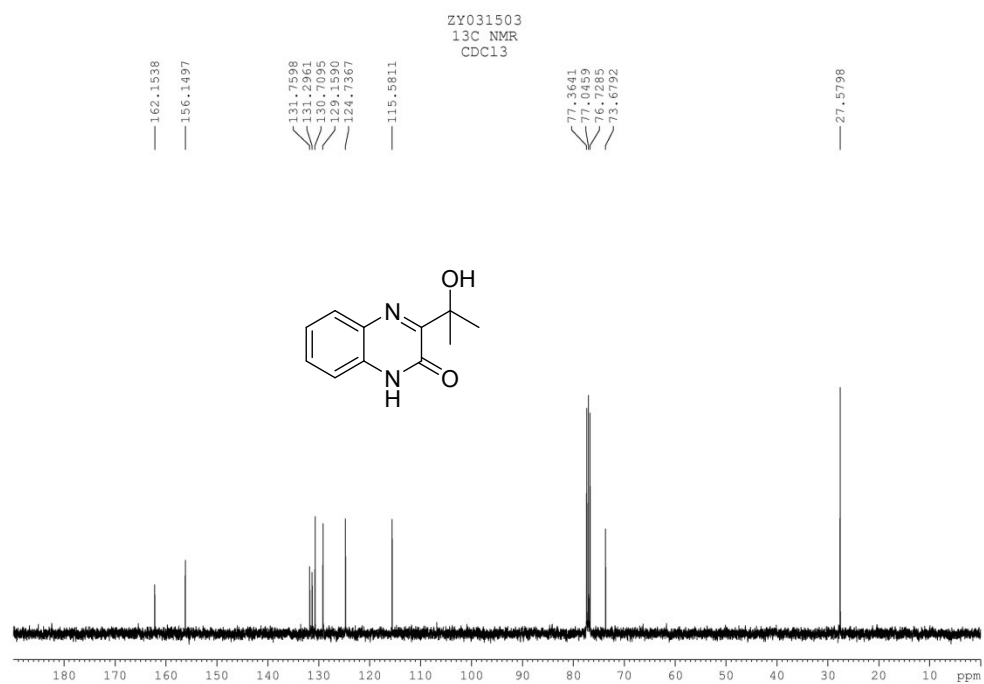


Fig. 48 ¹³C NMR spectrum of compound 30a

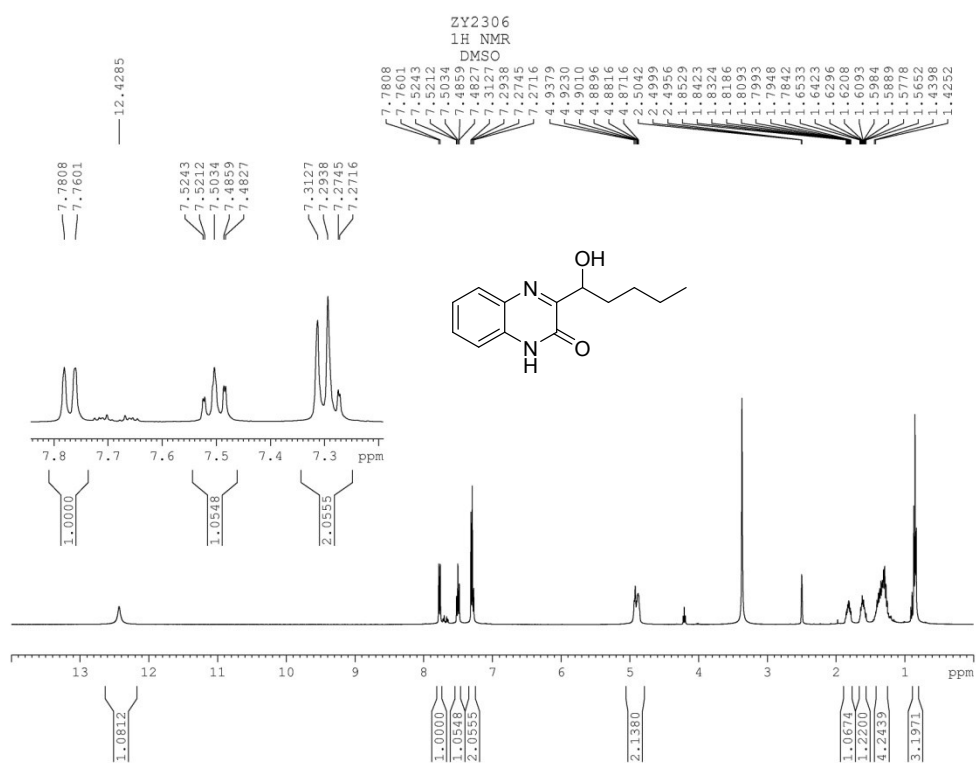


Fig. 49 ^1H NMR spectrum of compound **3od**

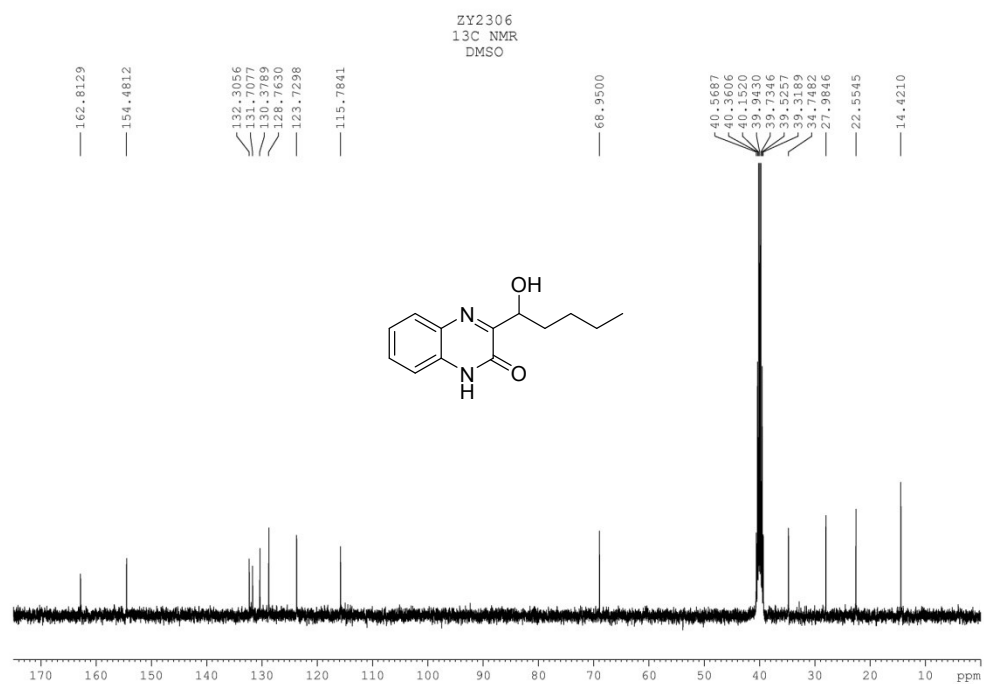


Fig. 50 ^{13}C NMR spectrum of compound **3od**

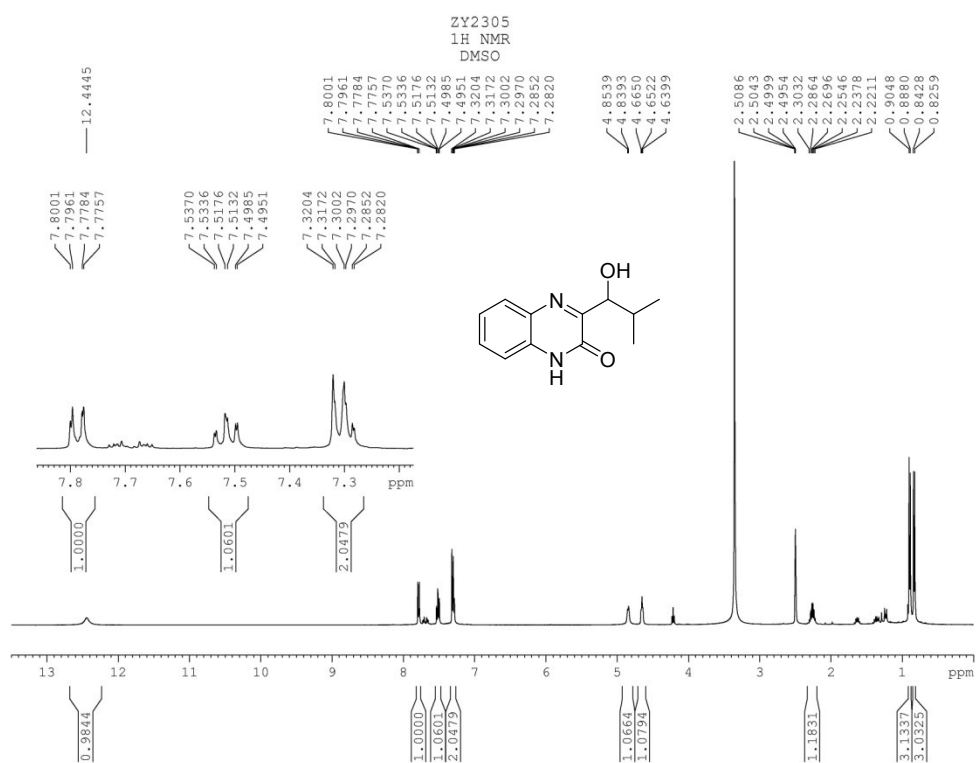


Fig. 51 ^1H NMR spectrum of compound **3oj**

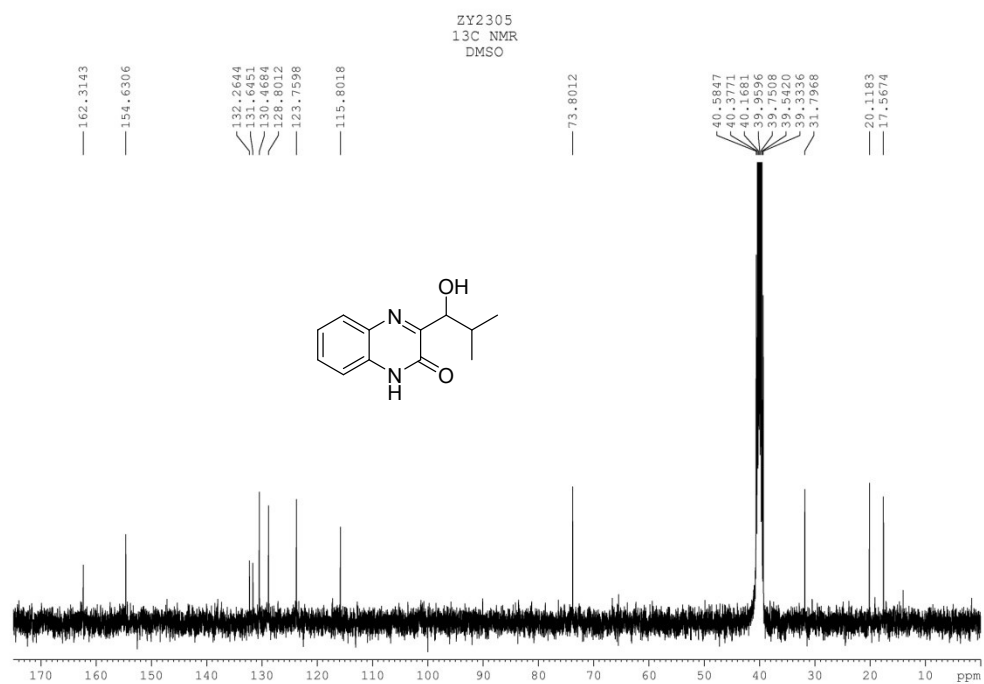


Fig. 52 ^{13}C NMR spectrum of compound **3oj**

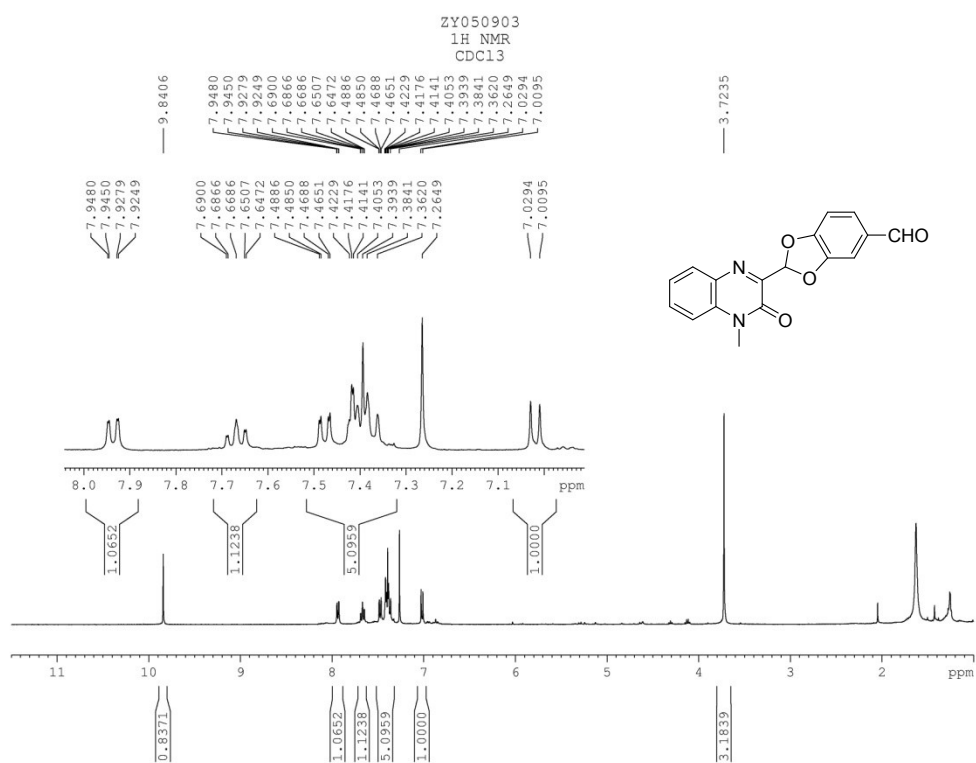


Fig. 51 ^1H NMR spectrum of compound 4

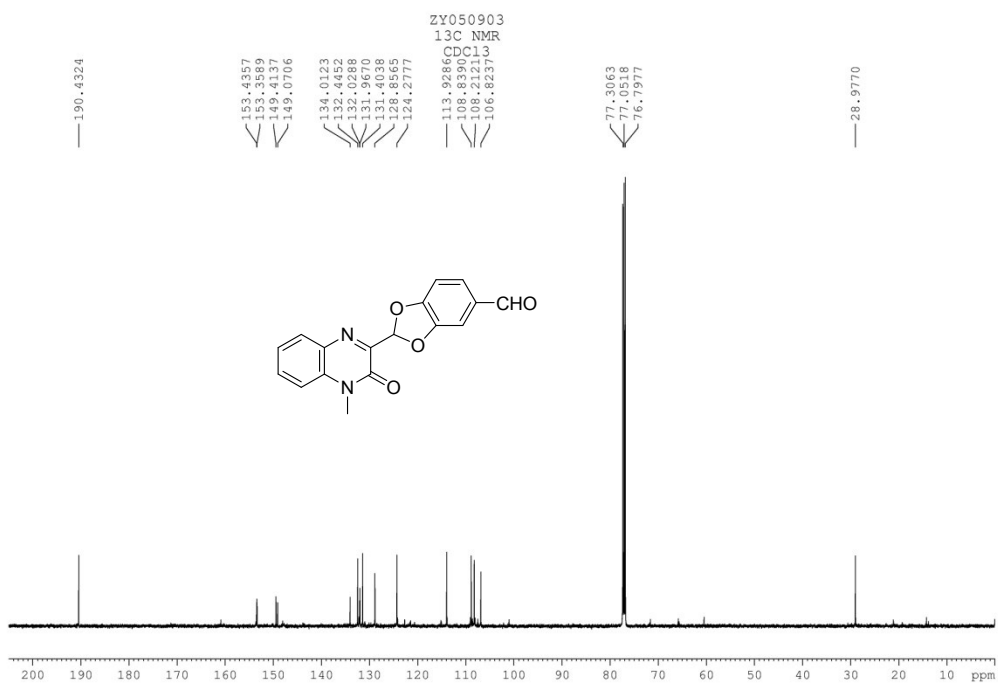


Fig. 52 ^{13}C NMR spectrum of compound 4

4. HR MS of the adduct of TEMPO and isoproponal radical

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T: FTMS + p ESI Full ms [150.00-2000.00]

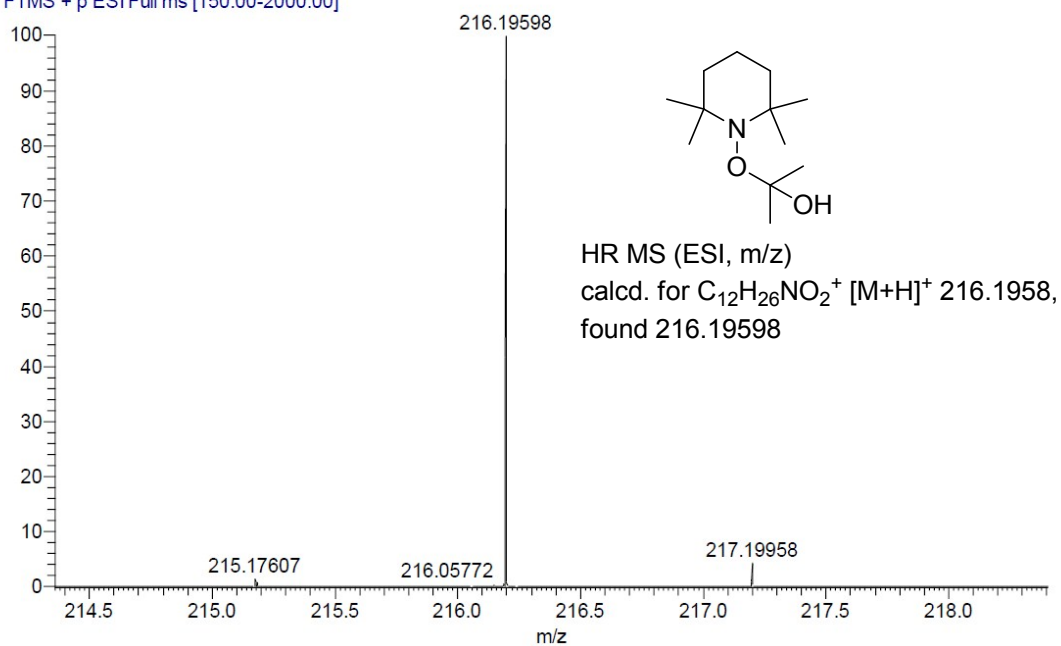


Fig. 53 HR MS of the adduct of TEMPO and isoproponal radical

3. Kinetic isotope effect experiments

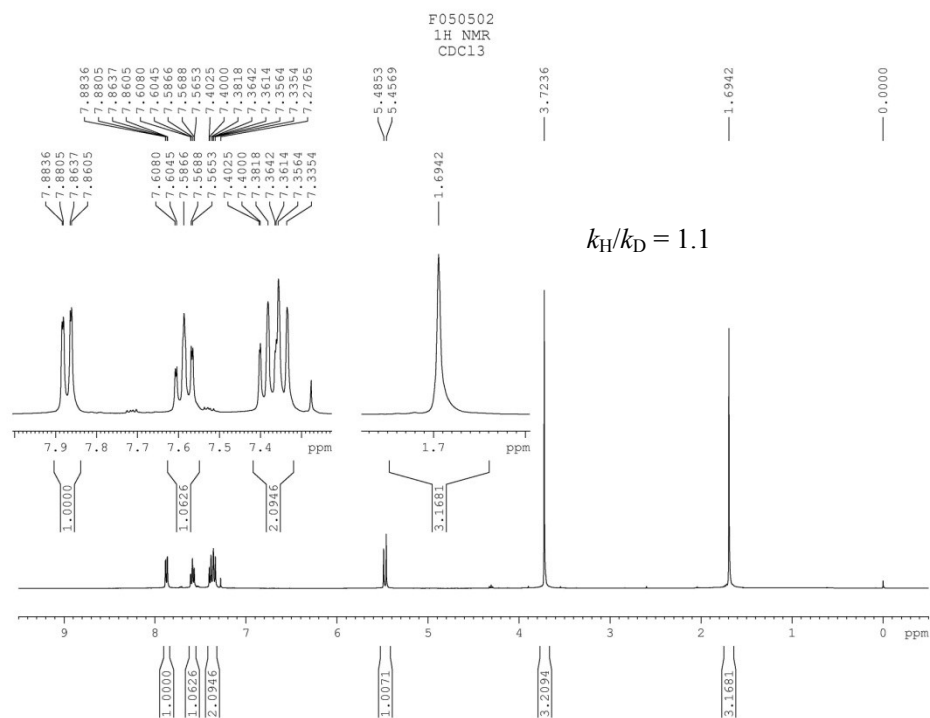


Fig. 54 Kinetic isotope effect experiment 1

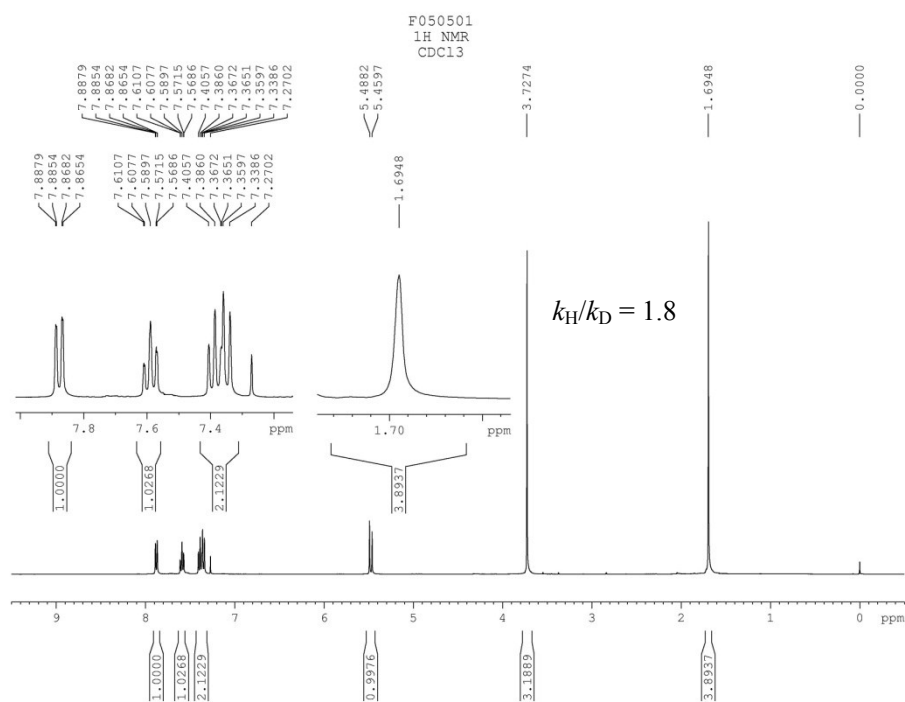


Fig. 55 Kinetic isotope effect experiment 2