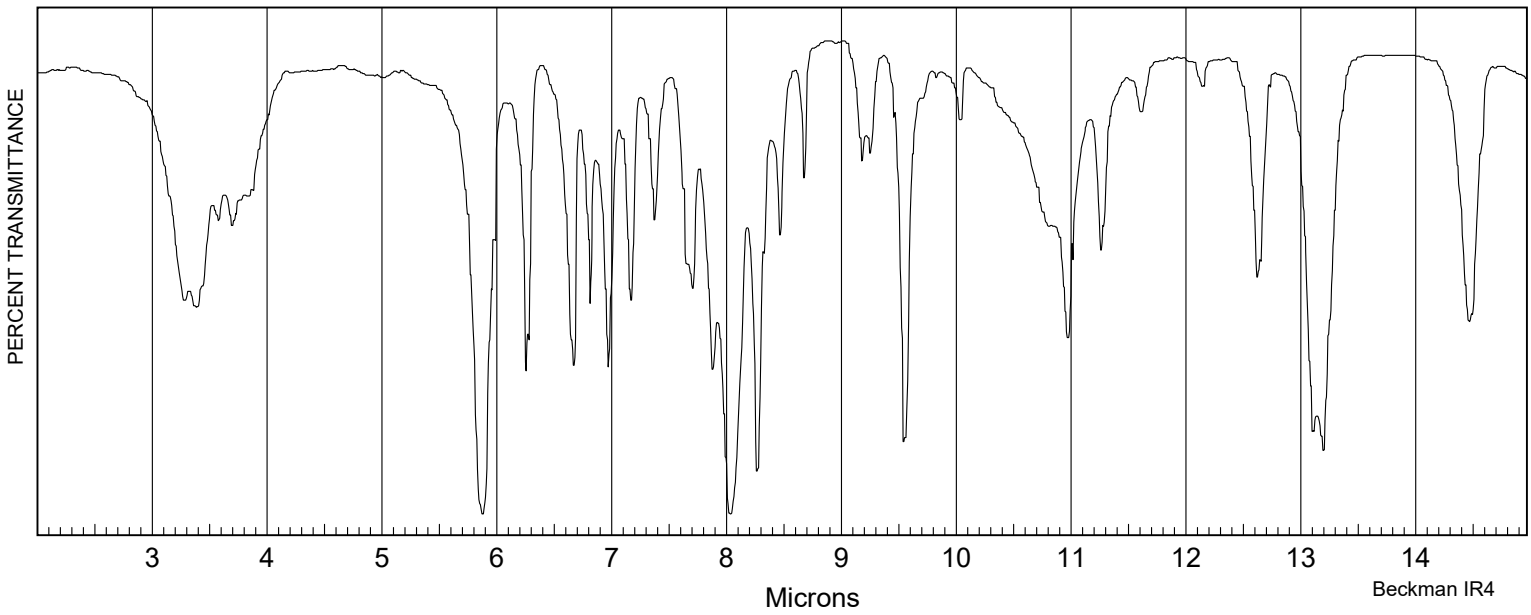
Problem Set 2

Problem N-80-1

Observed protons are circled
protons causing splitting are underlined

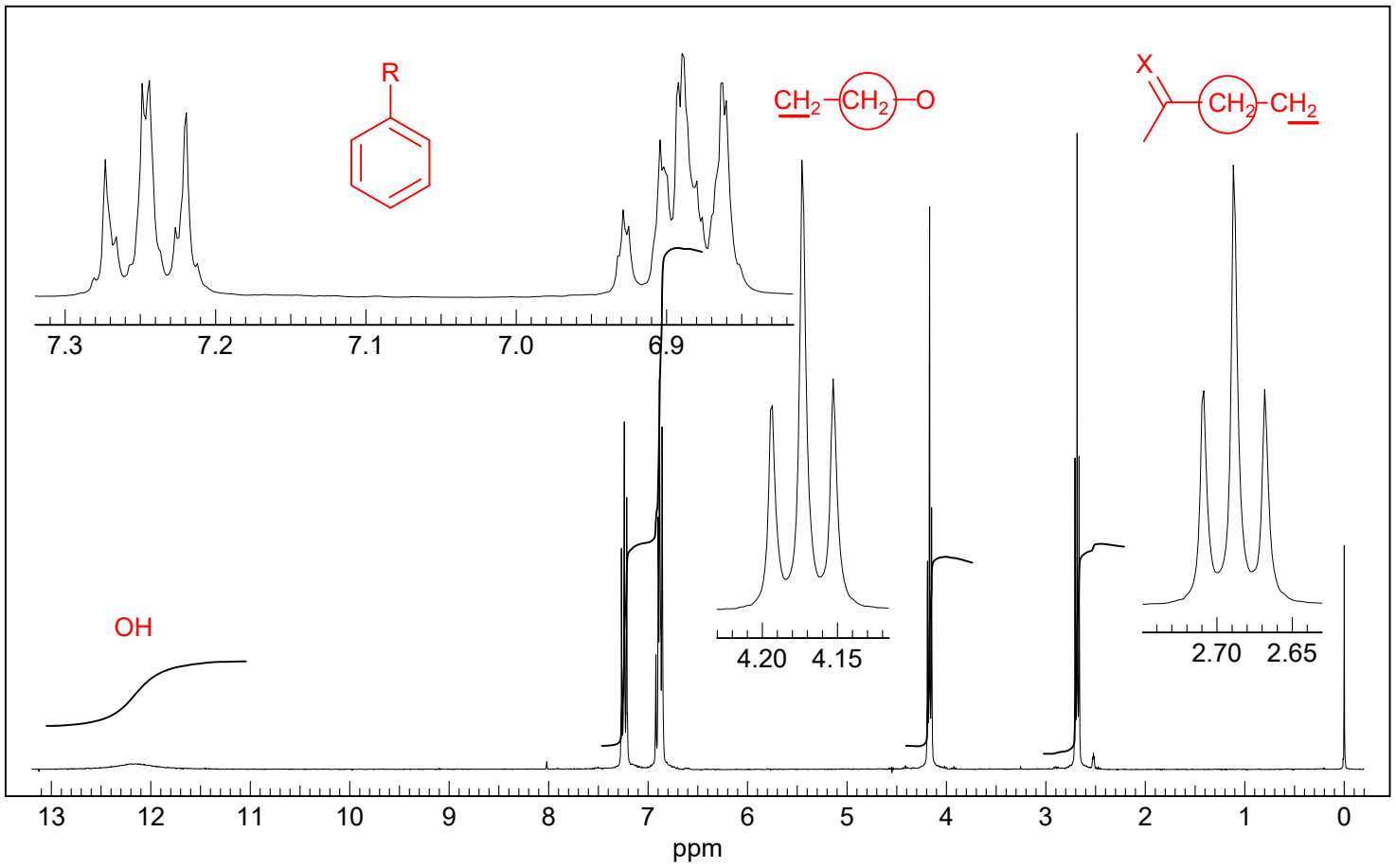
a. DBE_____

b. Identify IR peaks. Give functionality by marking them on the spectrum.

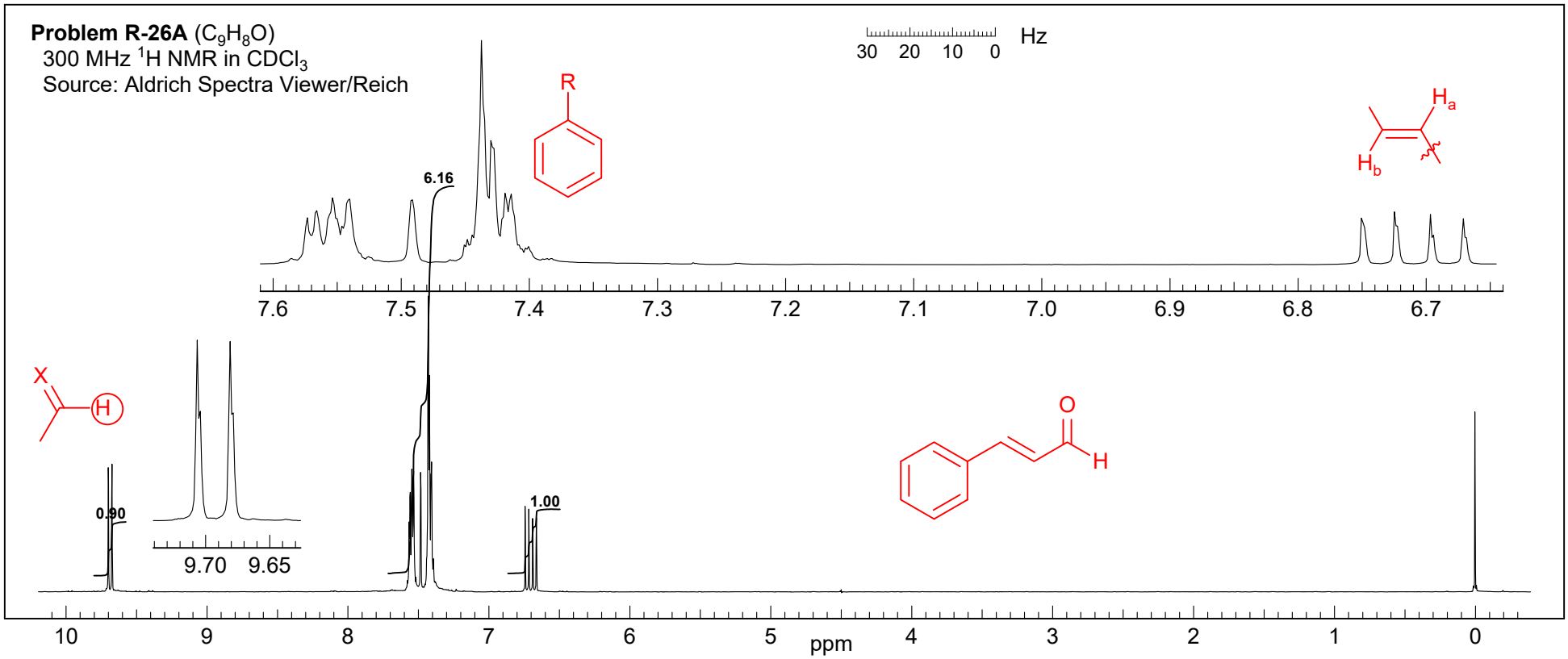


c. Identify fragments from the ^{1}H NMR spectrum.

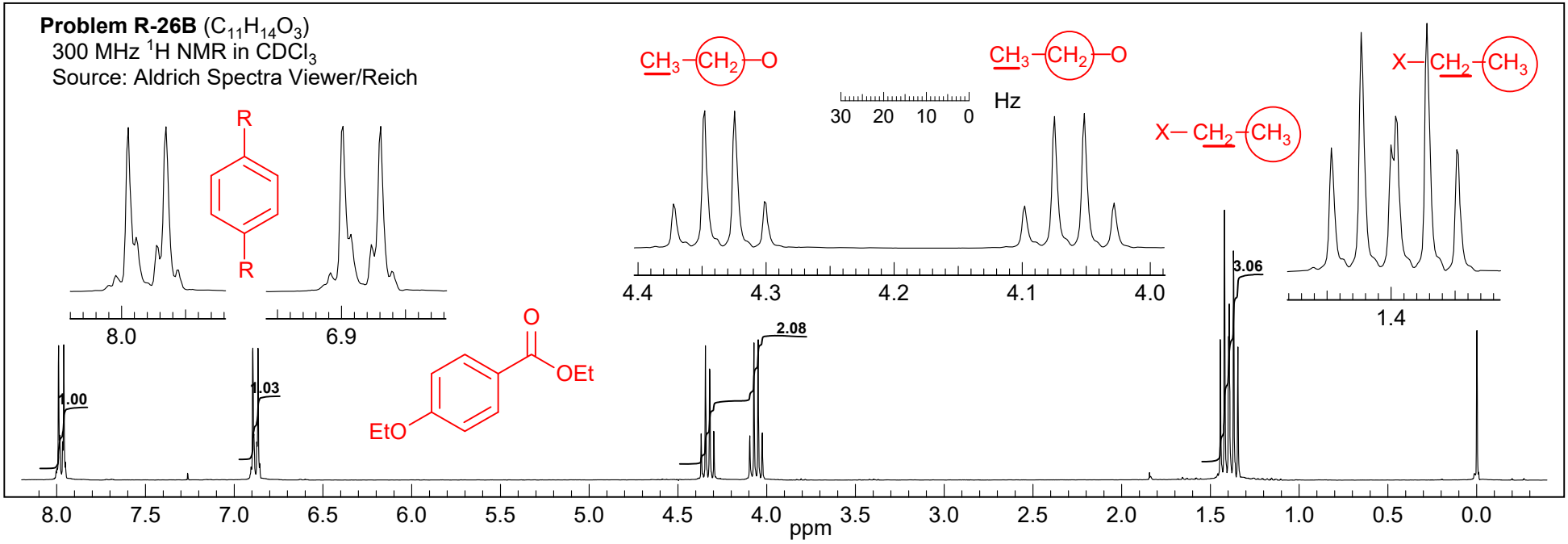
Problem N-80-1 $C_9H_{10}O_3$
300 MHz ^{1}H NMR spectrum in $CDCl_3$/DMSO-d_6
Source: Aldrich Spectra Viewer/Reich



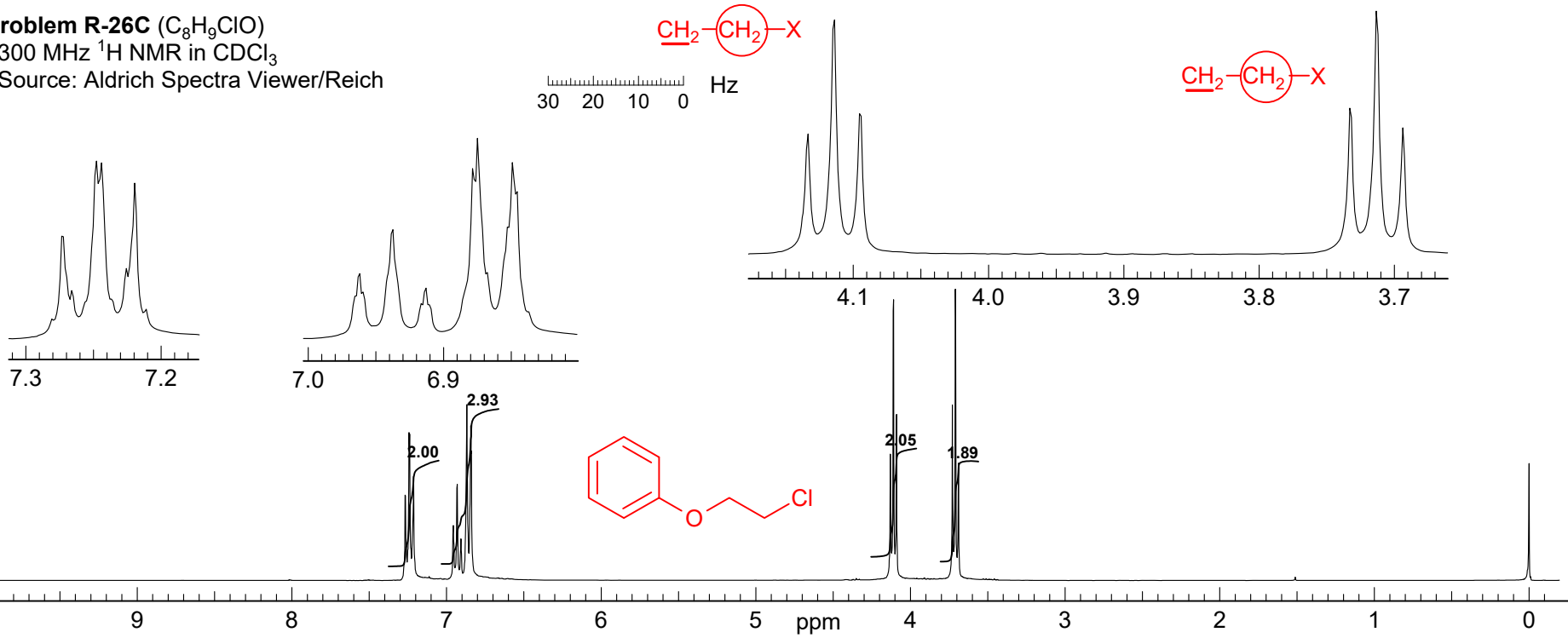
Problem R-26A (C_9H_8O)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich



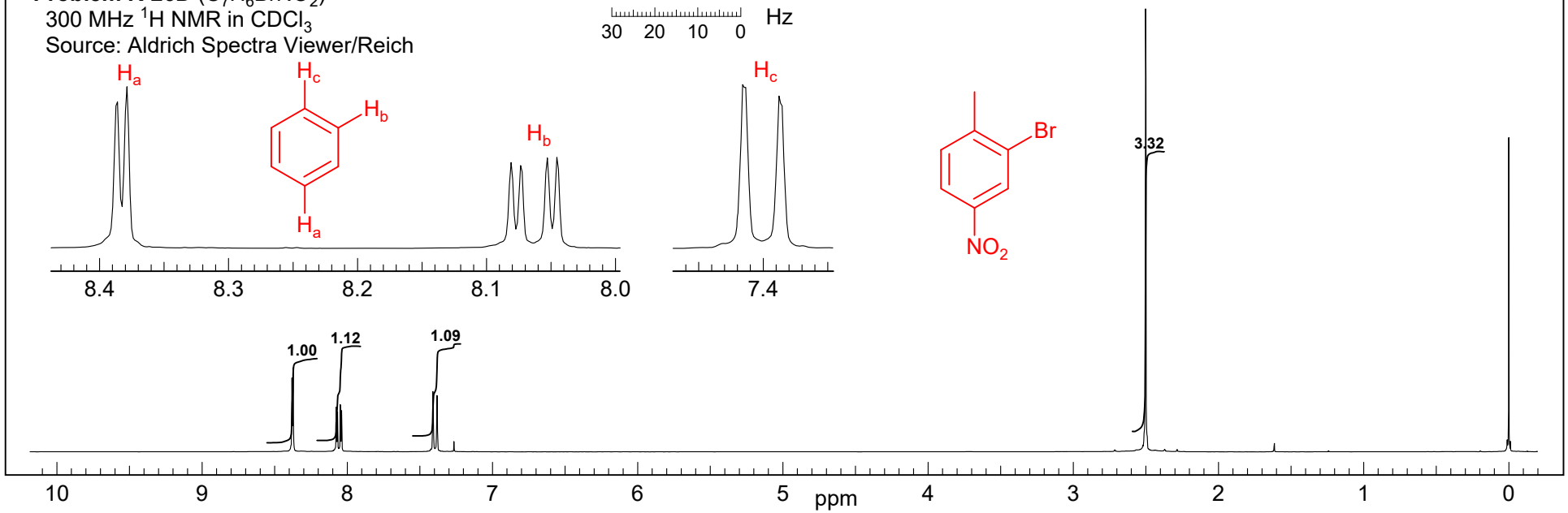
Problem R-26B ($C_{11}H_{14}O_3$)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich



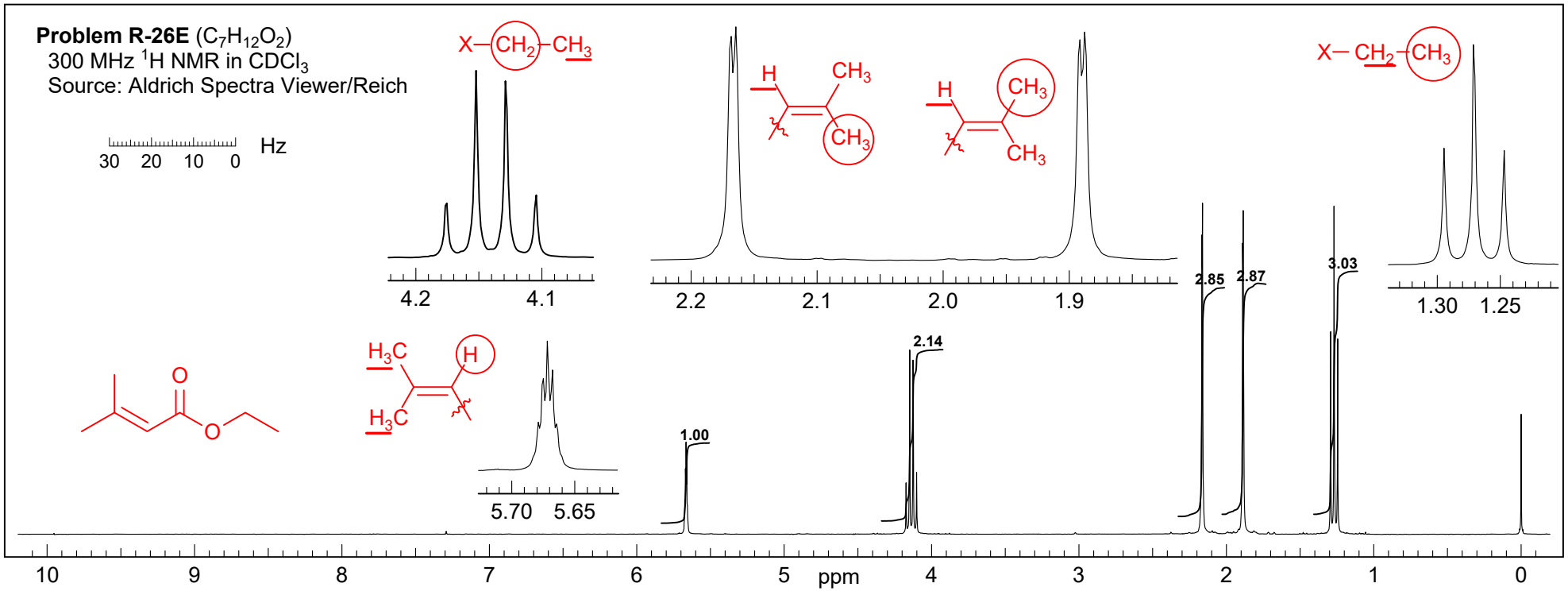
Problem R-26C (C_8H_9ClO)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich



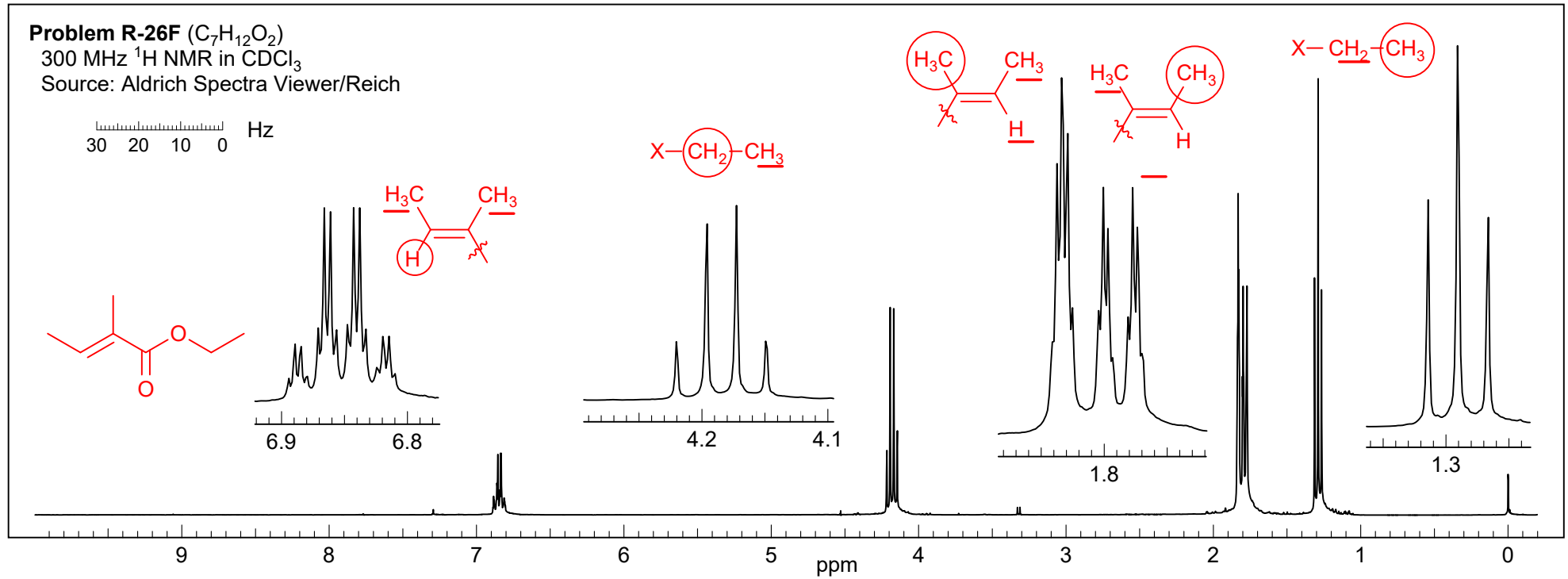
Problem R-26D ($C_7H_6BrNO_2$)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich



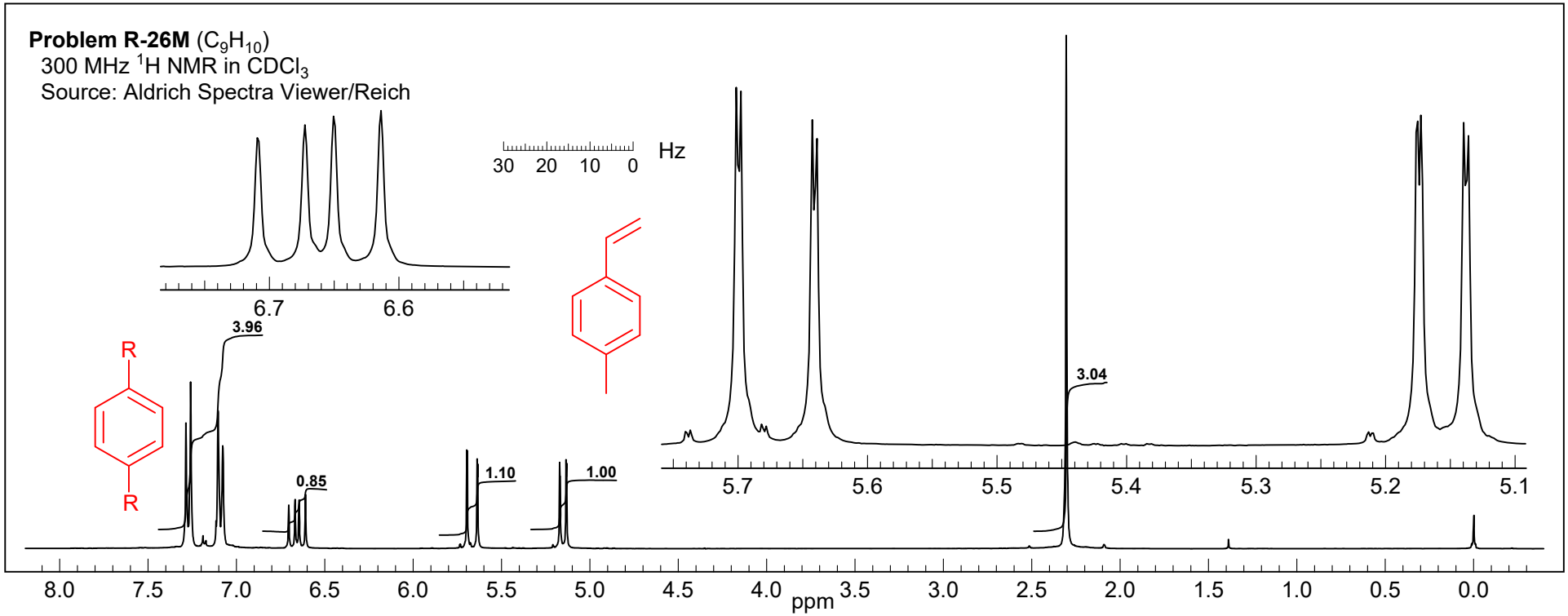
Problem R-26E ($C_7H_{12}O_2$)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich



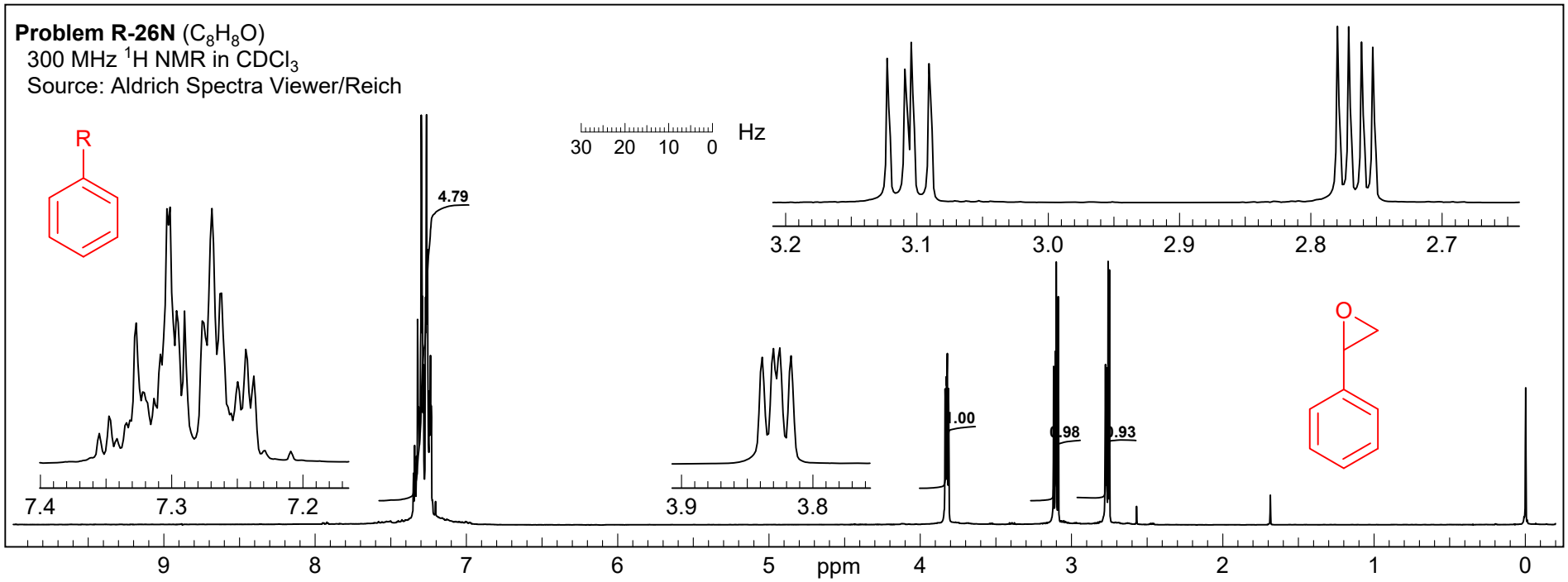
Problem R-26F ($C_7H_{12}O_2$)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich



Problem R-26M (C_9H_{10})
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich

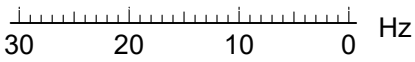


Problem R-26N (C_8H_8O)
300 MHz ^{1}H NMR in $CDCl_3$
Source: Aldrich Spectra Viewer/Reich

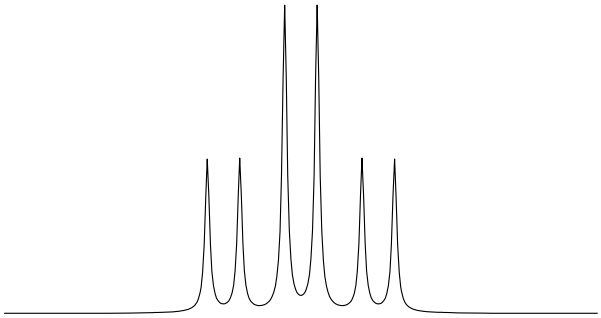


Problem R-301-A: Extracting *J* couplings from First Order Spectra

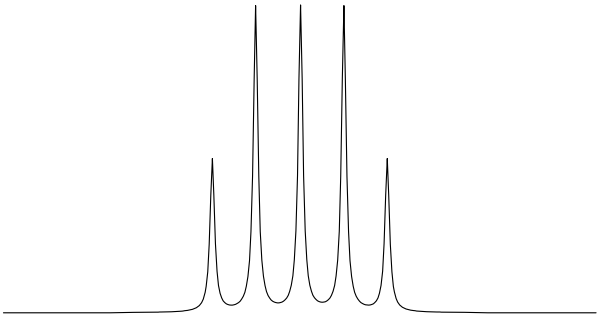
Each pattern is caused by a single proton. Analyze each in terms of *J* values for protons splitting the ones observed, and in the standard fashion (eg, tdt, *J* = 12, 3, 2 Hz). Draw a "coupling tree."



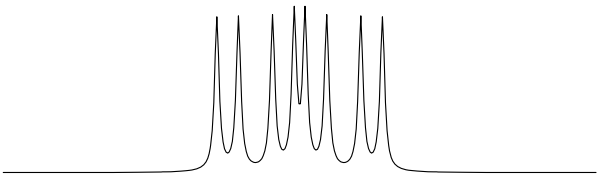
td, *J* = 7, 3 Hz



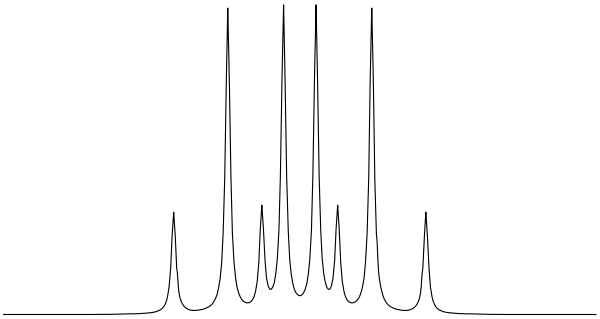
dt, *J* = 8, 4 Hz



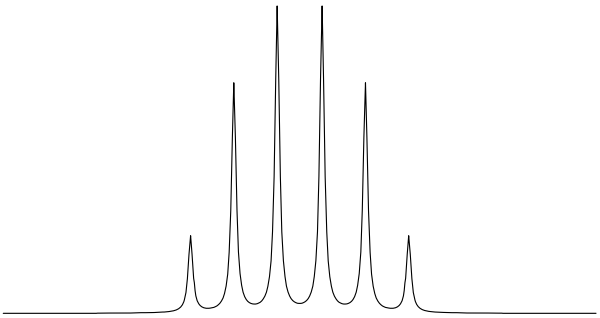
ddd, *J* =8, 5, 2 Hz



dq, *J* = 8, 5 Hz



dq, *J* = 8, 5 Hz



dtd, *J* = 9, 7, 2 Hz