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APPENDICES

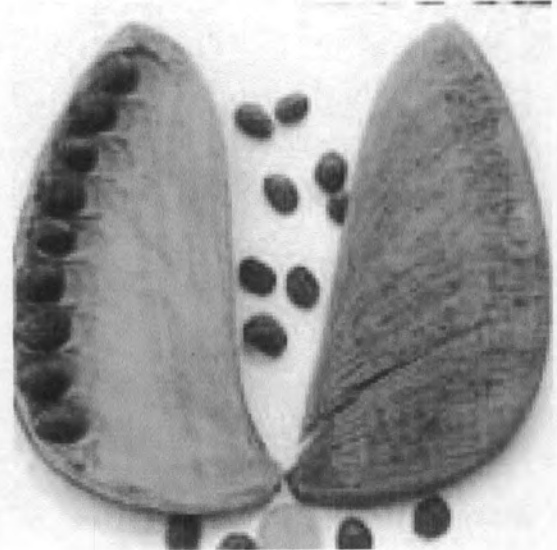
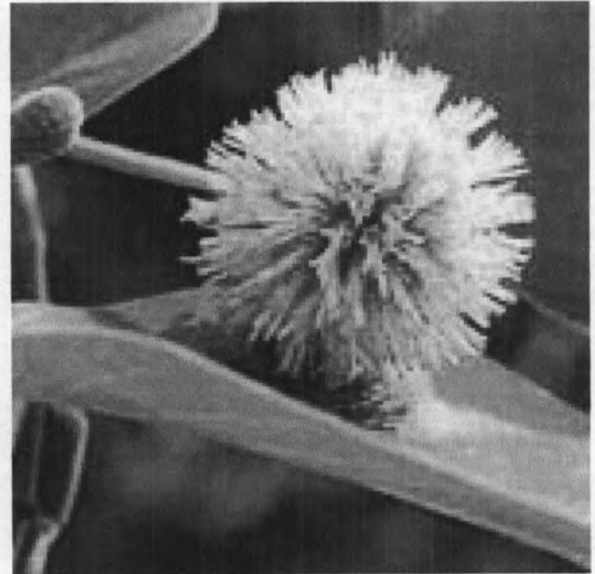


Figure 1 *X. xylocarpa* (Roxb.) Taub. var. *kerrii* (Craib & Hutch.) I.C.Nielsen

(www.rspg.org/palace/chitralada/cld6-2_1.htm)

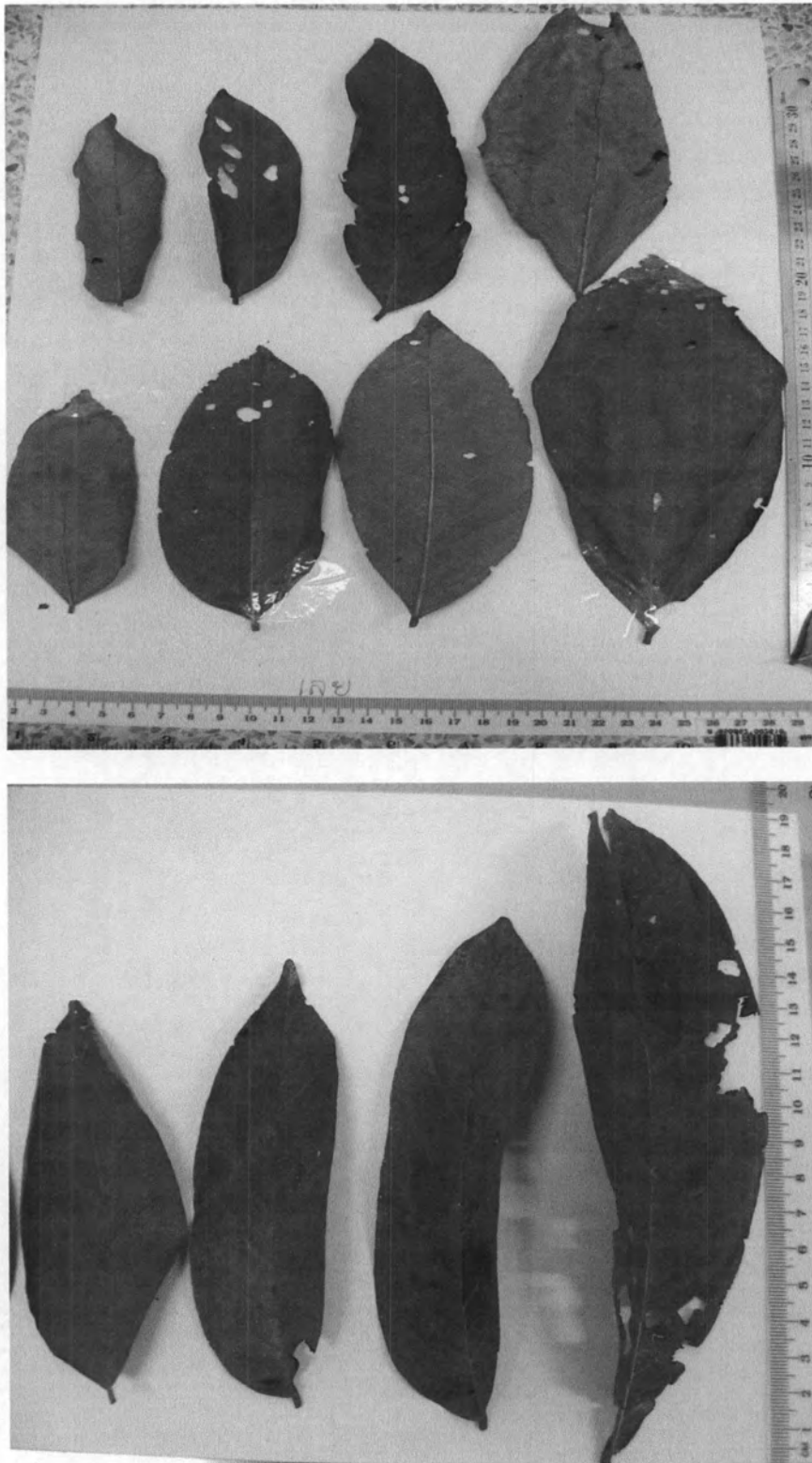


Figure 2 Leaves of *X. xylocarpa* Taub. from Leoi province

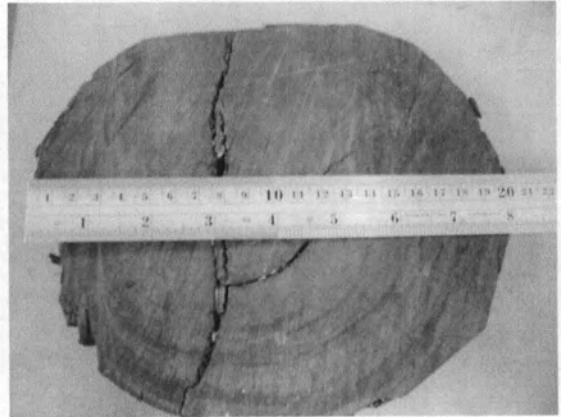
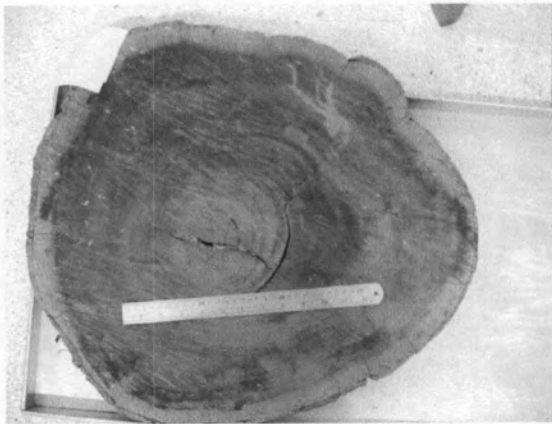
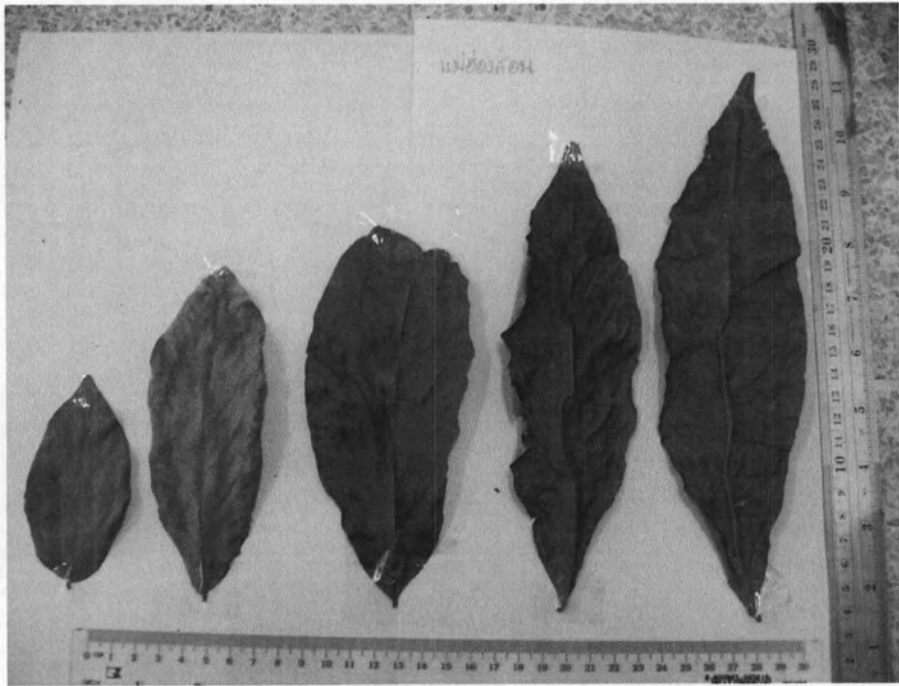


Figure 3 Leaves and heartwood of *X. xylocarpa* Taub. from Mae Hong Son province

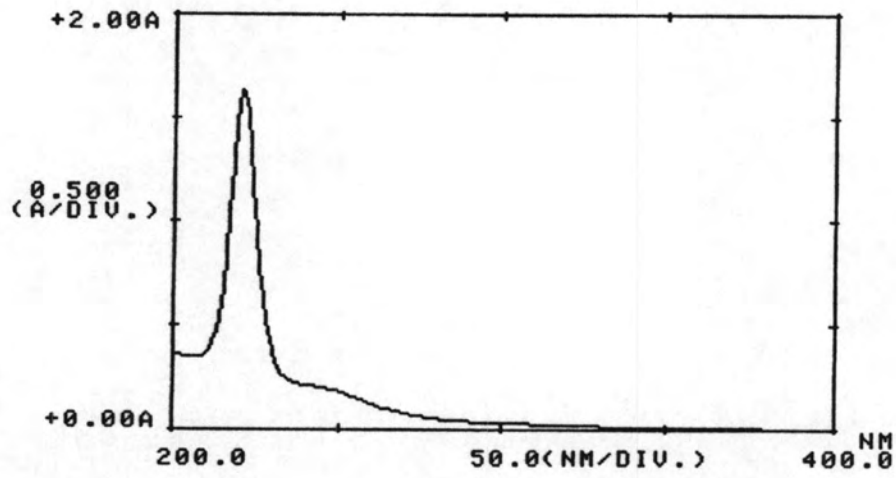


Figure 4 The UV spectrum of compound A-1 in MeOH

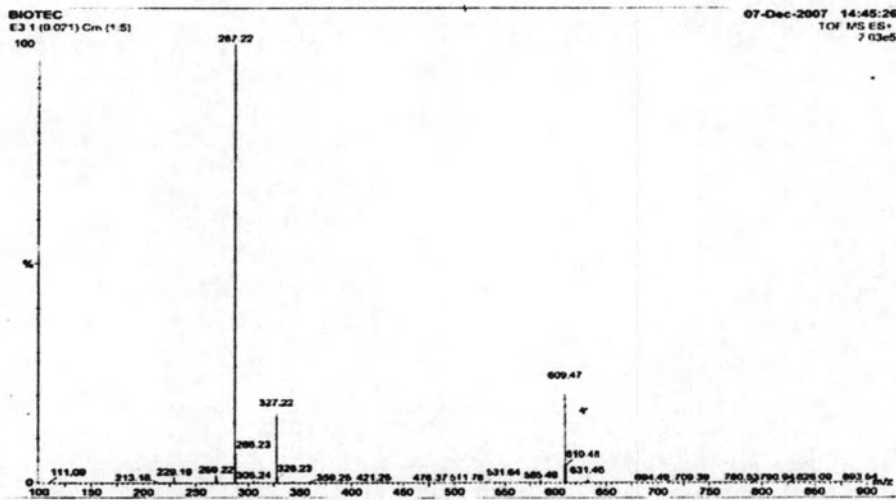
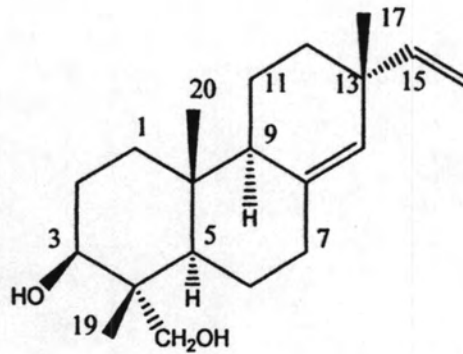


Figure 5 The mass spectrum of compound A-1

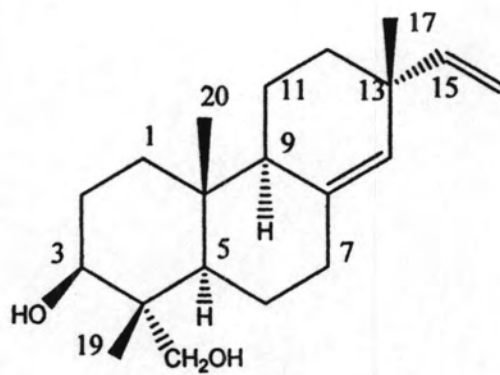
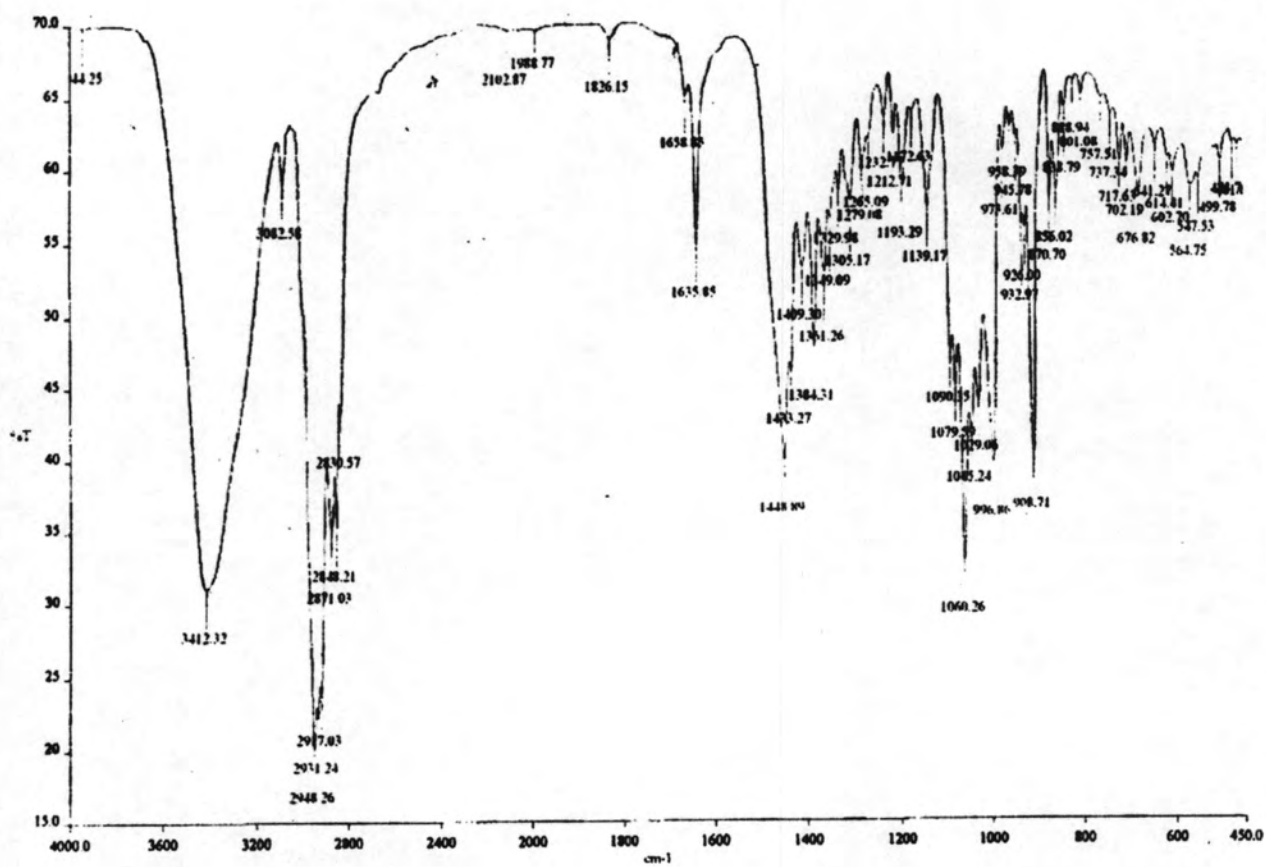


Figure 6 The IR spectrum of compound A-1 (KBr disc)

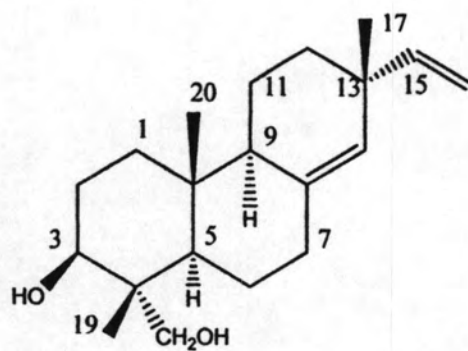
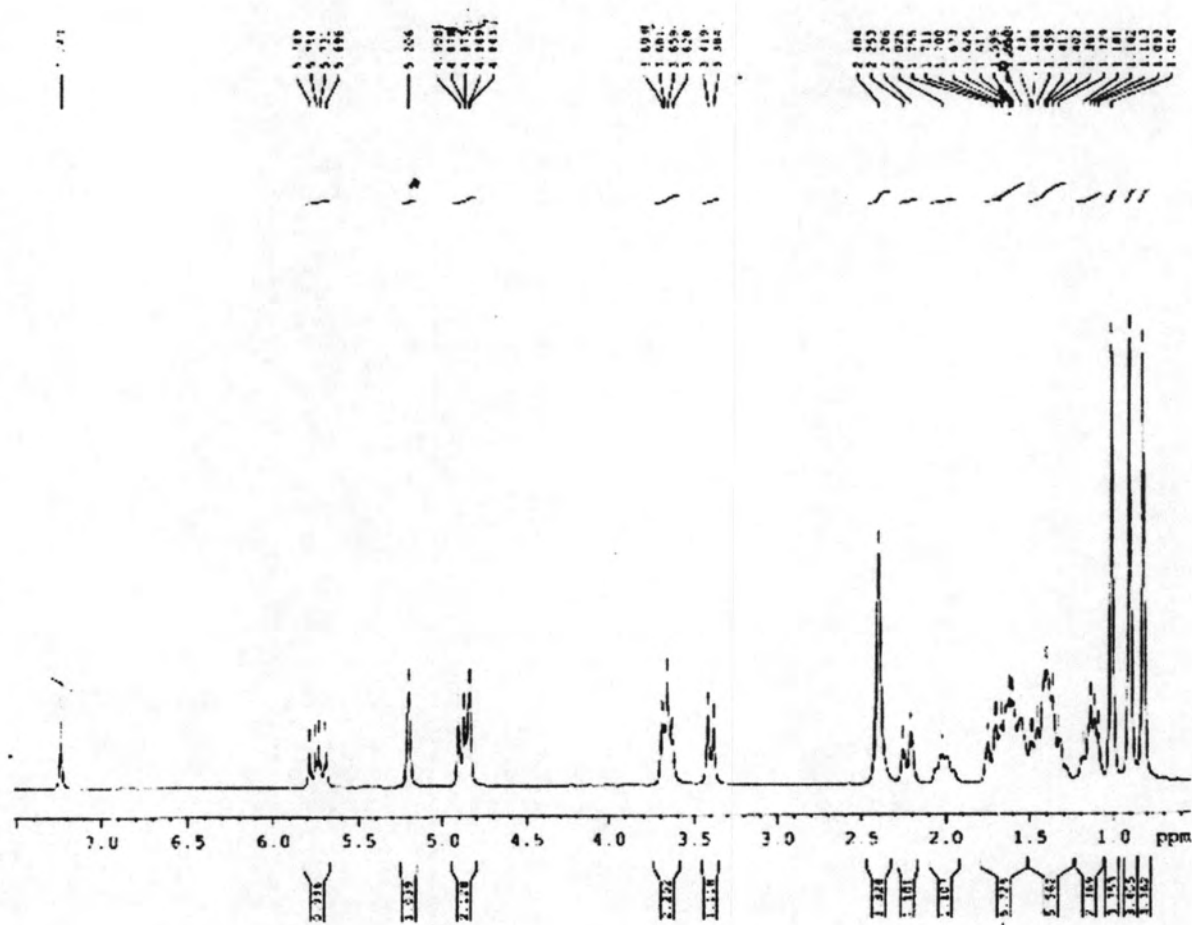


Figure 7 The 300 MHz ¹H-NMR spectrum of compound A-1 (in CDCl₃)

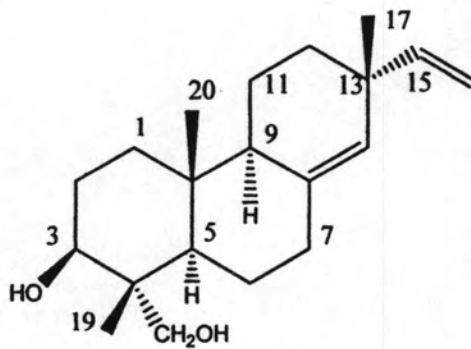
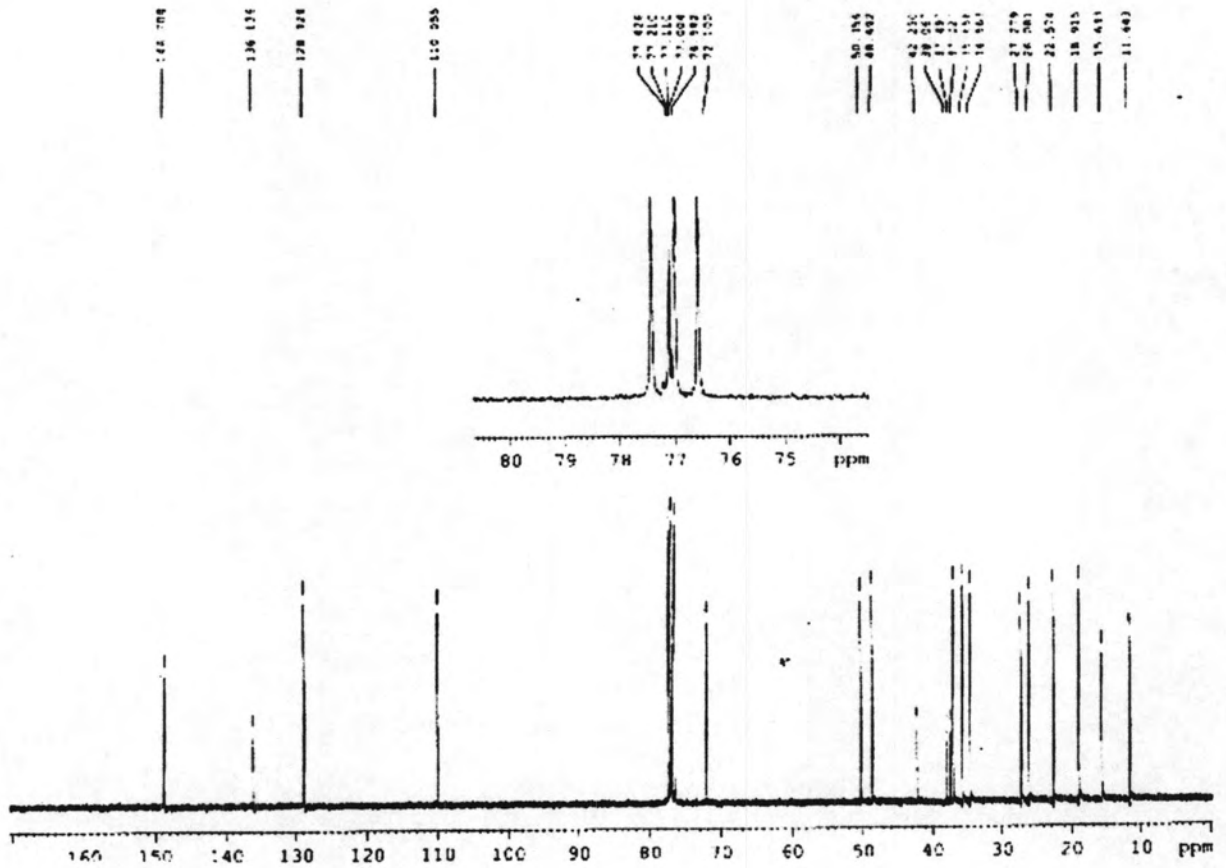


Figure 8 The 75 MHz ^{13}C -NMR spectrum of compound A-1 (in CDCl_3)

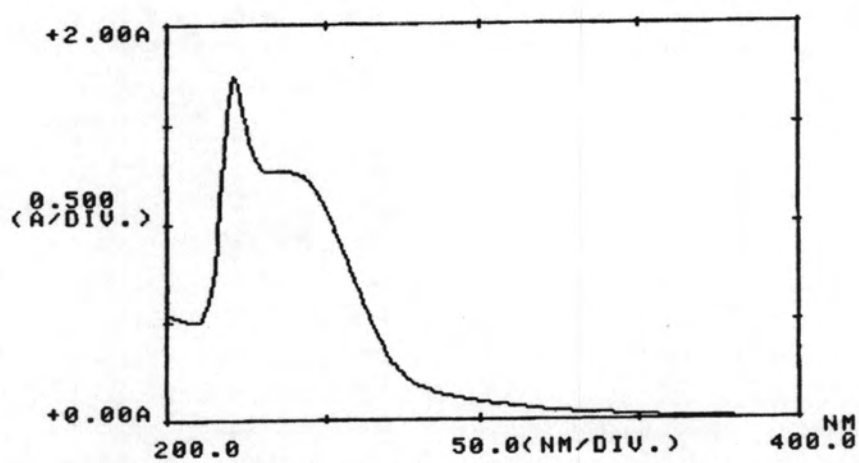


Figure 9 The UV spectrum of compound A-2 in MeOH

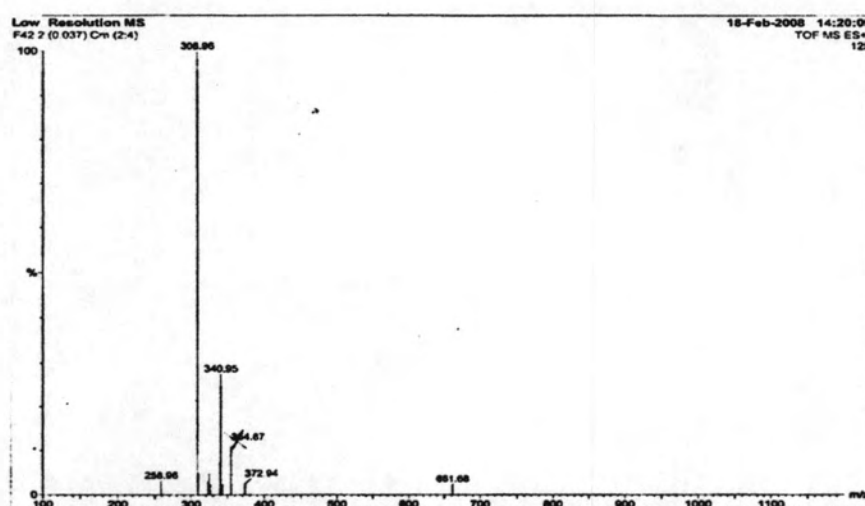
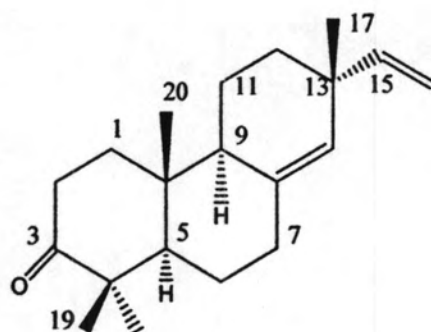


Figure 10 The mass spectrum of compound A-2

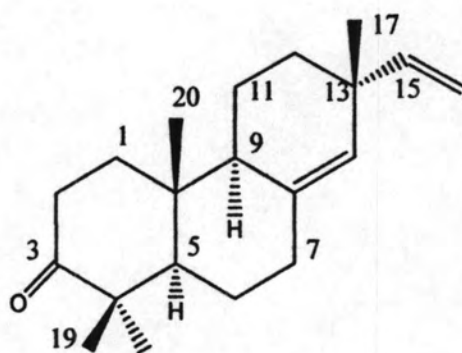
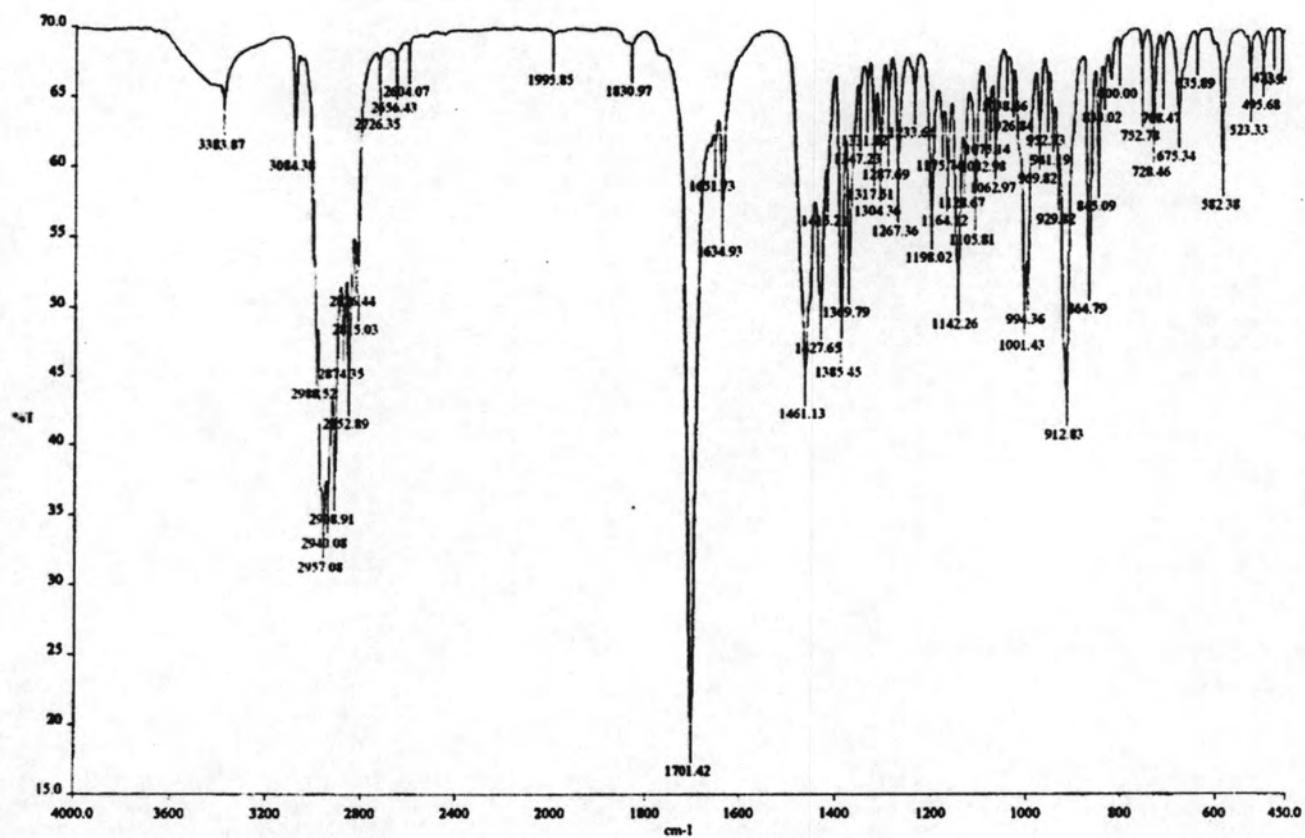


Figure 11 The IR spectrum of compound A-2 (KBr disc)

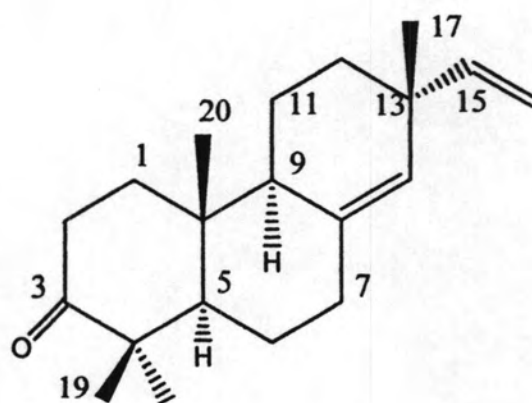
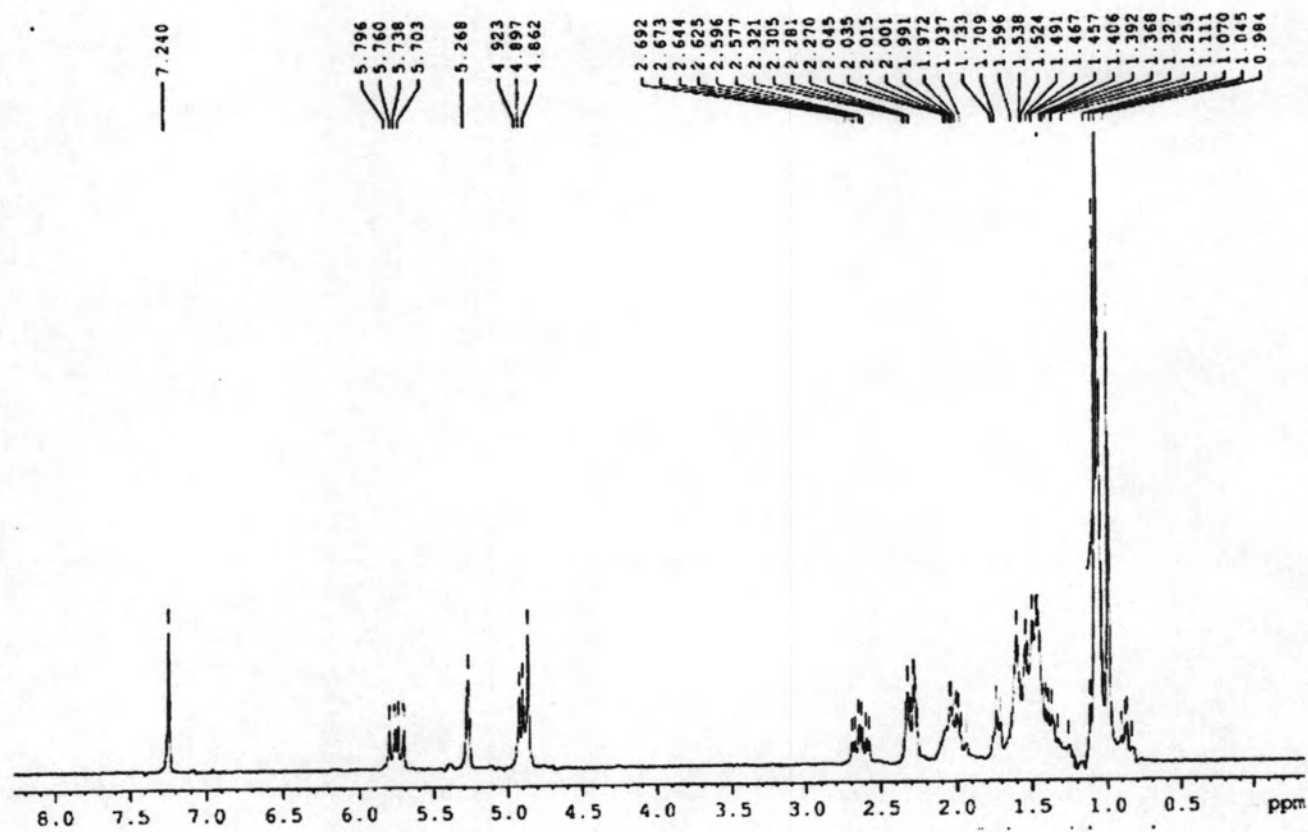


Figure 12 The 300 MHz $^1\text{H-NMR}$ spectrum of compound A-2 (in CDCl_3)

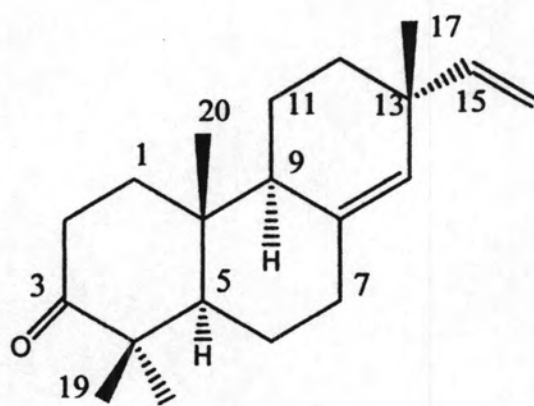
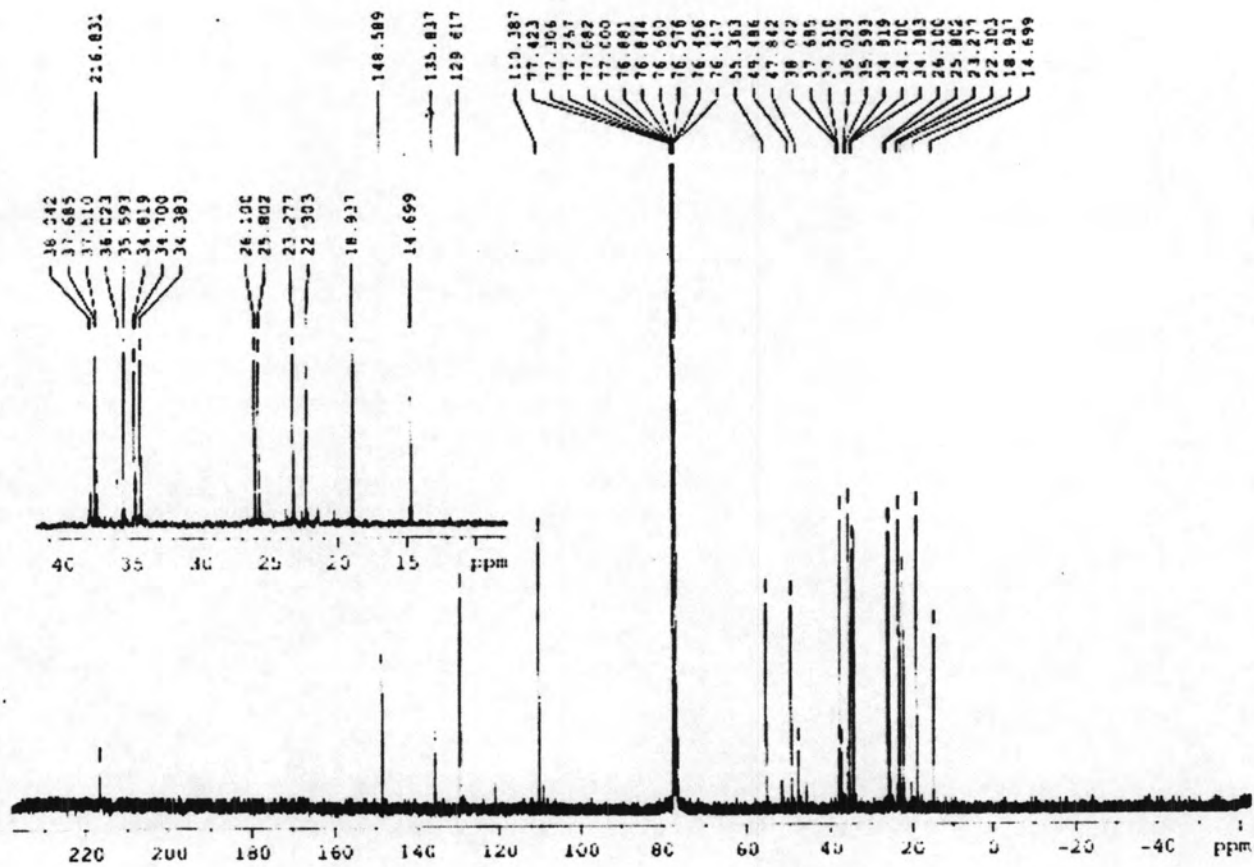


Figure 13 The 75 MHz ^{13}C -NMR spectrum of compound A-2 (in CDCl_3)

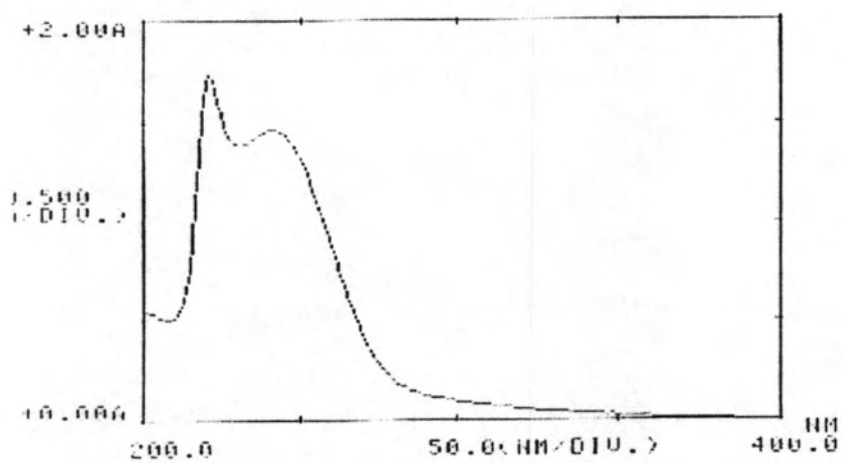


Figure 14 The UV spectrum of compound A-3 in MeOH

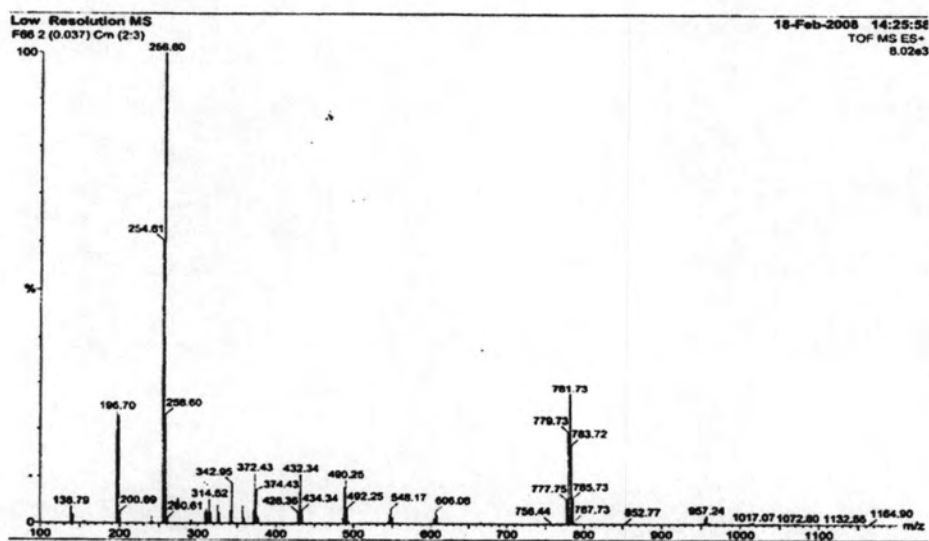
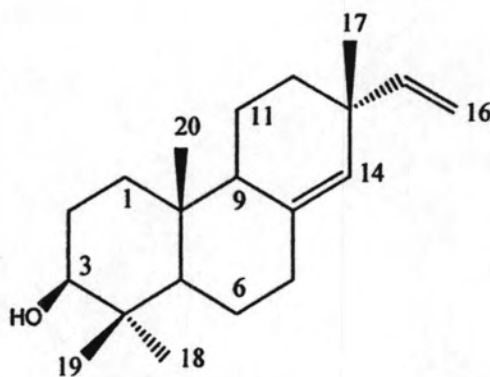


Figure 15 The mass spectrum of compound A-3

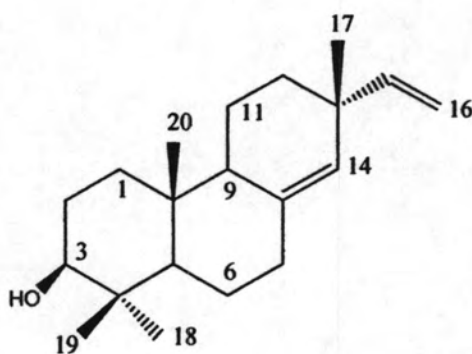
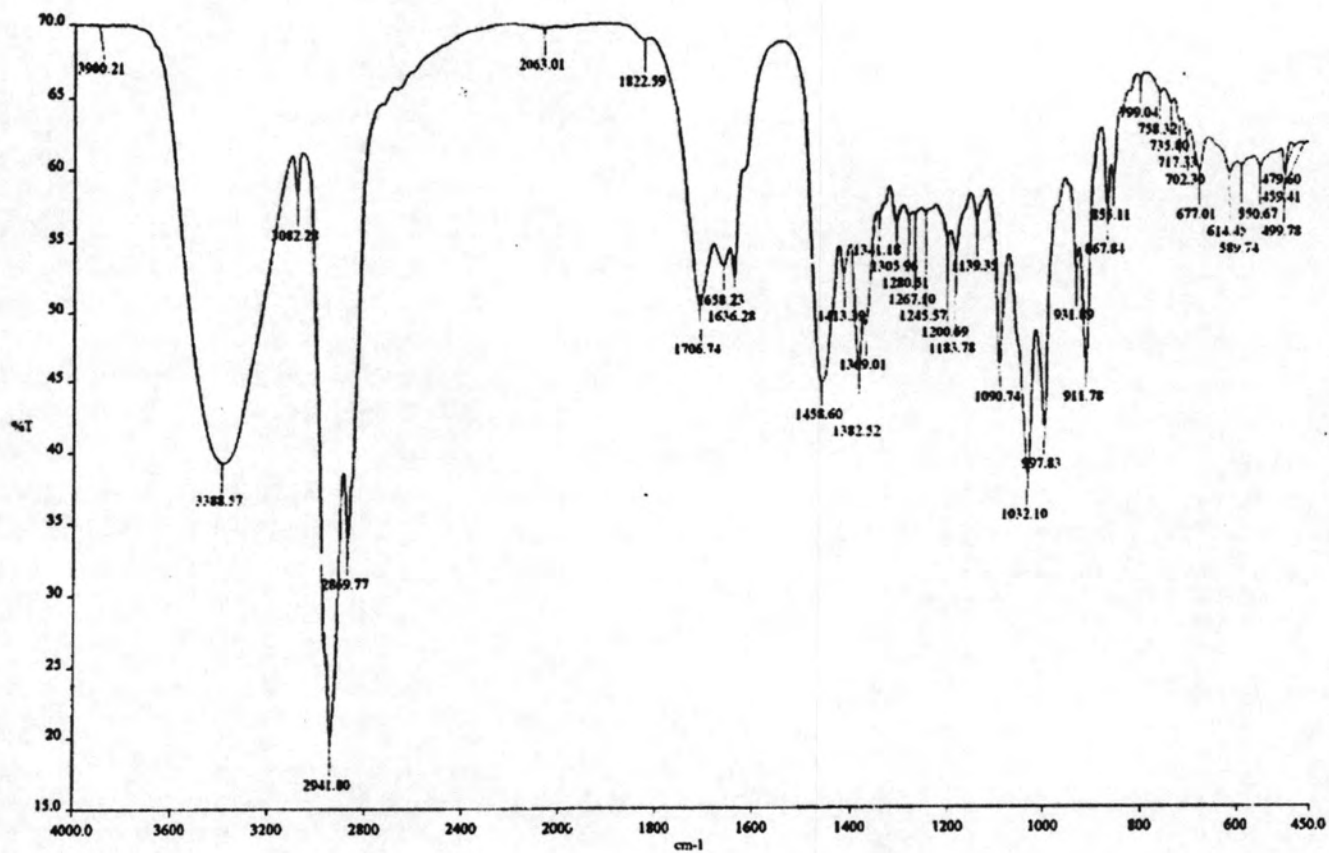


Figure 16 The IR spectrum of compound A-3 (KBr disc)

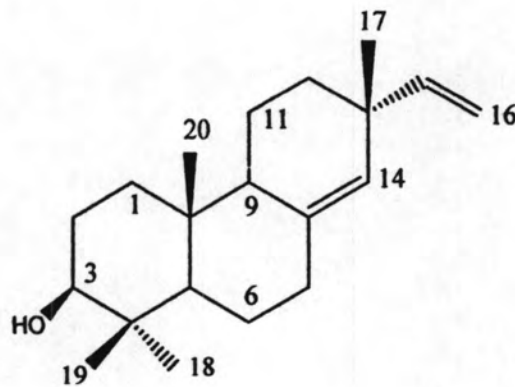
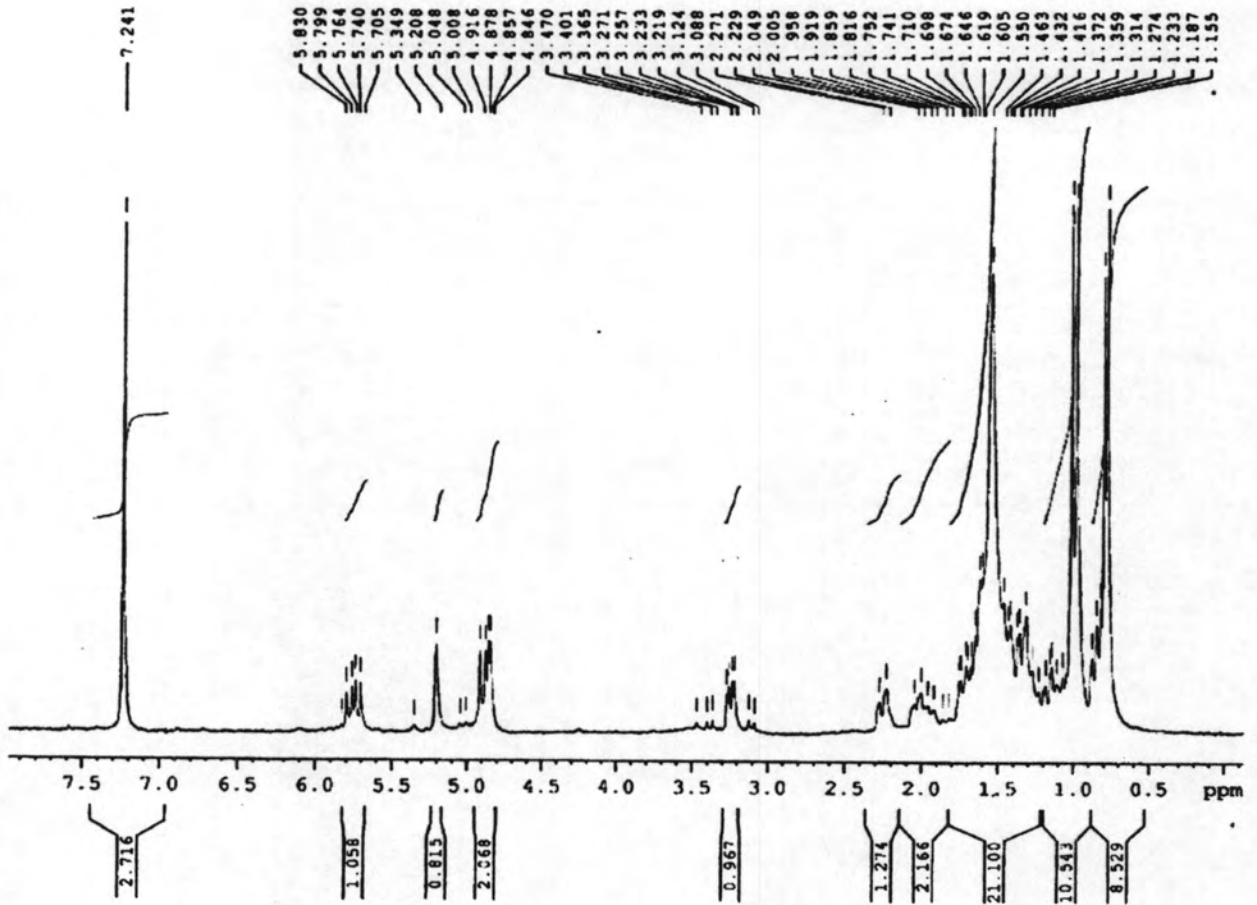


Figure 17 The 300 MHz $^1\text{H-NMR}$ spectrum of compound A-3 (in CDCl_3)

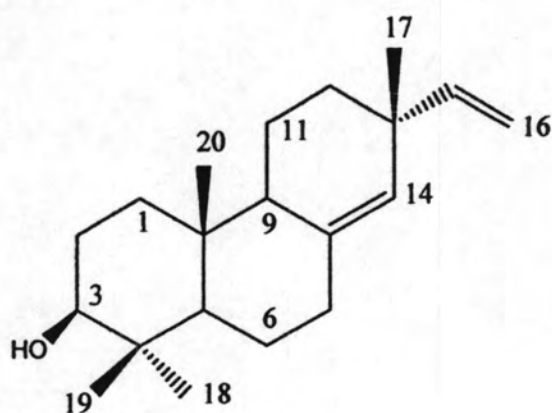
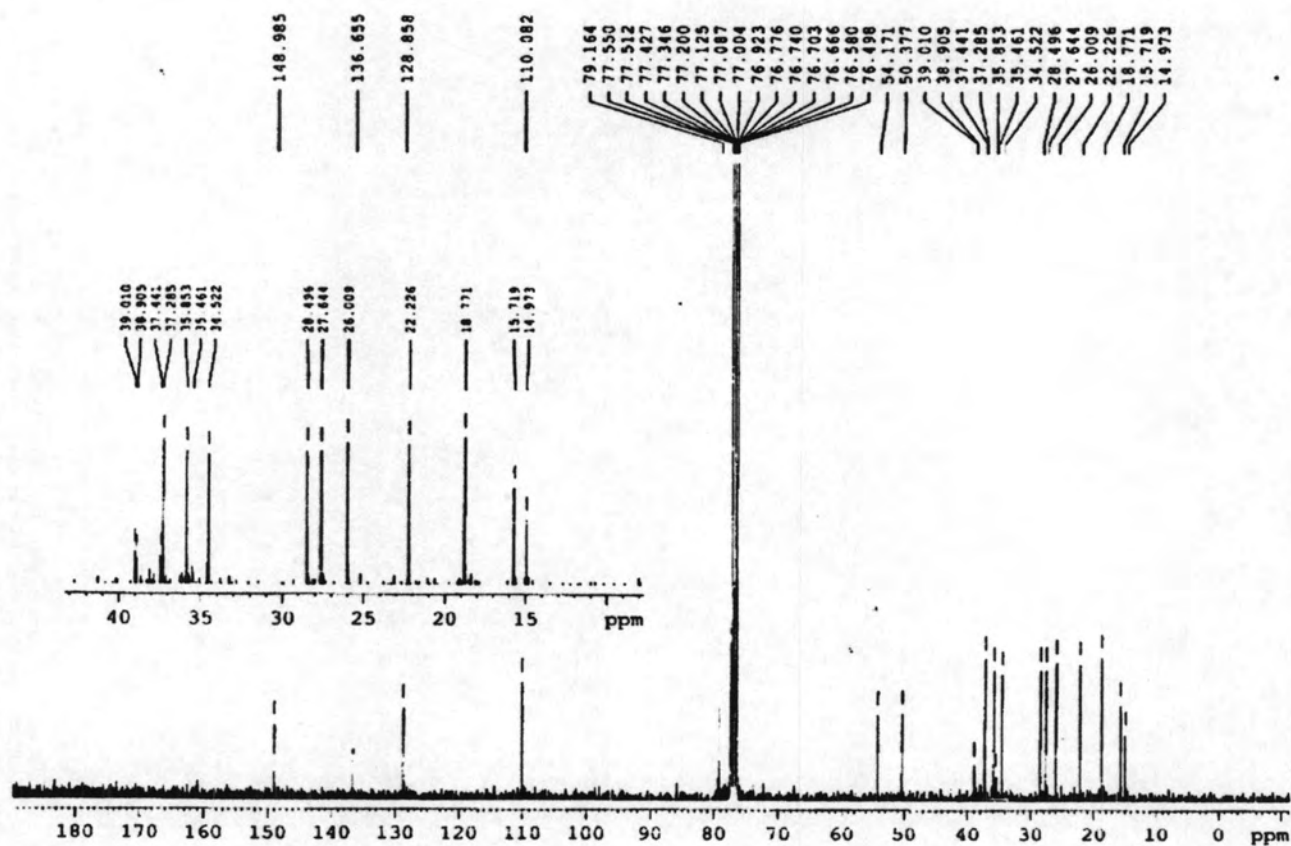


Figure 18 The 75 MHz ^{13}C -NMR spectrum of compound A-3 (in CDCl_3)

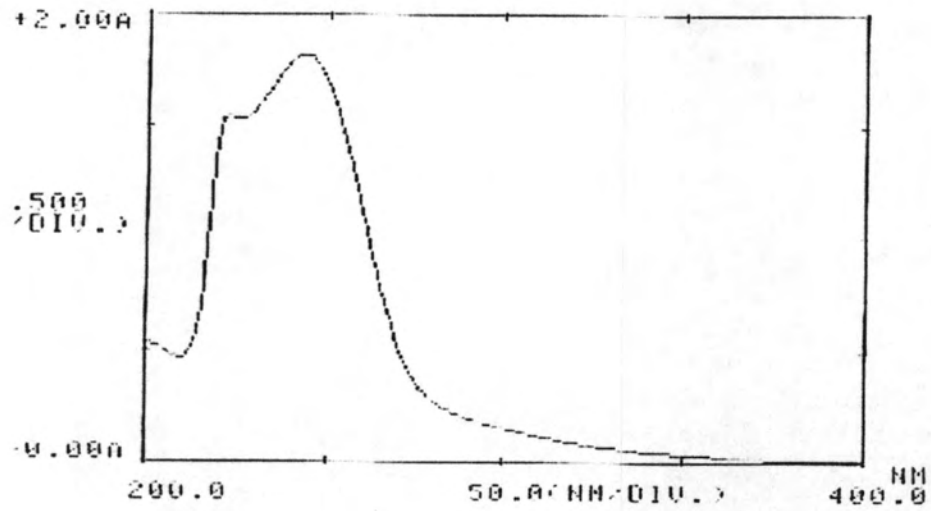


Figure 19 The UV spectrum of compound A-4 in MeOH

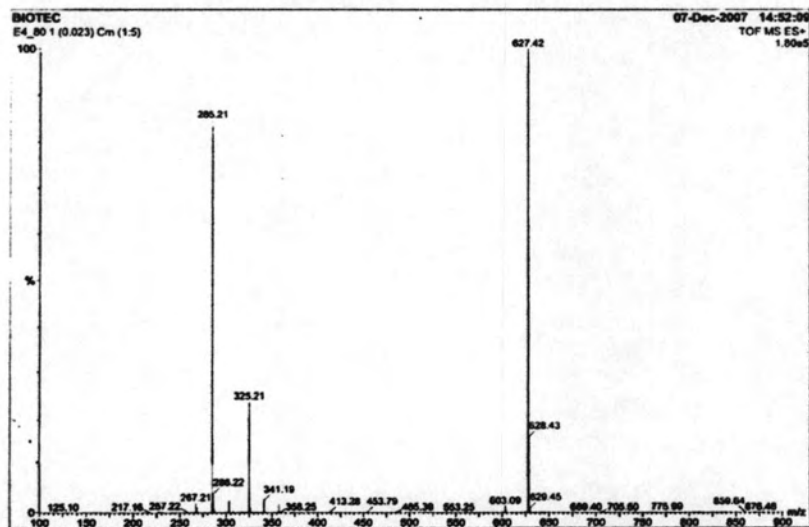
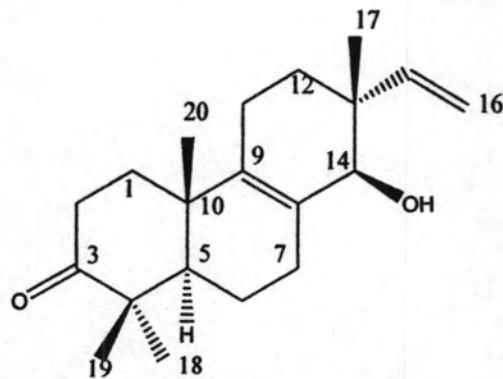


Figure 20 The mass spectrum of compound A-4

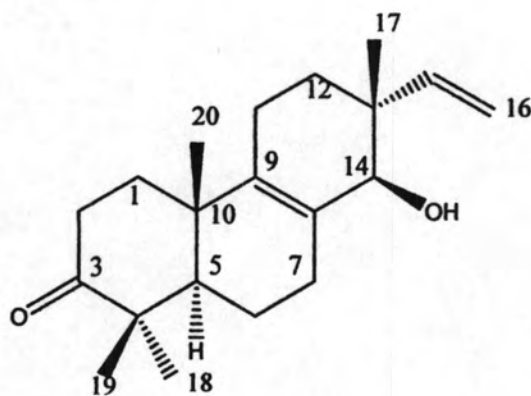
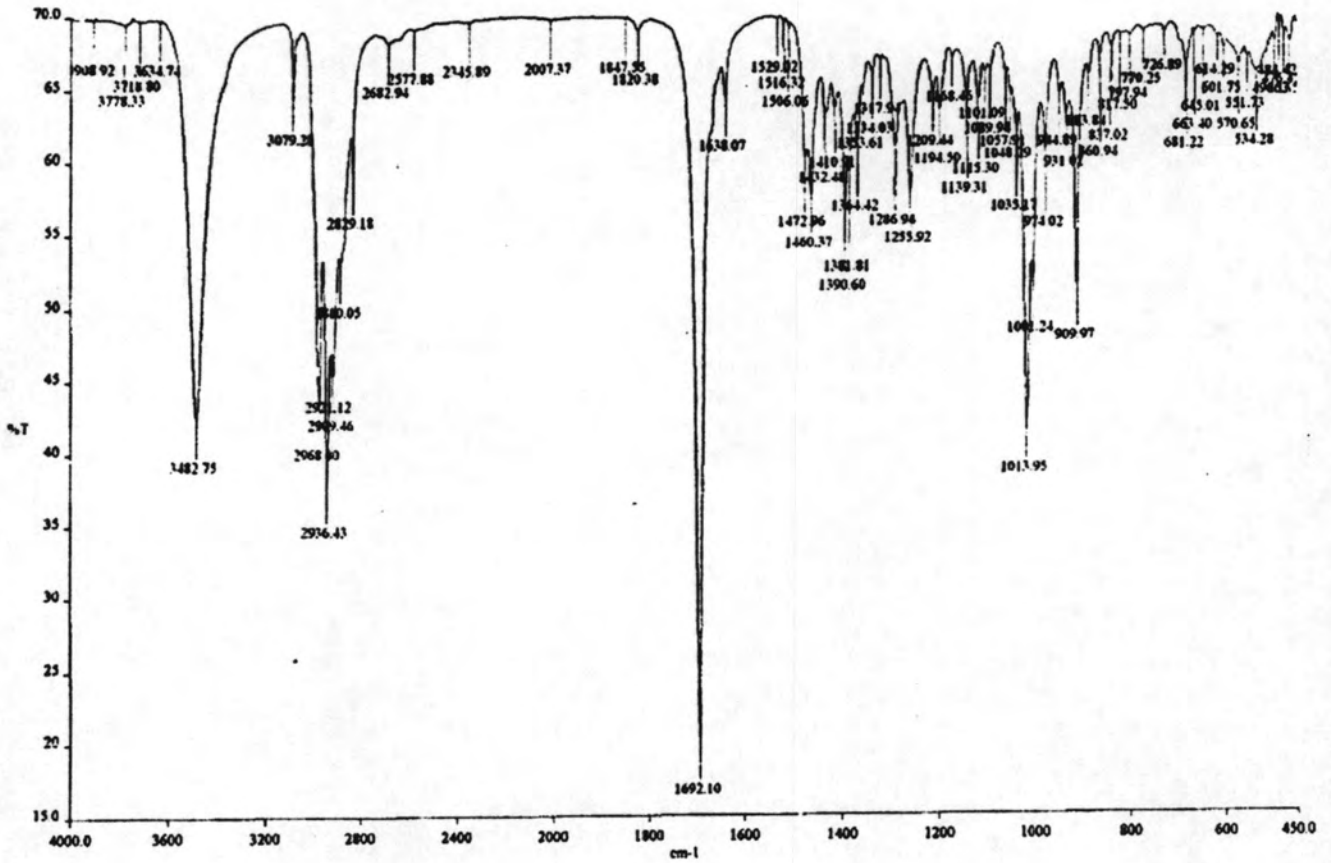


Figure 21 The IR spectrum of compound A-4 (KBr disc)

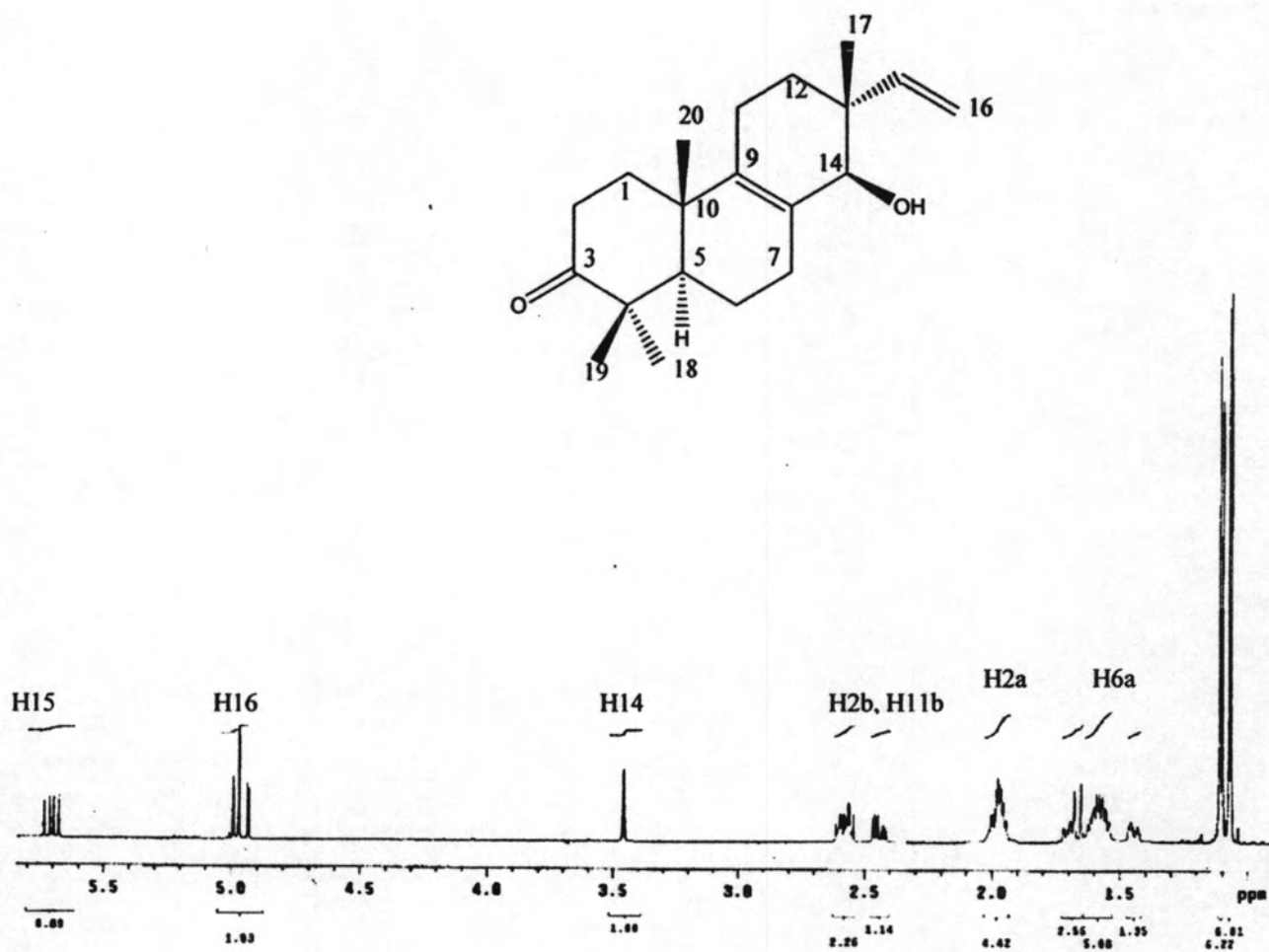


Figure 22 The 500 MHz ¹H-NMR spectrum of compound A-4 (in CDCl₃)

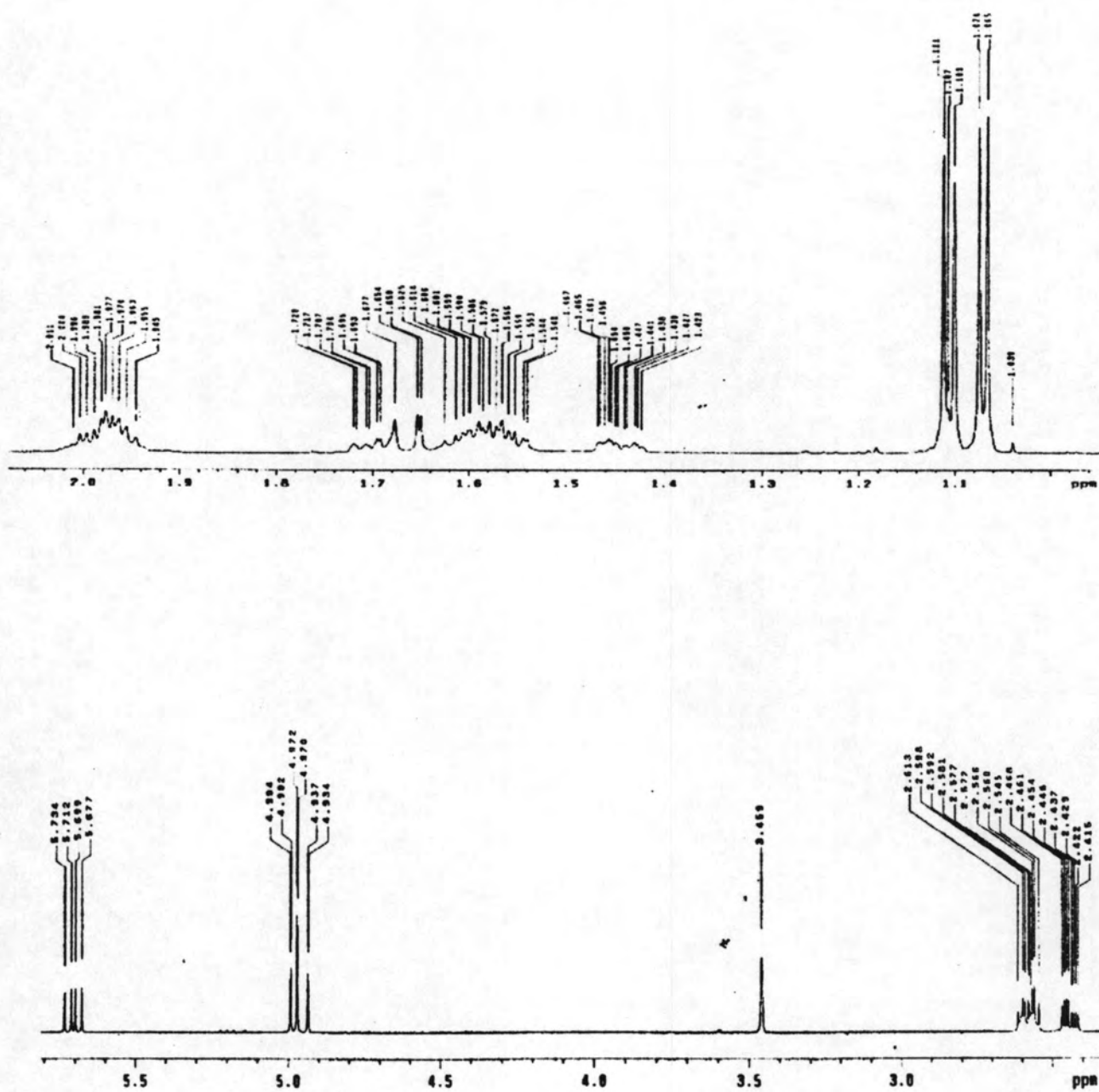


Figure 23 The expanded 500 MHz $^1\text{H-NMR}$ spectrum of compound A-4 (in CDCl_3)
(δ_{H} 1.0-2.1 ppm, δ_{H} 2.0-5.8 ppm)

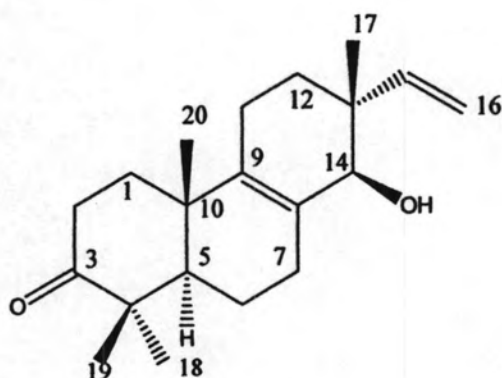
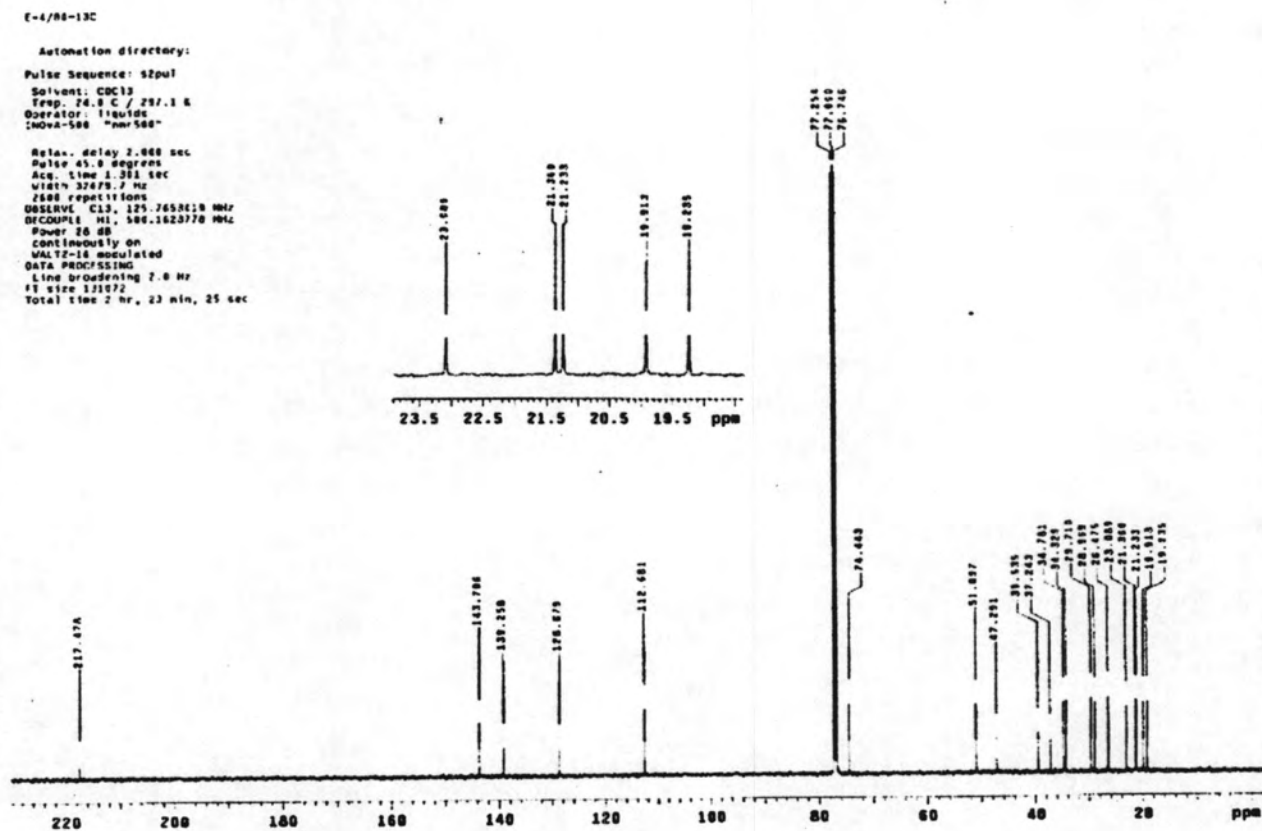


Figure 24 The 125 MHz ^{13}C -NMR spectrum of compound A-4 (CDCl_3)

E-4/88-DEPT135

Automation directory:

Pulse Sequence: DEPT
 Solvent: CDCl₃
 Temp: 24.0 C / 297.1 K
 Operator: liquids
 INOVA-510 "mer500"

Relax. delay 2.000 sec
 Pulse 90.0 degrees
 Acq. time 1.000 sec
 Width 38180.0 Hz
 512 repetitions
 OBSERVE C13, 125.7653019 MHz
 DECOUPLE H1, 500.1623770 MHz
 Power 28 dB
 on during acquisition
 off during delay
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 1.0 Hz
 FT size 65536
 Total time 23 min, 54 sec

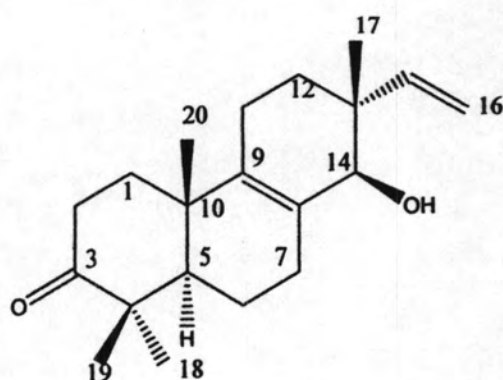
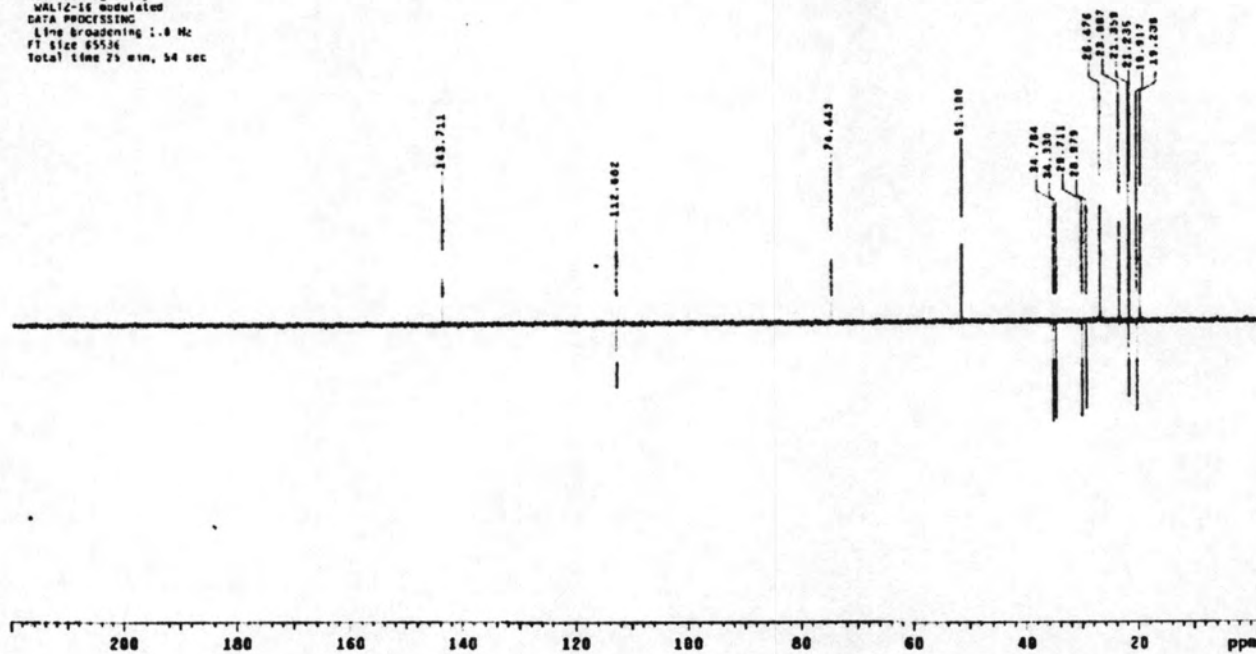


Figure 25 The DEPT-135 spectrum of compound A-4 (in CDCl₃)

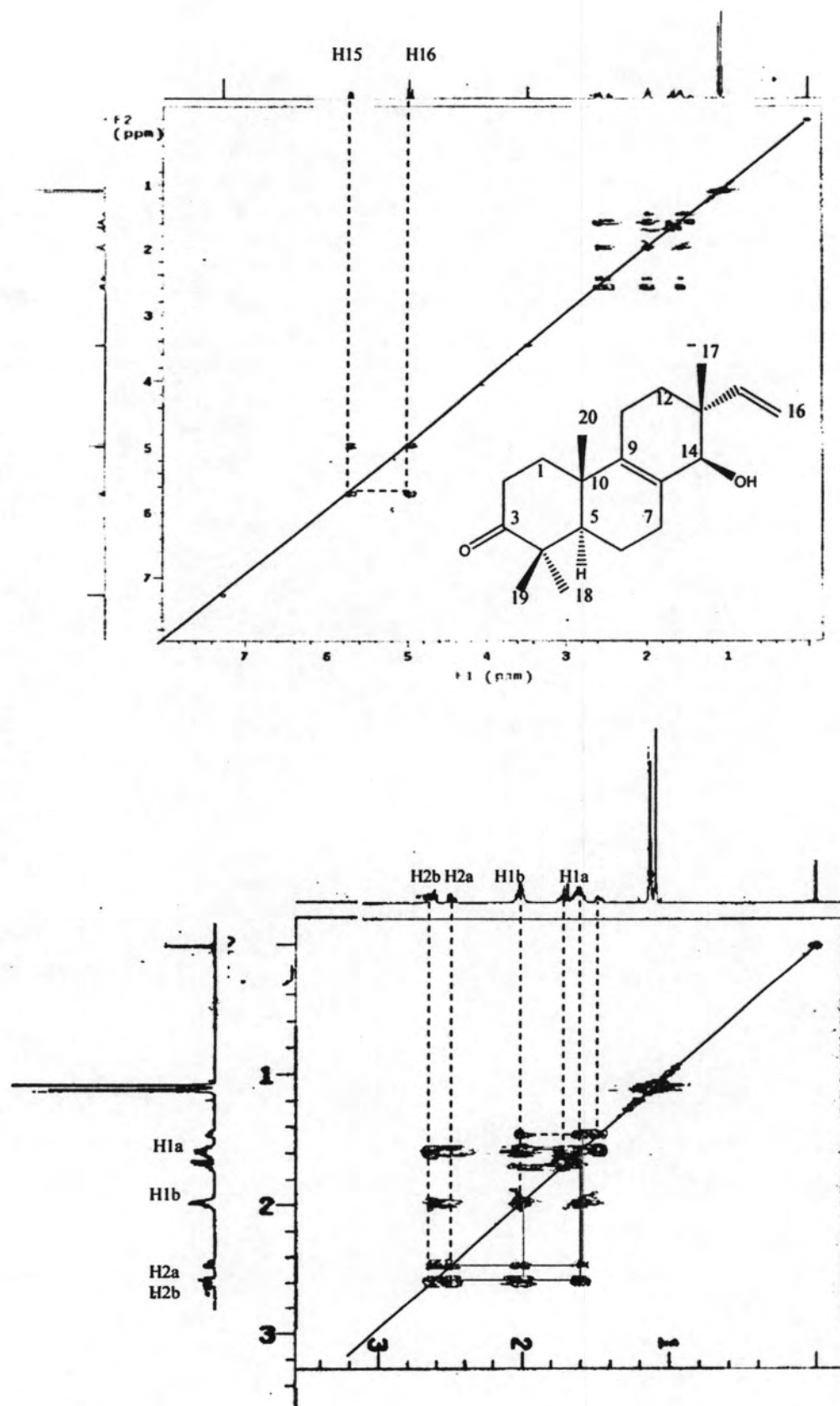


Figure 26 The 75 MHz ^1H - ^1H COSY spectrum of compound A-4 (in CDCl_3)

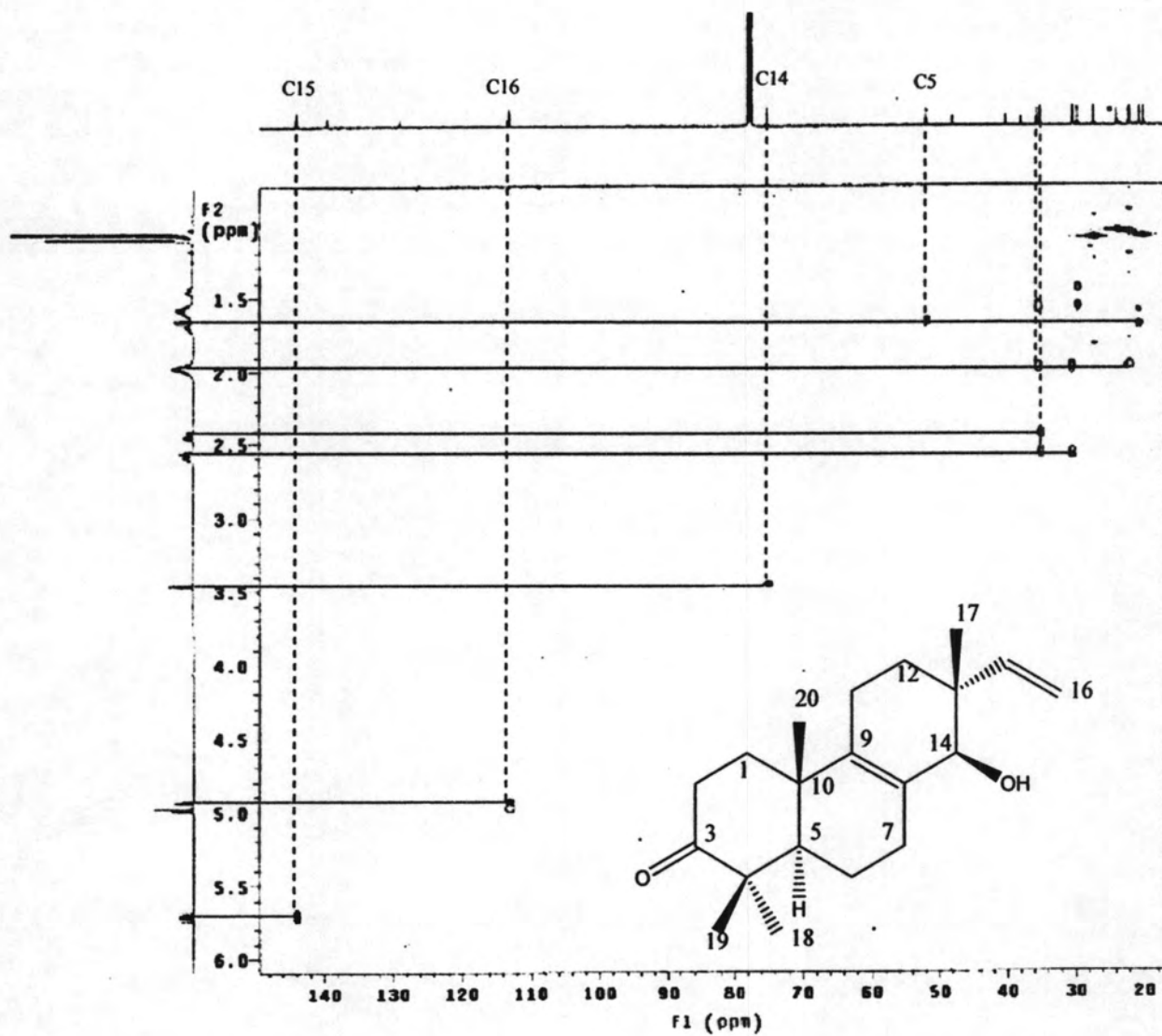


Figure 27 The 500 MHz HSQC spectrum of compound A-4 (in CDCl_3)

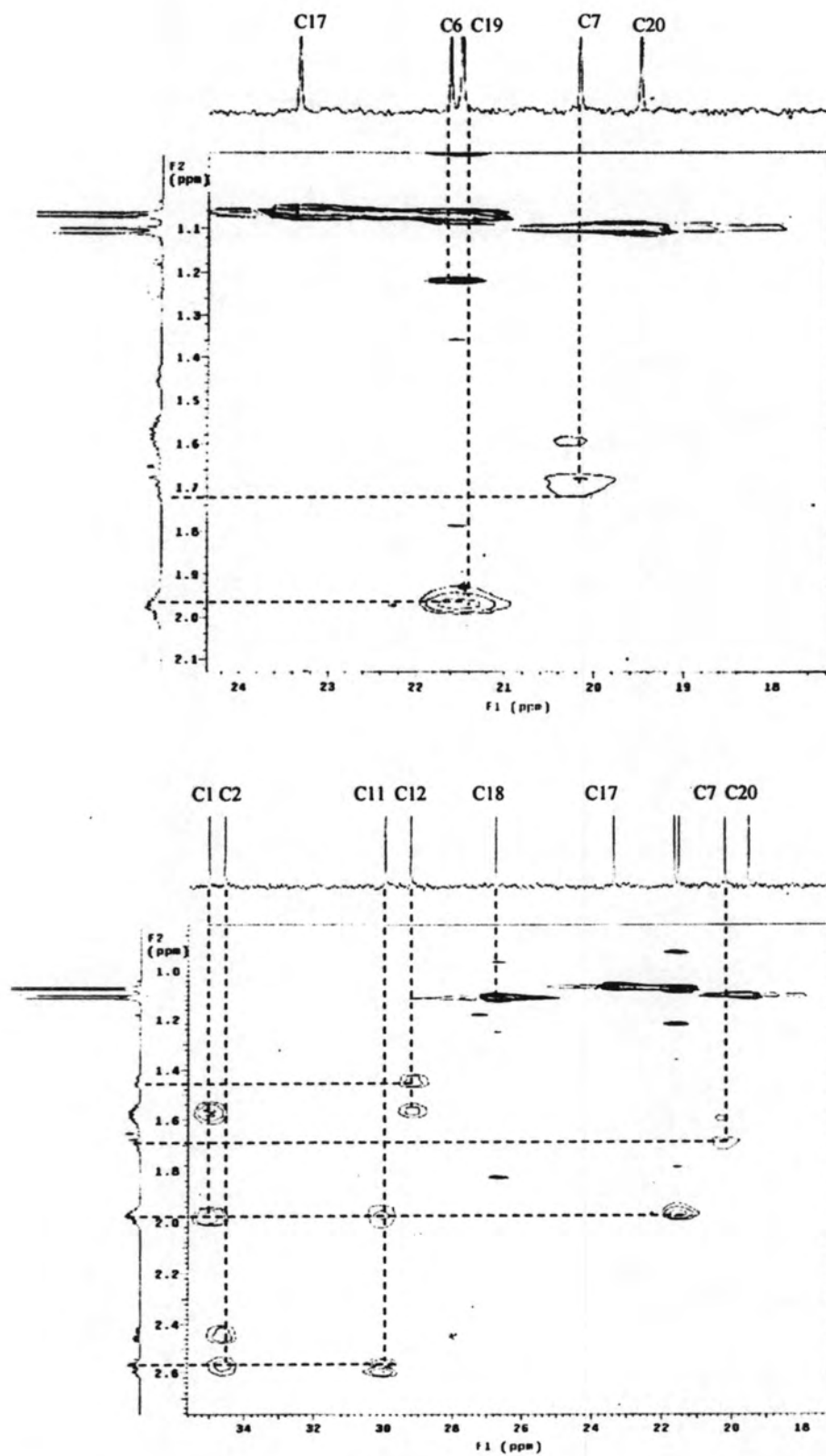


Figure 28 The expanded 500 MHz HSQC spectrum of compound A-4 (in CDCl_3) (δ_{H} 0.8-2.1 ppm, δ_{C} 18-35 ppm)

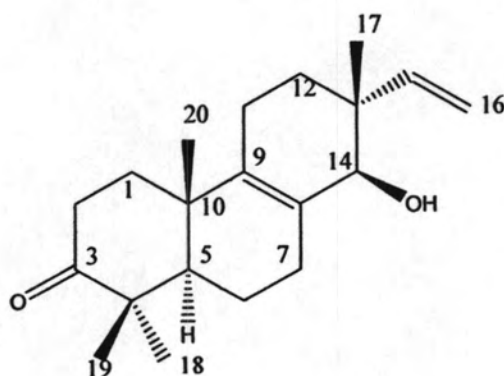
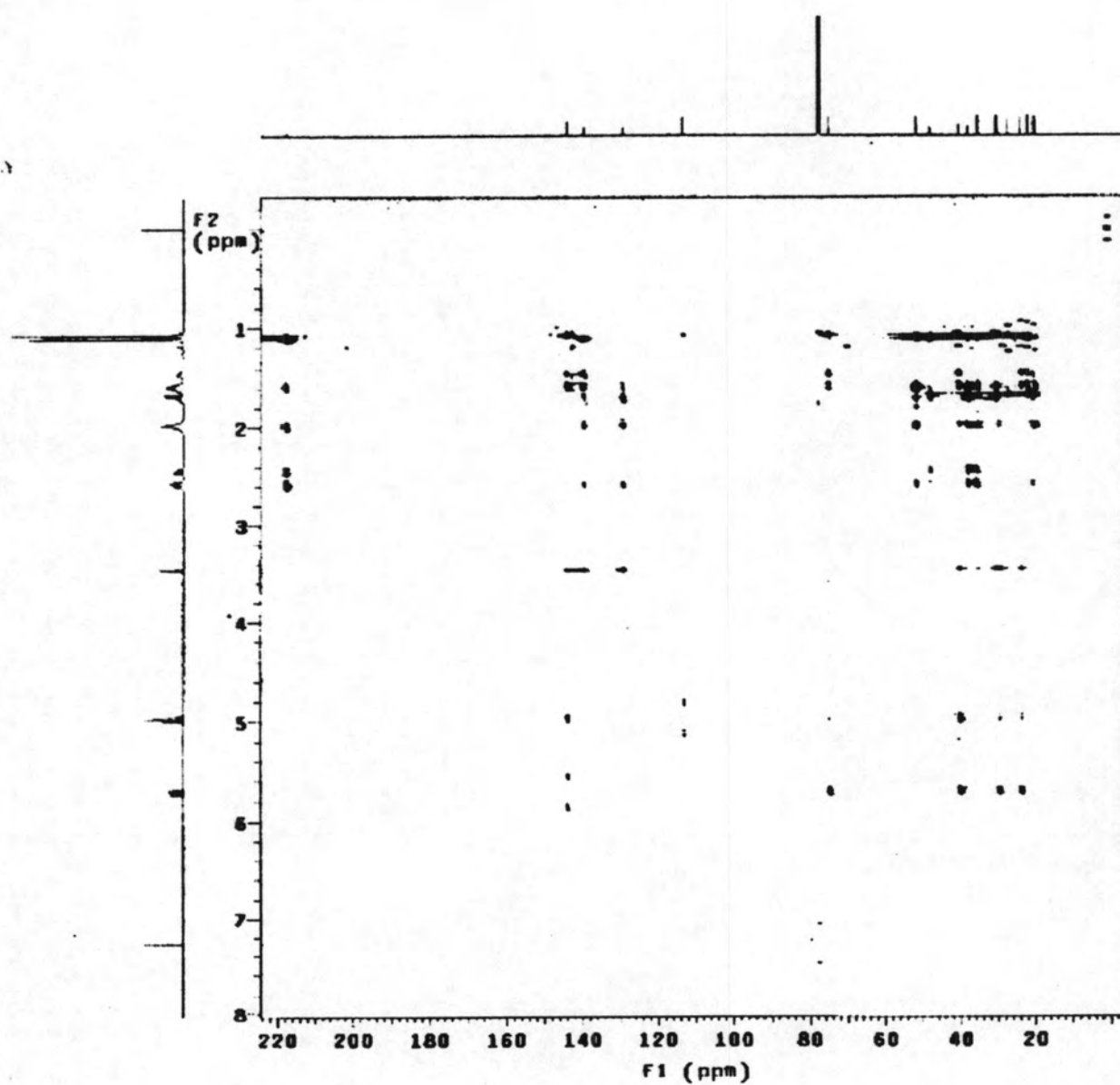


Figure 29 The 500 MHz HMBC spectrum of compound A-4 (in CDCl₃)

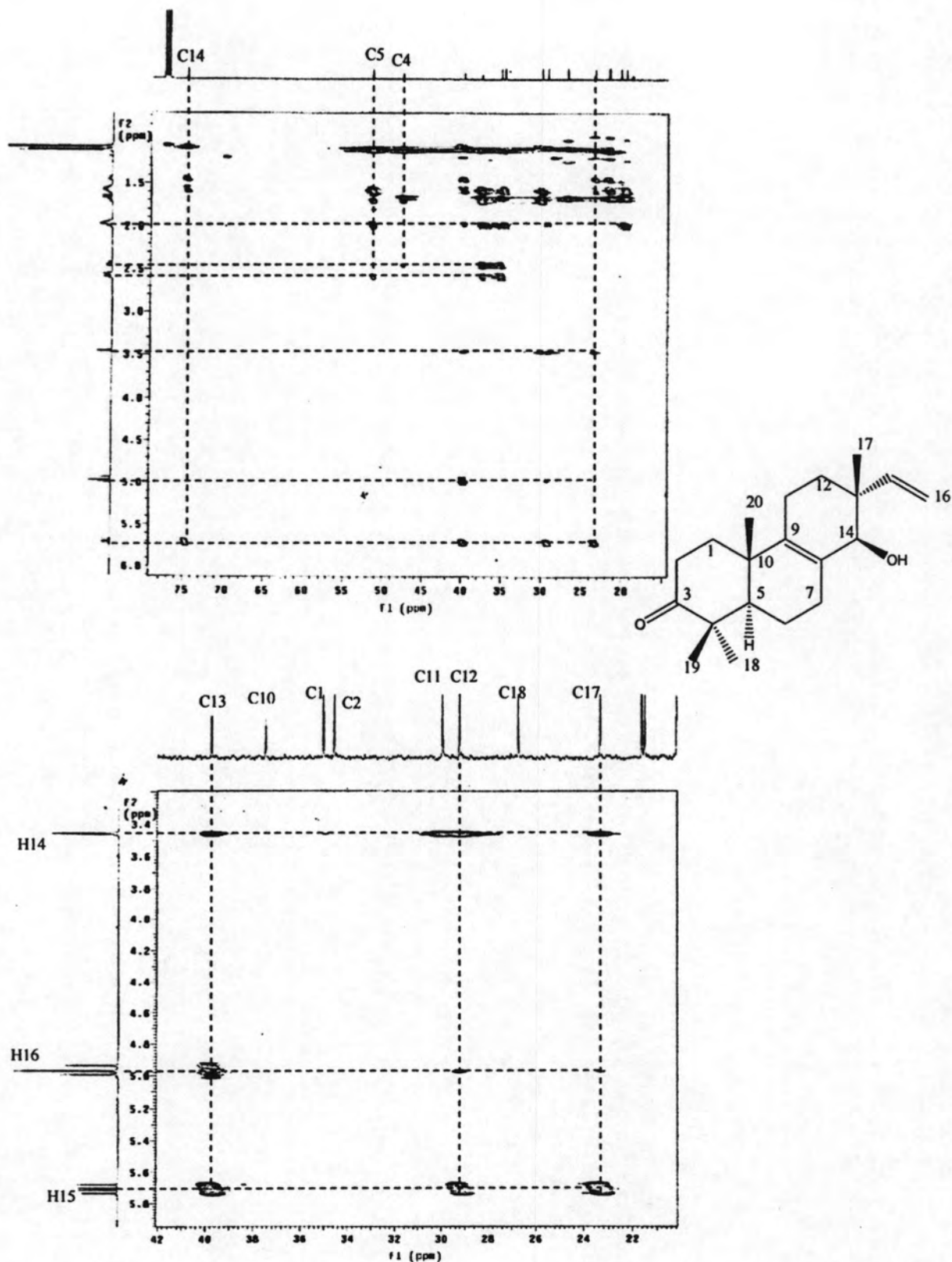


Figure 30 The expanded 500 MHz HMBC spectrum of compound A-4 (in CDCl_3)
 (δ_{H} 0.8-7ppm, δ_{C} 20-75 ppm and δ_{H} 3.0-6.0 ppm, δ_{C} 20-42 ppm)

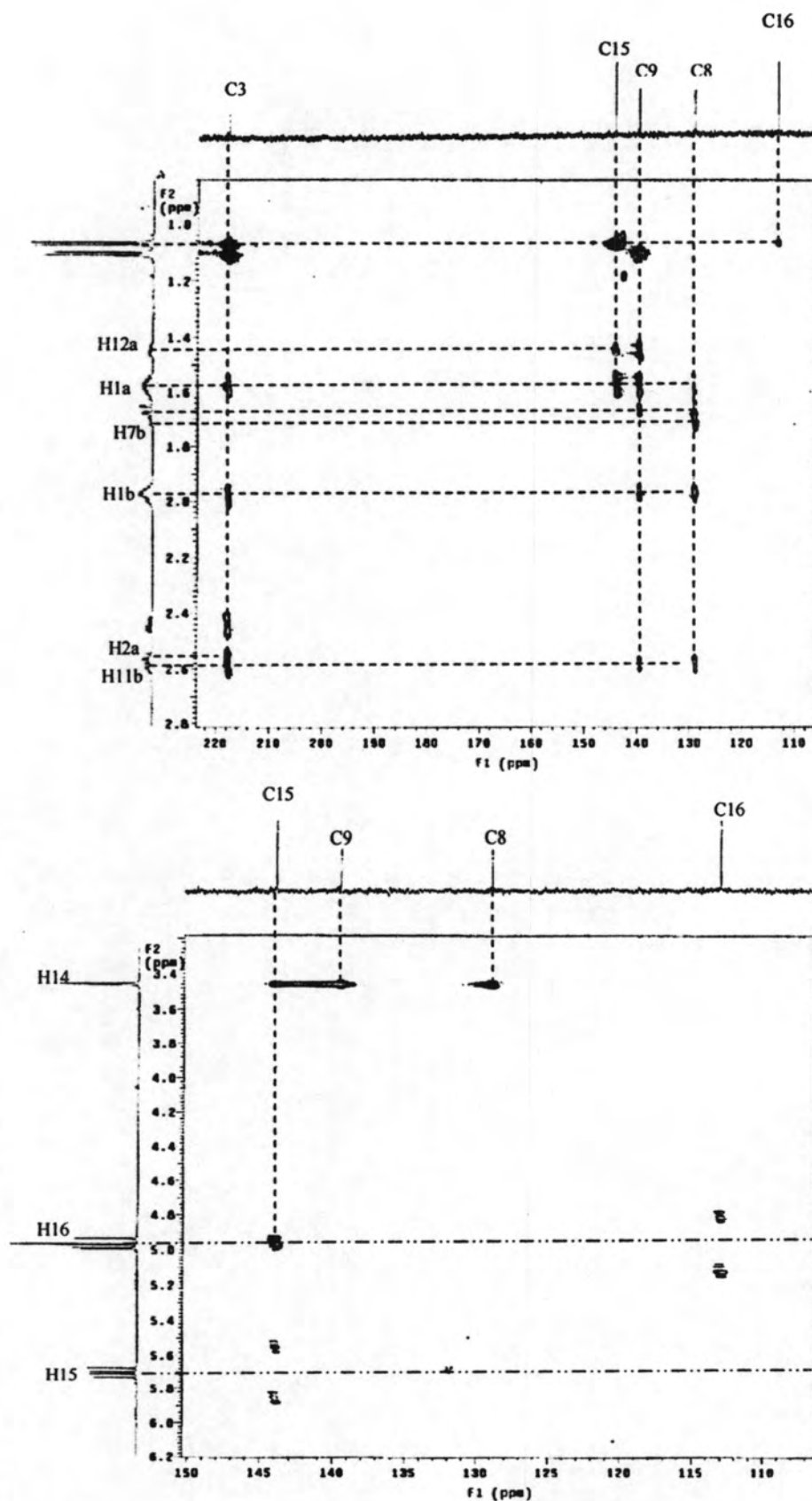


Figure 31 The expanded 500 MHz HMBC spectrum of compound A-4 (in CDCl₃)
 (δ_{H} 1.0-2.8 ppm, δ_{C} 110-220 ppm and δ_{H} 3.0-6.0 ppm, δ_{C} 110-220 ppm)

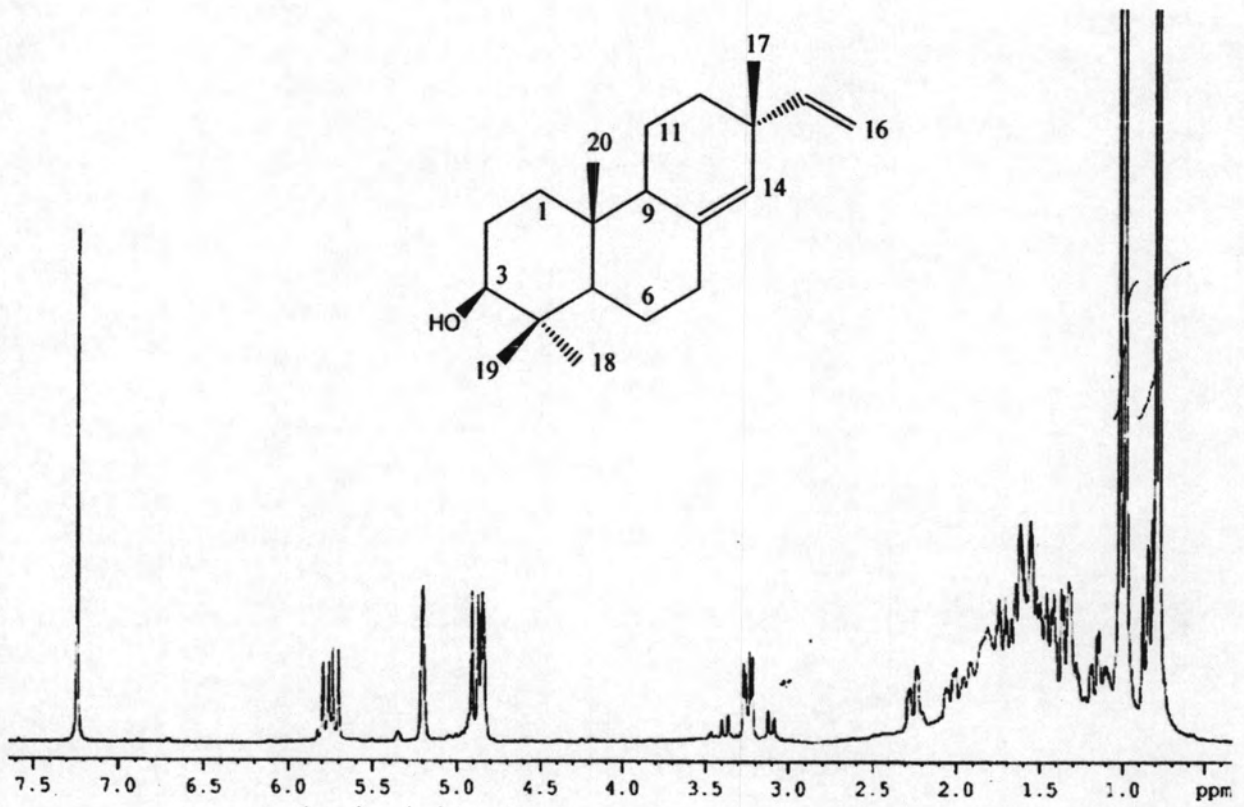


Figure 32 The 300 MHz ¹H-NMR spectrum of compound B-1 (in CDCl₃)

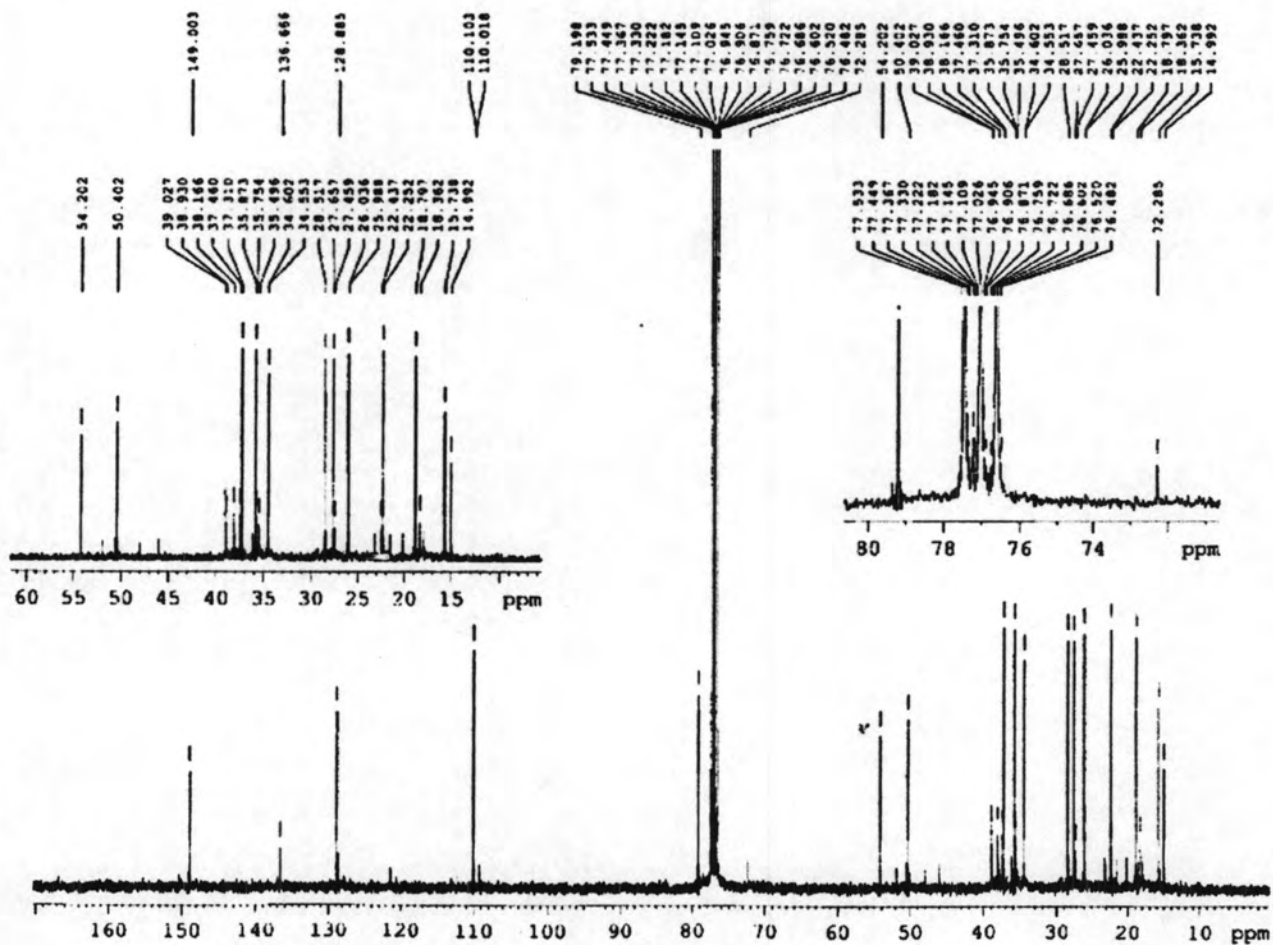


Figure 33 The 75 MHz ^{13}C -NMR spectrum of compound B-1 (in CDCl_3)

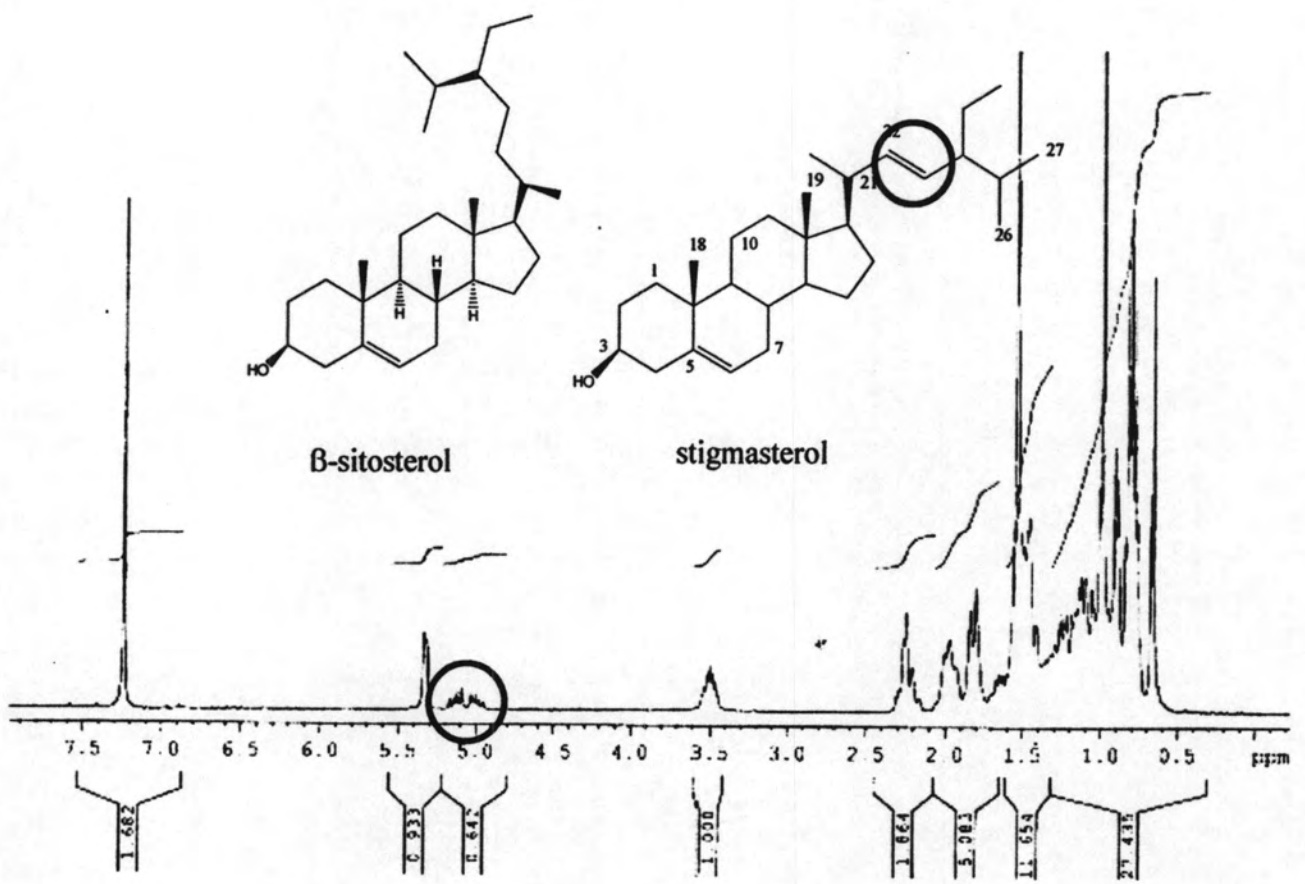


Figure 34 The 300 MHz ¹H-NMR spectrum of compound B-2 (in CDCl₃)

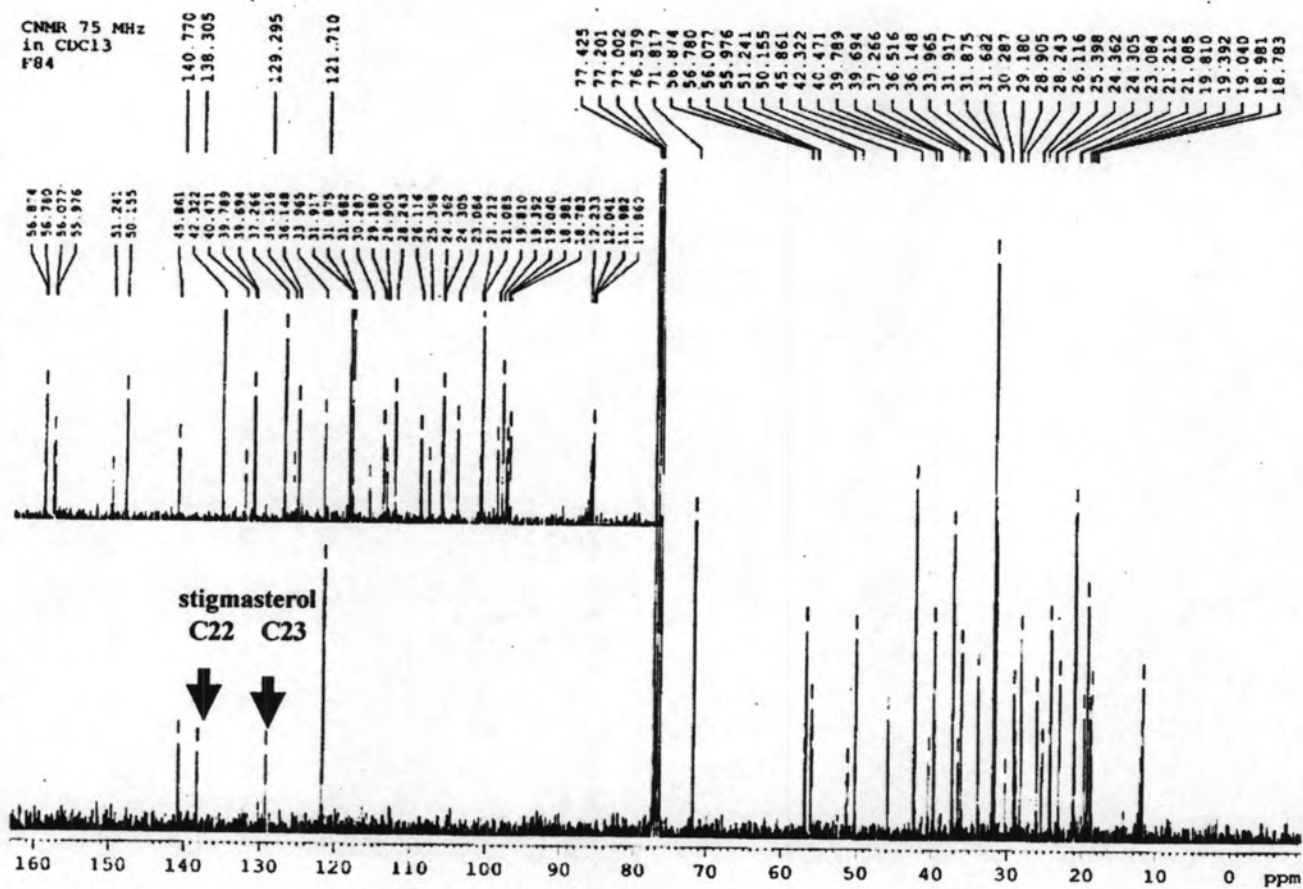


Figure 35 The 75 MHz ¹³C-NMR spectrum of compound B-2 (in CDCl₃)

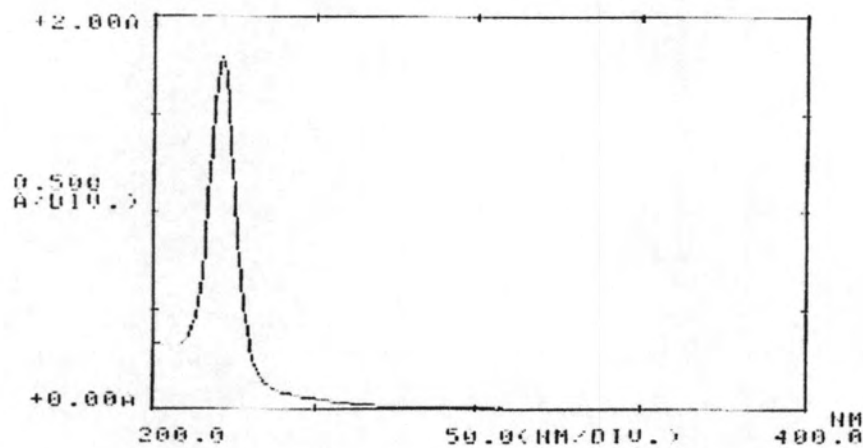


Figure 36 The UV spectrum of compound B-3 in MeOH

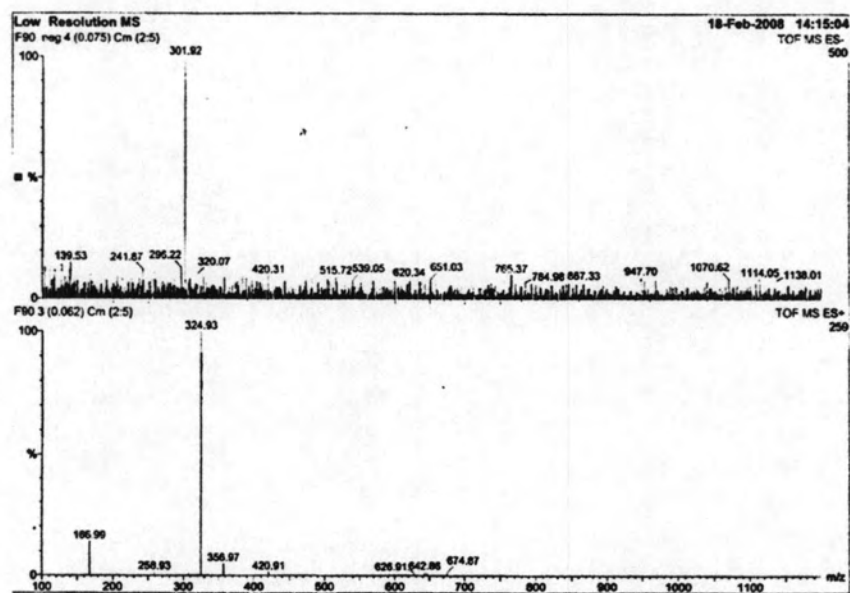
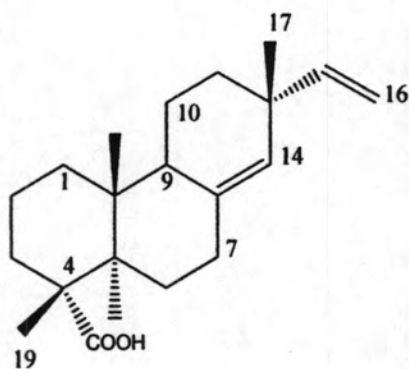


Figure 37 The mass spectrum of compound B-3

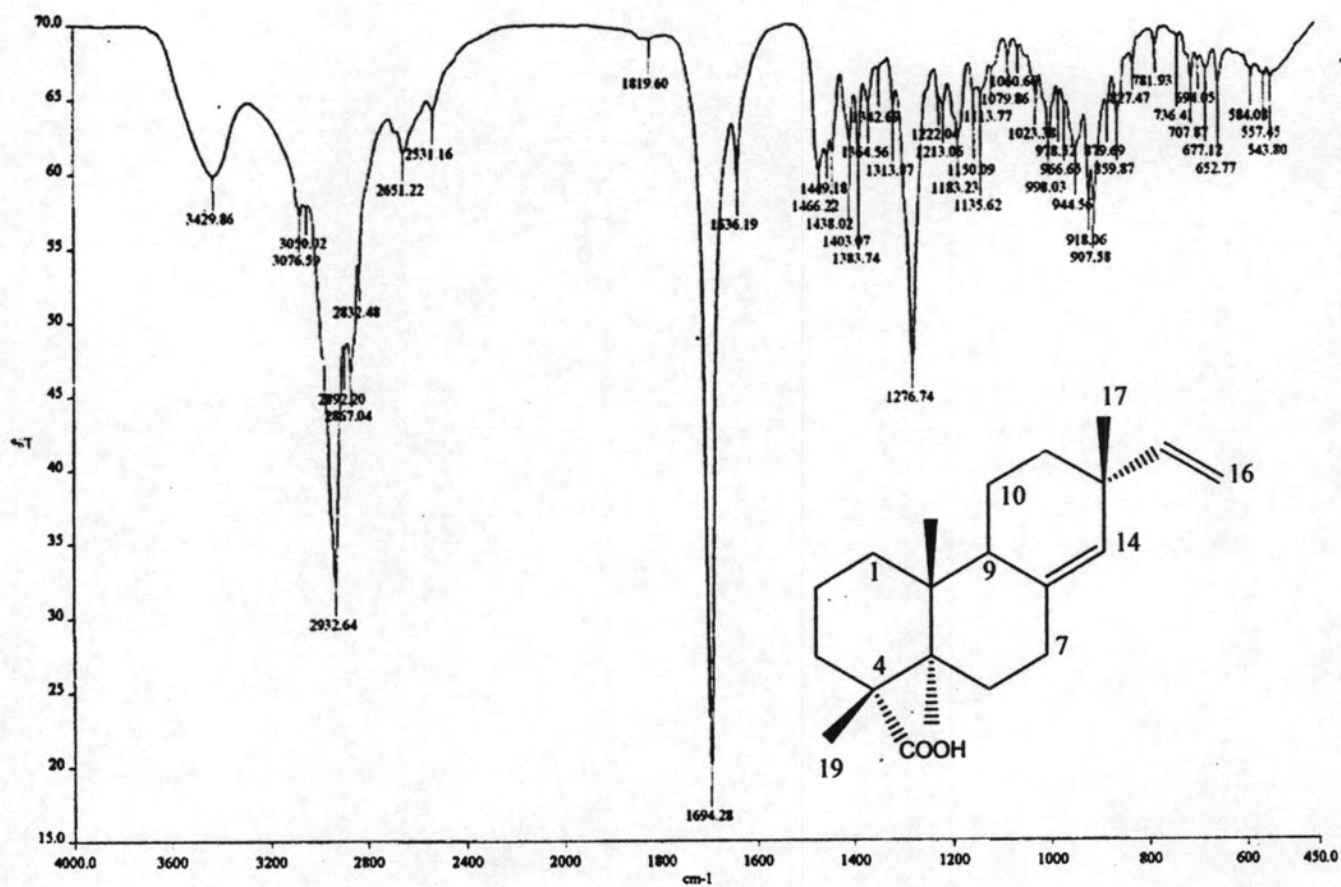


Figure 38 The IR spectrum of compound B-3 (KBr disc)

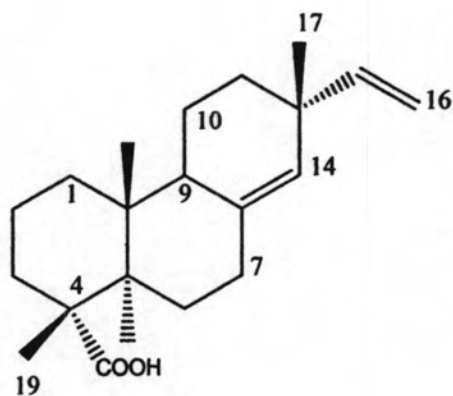
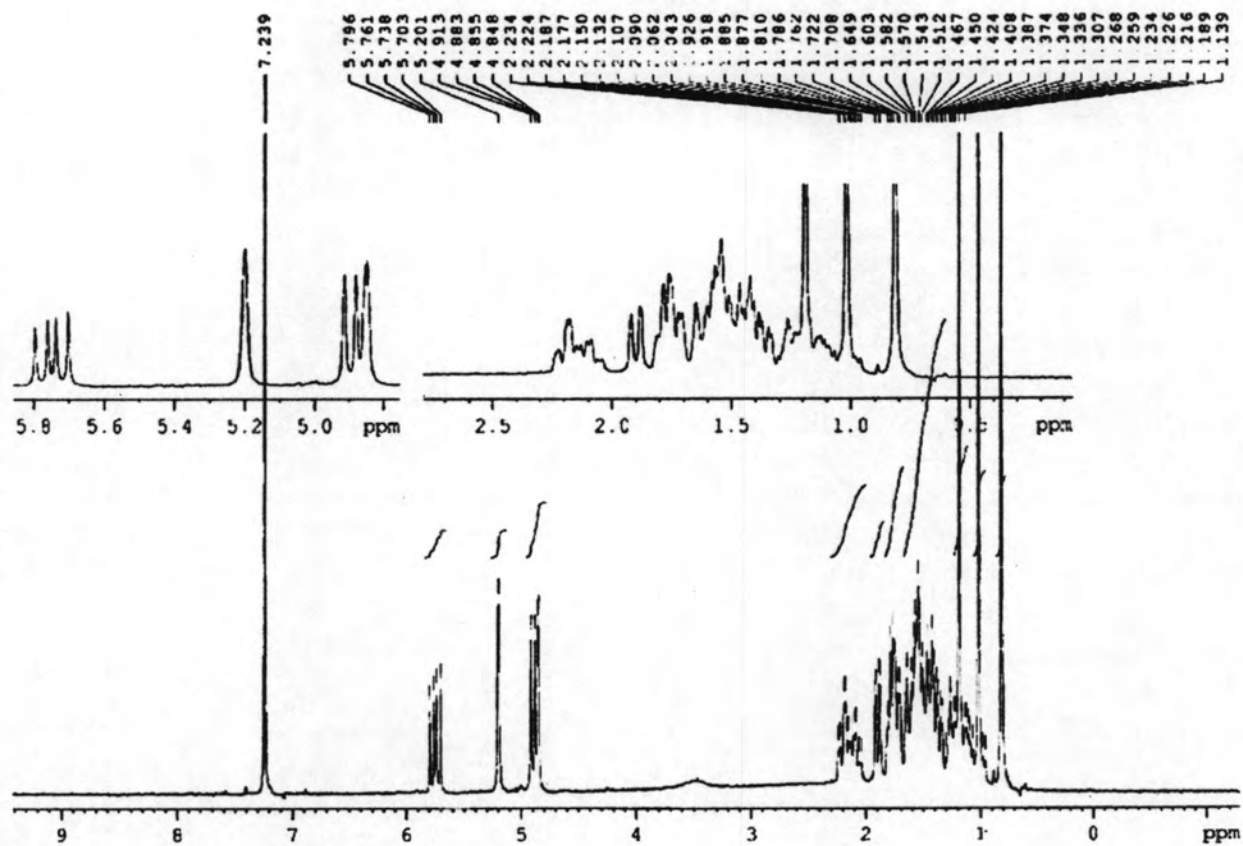


Figure 39 The 300 MHz $^1\text{H-NMR}$ spectrum of compound B-3 (in CDCl_3)

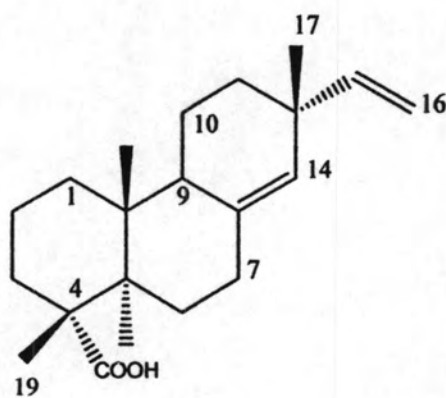
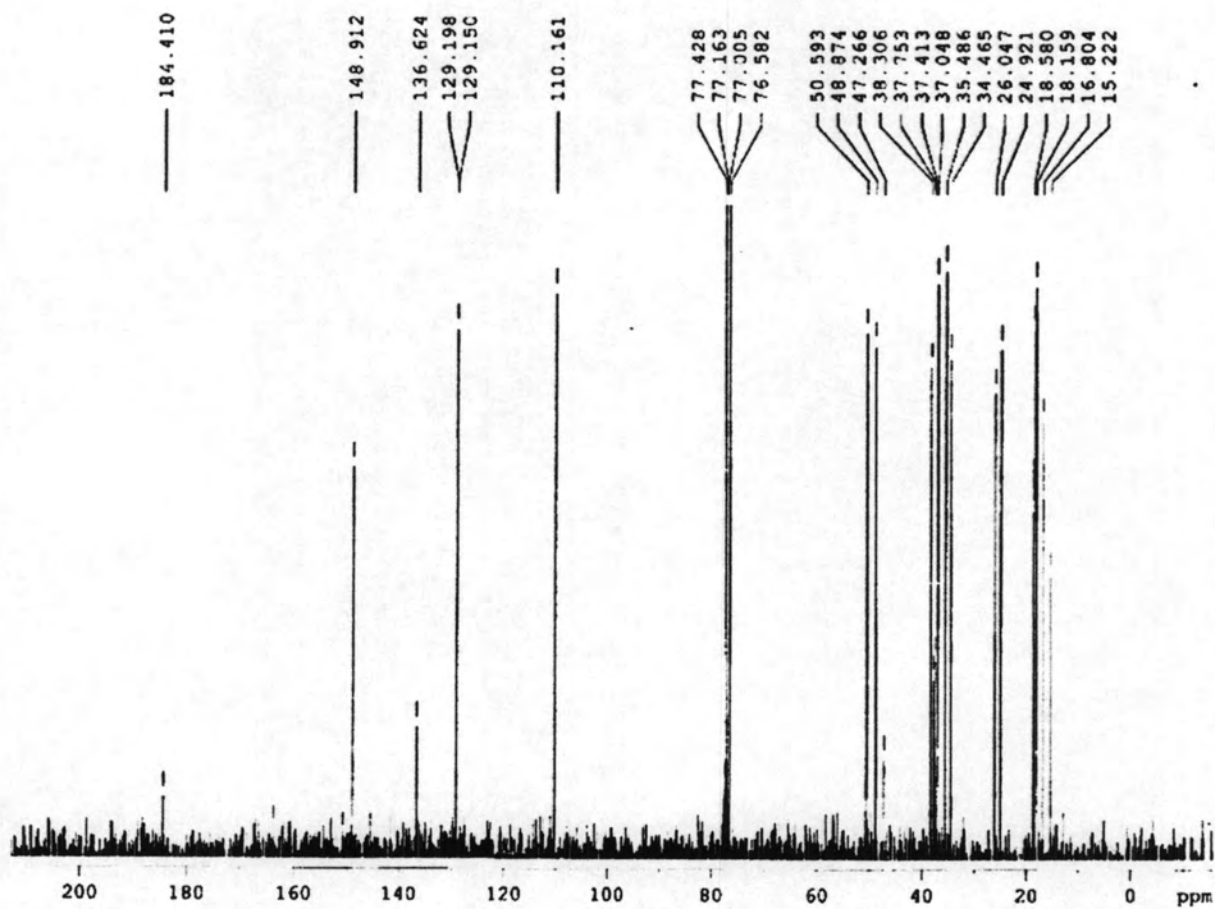


Figure 40 The 75 MHz ^{13}C -NMR spectrum of compound B-3 (in CDCl_3)

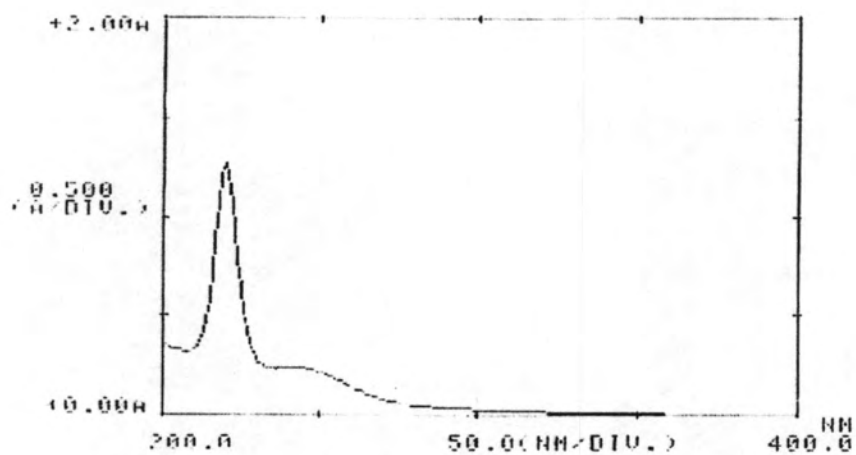


Figure 41 The UV spectrum of compound B-4 in MeOH

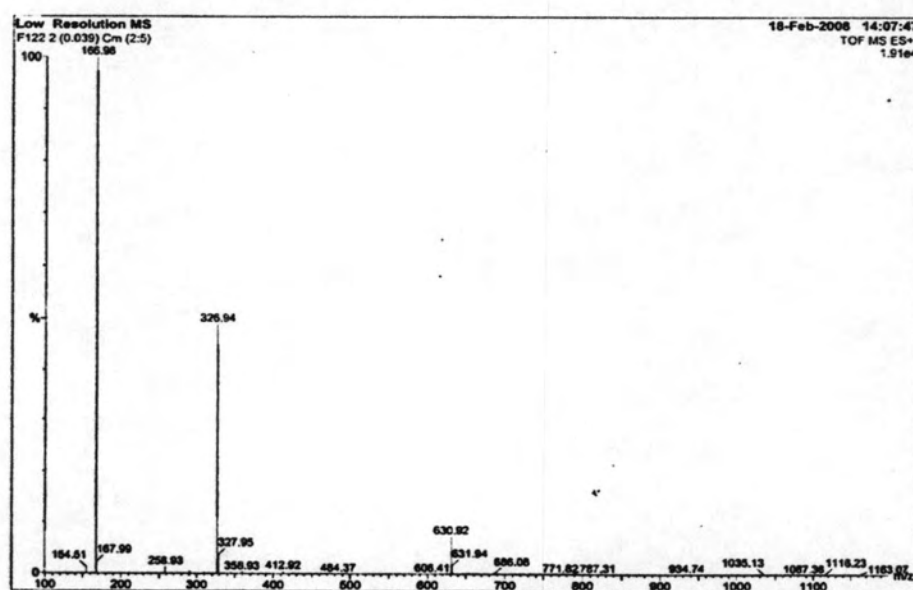
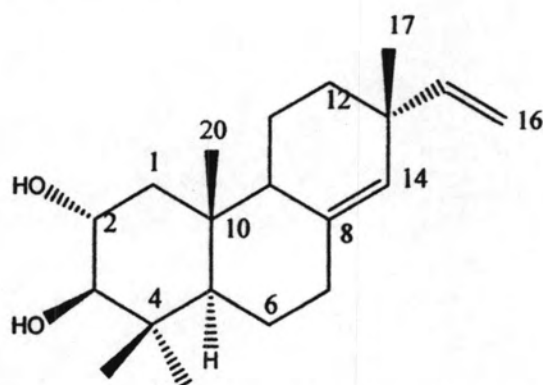


Figure 42 The mass spectrum of compound B-4

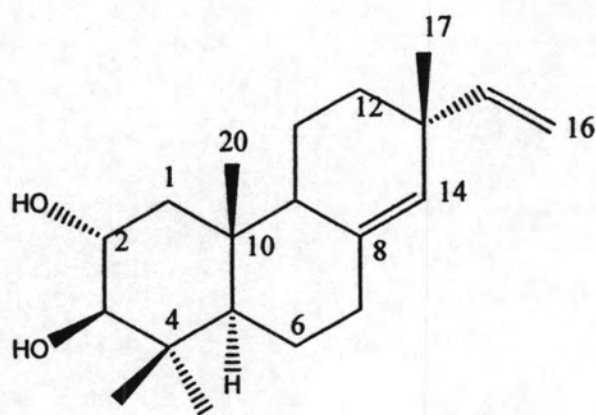
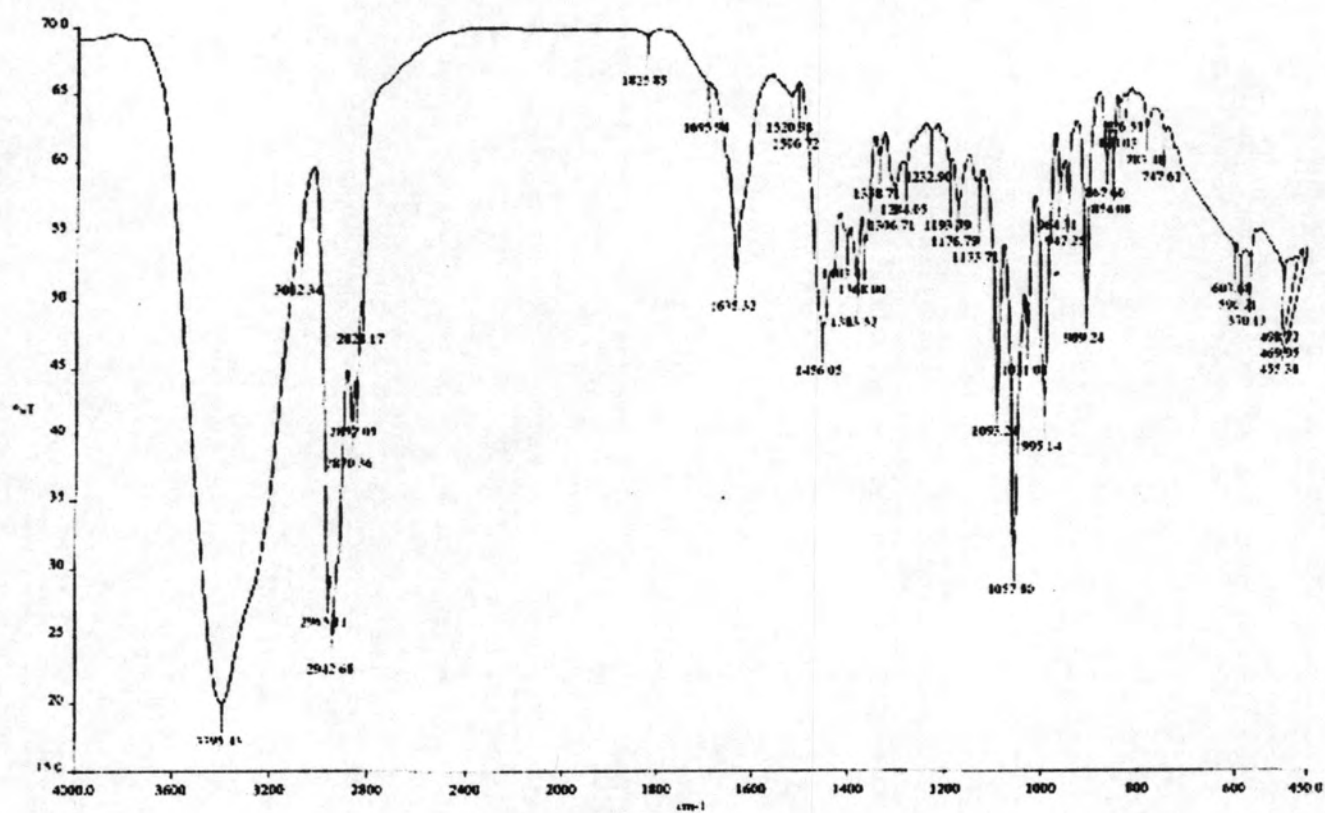


Figure 43 The IR spectrum of compound B-4 (KBr disc)

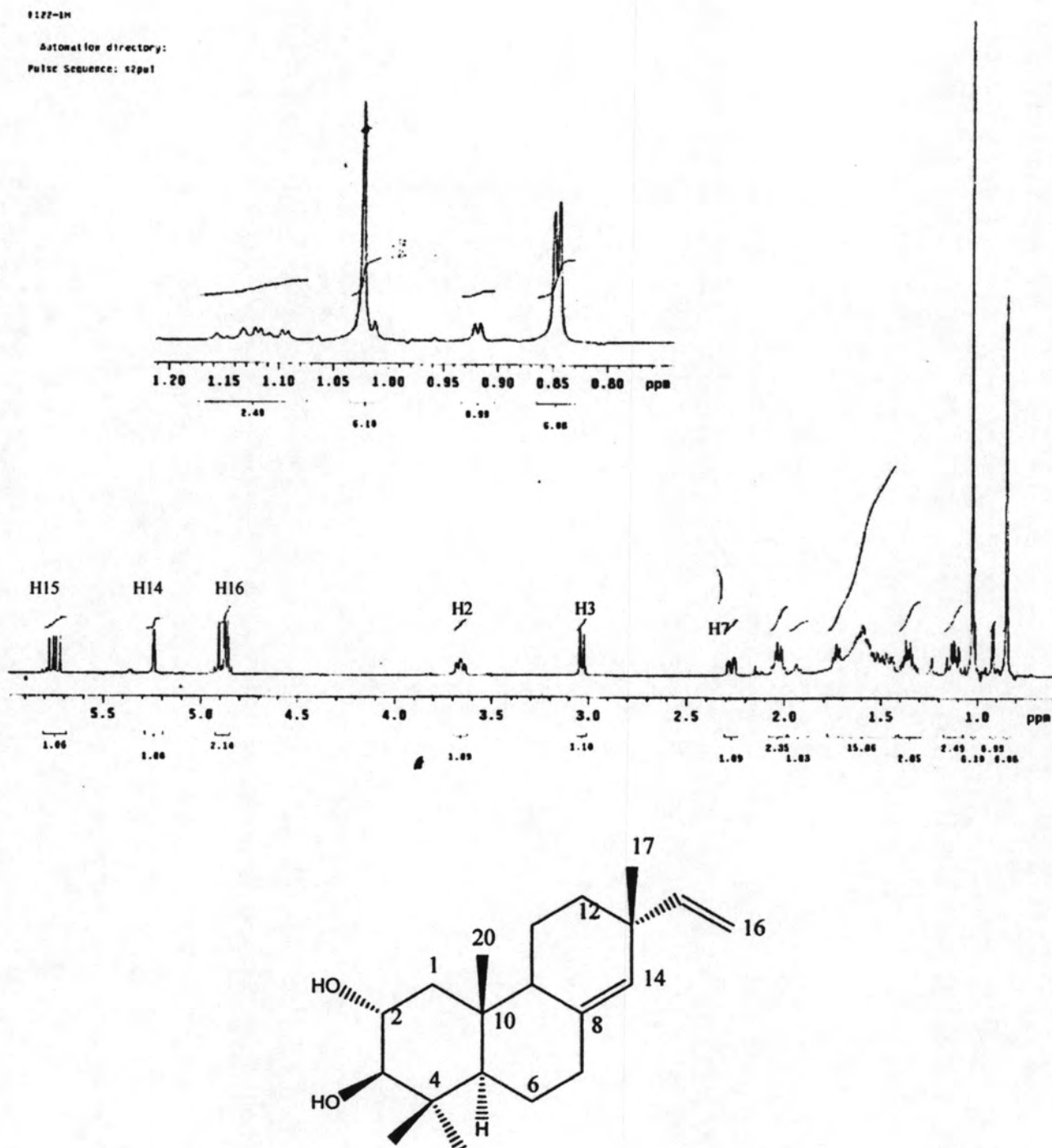


Figure 44 The 500 MHz $^1\text{H-NMR}$ spectrum of compound B-4 (in CDCl_3)

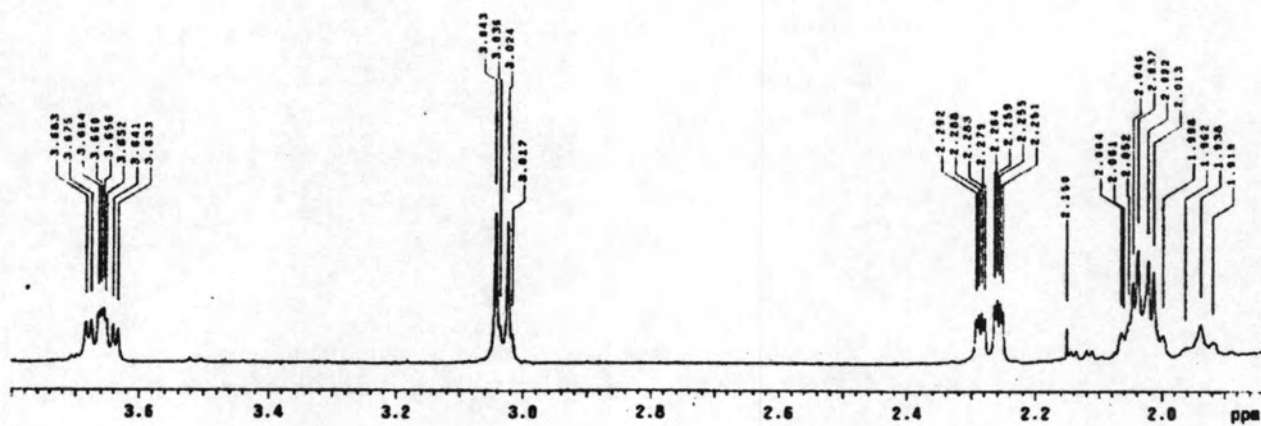
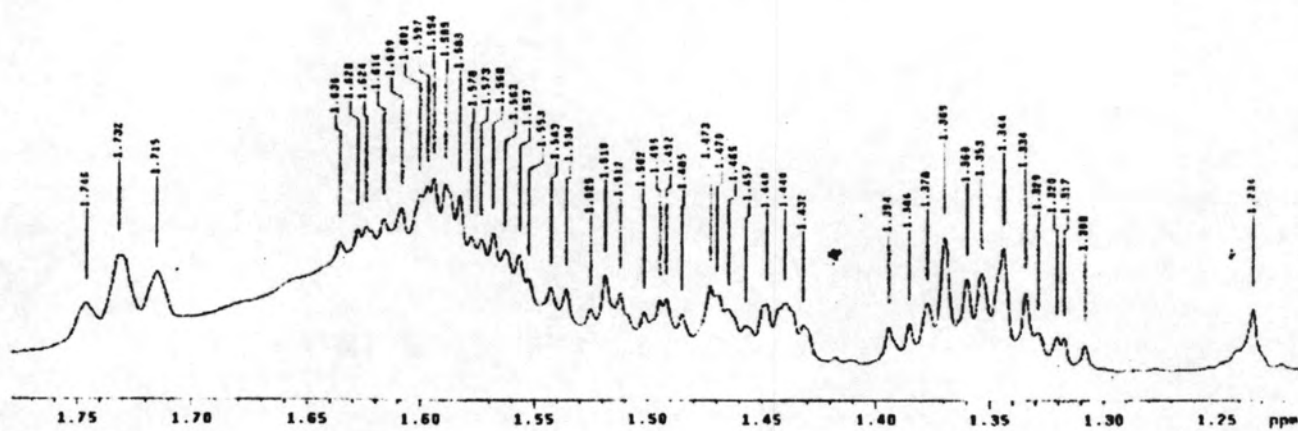


Figure 45 The expanded 500 MHz ^1H -NMR spectrum of compound B-4 (in CDCl_3)
(δ_{H} 1.0-3.7 ppm)

F122-13C

Automation directory:

Pulse Sequence: s2pul
 Solvent: CDCl₃
 Temp. 24.0 C / 297.1 K
 Operator: ligulos
 INOVA-500 "ner500"

Relax. delay 2.000 sec
 Pulse 45.0 degrees
 Acq. time 5.588 sec
 Width 32679.7 Hz
 6666 repetitions
 OBSERVE C13, 125.7659884 MHz
 DECOUPLE H1, 500.1623778 MHz
 Power 36 dB
 continuously on
 WALTZ-16 modulated
 DATA PROCESSING
 Line broadening 0.5 Hz
 FT size 65536
 Total time 4 hr., 55 min., 40 sec

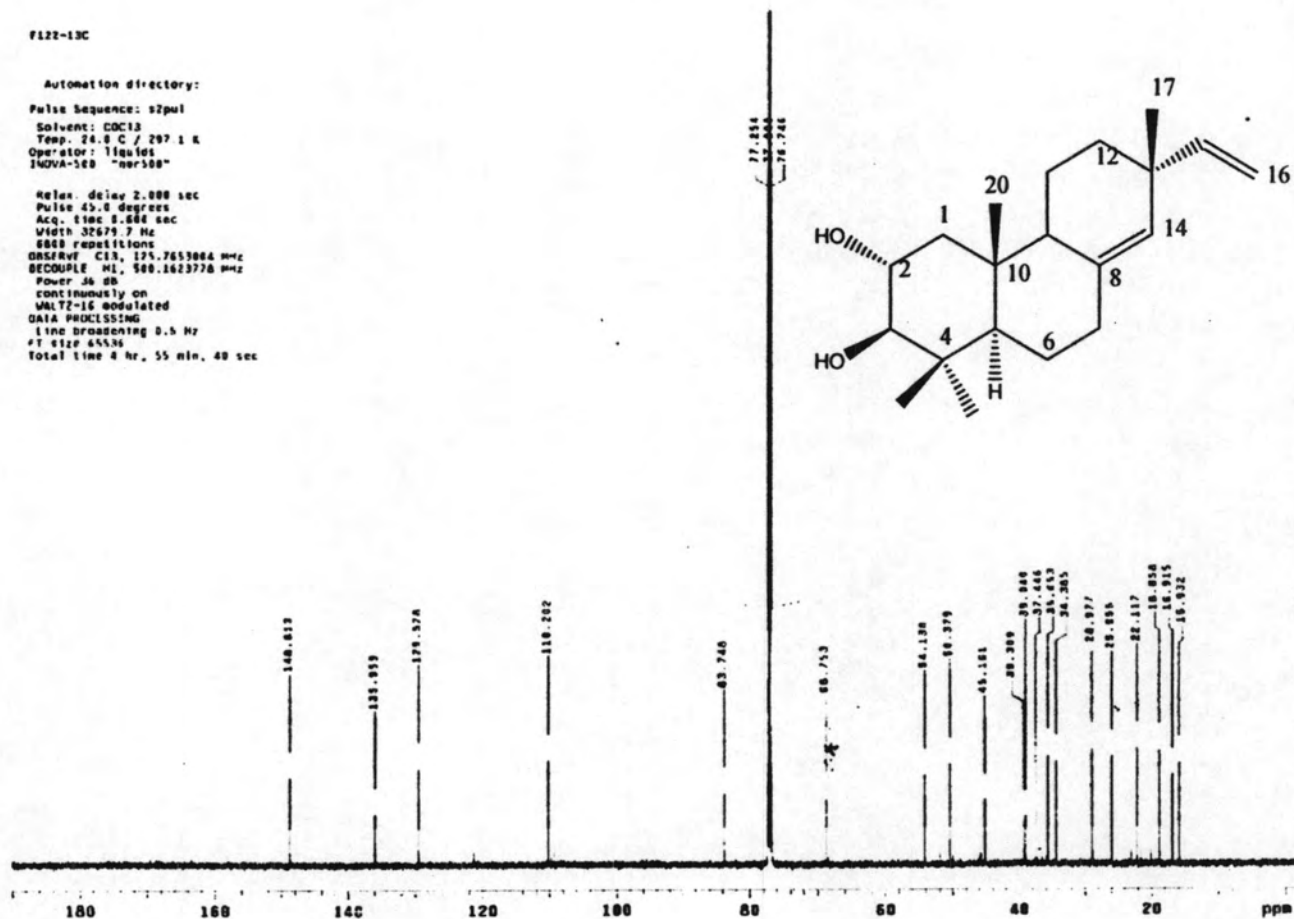


Figure 46 The 125 MHz ¹³C-NMR spectrum of compound B-4 (in CDCl₃)

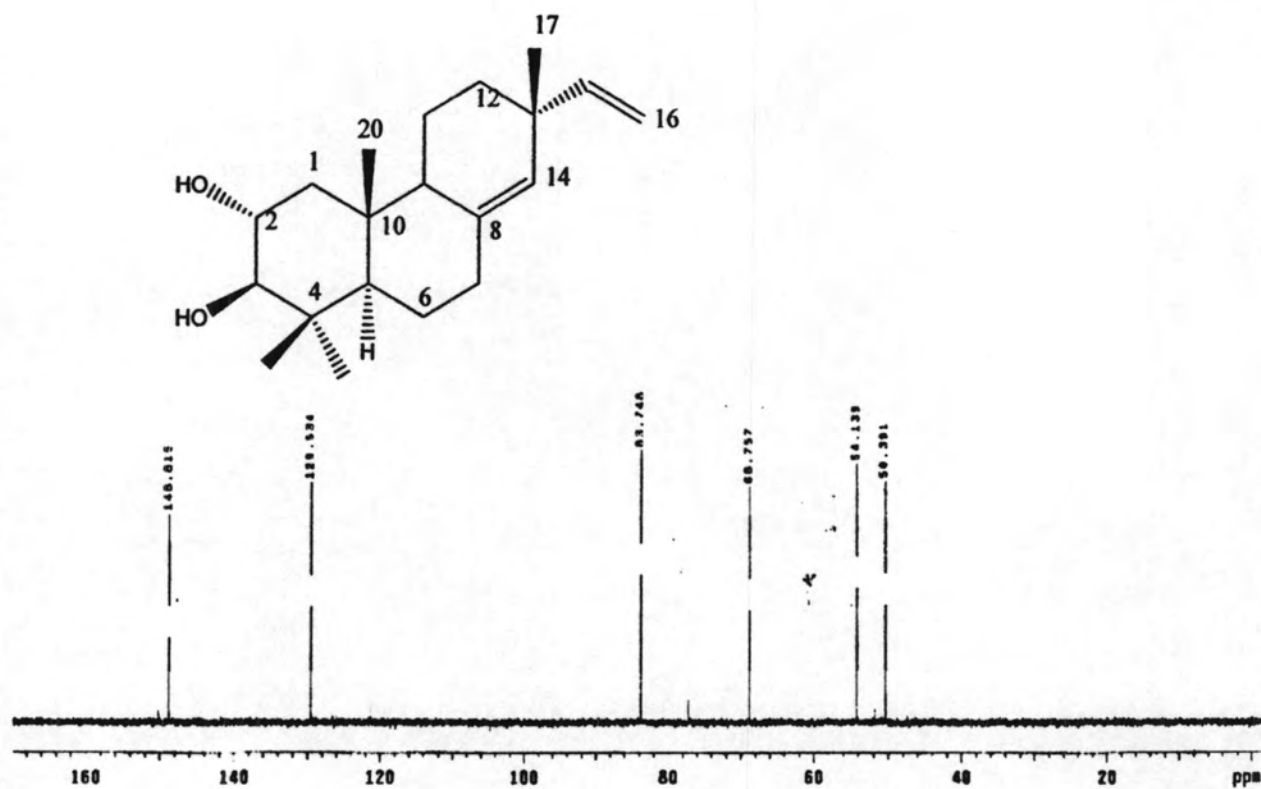


Figure 47 The DEPT-90 spectrum of compound B-4 (in CDCl₃)

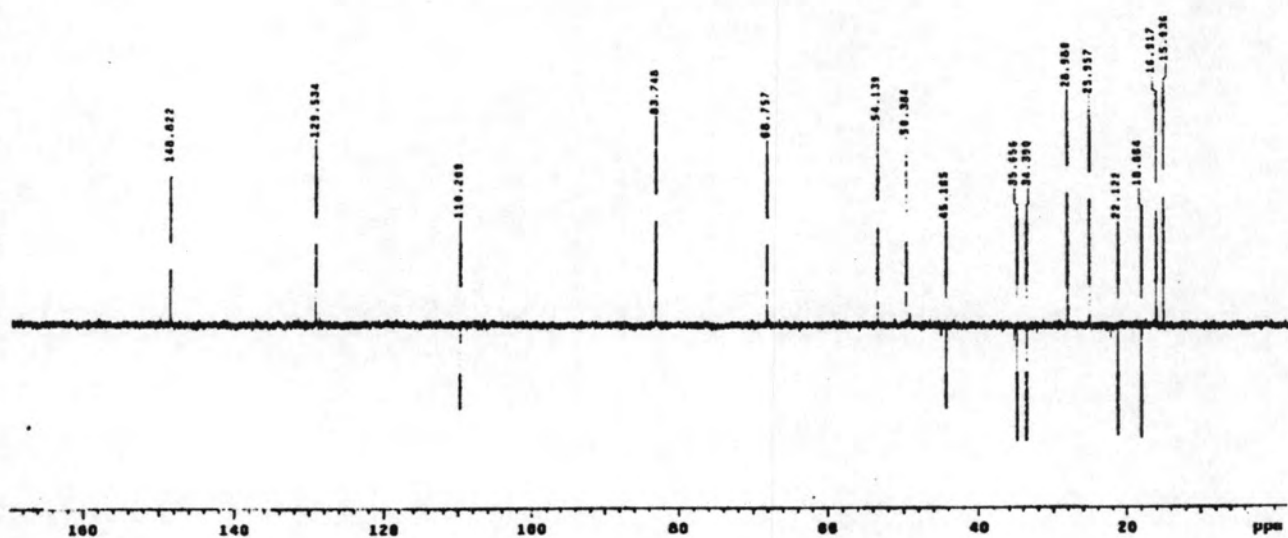


Figure 48 The DEPT-135 spectrum of compound B-4 (in CDCl₃)

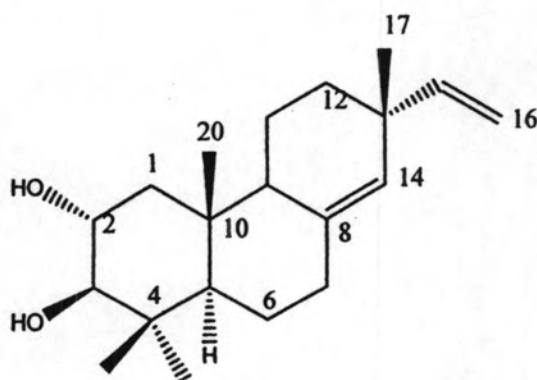
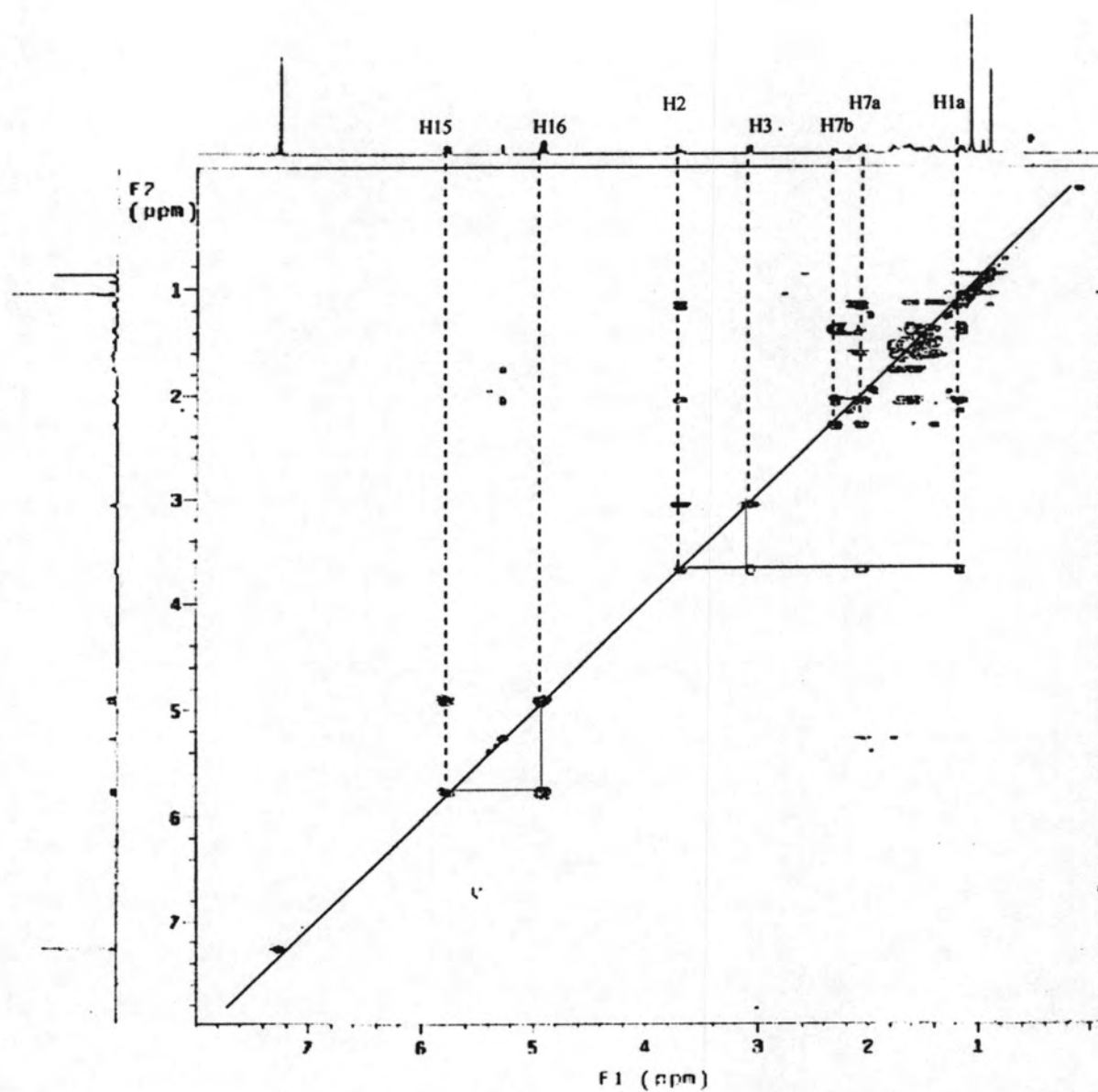


Figure 49 The 75 MHz ^1H - ^1H COSY spectrum of compound B-4 (in CDCl_3)

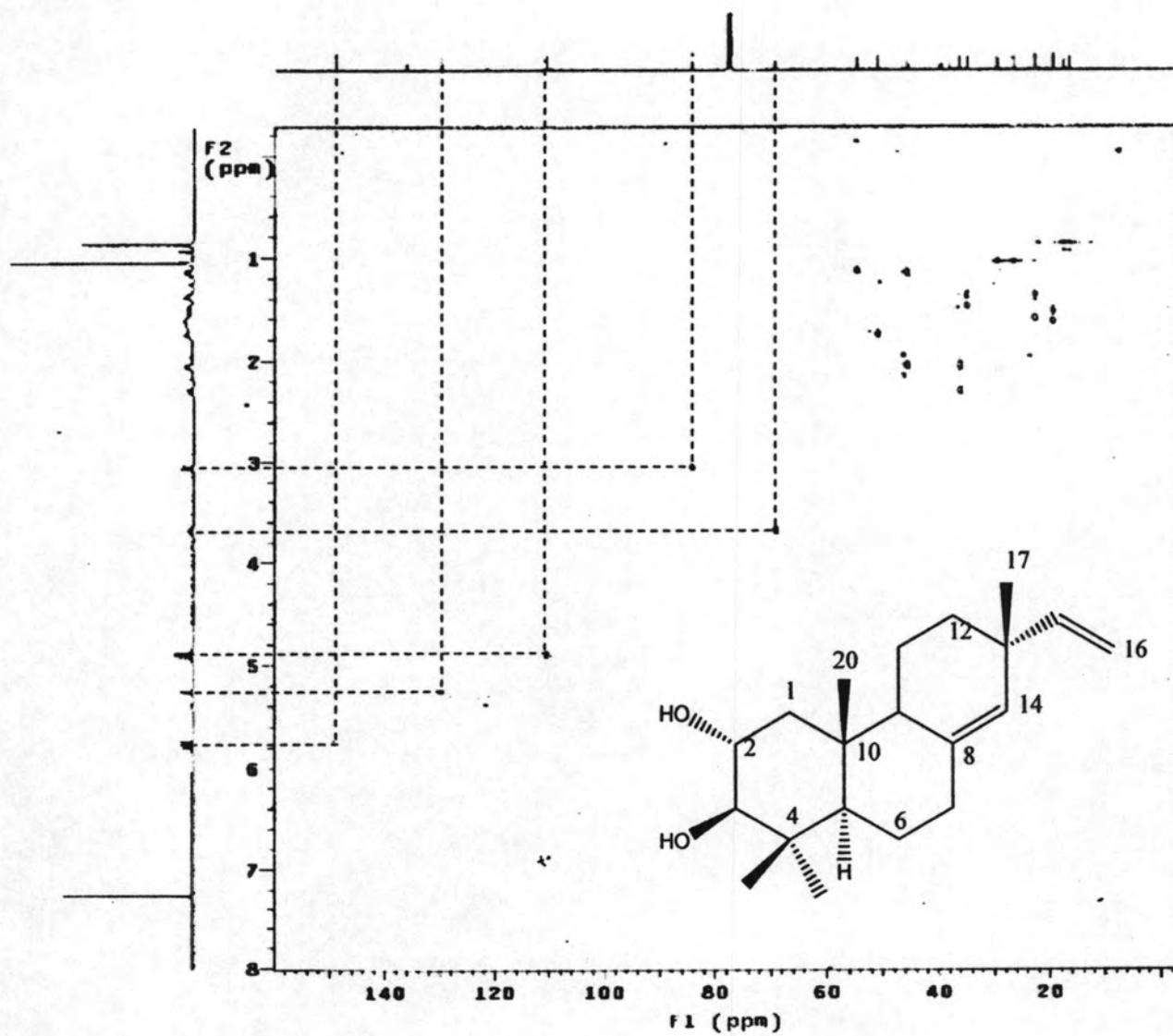


Figure 50 The 500 MHz HSQC spectrum of compound B-4 (in CDCl₃)

F112-gmsc

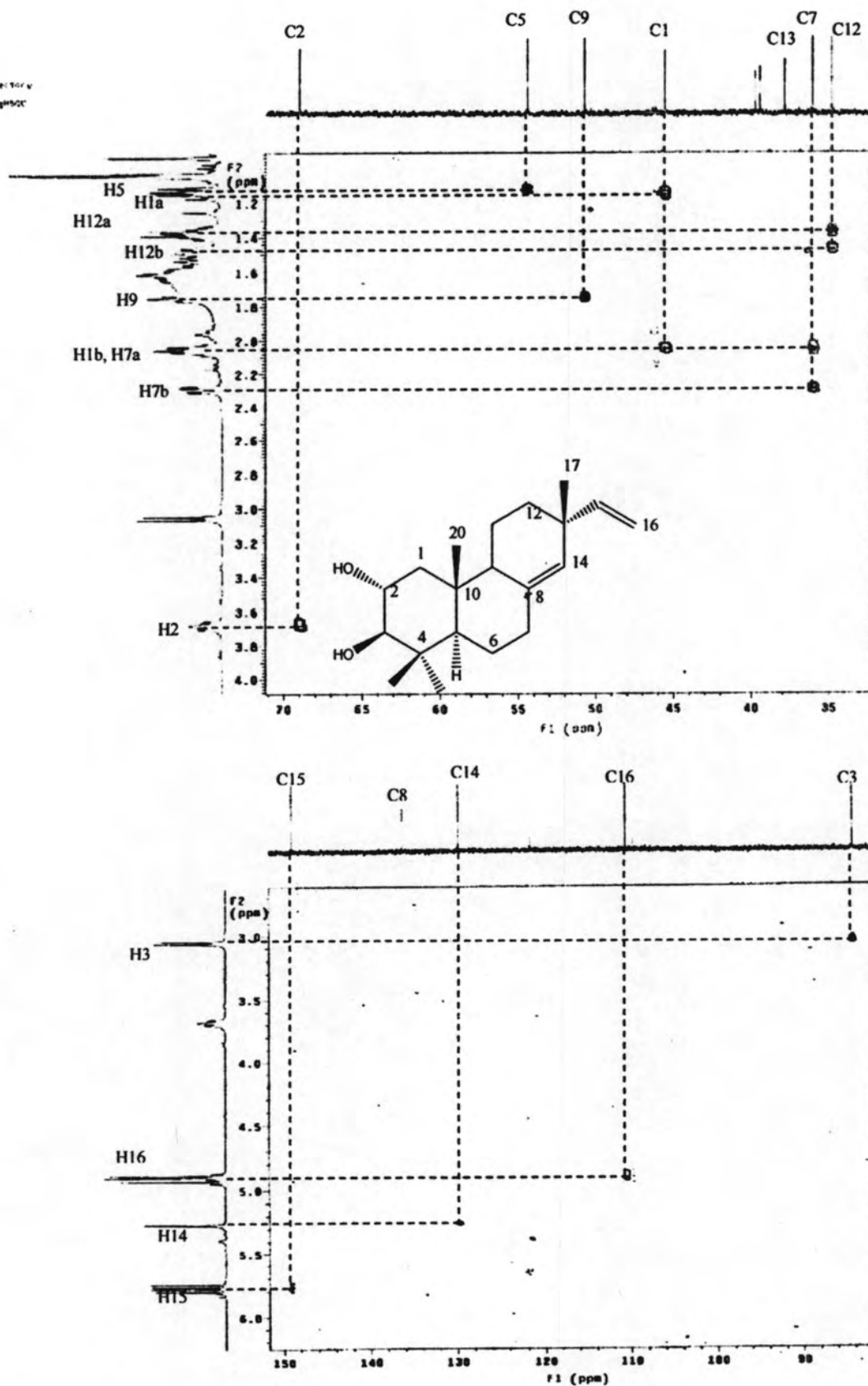
Automation directory
Phase Sequence: gmsc

Figure 51 The expanded 500 MHz HSQC spectrum of compound B-4 (in CDCl_3)
(δ_{H} 1.0-4.0 ppm, δ_{C} 35-70, ppm and δ_{H} 2.8-6.0 ppm, δ_{C} 80-150 ppm)

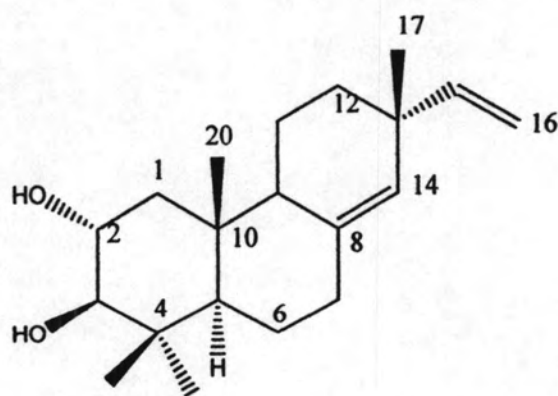
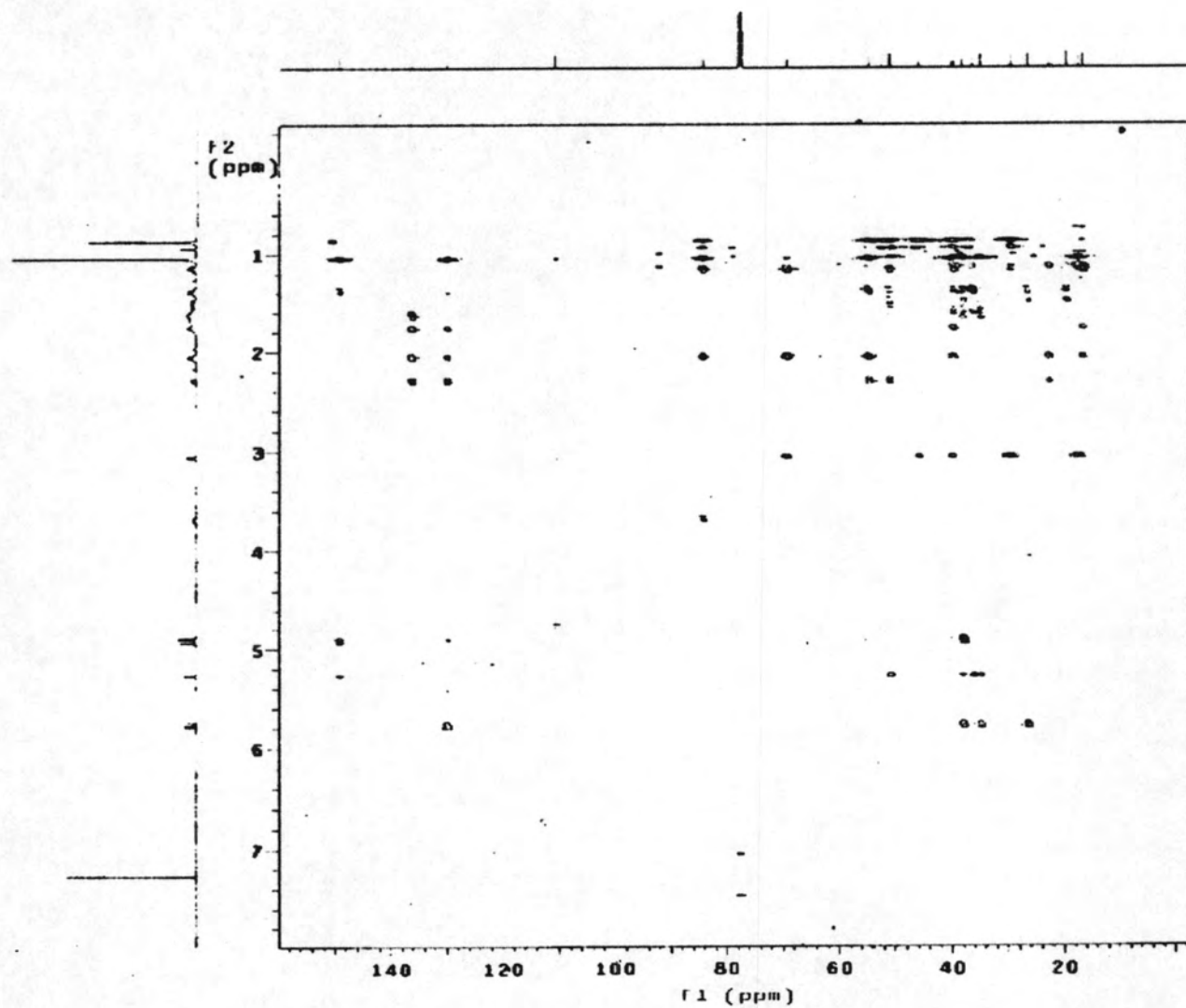


Figure 52 The 500 MHz HMBC spectrum of compound B-4 (in CDCl_3)

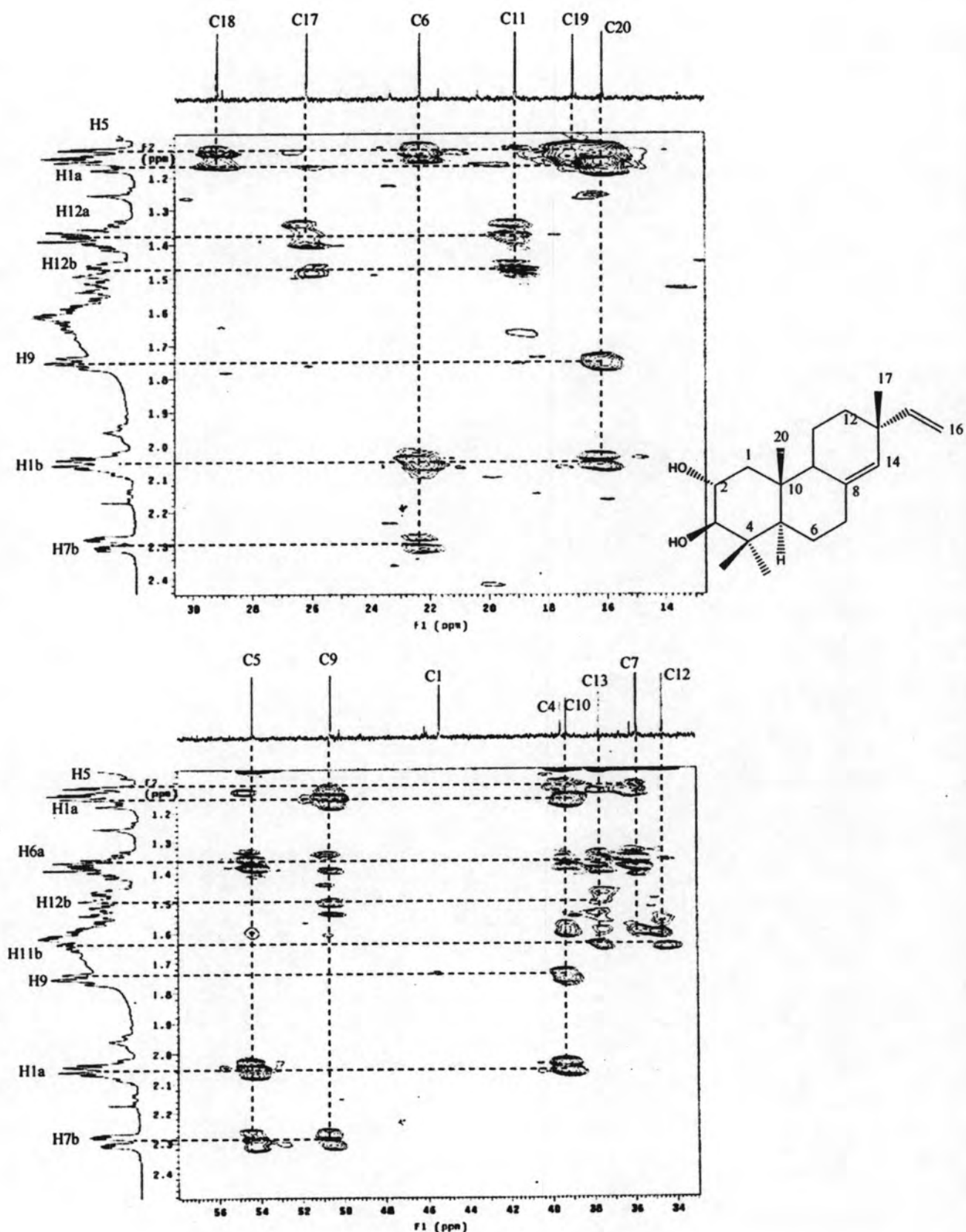


Figure 53 The expanded 500 MHz HMBC spectrum of compound B-4 (in CDCl₃)
 (δ_H 1.1-2.4 ppm, δ_C 14-30, ppm and δ_H 1.1-2.4 ppm, δ_C 33-58 ppm)

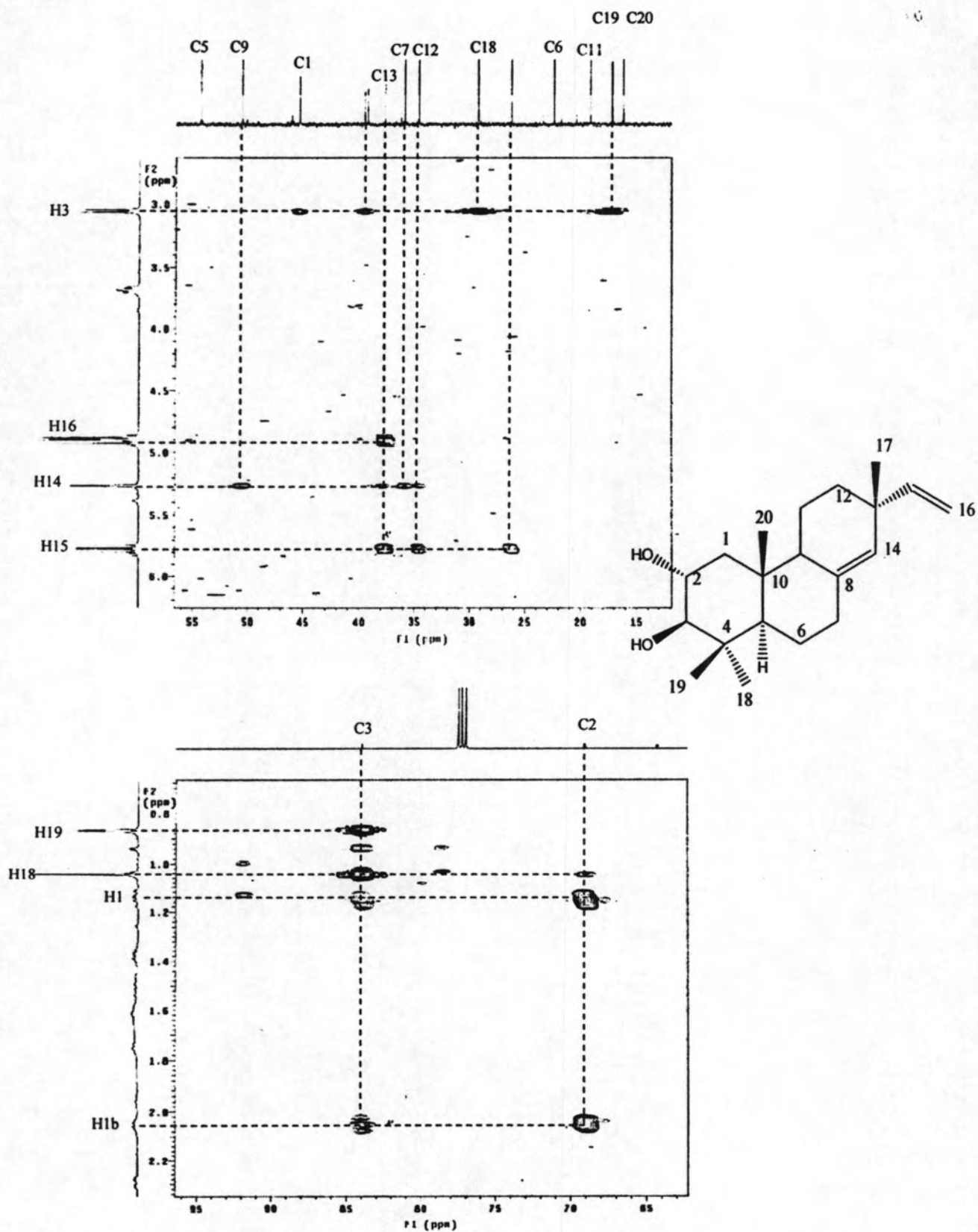


Figure 54 The expanded 500 MHz HMBC spectrum of compound B-4 (in CDCl_3)

(δ_{H} 3.0-6.0 ppm, δ_{C} 14-55 ppm and δ_{H} 0.8-2.3 ppm, δ_{C} 63-95 ppm)

VITA

Miss Nidchaporn Wachirattanapongmetee was born on August 1, 1980 in Yasothorn, Thailand. She received her Bachelor's degree of Science in Pharmacy in 2004 from the Faculty of Pharmaceutical Sciences, Ubonratchathani University, Thailand. She is currently holding a position as a pharmacist at Burapha University Hospital, Chonburi, Thailand.