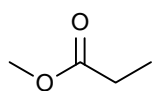


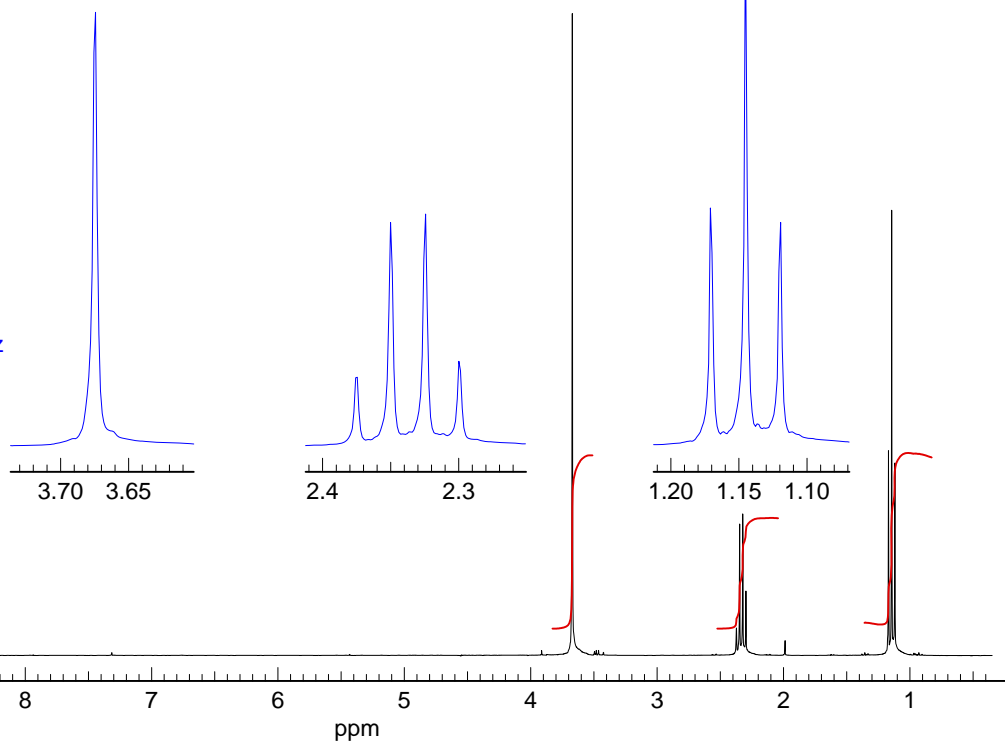
Problem R-16B ($C_4H_8O_2$)

300 MHz 1H NMR spectrum in $CDCl_3$

Source: Aldrich Spectra Collection/Reich g



30 20 10 0 Hz



Problem Set 1 - NMR Spectra

Reich
Chem 345

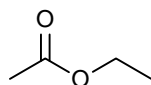
Two Isomers of C₄H₈O₂

Problem R-16A (C₄H₈O₂)

300 MHz ¹H NMR spectrum in CDCl₃

Source: Aldrich Spectra Collection/Reich g

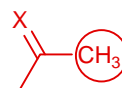
IHD = 1



30 20 10 0 Hz

Observed protons are circled
protons causing splitting are underlined

O-CH₂-CH₃
quartet



2

3

CH₂-CH₃

3

4.2 4.1

2.05 2.00

1.30 1.25

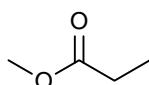
10 9 8 7 6 5 4 3 2 1 0 ppm

Problem R-16B (C₄H₈O₂)

300 MHz ¹H NMR spectrum in CDCl₃

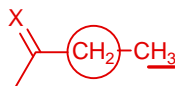
Source: Aldrich Spectra Collection/Reich g

IHD = 1



30 20 10 0 Hz

O-CH₃



3

CH₂-CH₃

3

3.70 3.65

2.4 2.3

1.20 1.15 1.10

2

10 9 8 7 6 5 4 3 2 1 0 ppm