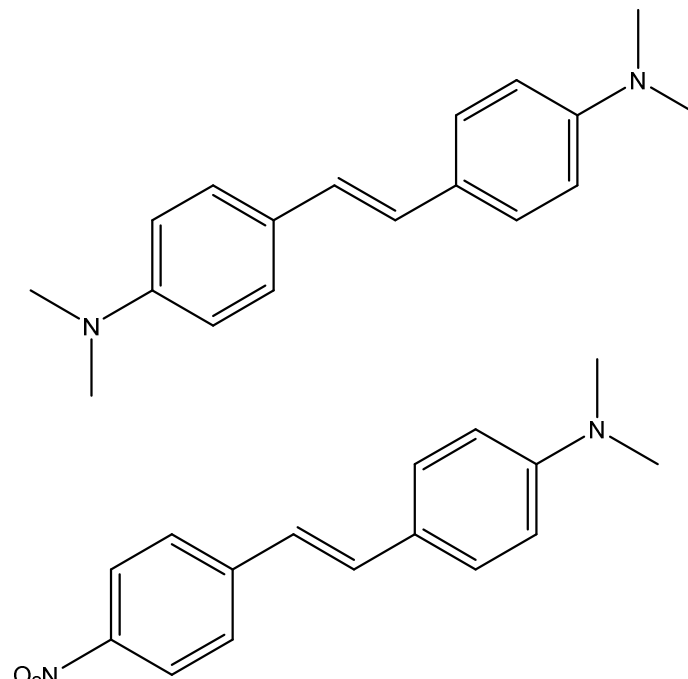
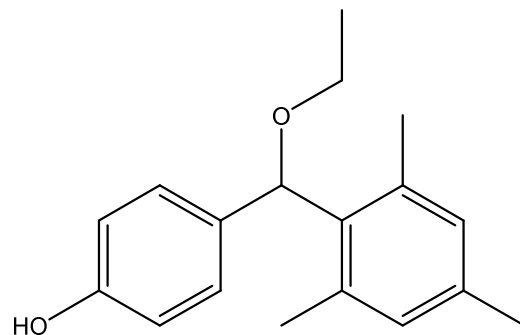
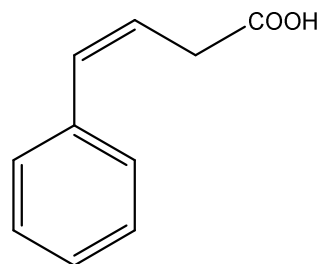
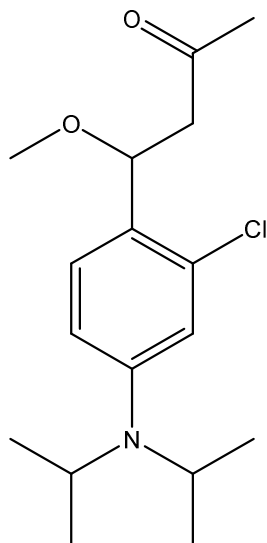
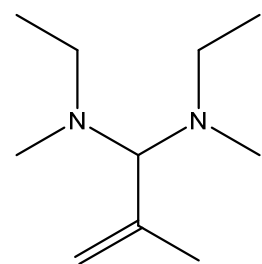
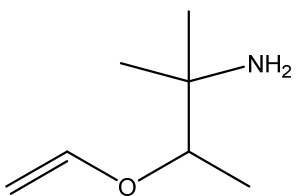
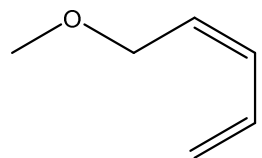


Zadanie 1. Narysuj przewidywane widma $^1\text{H-NMR}$ dla następujących struktur. Uważaj na protony diastereotopowe (3 przypadki) oraz symetrię związku. Podaj multipletowość sygnałów, stosunek intensywności w multipletach (jeśli nie jest to m), intensywność integralną sygnału.

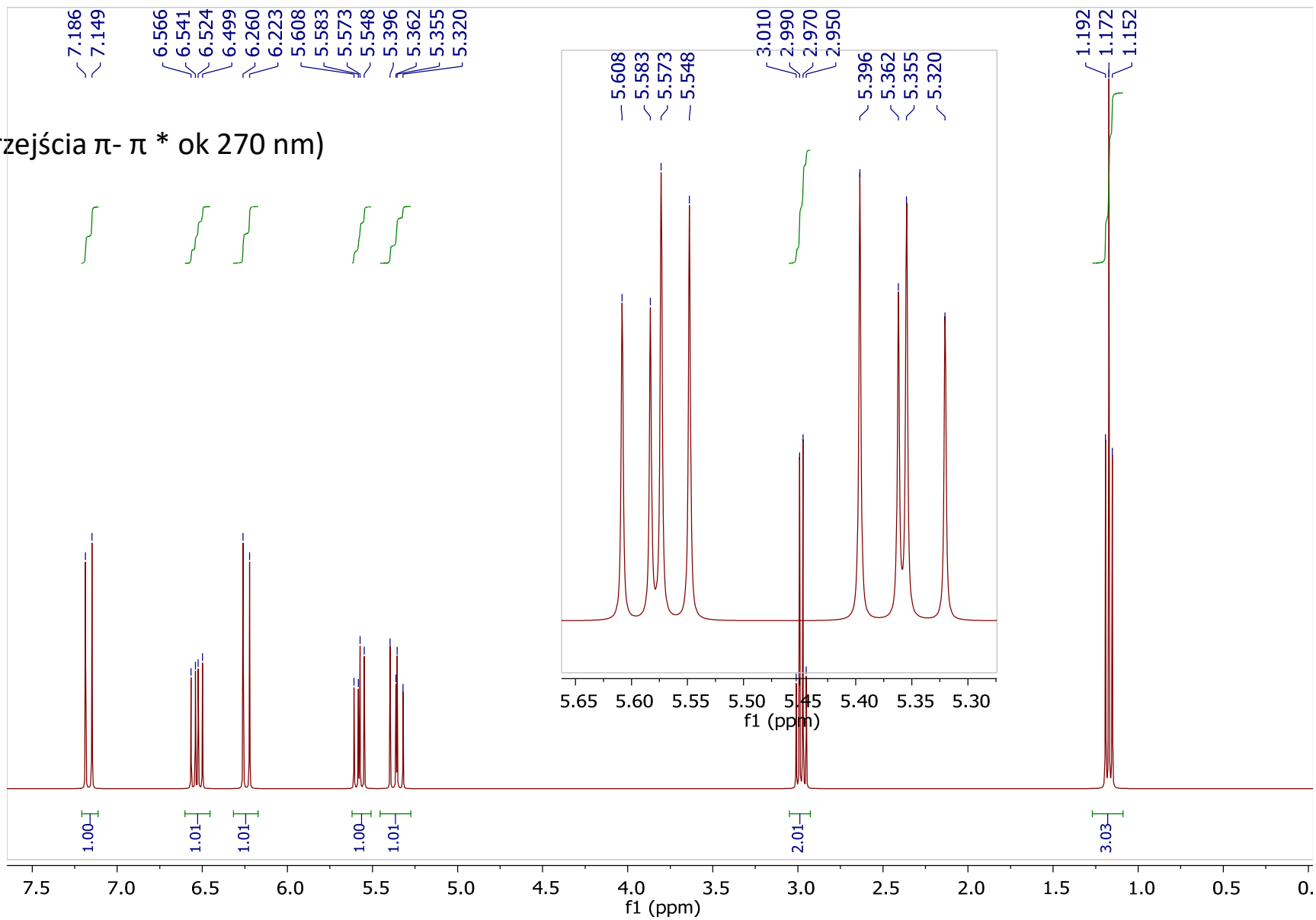
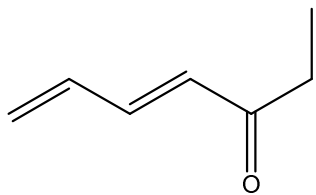


Zadanie 2. Na podstawie widma ^1H NMR zmierzonych na aparacie Bruker 400 MHz (CDCl_3) określ strukturę związku chemicznego.

(a)

C₇H₁₀O

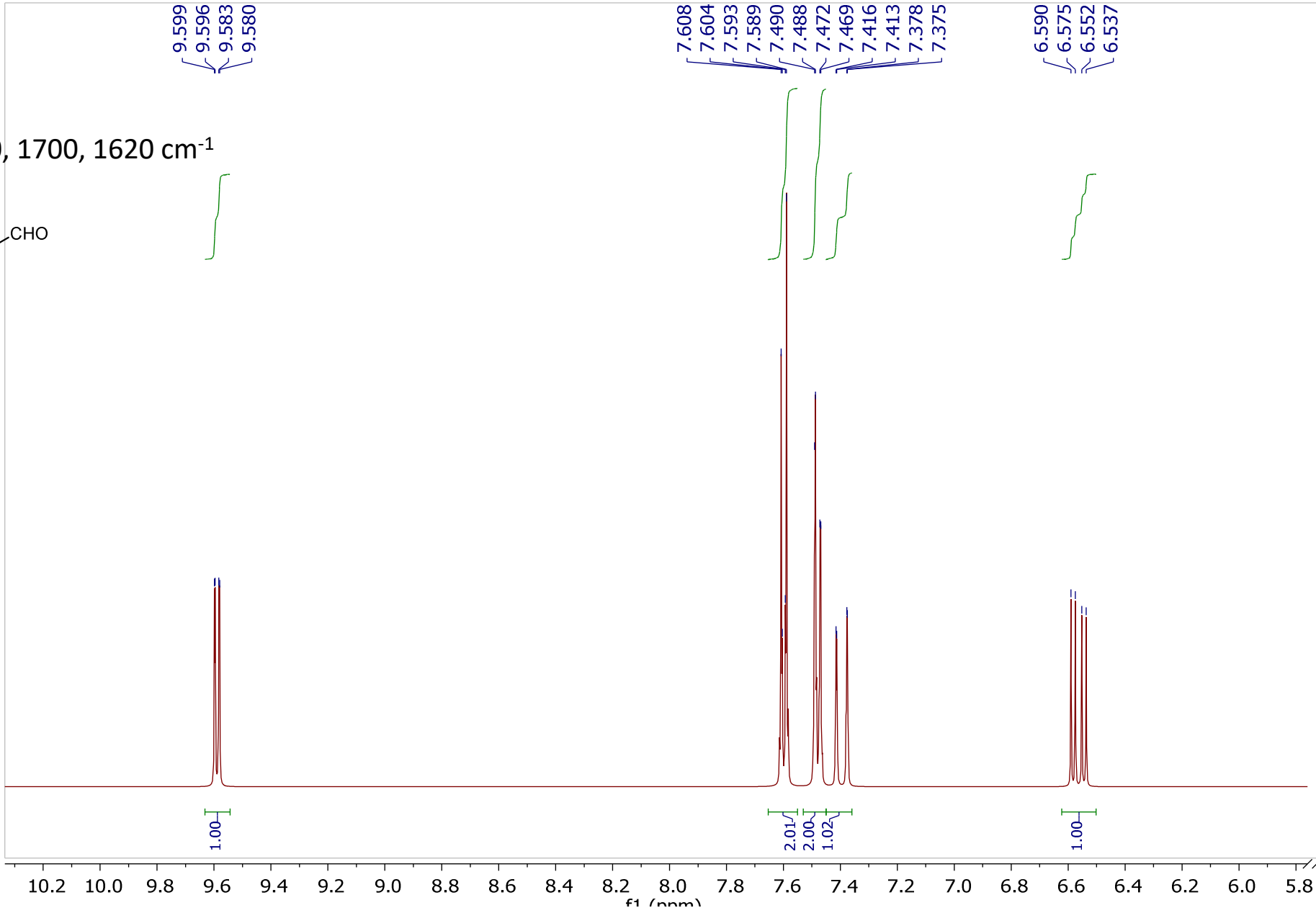
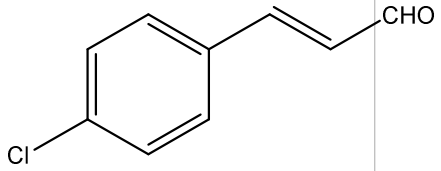
(W widmie UV-Vis sygnał przejścia π - π^* ok 270 nm)



(b)

C_9H_7ClO

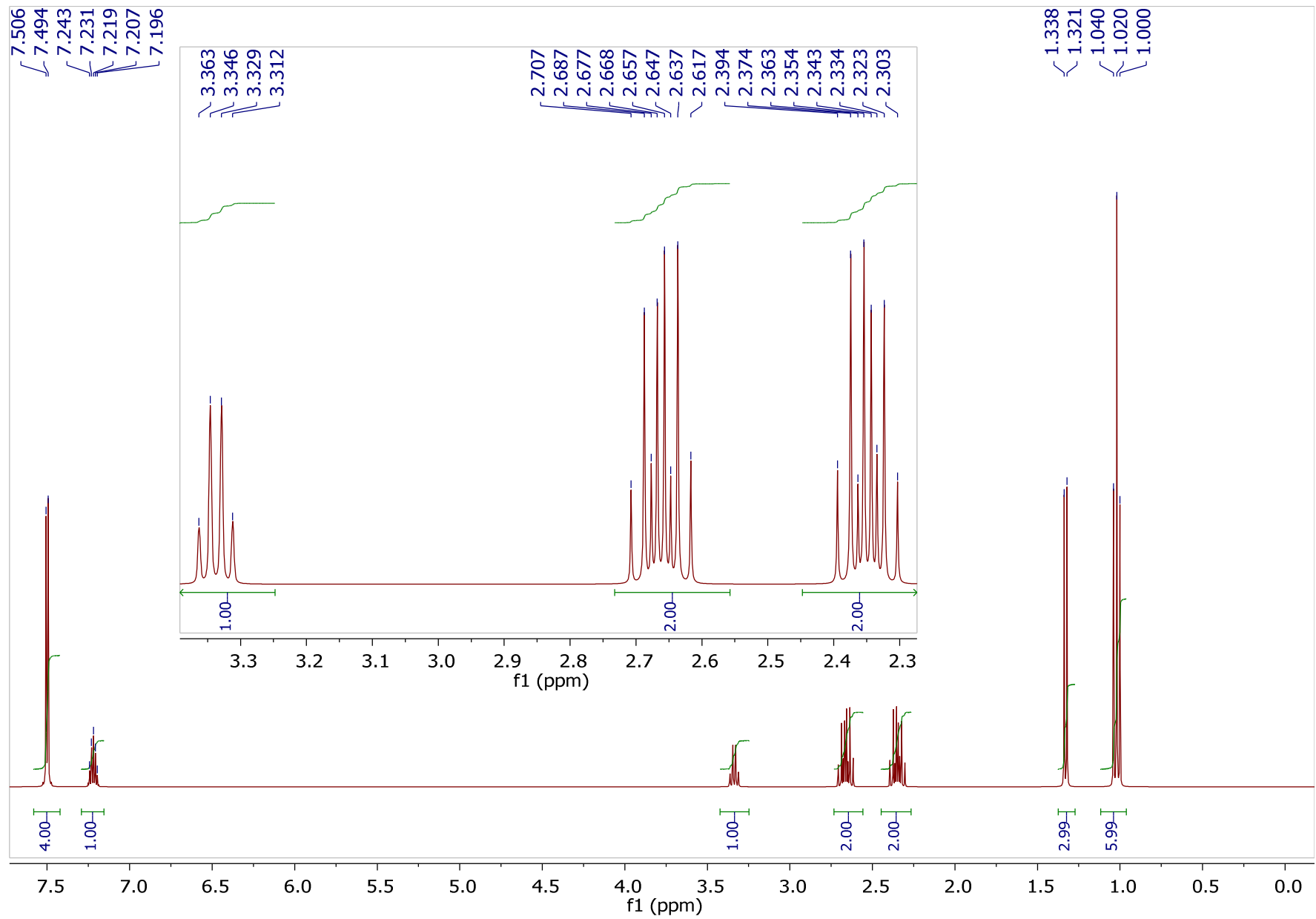
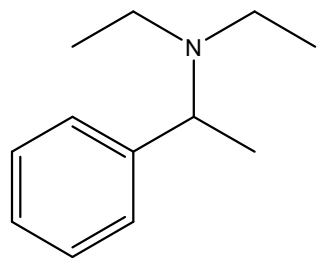
IR: 3040, 2810, 2730, 1700, 1620 cm^{-1}



(c)

C₁₂H₁₉N

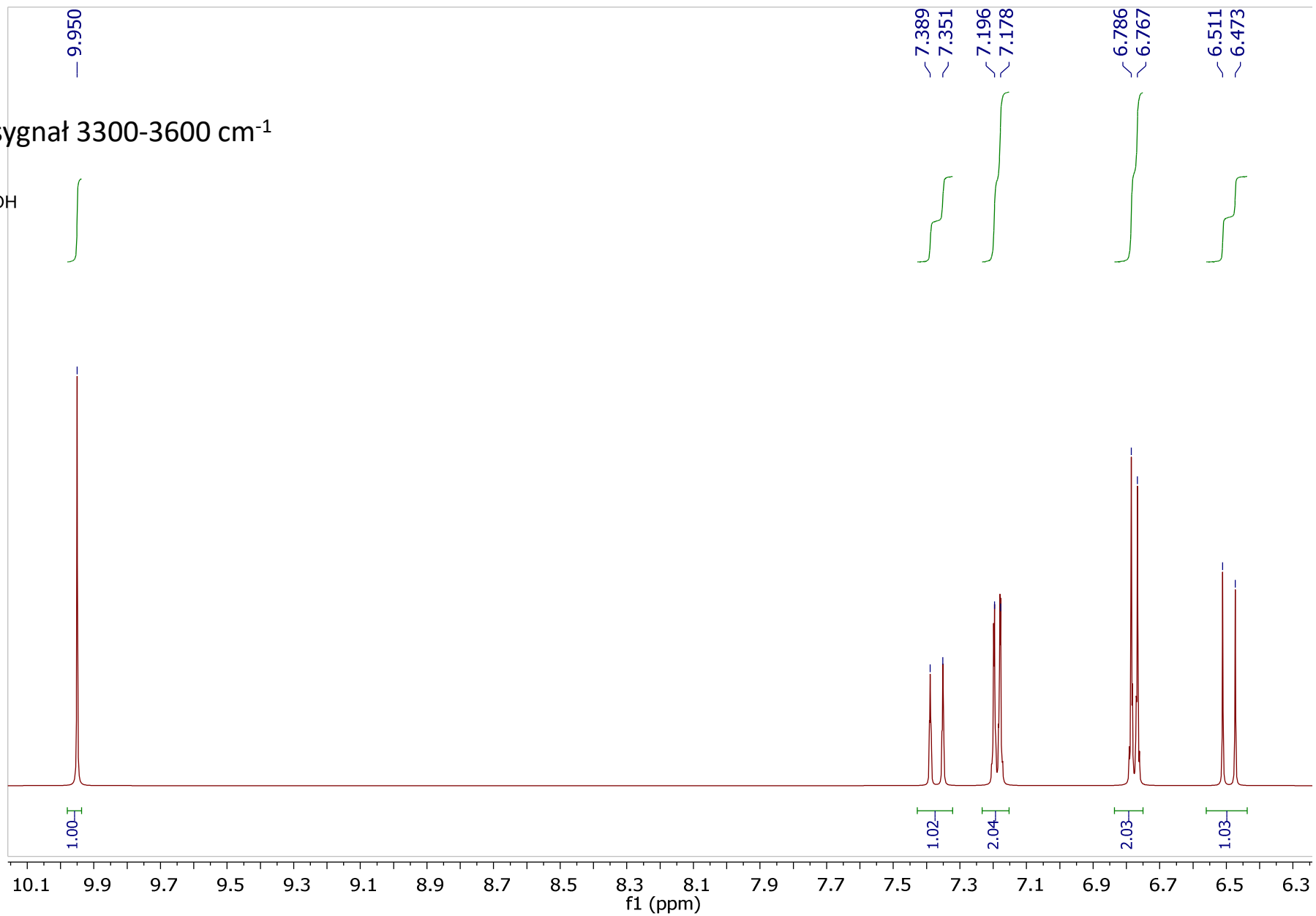
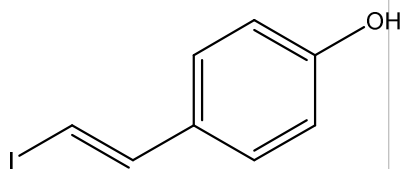
Racemat



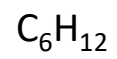
(d)

C_8H_7IO

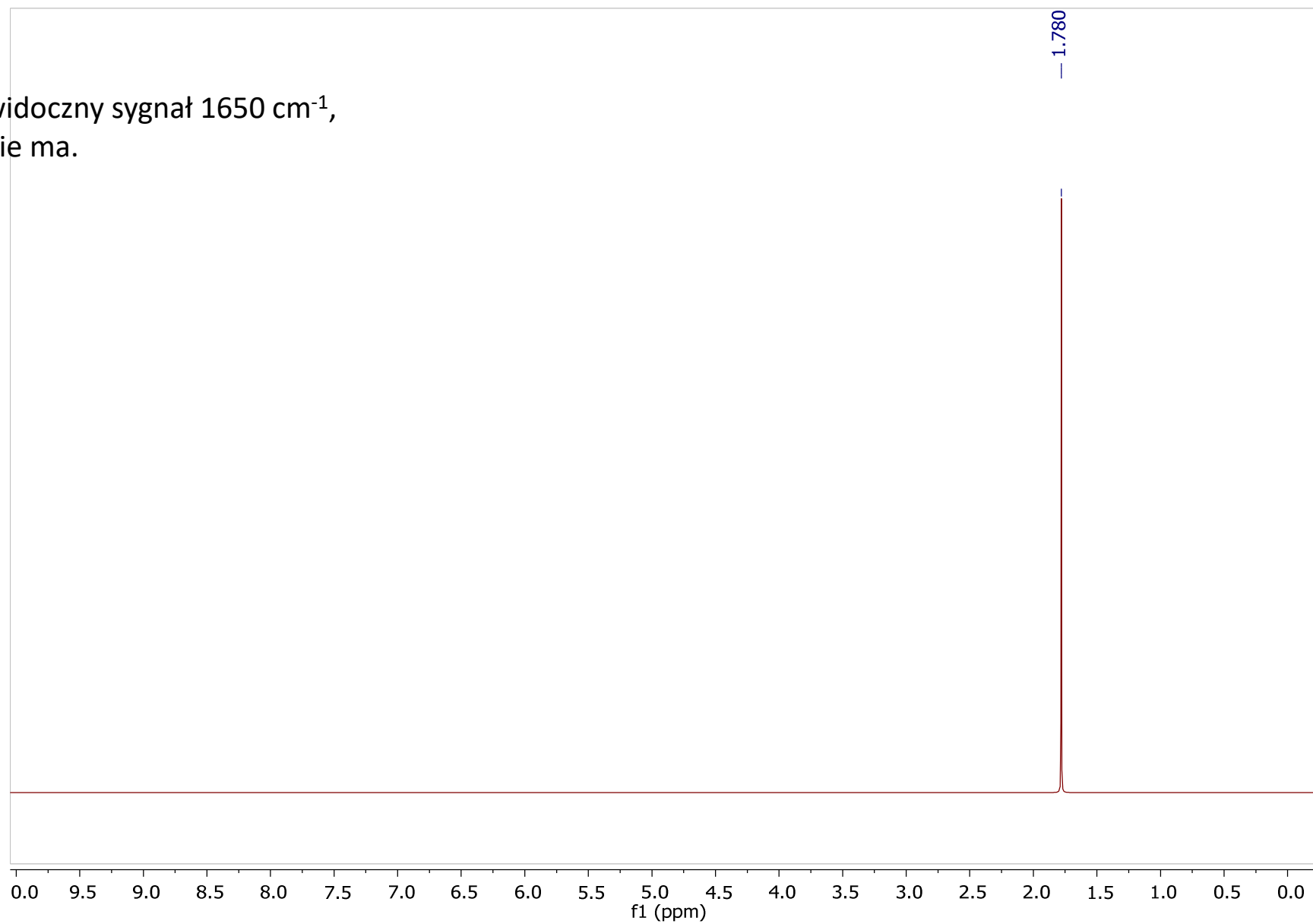
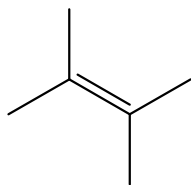
W Widmie IR szeroki sygnał 3300-3600 cm^{-1}



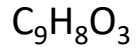
(e)



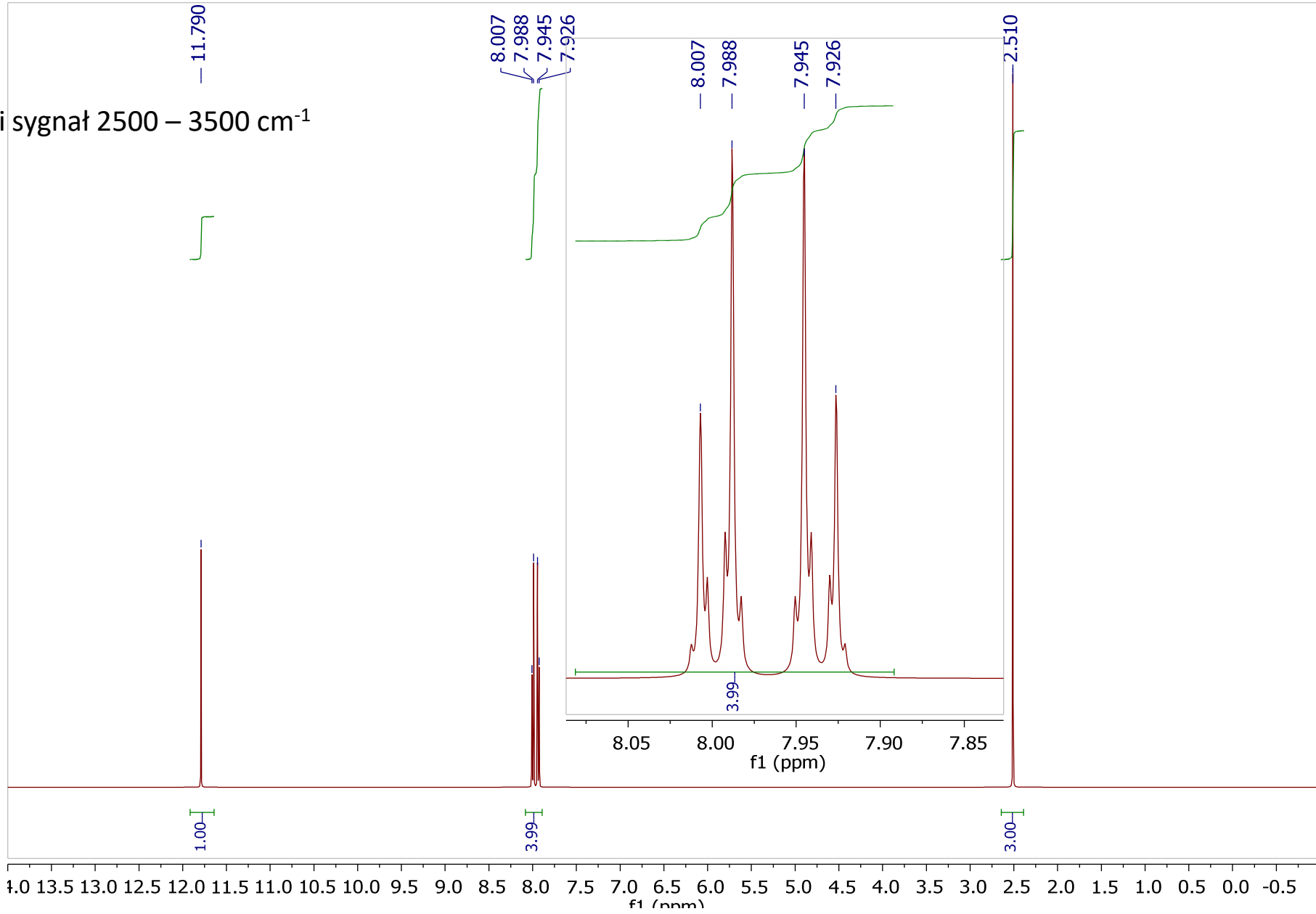
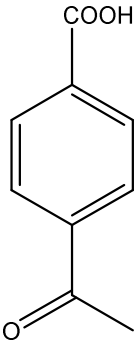
W widmie Ramana widoczny sygnał 1650 cm^{-1} ,
ale w widmie IR go nie ma.



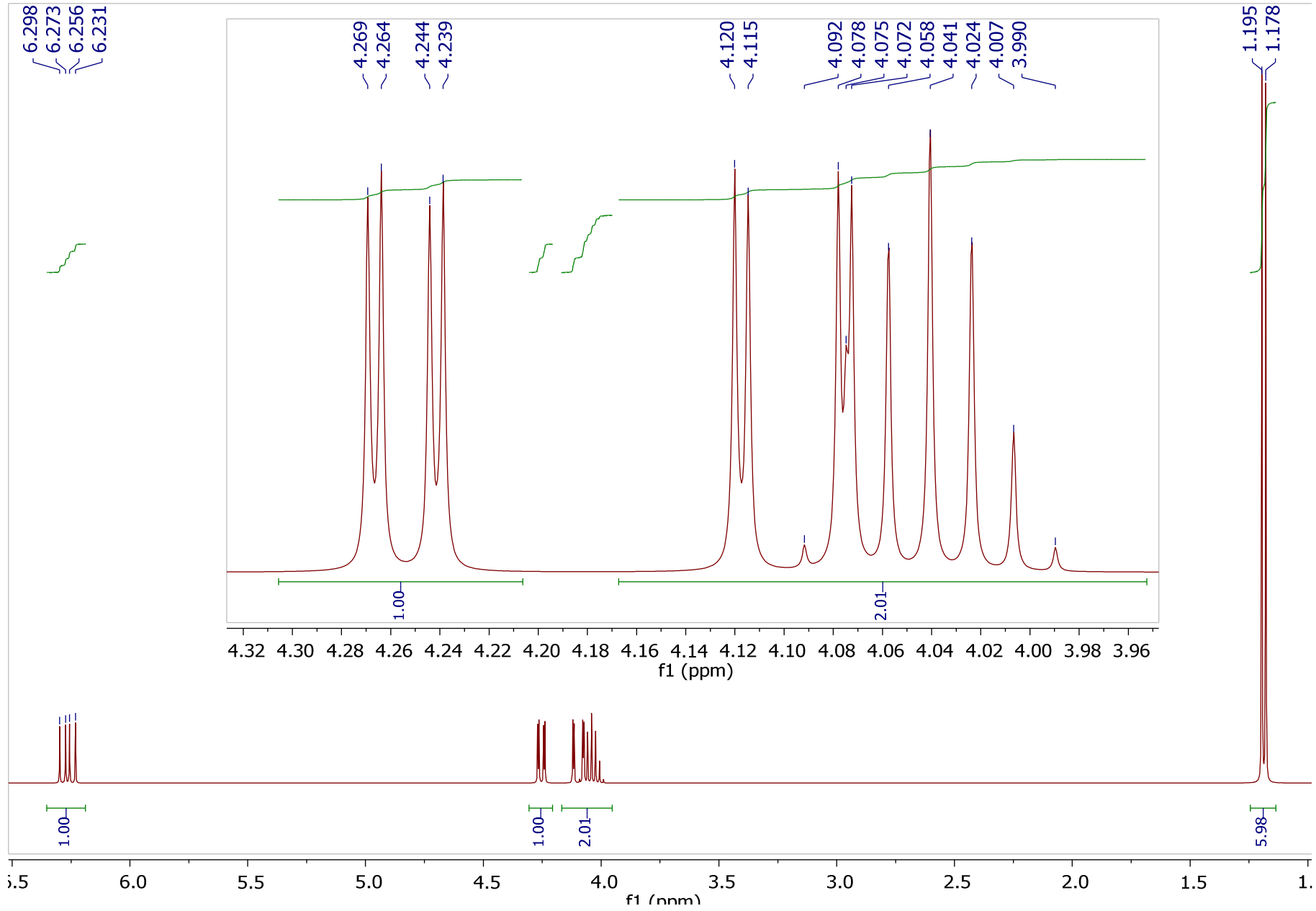
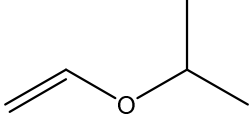
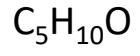
(f)



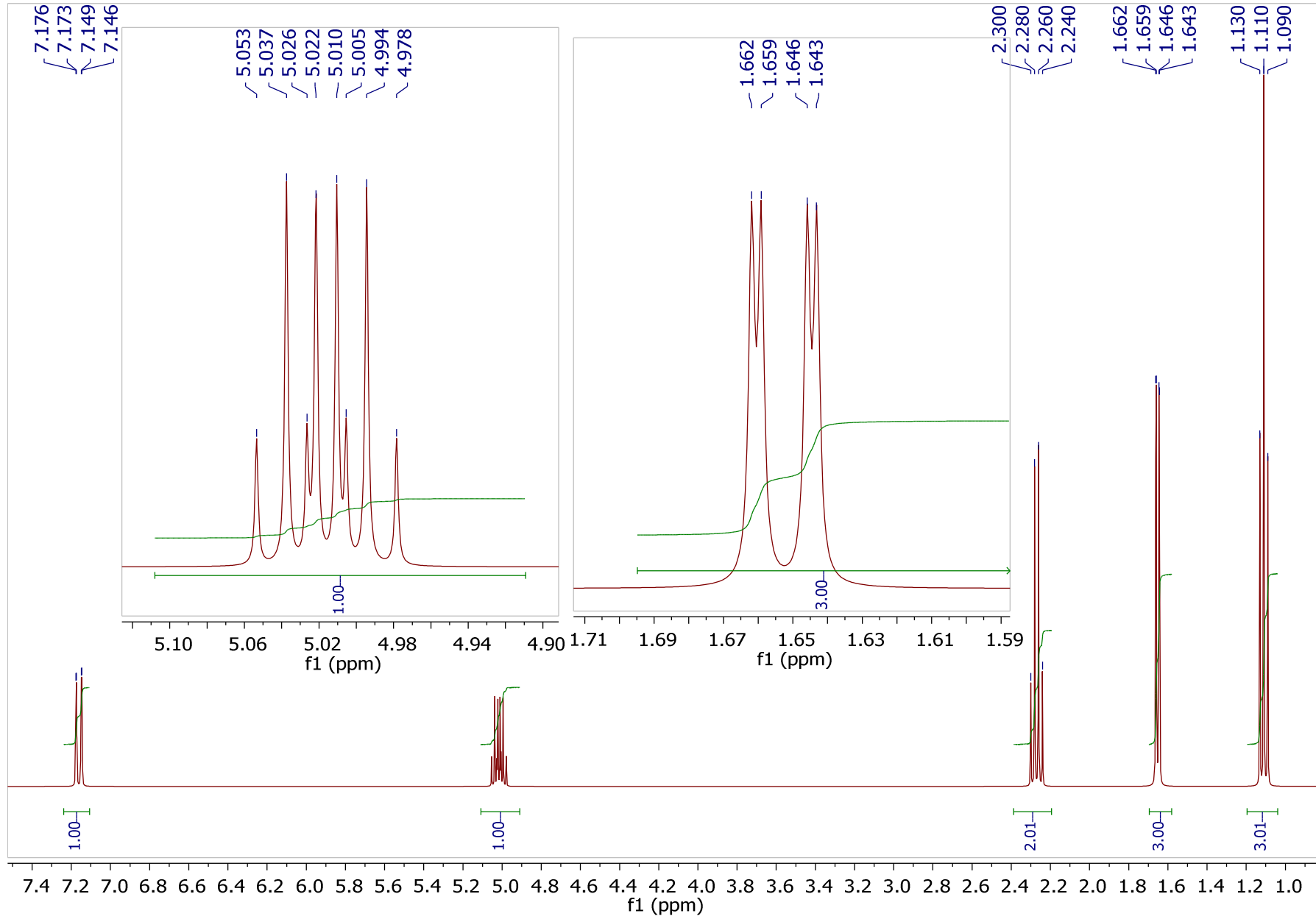
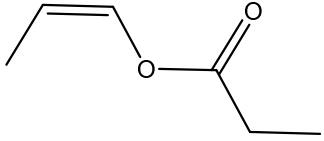
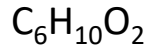
W widmie IR szeroki sygnał 2500 – 3500 cm^{-1}



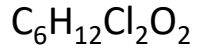
(g)



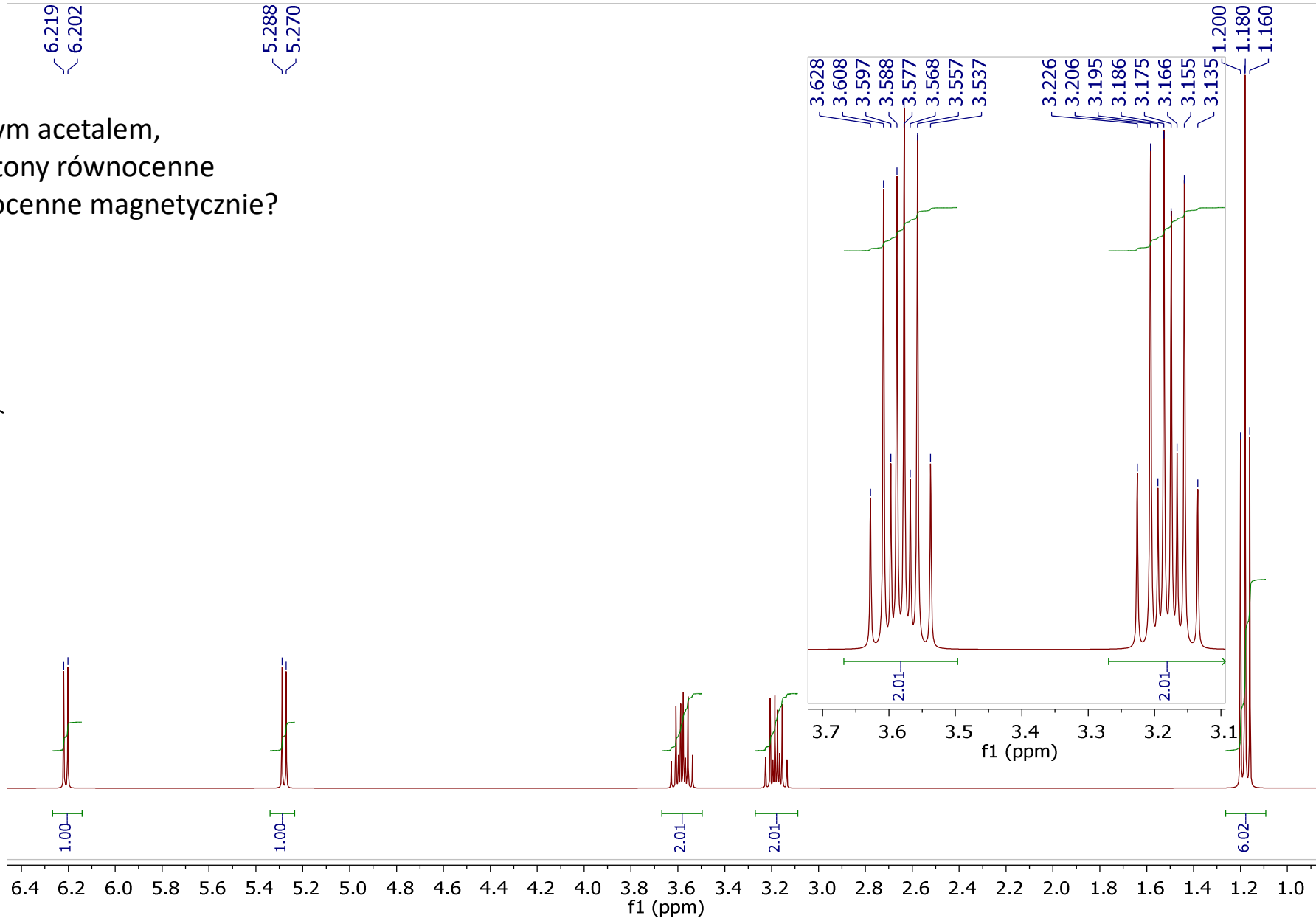
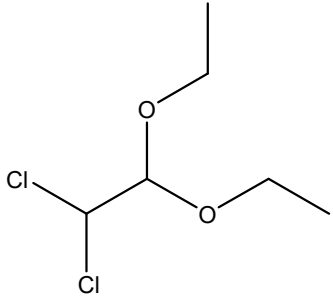
(h)



(i)



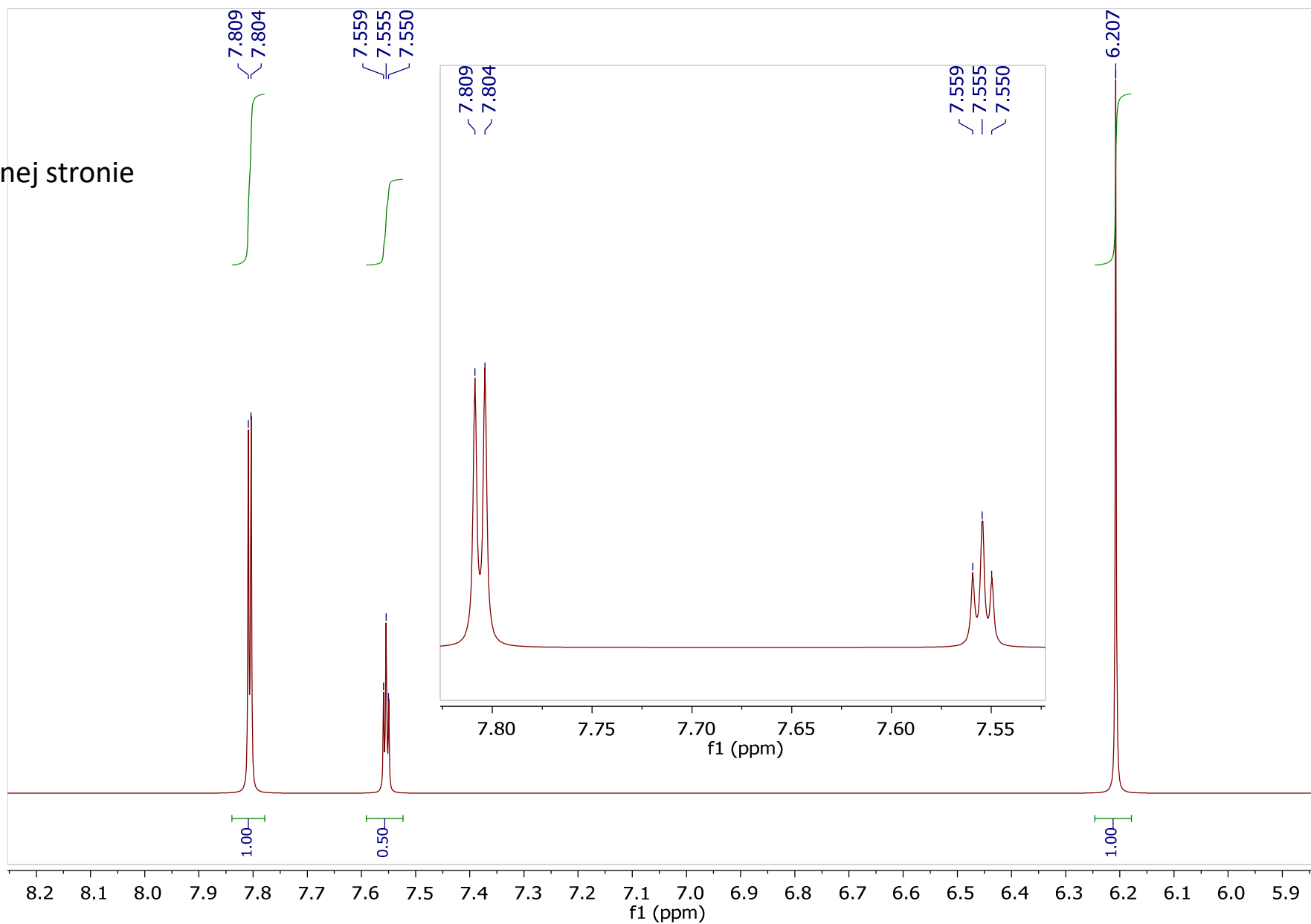
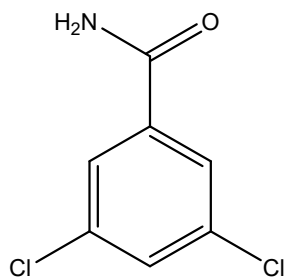
Związek jest achiralnym acetalem,
ale czy wszystkie protony równocenne
chemicznie, są równocenne magnetycznie?



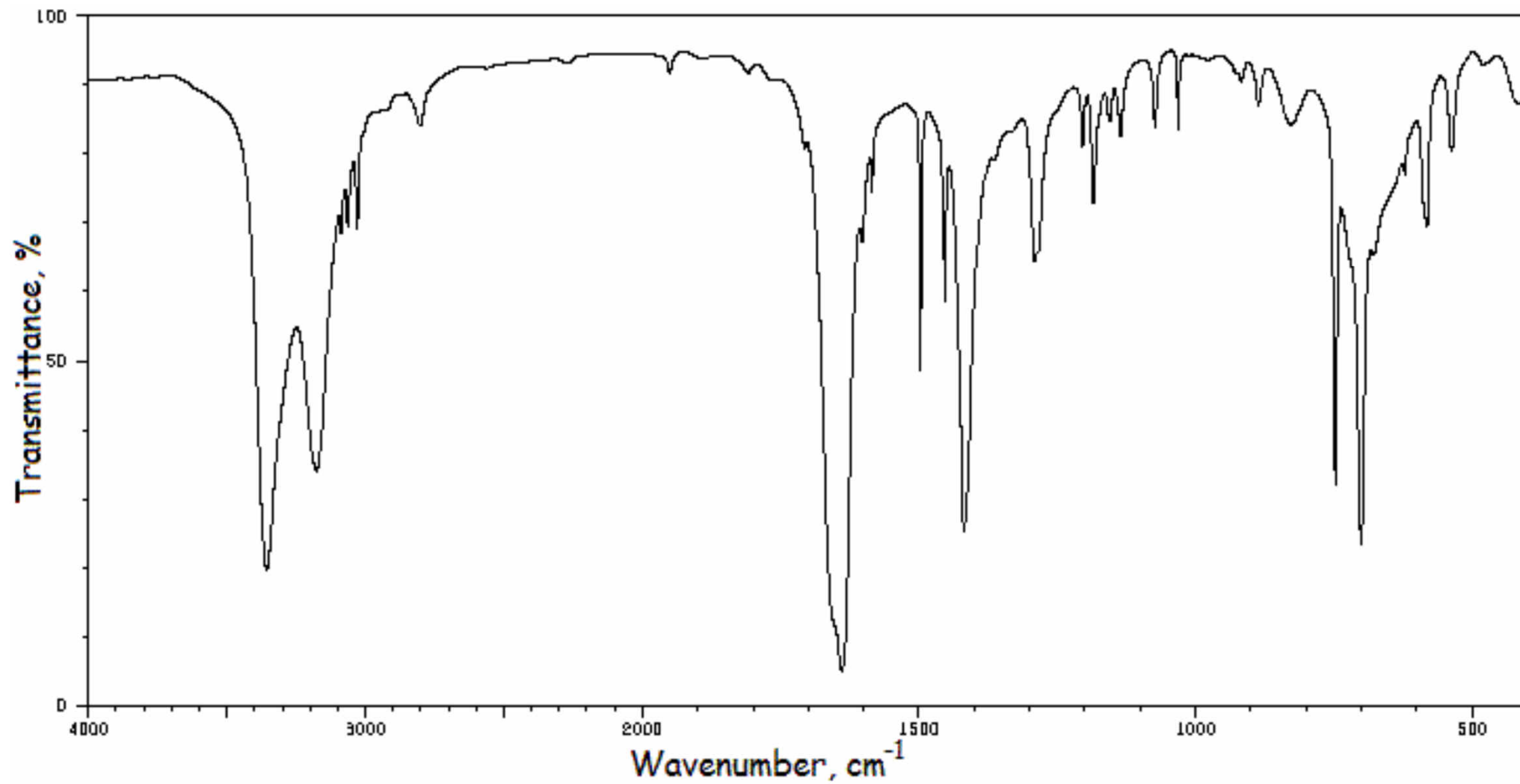
(j)

$C_7H_5Cl_2NO$

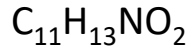
IR załączone na następnej stronie



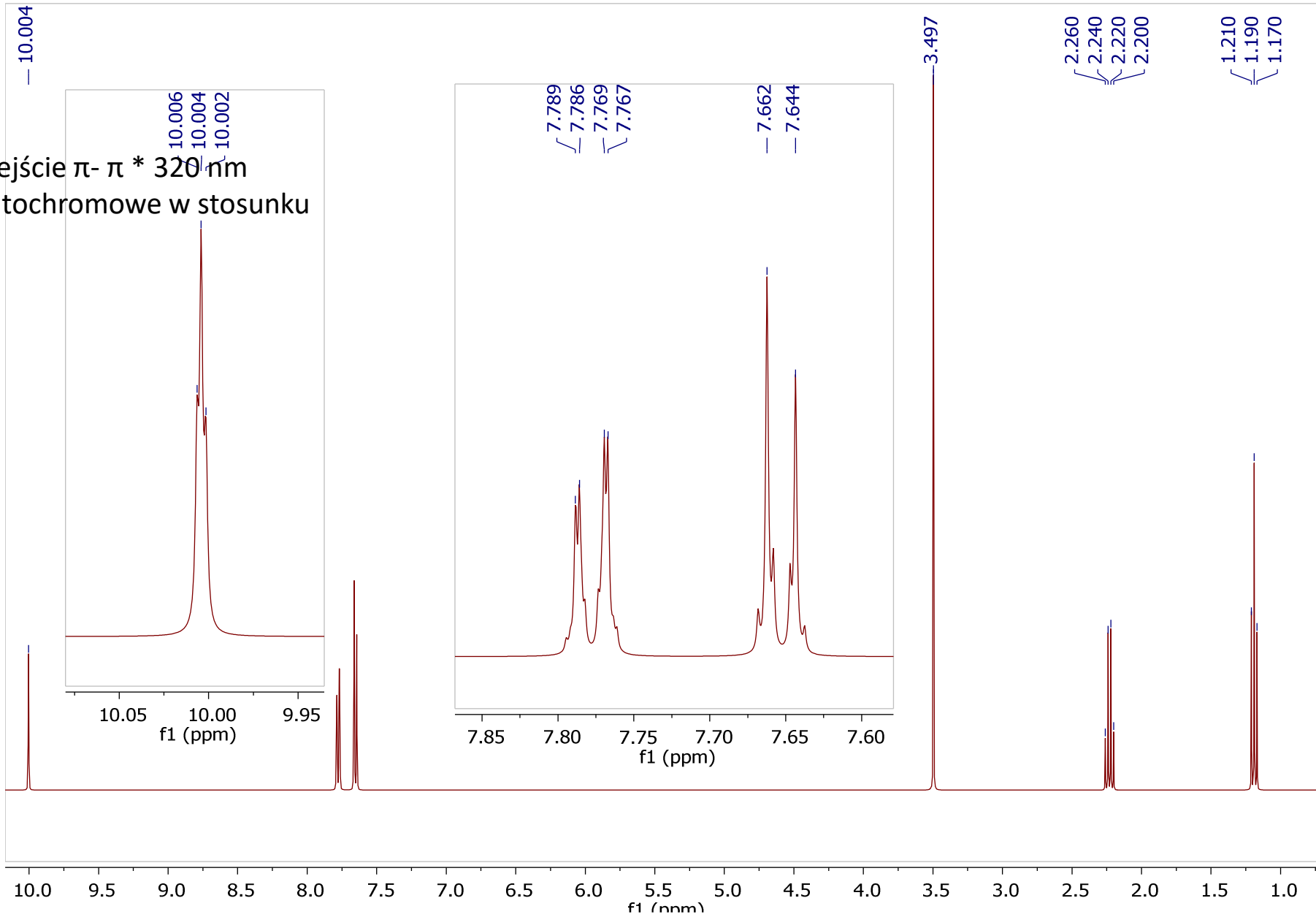
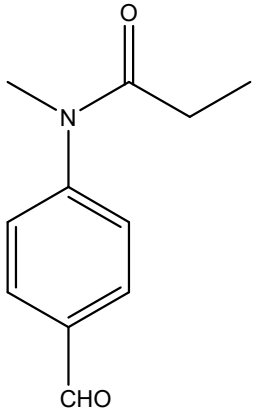
(j)



(k)

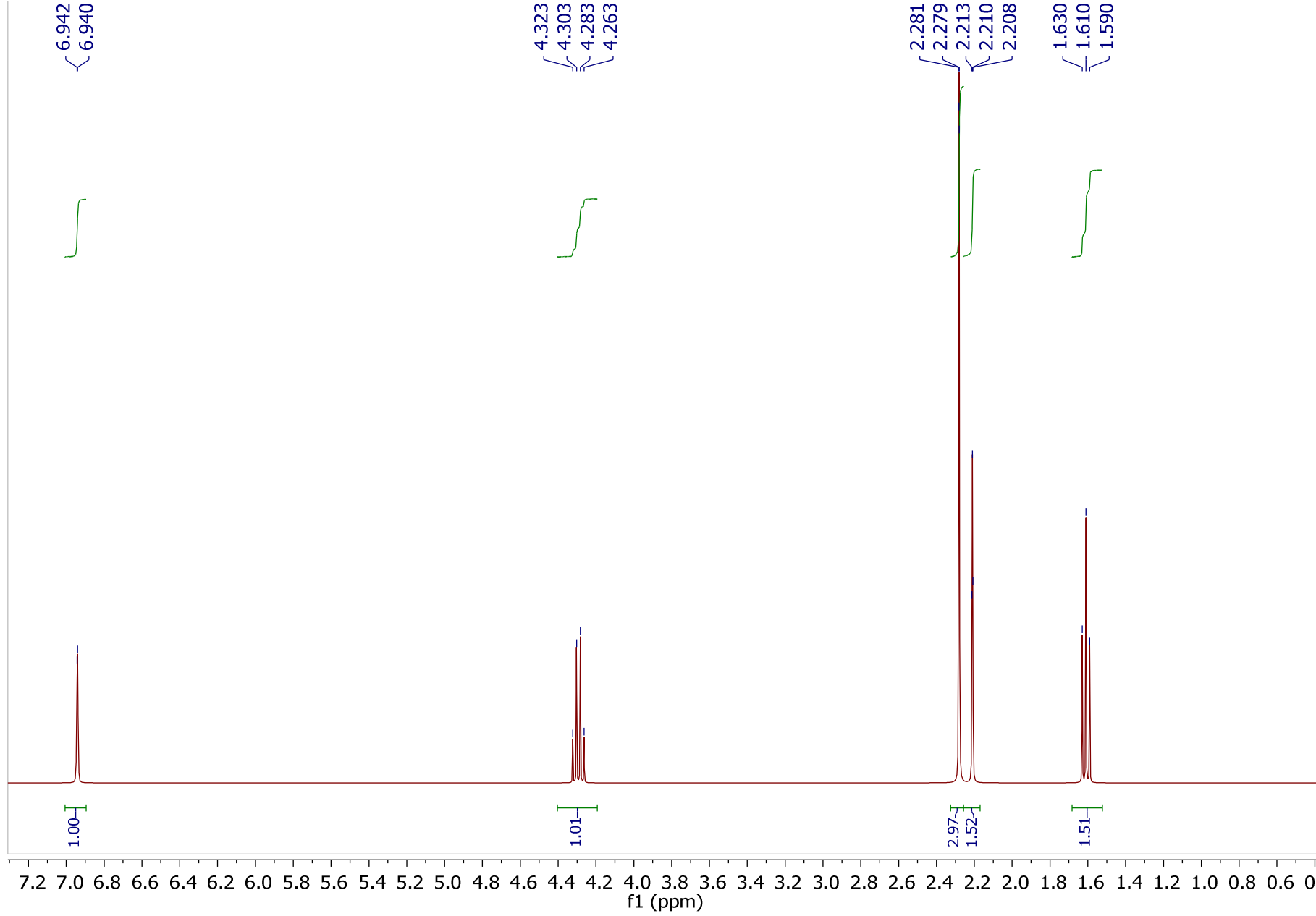
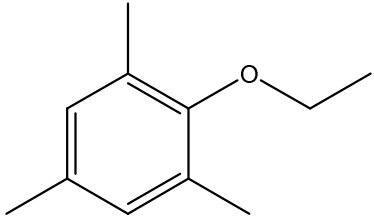


W widmie UV-Vis przejście $\pi-\pi^*$ 320 nm
(silne przesunięcie batochromowe w stosunku do benzenu)

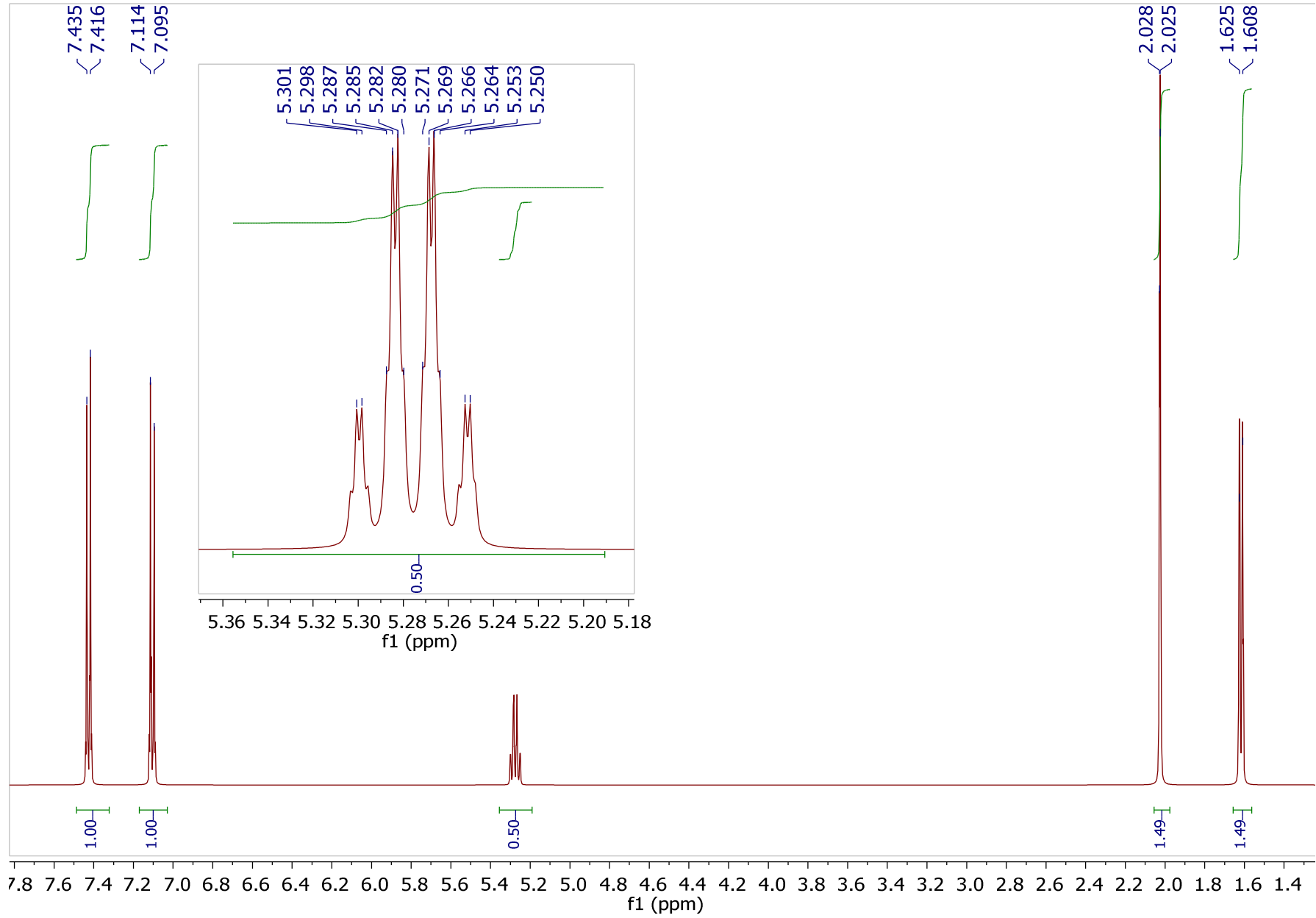
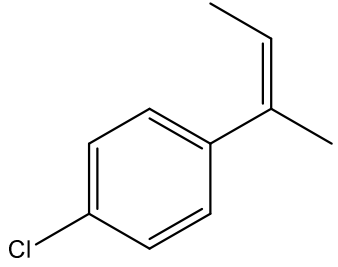
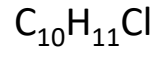


(I)

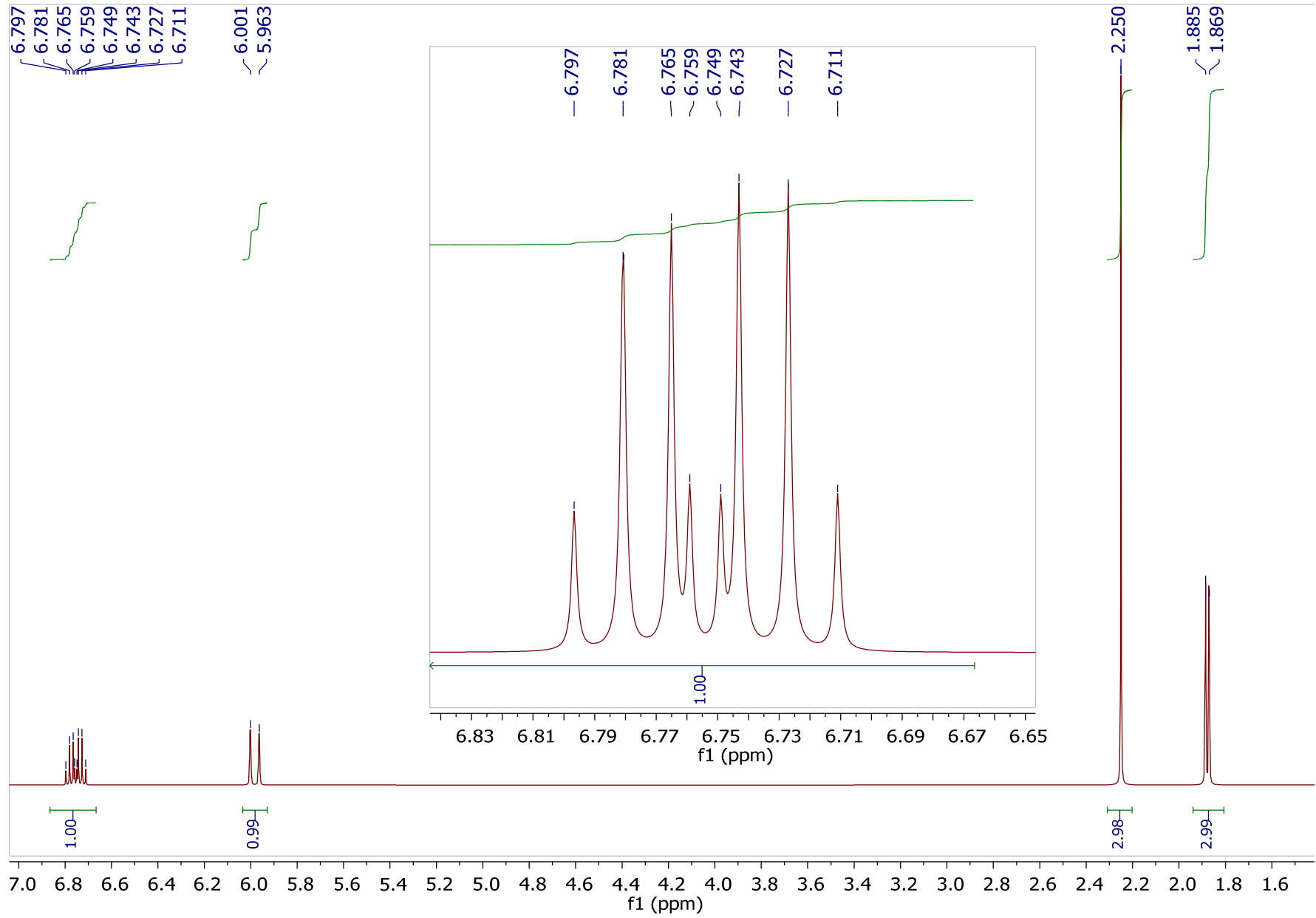
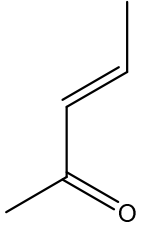
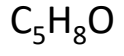
$C_{11}H_{16}O$



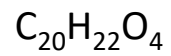
(m)



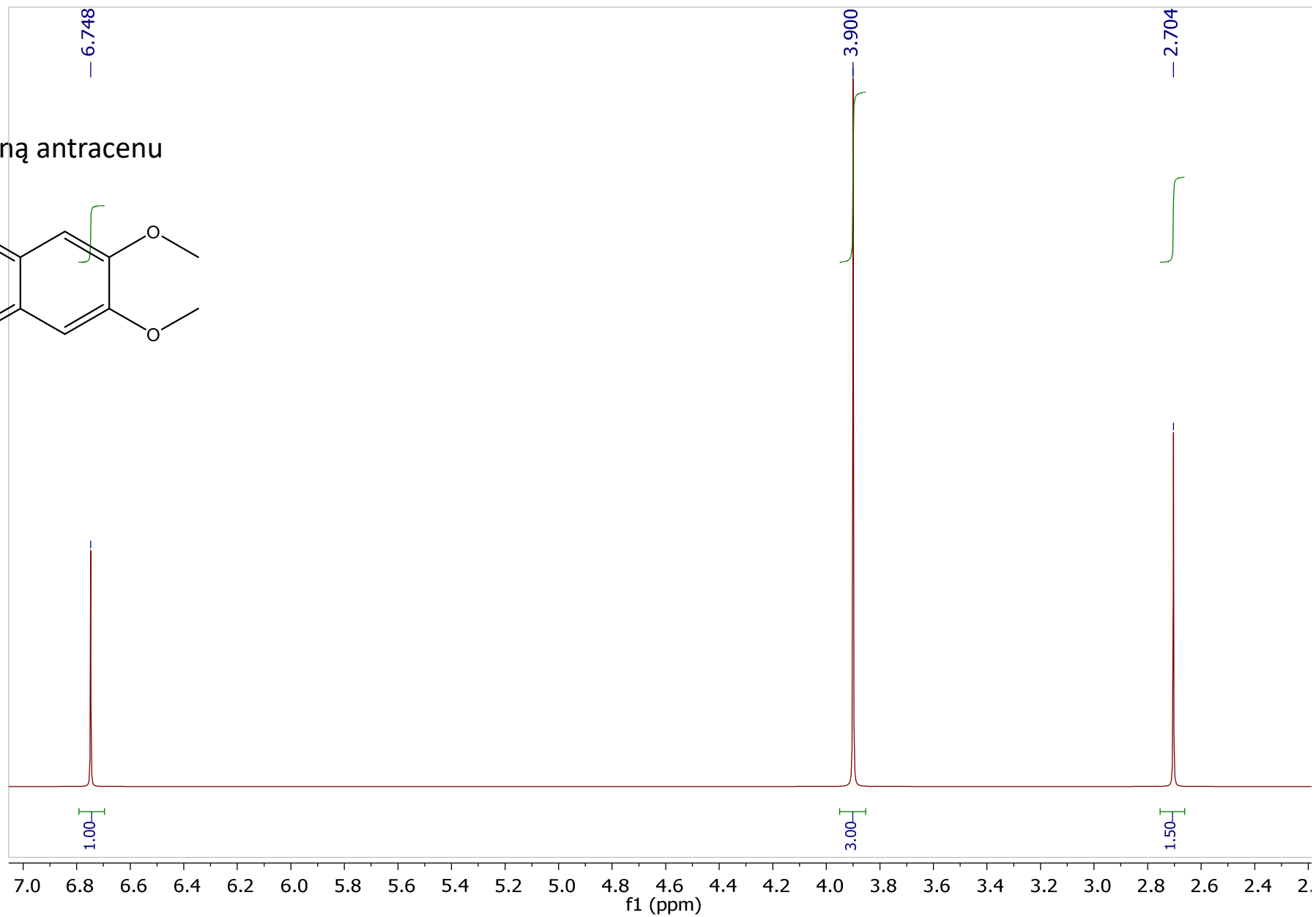
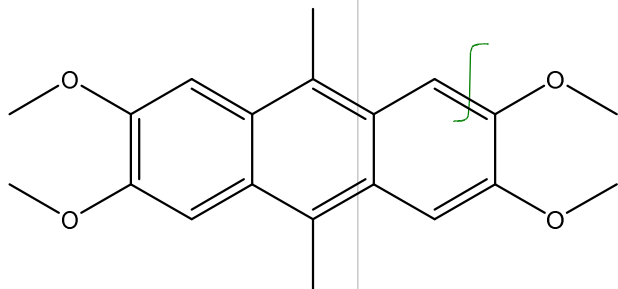
(n)



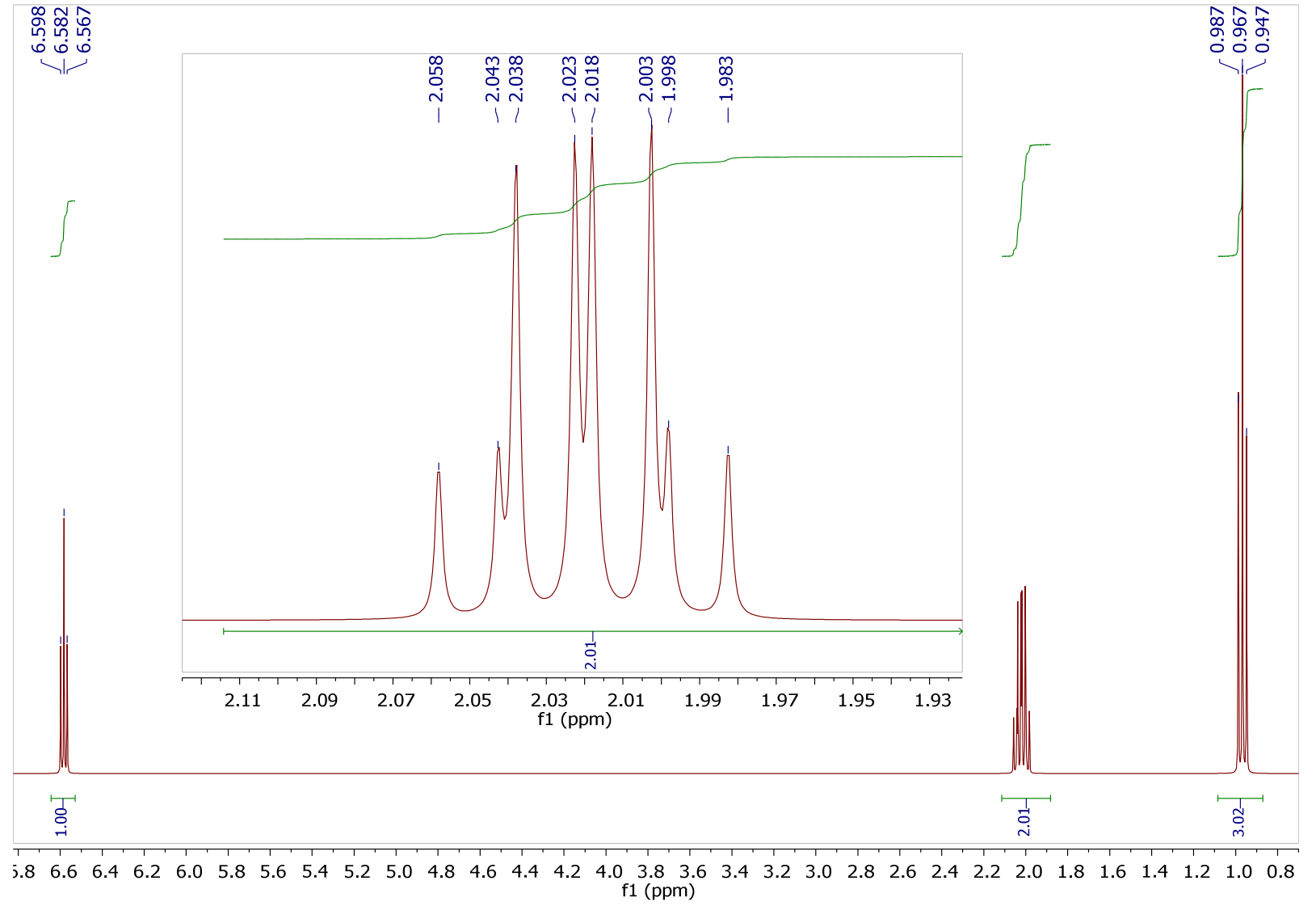
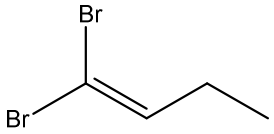
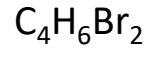
(o)



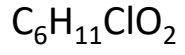
Związek jest pochodną antracenu



(p)

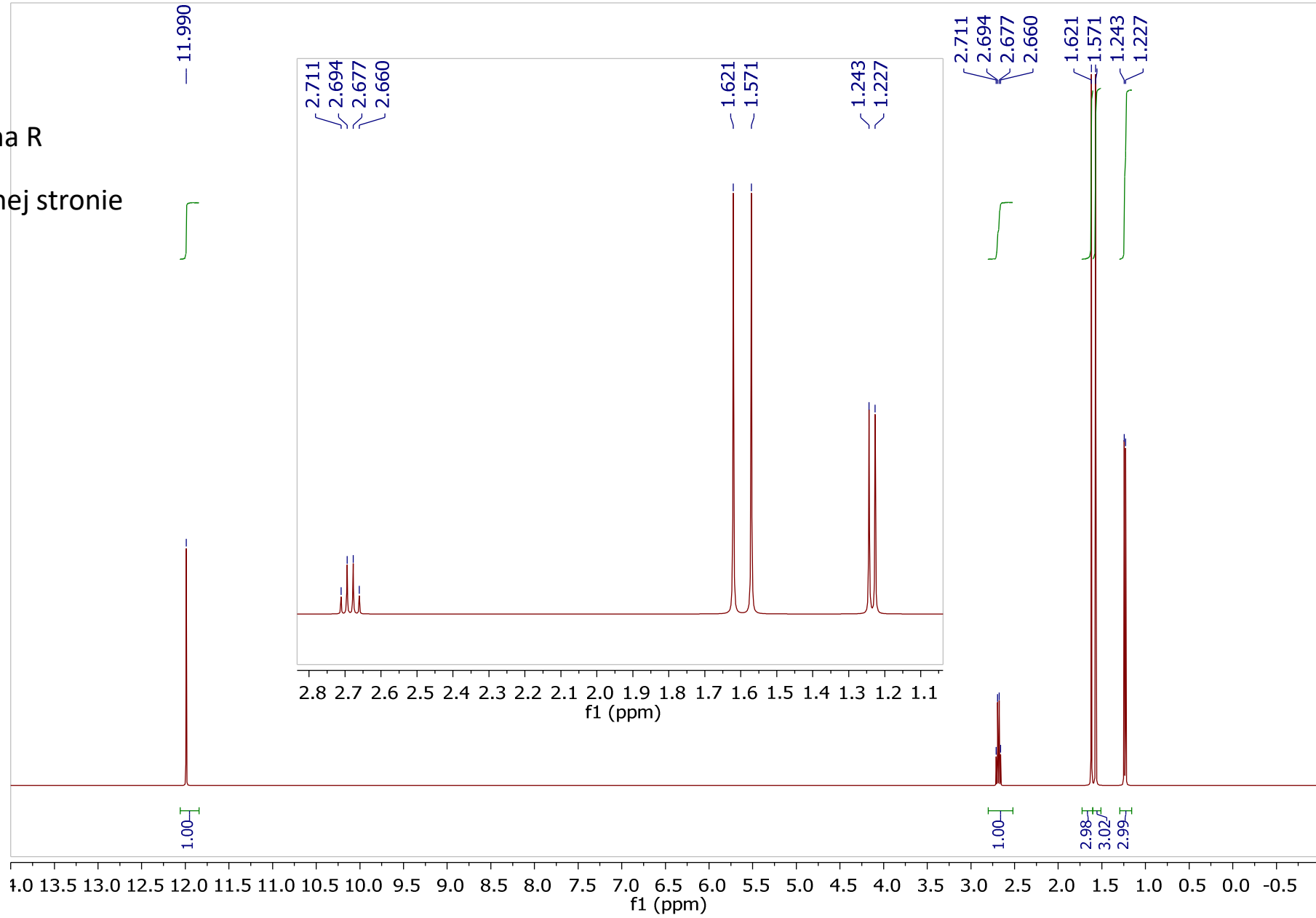
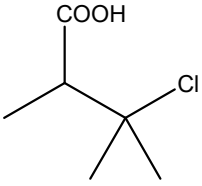


(r)

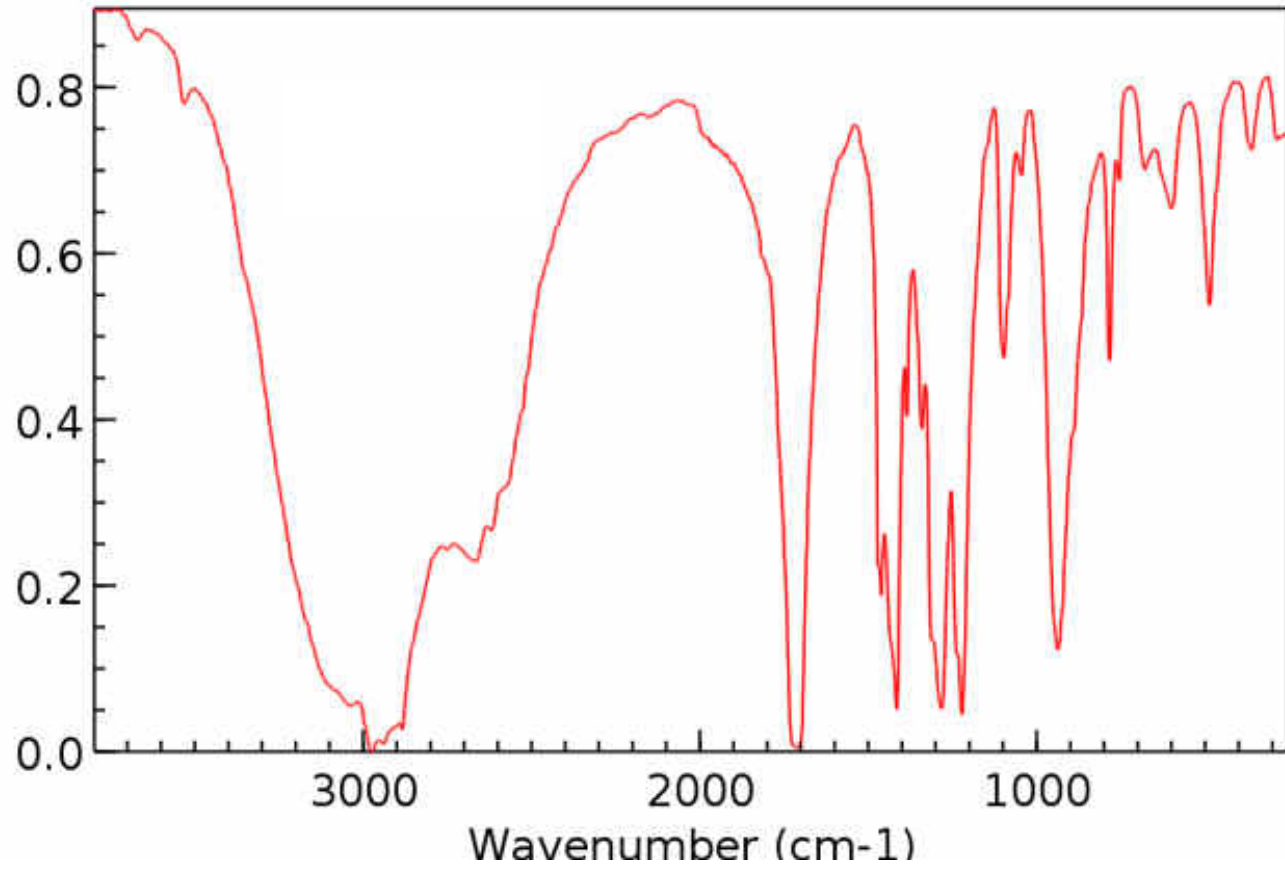


Konfiguracja absolutna R

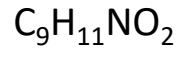
Widmo IR na następnym stronie



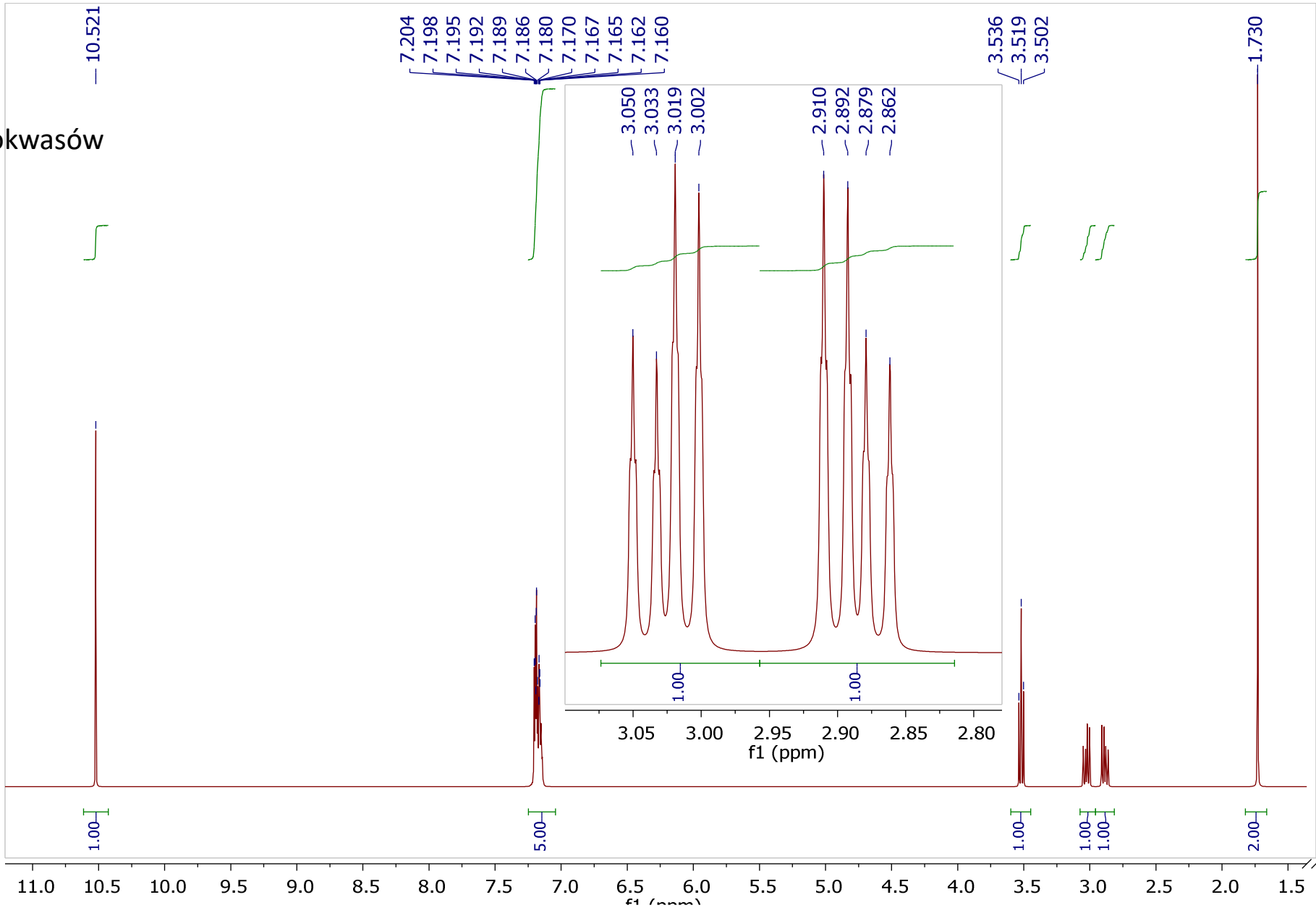
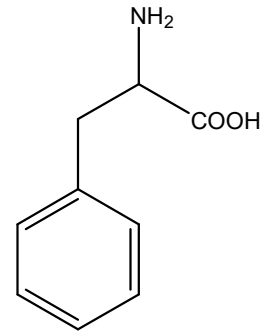
(r)



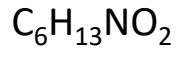
(s)



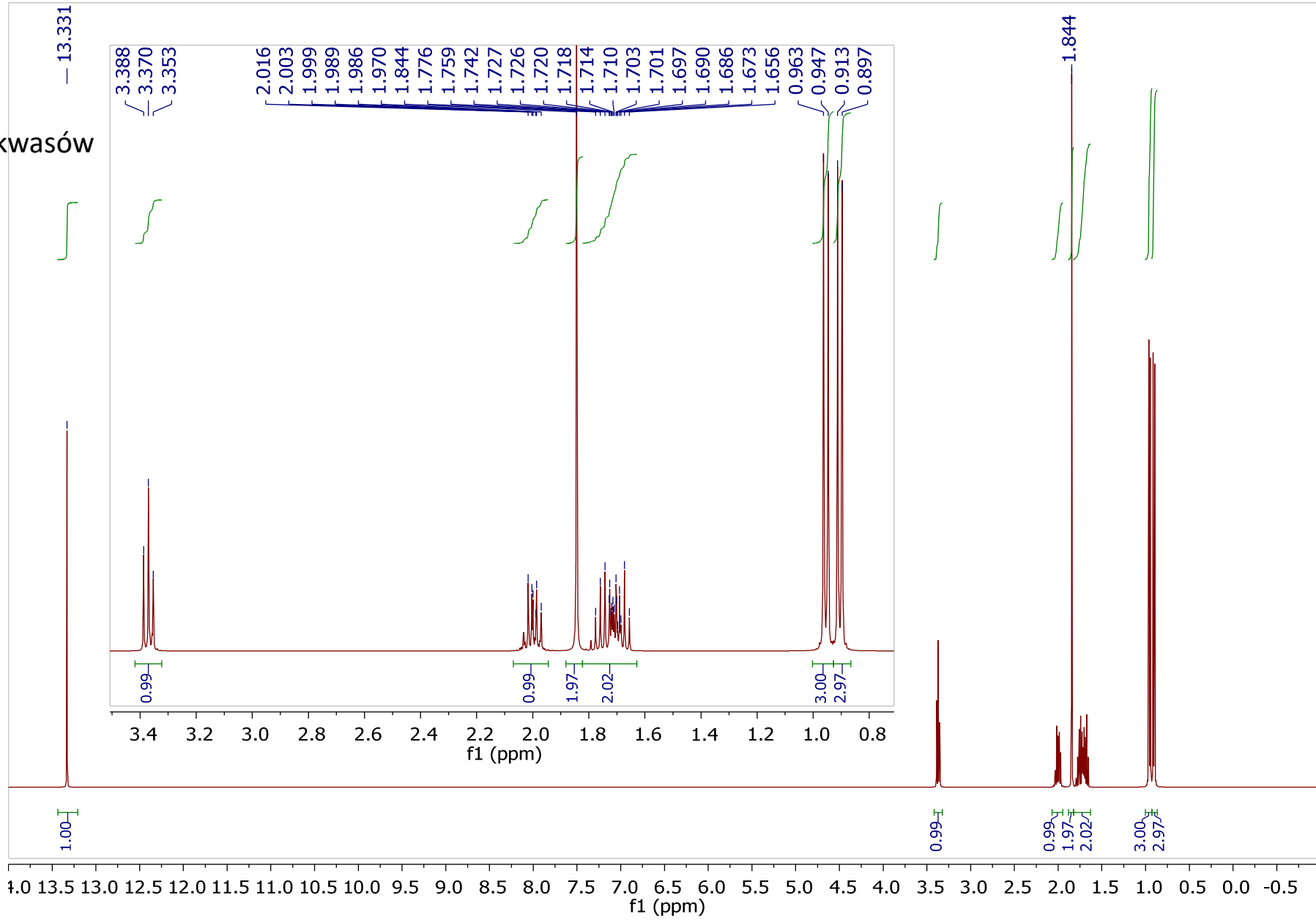
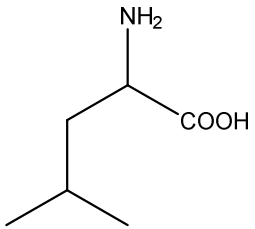
Jeden z alfa-aminokwasów



(t)



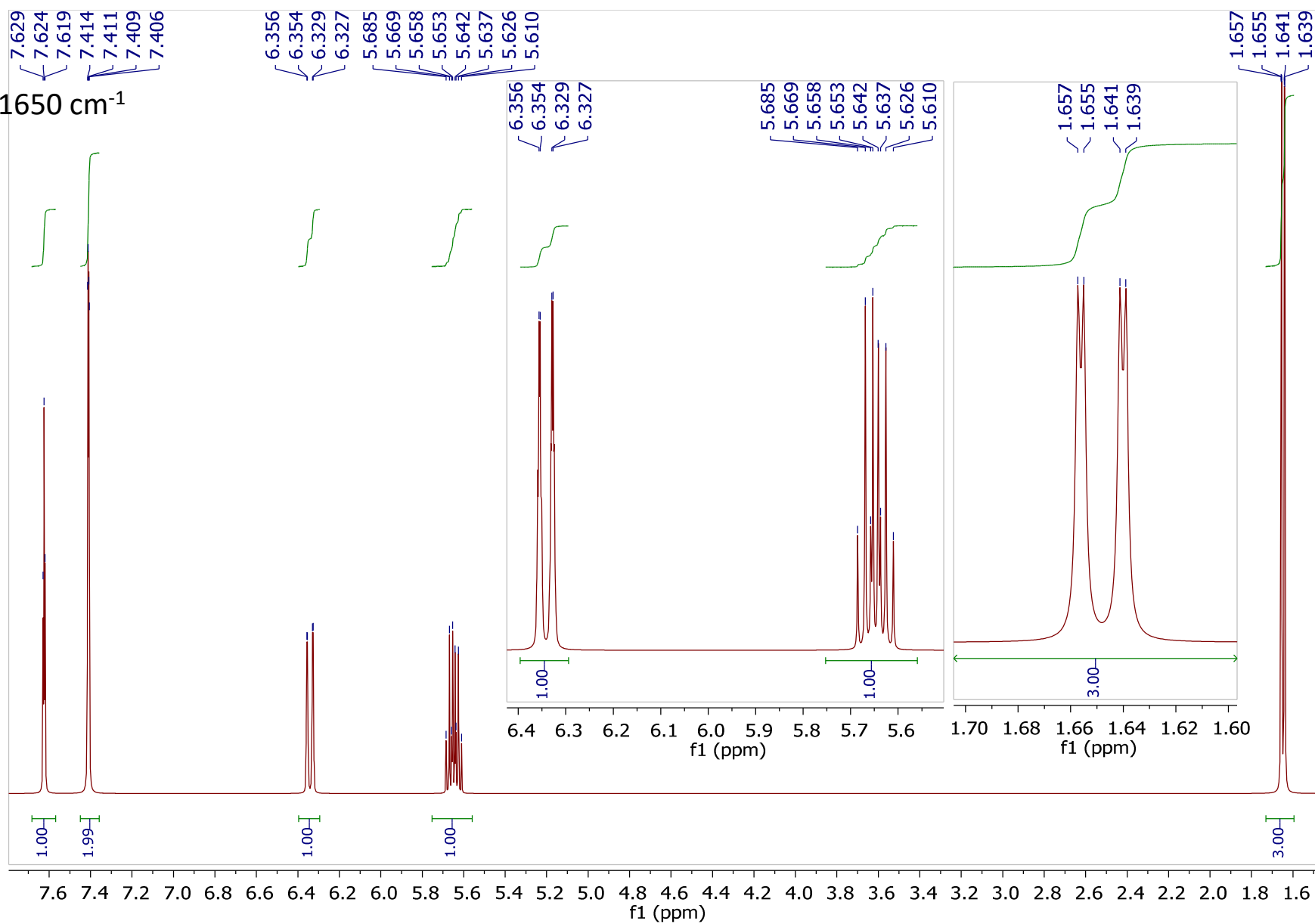
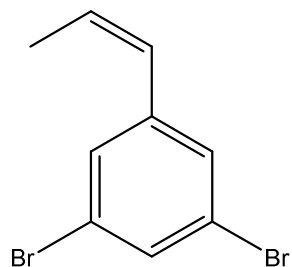
Jeden z alfa-aminokwasów



(u)

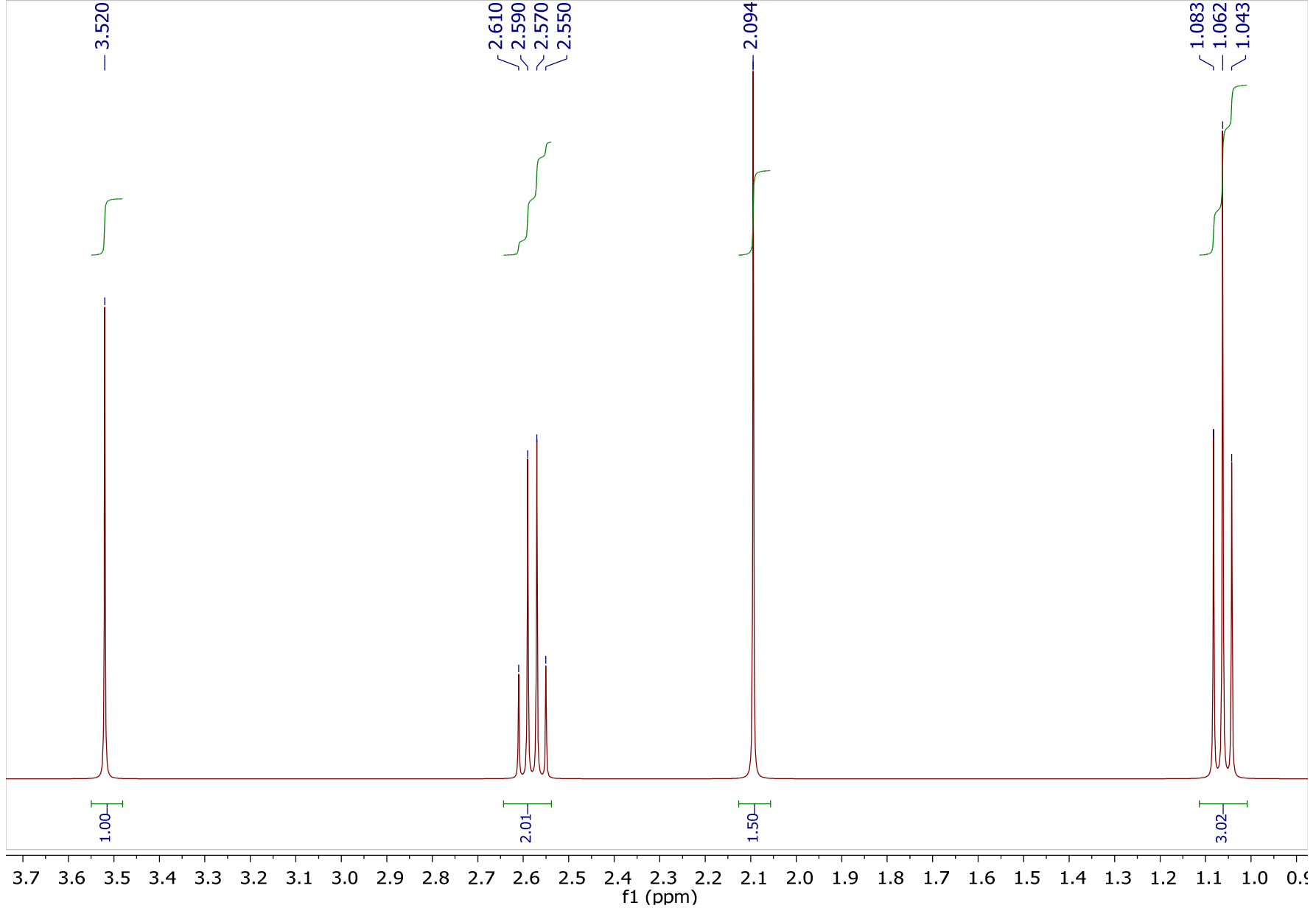
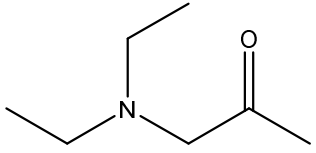
$C_9H_8Br_2$

W widmie IR min. sygnał 1650 cm^{-1}

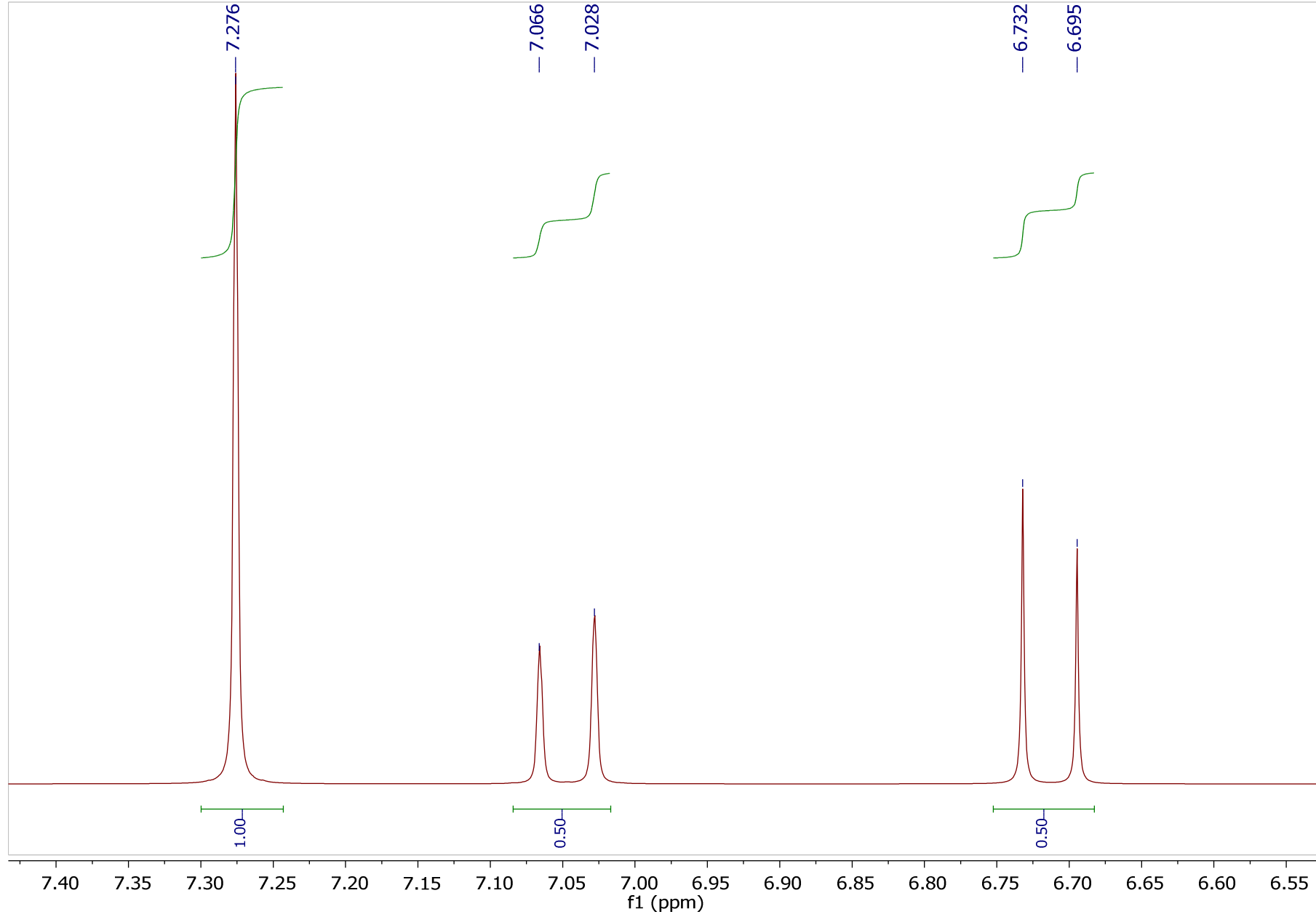
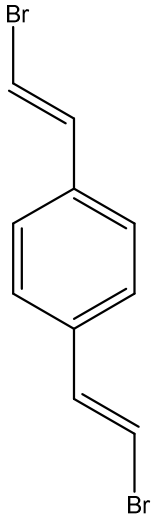
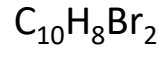


(w)

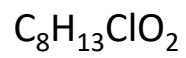
C₇H₁₅NO



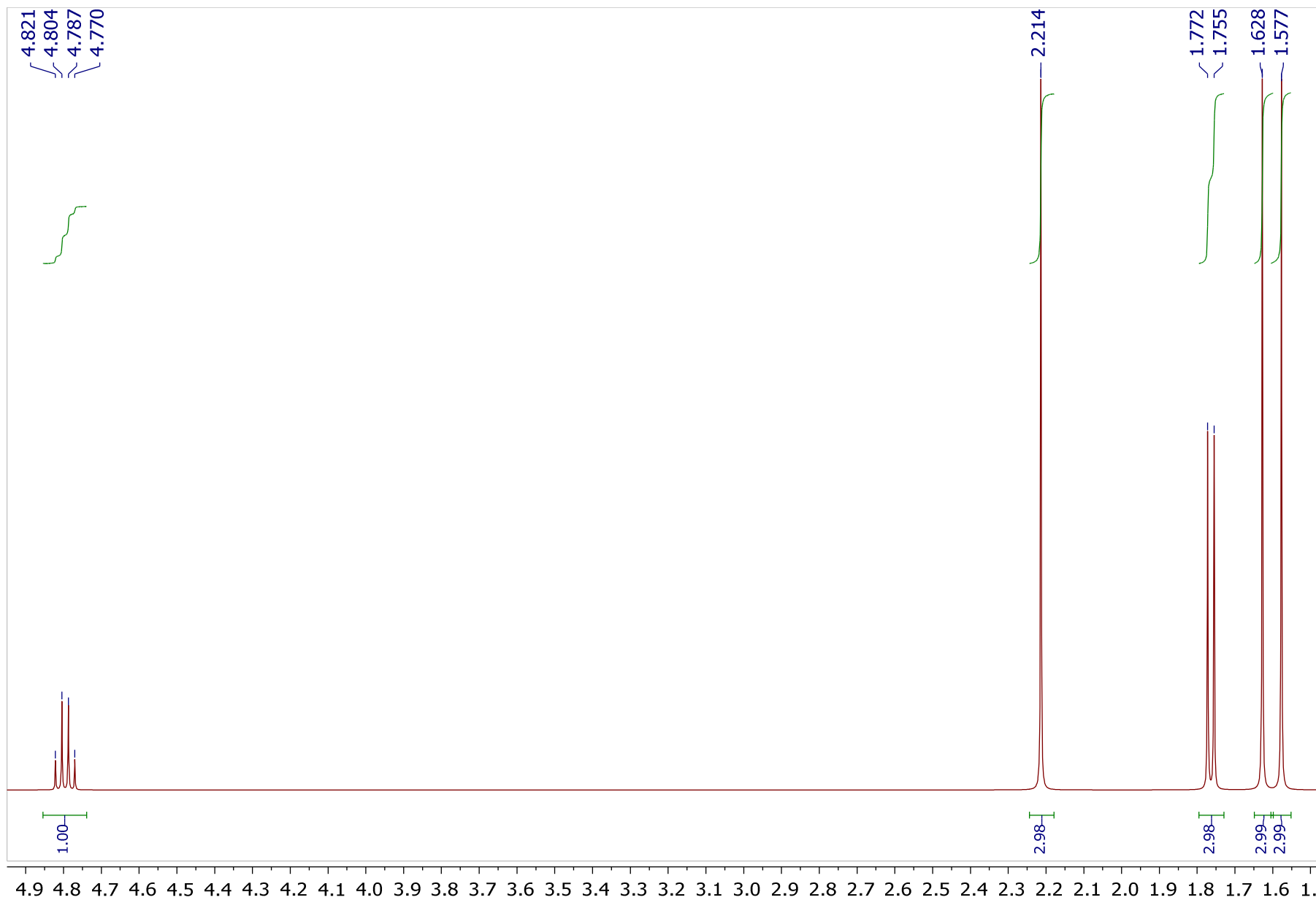
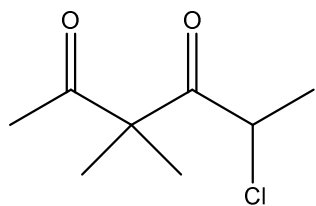
(x)



(y)



Konfiguracja S



(z)

