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**APPENDIX**

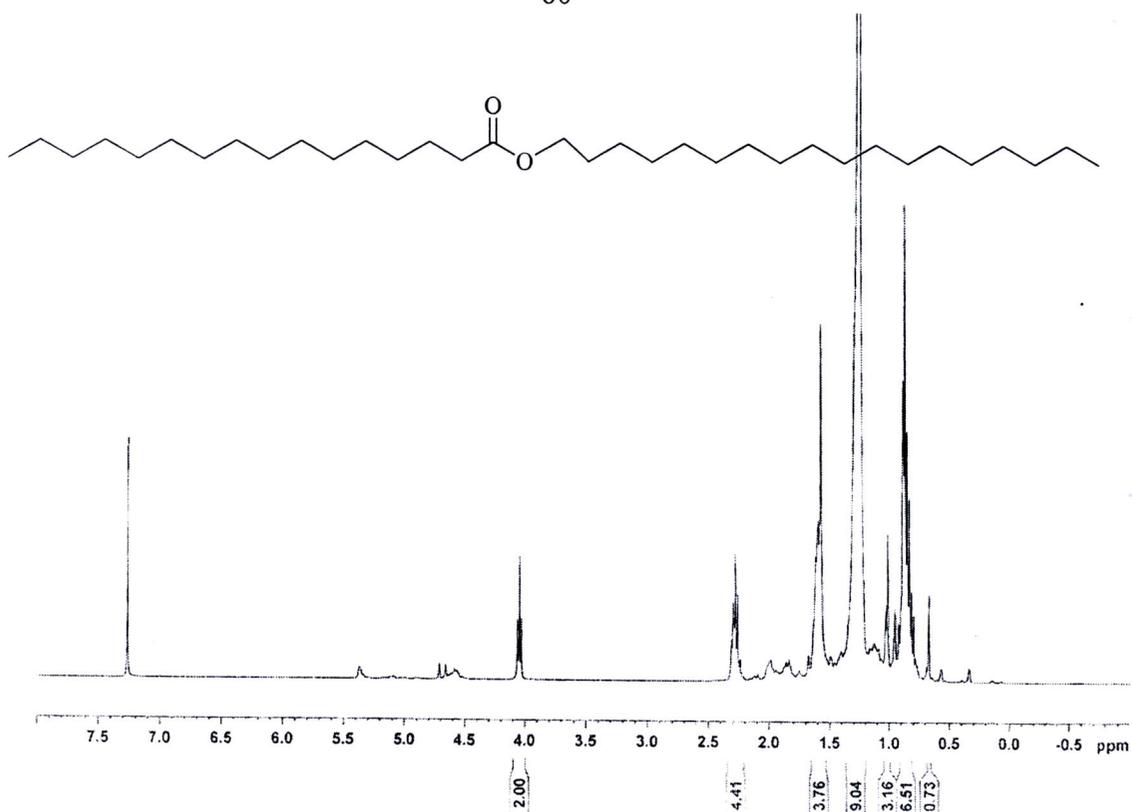


Figure 7  $^1\text{H}$  NMR spectrum of steryl palmitate (26)

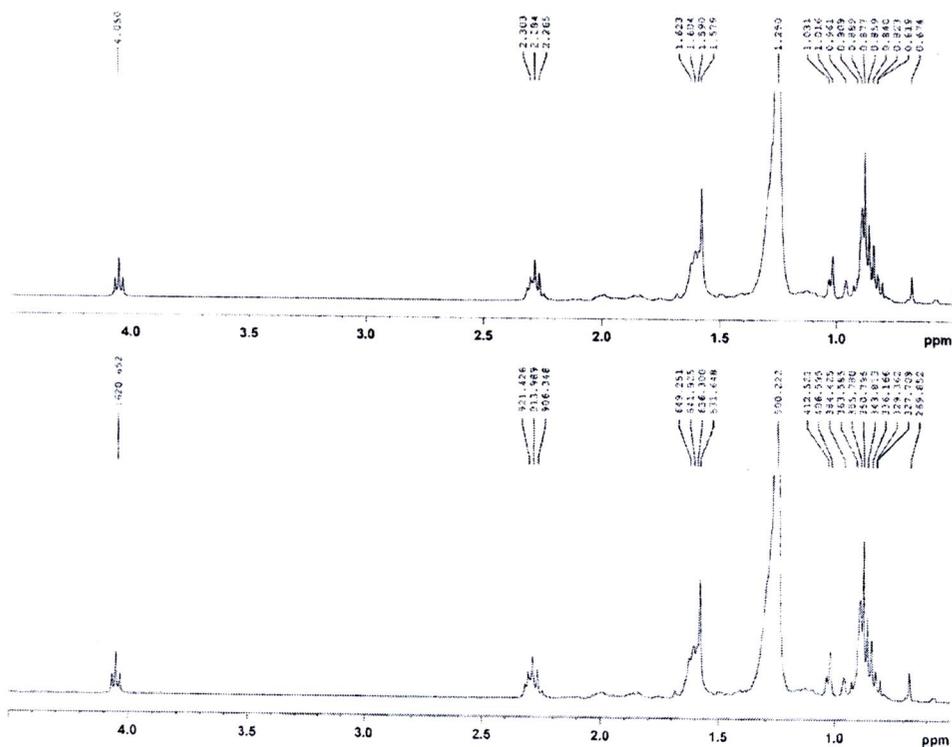


Figure 8 Expansion of  $^1\text{H}$  NMR spectrum of steryl palmitate (26)

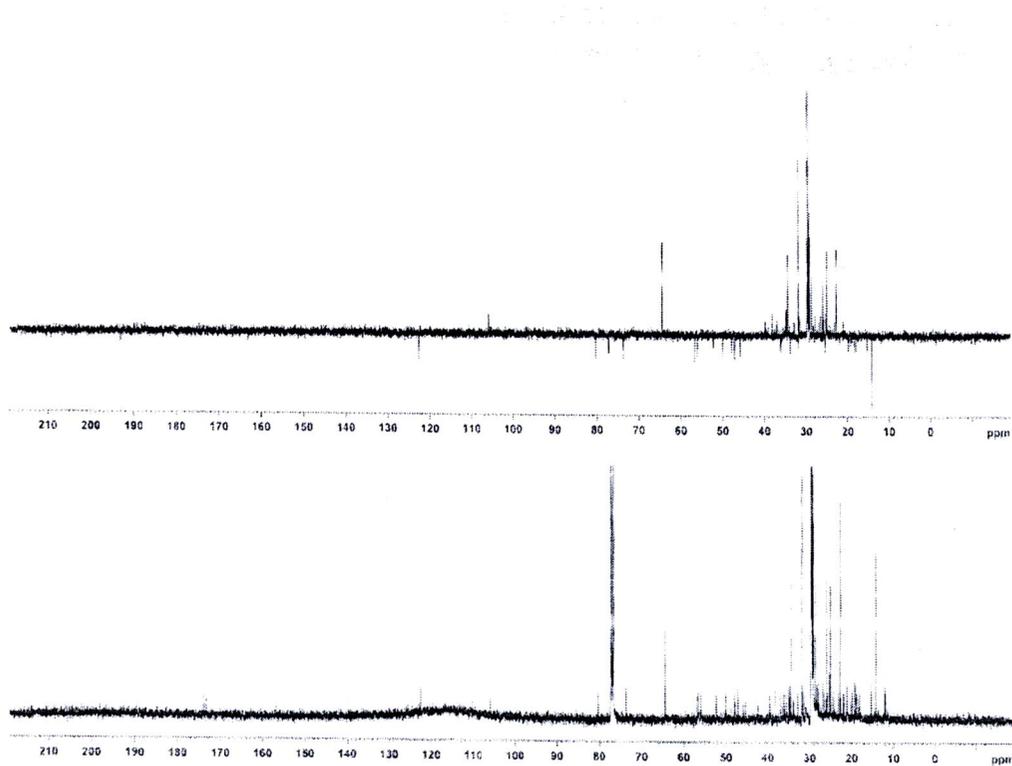


Figure 9  $^{13}\text{C}$  NMR and DEPT 135 spectra steryl palmitate (26)

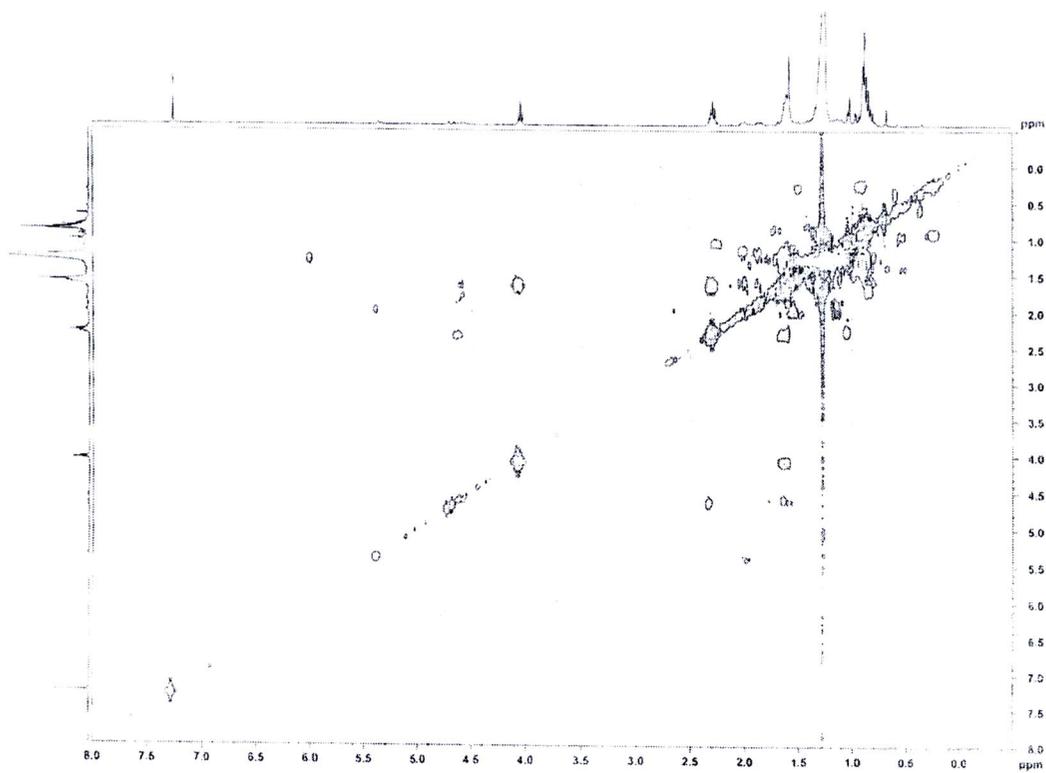
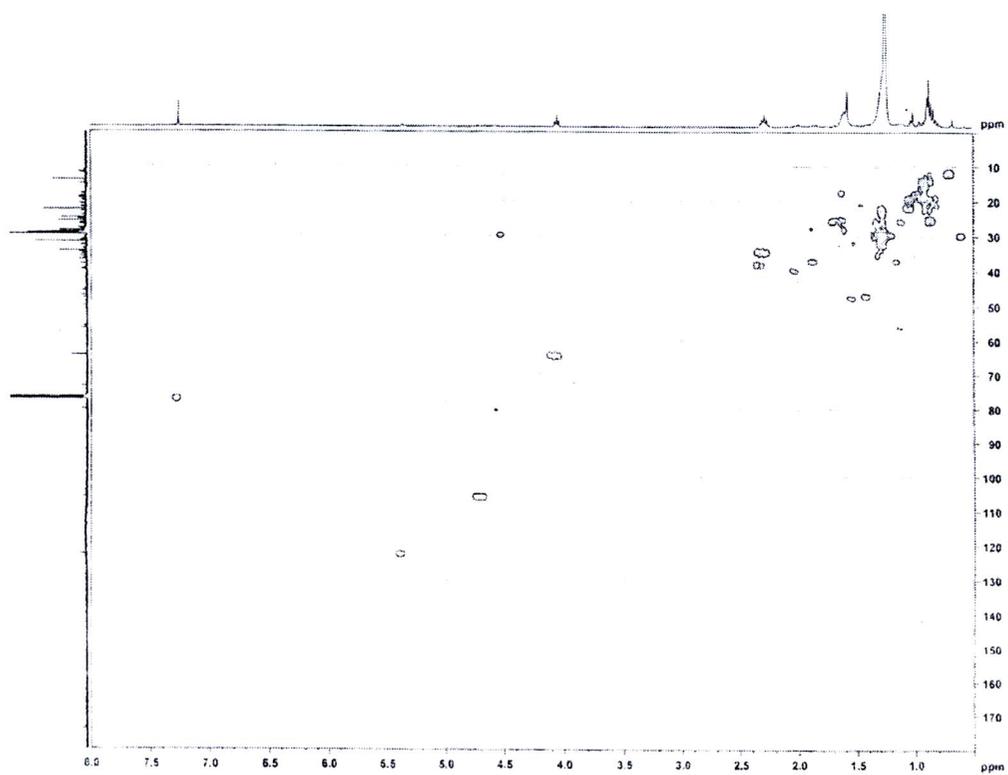
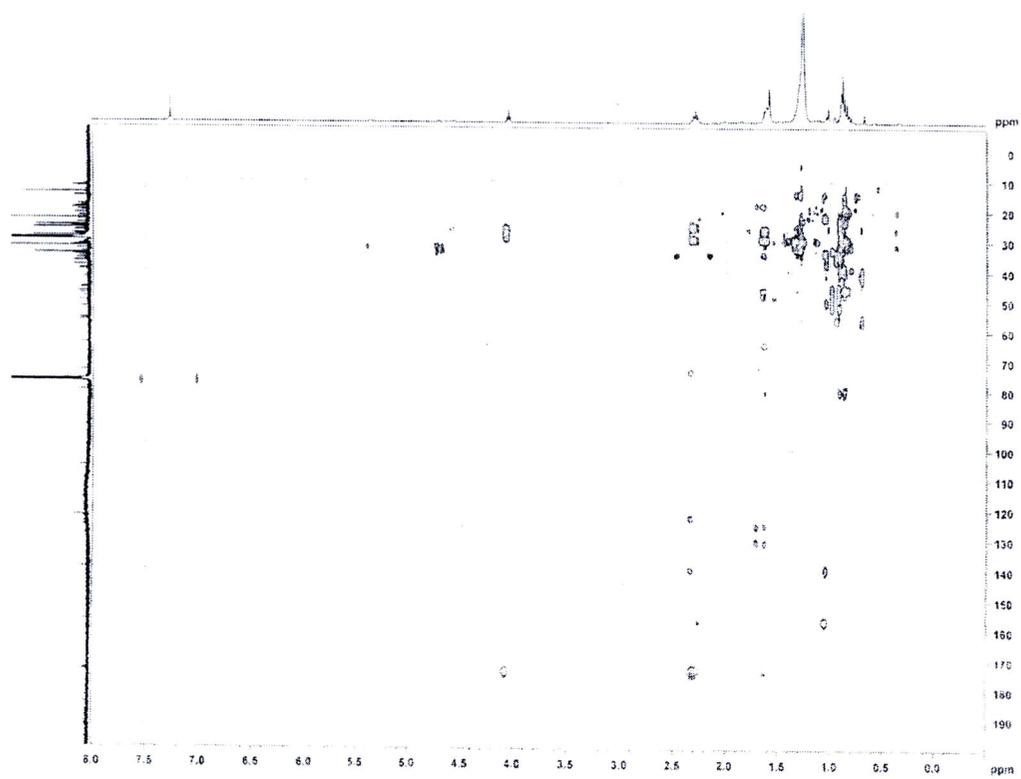


Figure 10 COSY spectrum of steryl palmitate (26)



**Figure 11** HMQC spectrum of steryl palmitate (26)



**Figure 12** HMBC spectrum of steryl palmitate (26)

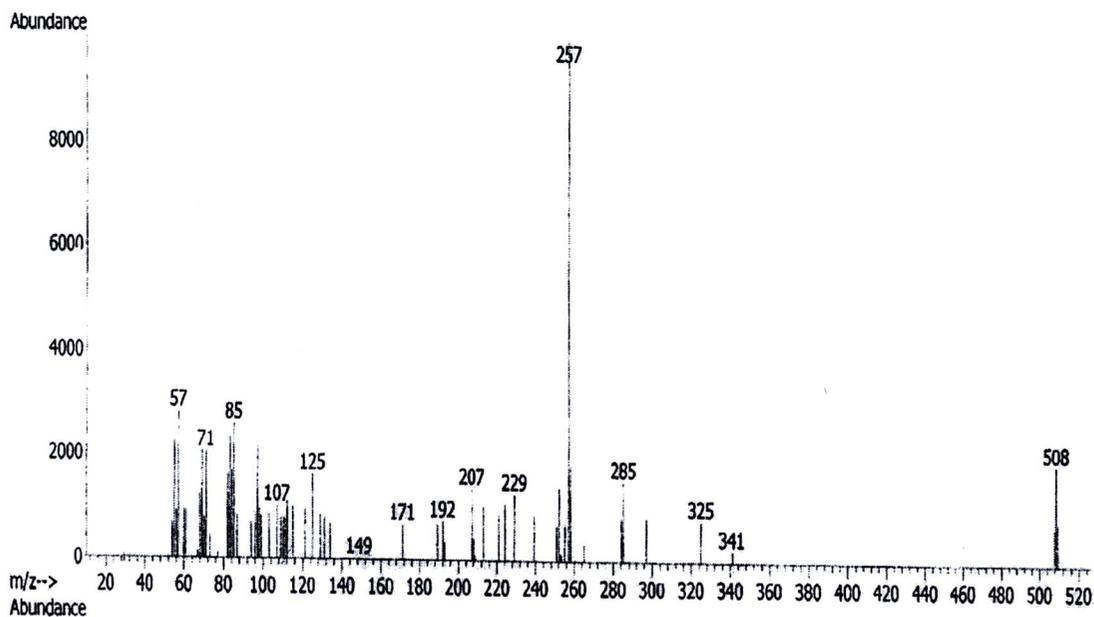


Figure 13 Mass spectrum of steryl palmitate (27)

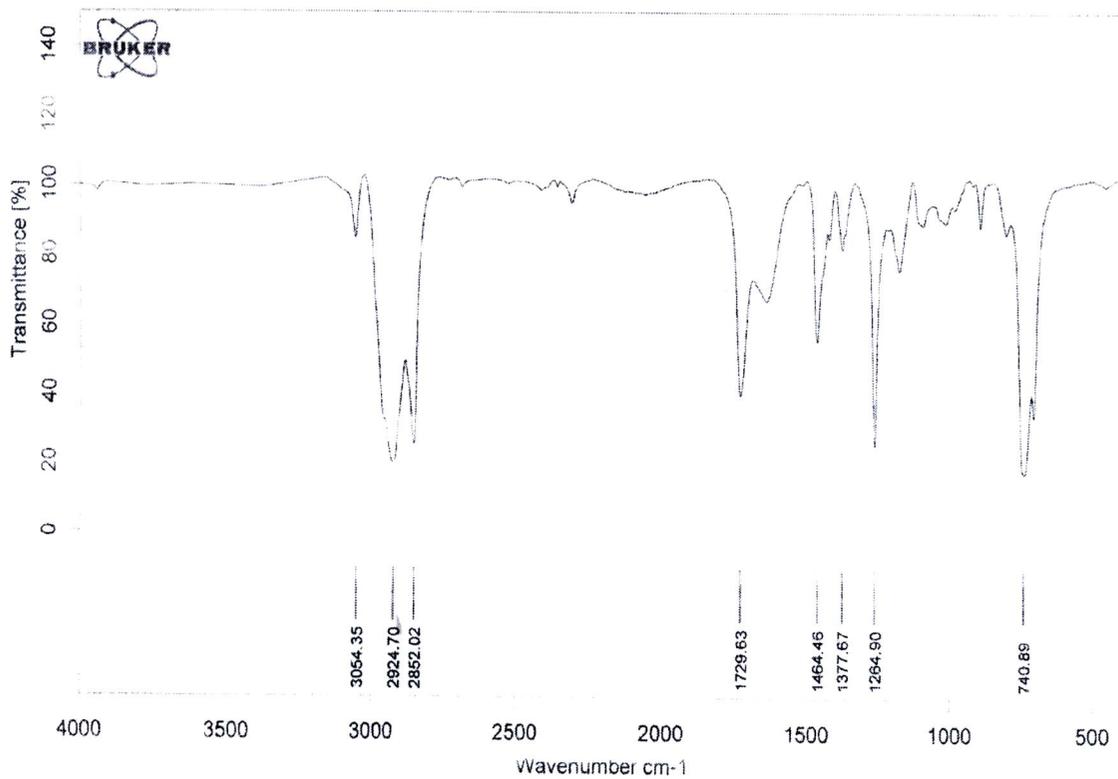


Figure 14 IR spectrum of steryl palmitate (27)

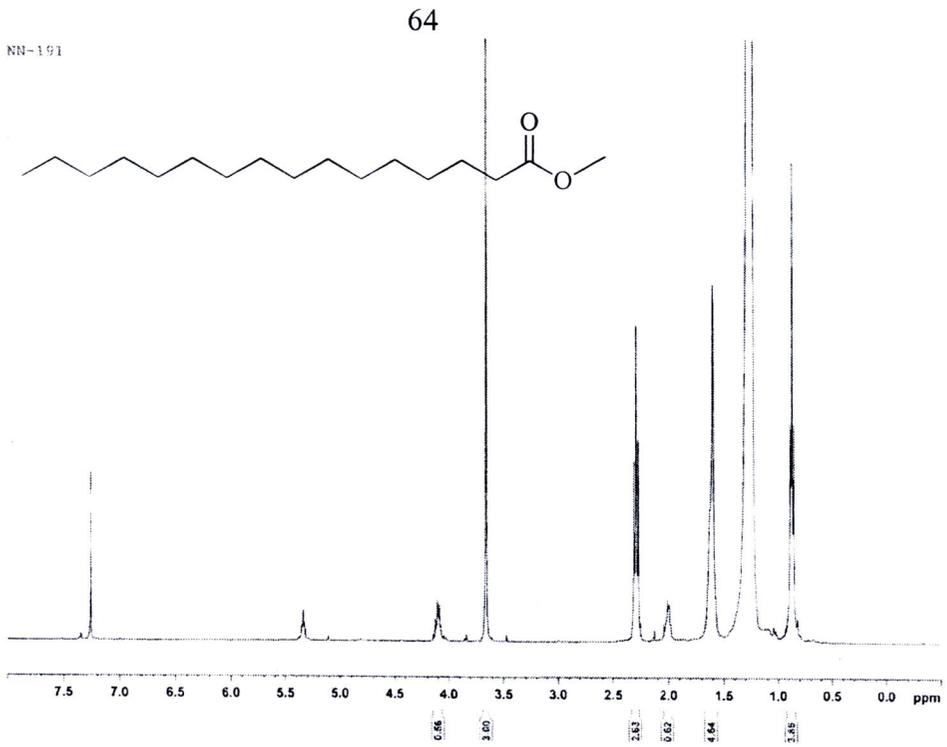


Figure 15 <sup>1</sup>H NMR spectrum of methyl palmitate (27)

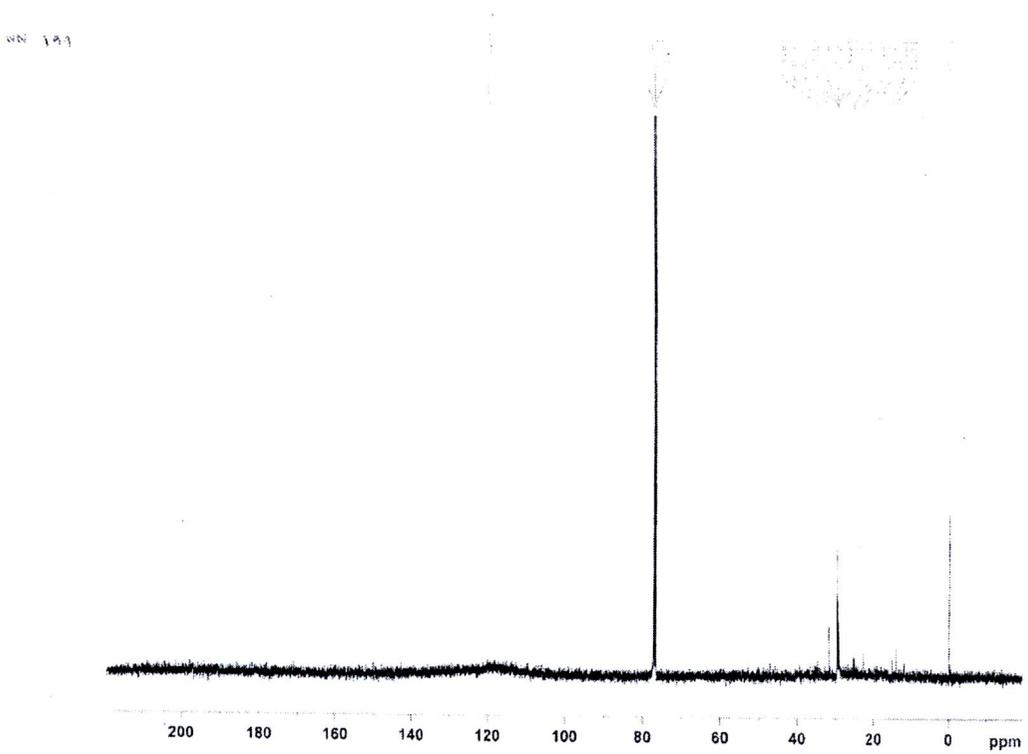
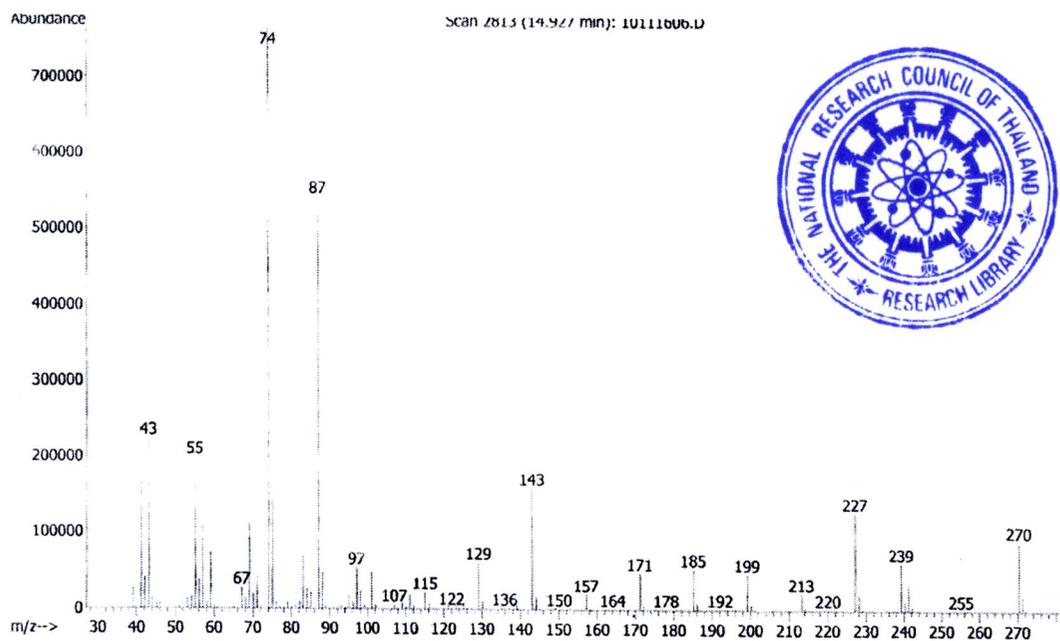
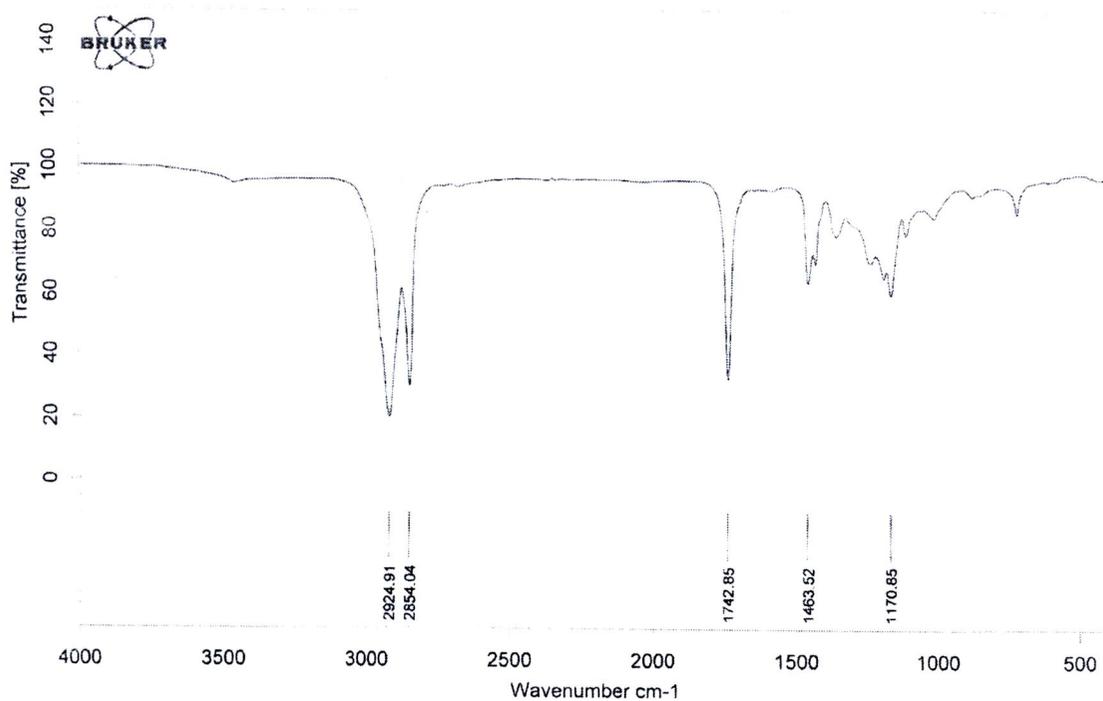


Figure 16 <sup>13</sup>C NMR spectrum of methyl palmitate (27)



**Figure 17** Mass spectrum of methyl palmitate (27)



**Figure 18** IR spectrum of methyl palmitate (27)

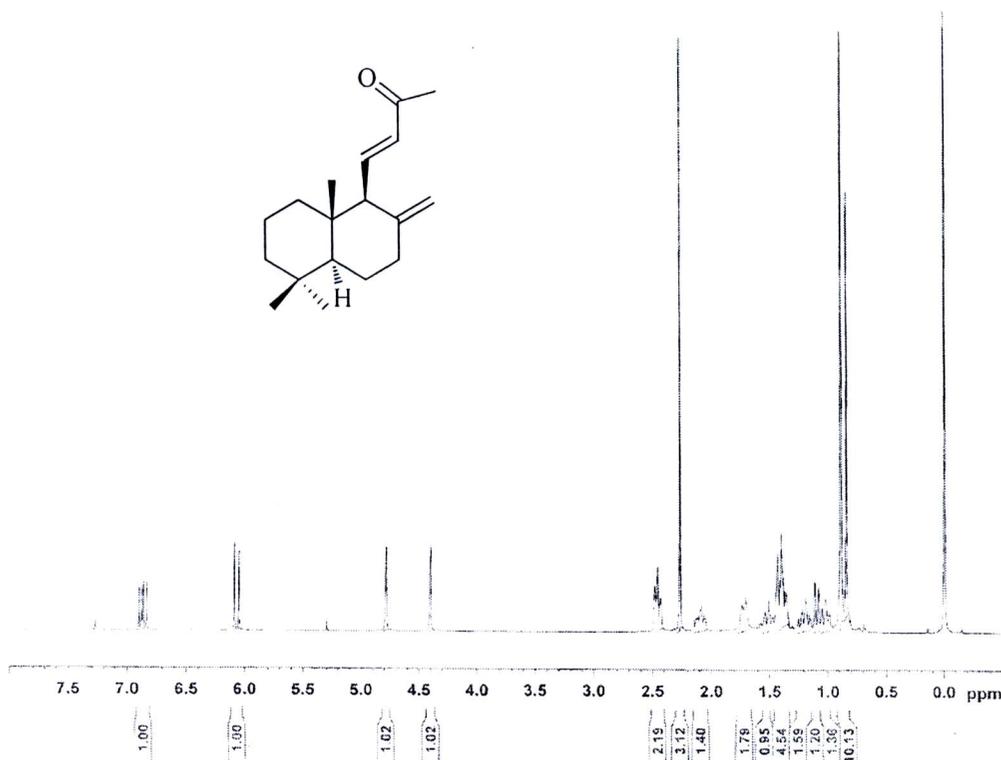


Figure 19  $^1\text{H}$  NMR spectrum of *(E)*-15,16-bisnorlabda-8(17),11-dien-13-one (28)

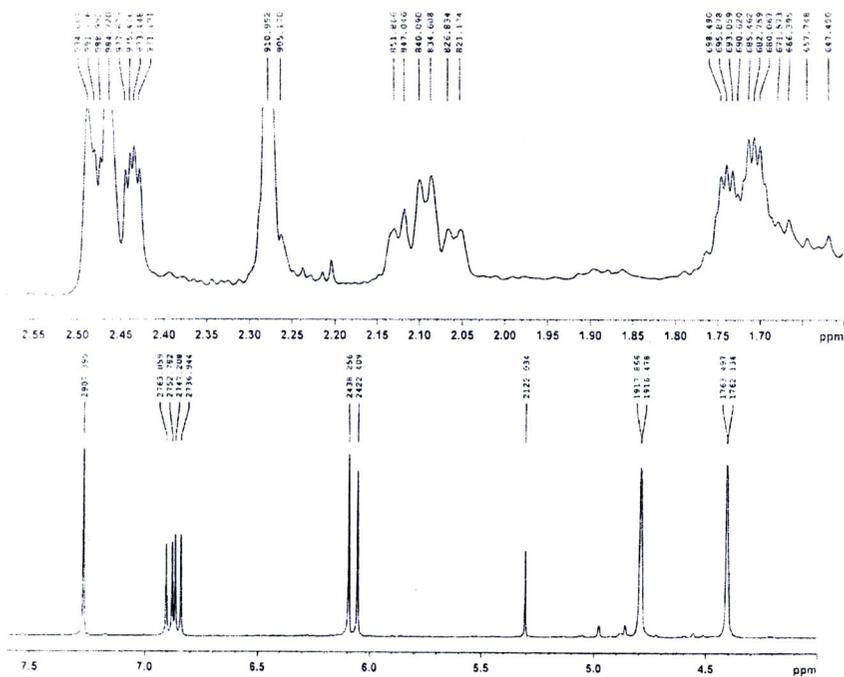


Figure 20 Expansion of  $^1\text{H}$  NMR spectrum of *(E)*-15,16-bisnorlabda-8(17),11-dien-13-one (28)

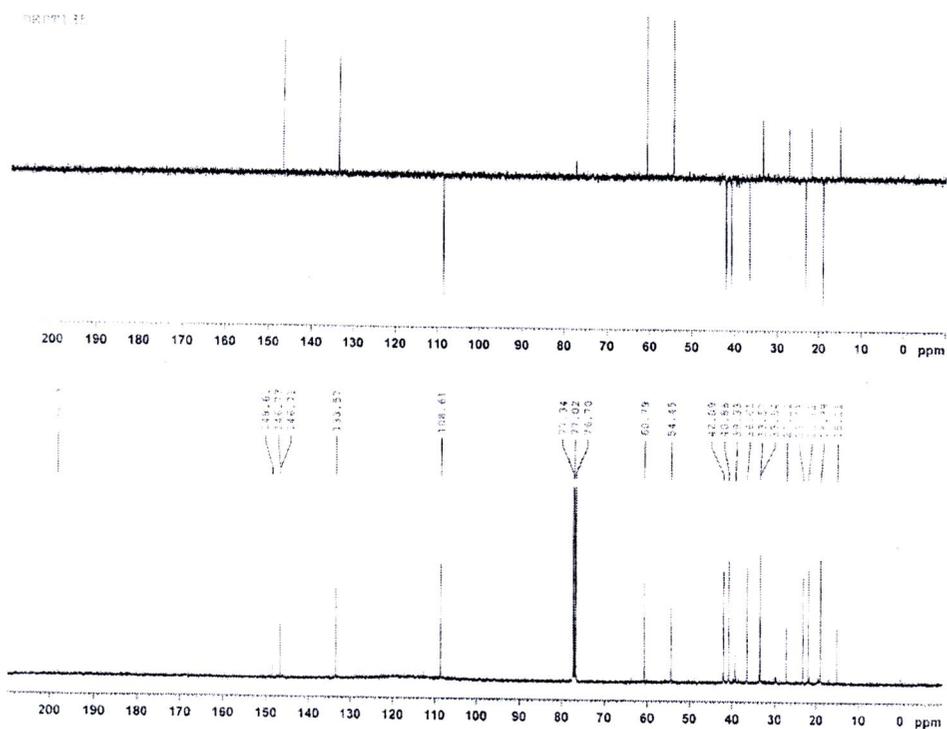


Figure 21  $^{13}\text{C}$  NMR and DEPT 135 spectra (*E*)-15,16-bisnorlabda-8(17),11-dien-13-one (**28**)

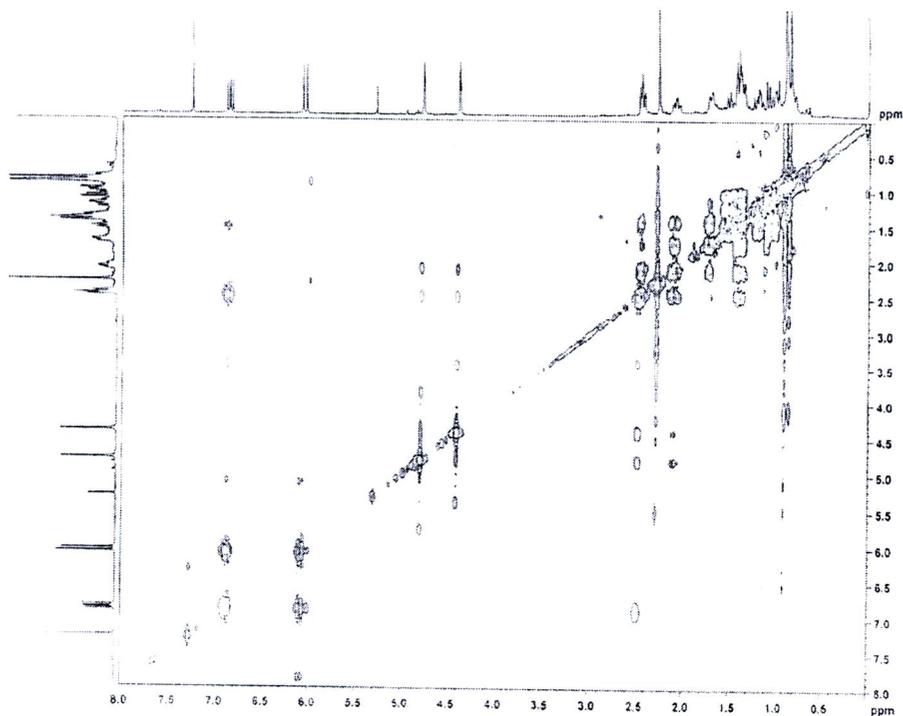


Figure 22 COSY spectrum of (*E*)-15,16-bisnorlabda-8(17),11-dien-13-one (**28**)

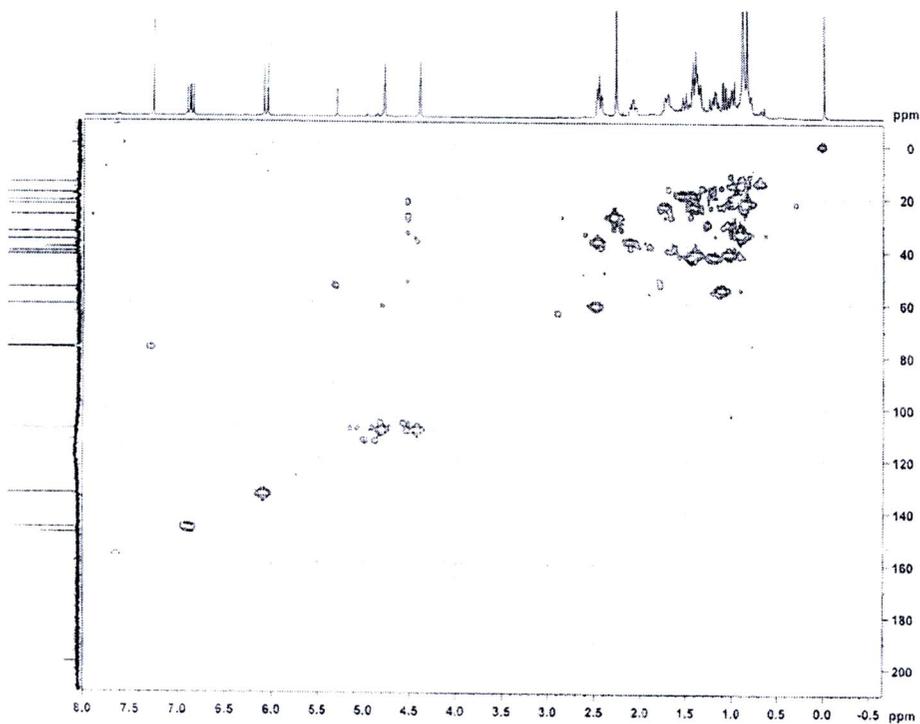


Figure 23 HMBC spectrum of (*E*)-15,16-bisnorlabda-8(17),11-dien-13-one (**28**)

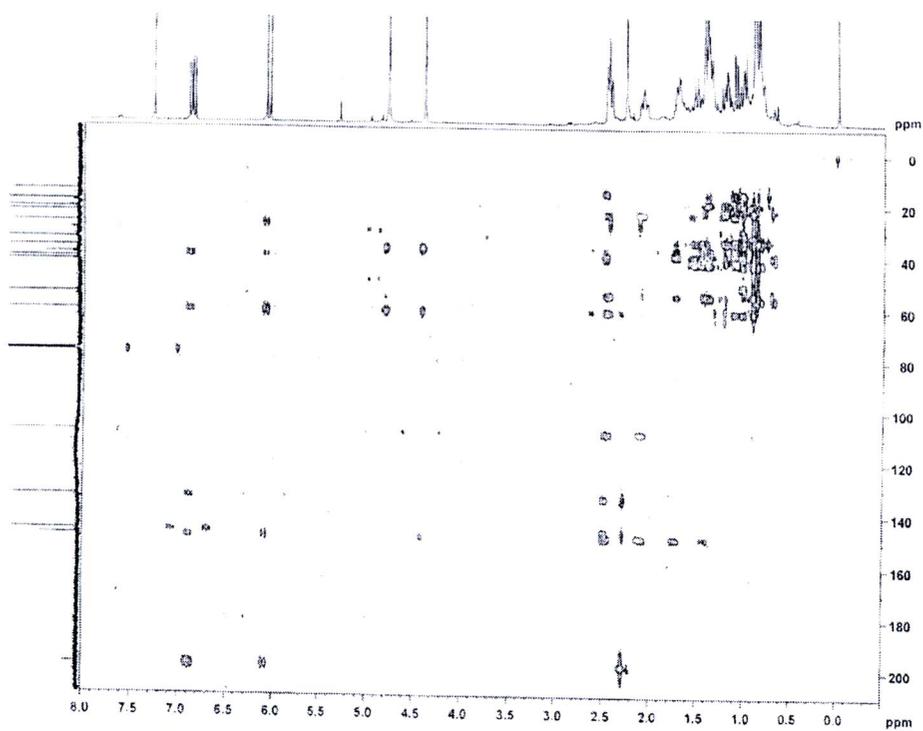


Figure 24 HMBC spectrum of (*E*)-15,16-bisnorlabda-8(17),11-dien-13-one (**28**)

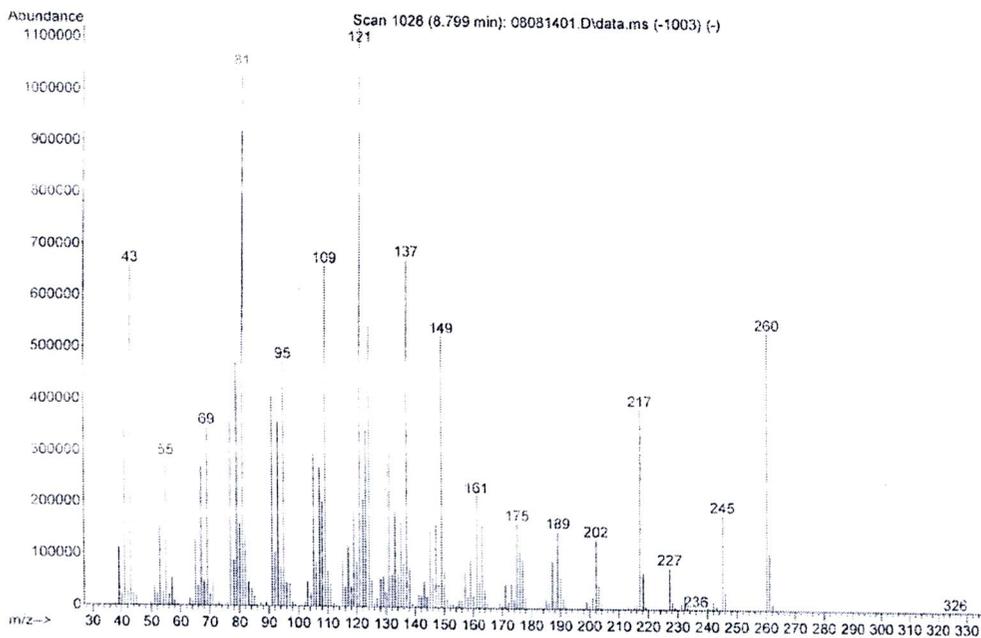


Figure 25 Mass spectrum of (*E*)-15,16-bisnorlabda-8(17),11-dien-13-one (**28**)

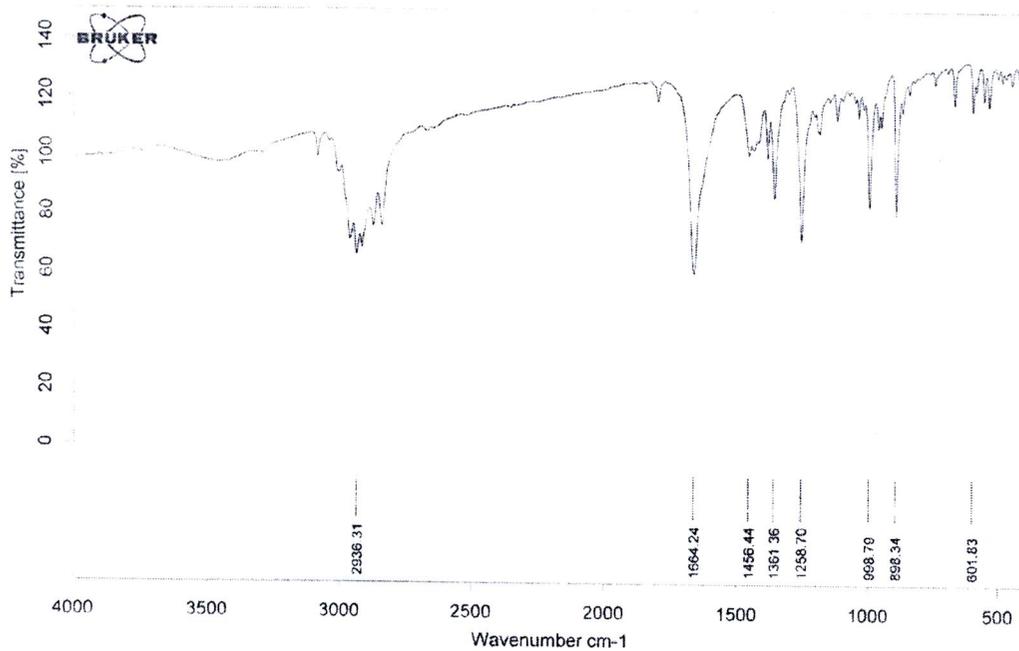


Figure 26 IR spectrum of (*E*)-15,16-bisnorlabda-8(17),11-dien-13-one (**28**)

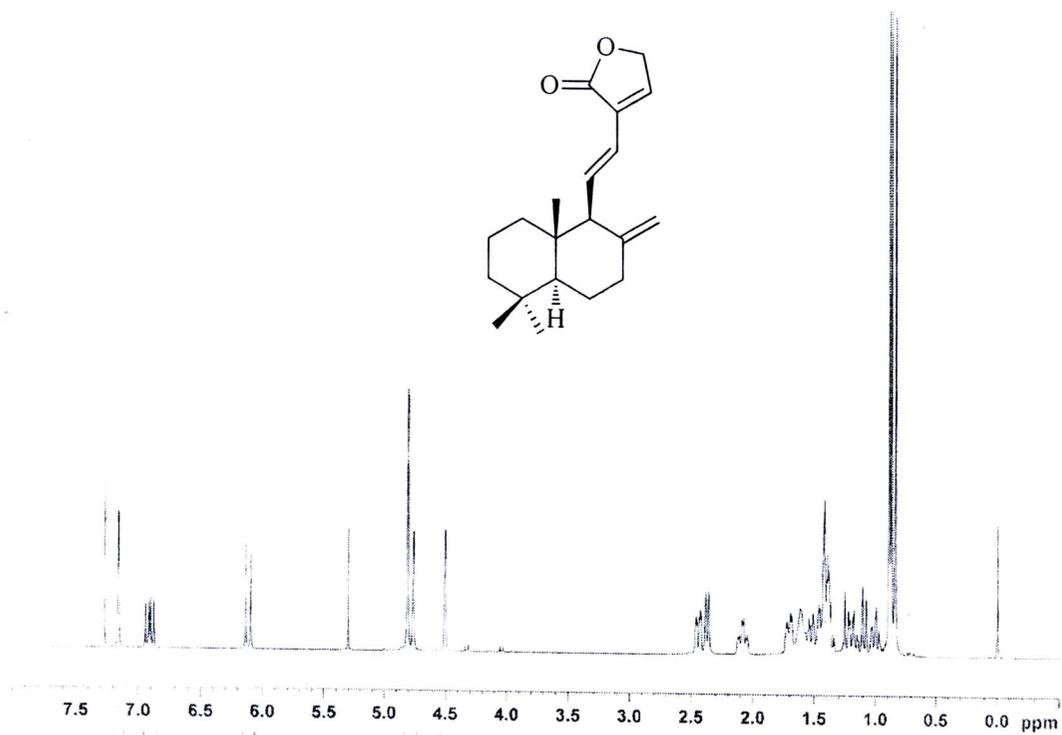


Figure 27  $^1\text{H}$  NMR spectrum of villosin (29)

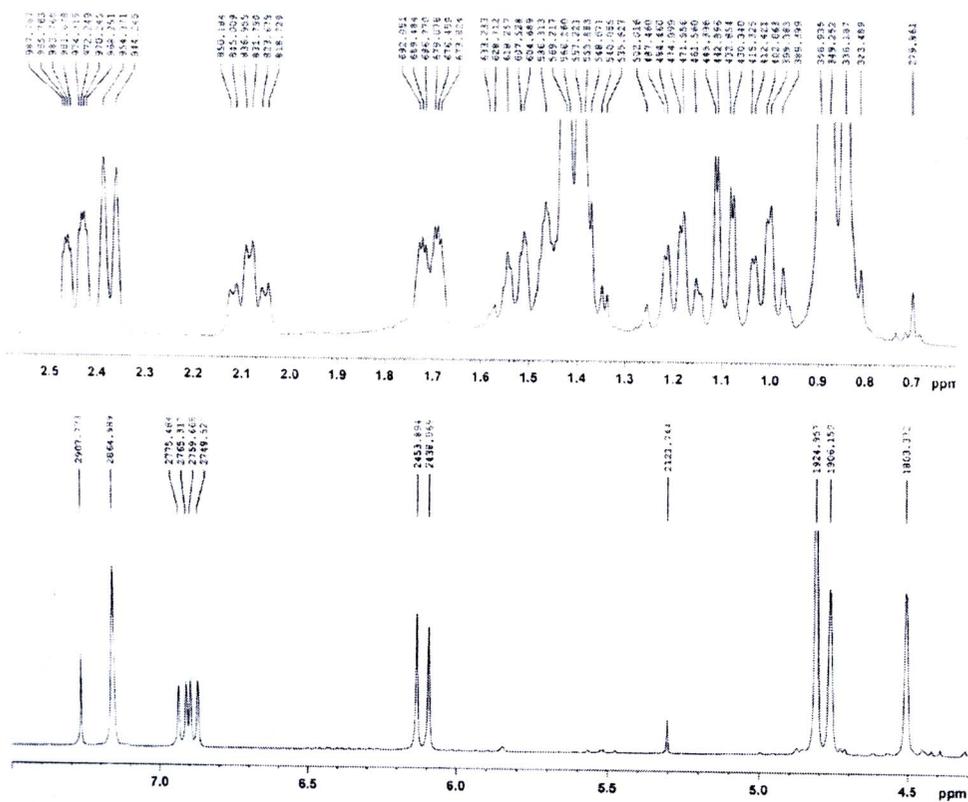


Figure 28 Expansion of  $^1\text{H}$  NMR spectrum of villosin (29)

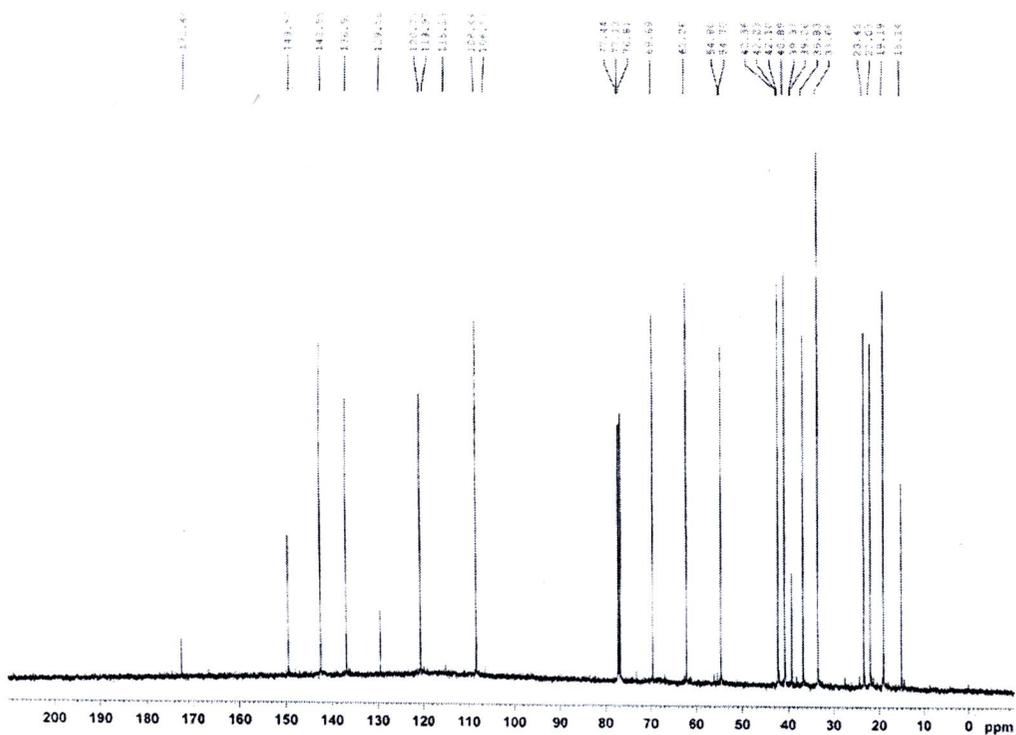


Figure 29  $^{13}\text{C}$  NMR spectrum of villosin (29)

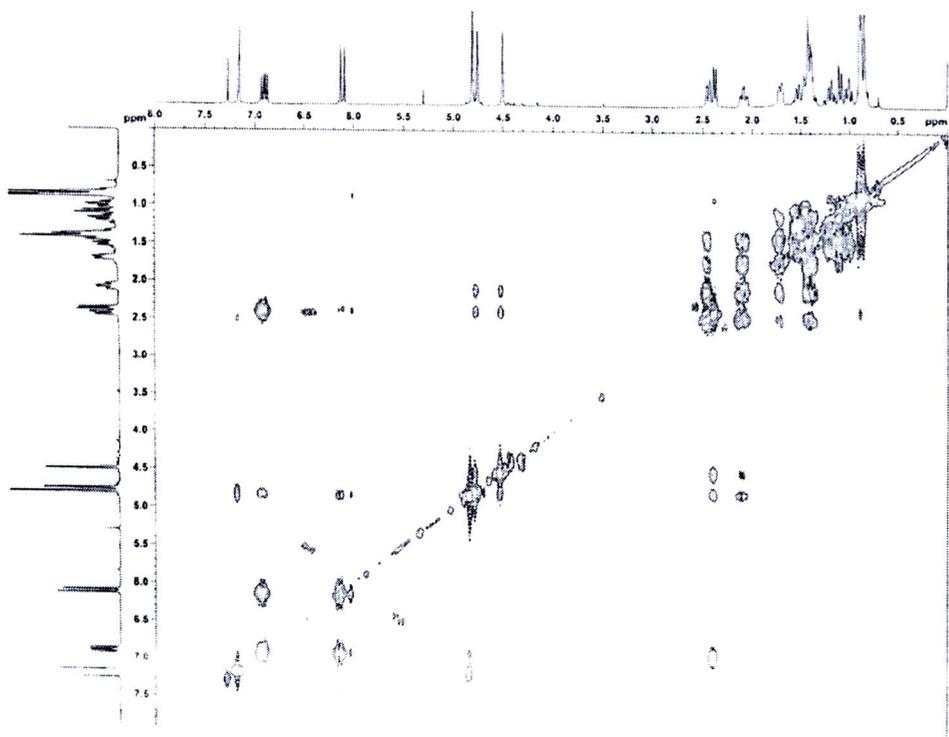


Figure 30 COSY spectrum of villosin (29)

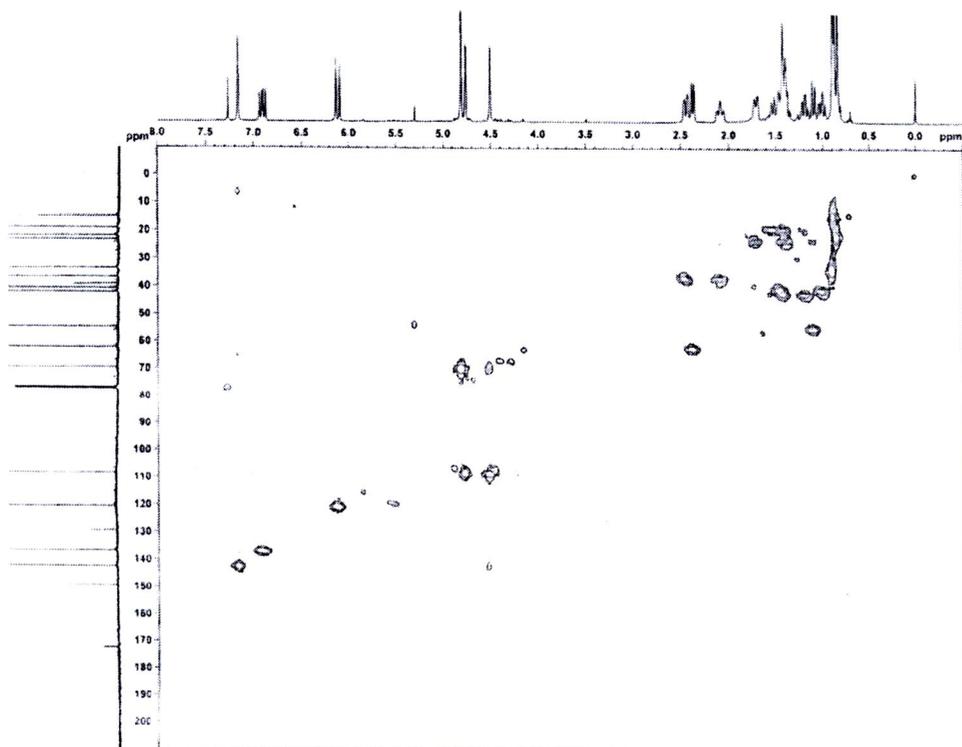


Figure 31 HMQC spectrum of villosin (29)

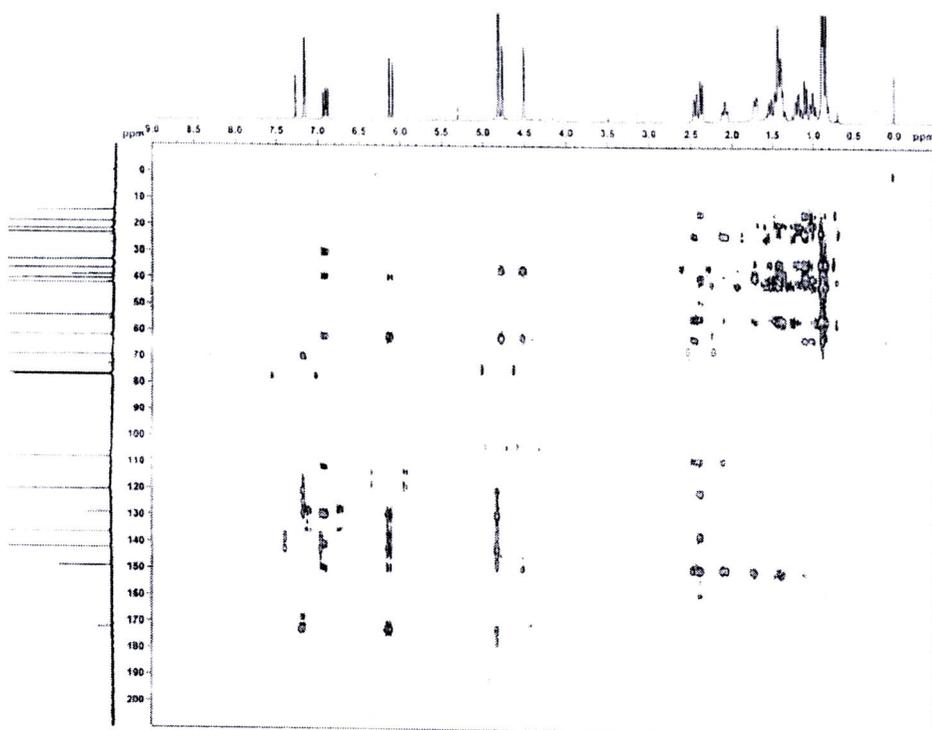


Figure 32 HMBC spectrum of villosin (29)

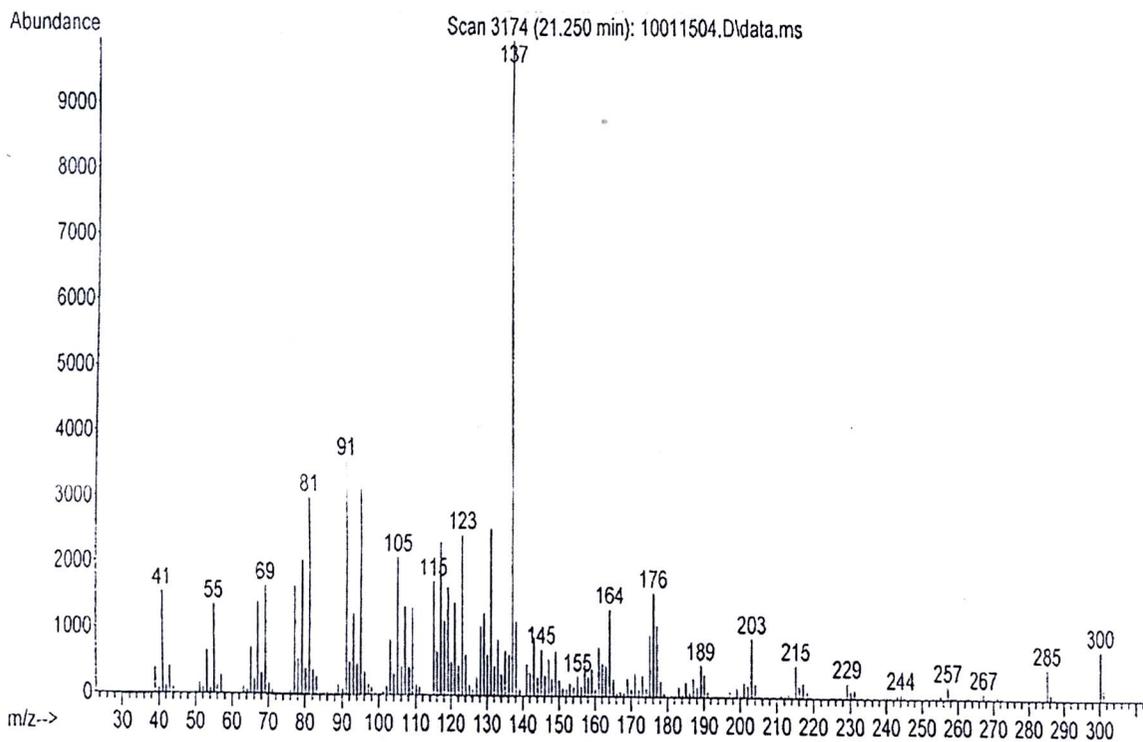


Figure 33 Mass spectrum of villosin (29)

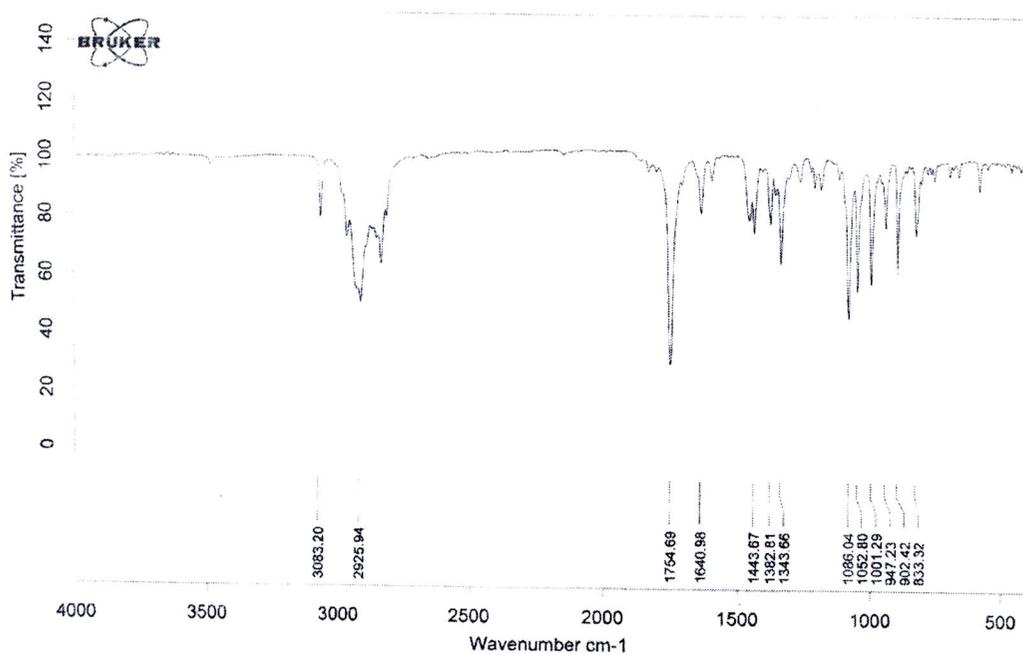
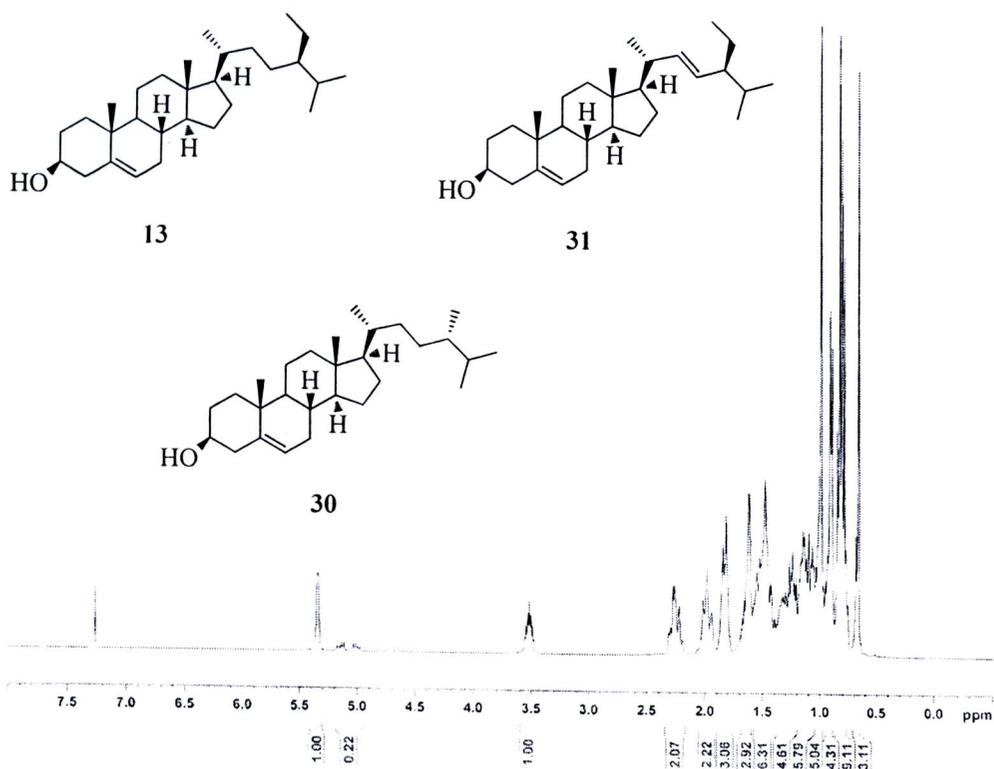
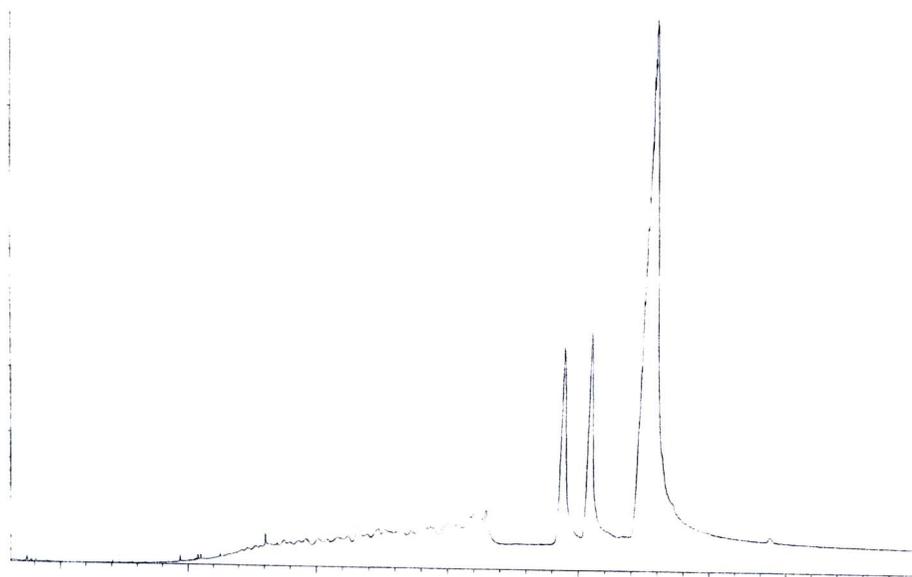


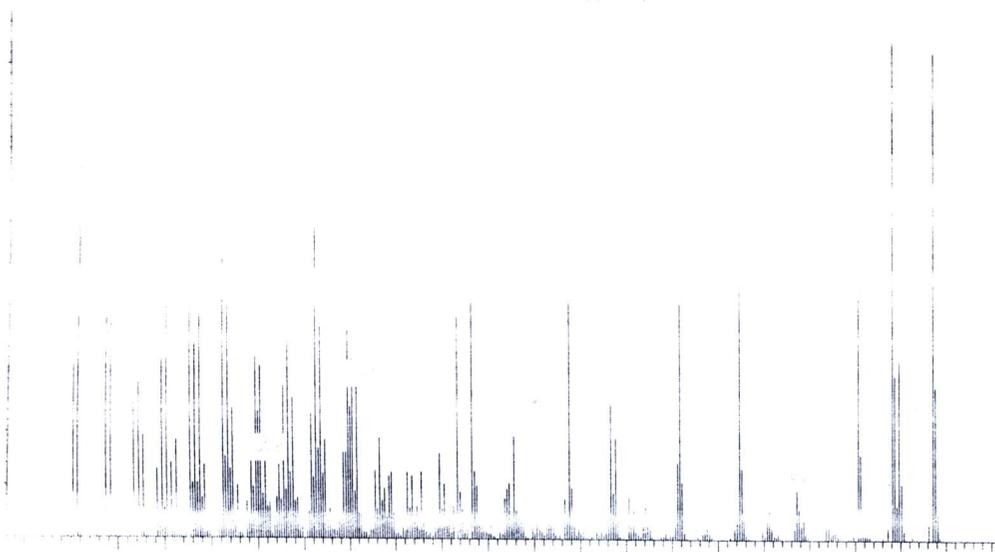
Figure 34 IR spectrum of villosin (29)



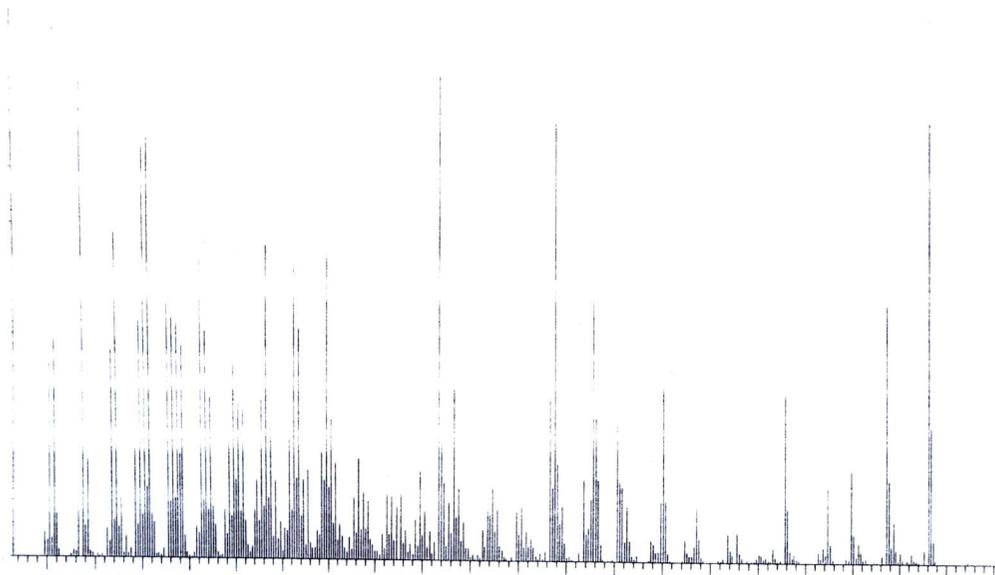
**Figure 35**  $^1\text{H}$  NMR spectrum of mixture of  $\beta$ -sitosterol (13), stigmasterol (30), and campesterol (31)



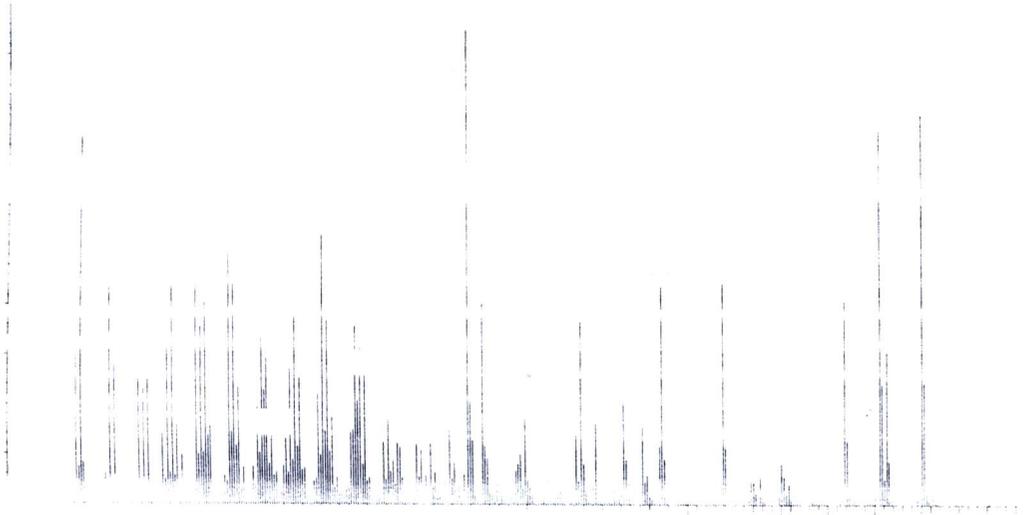
**Figure 36** Total ion chromatogram of mixture of  $\beta$ -sitosterol (13), stigmasterol (30), and campesterol (31)



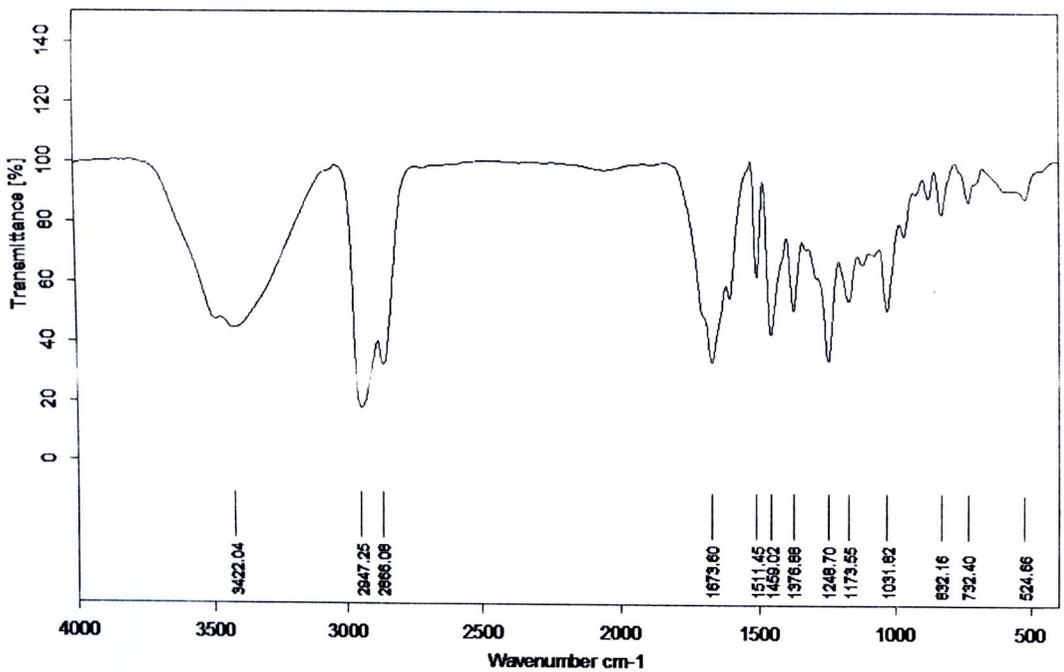
**Figure 37** Mass spectrum of  $\beta$ -sitosterol (13)



**Figure 38** Mass spectrum of stigmasterol (30)



**Figure 39** Mass spectrum of campesterol (31)



**Figure 40** IR spectrum of mixture of  $\beta$ -sitosterol (13), stigmasterol (30), and campesterol (31)



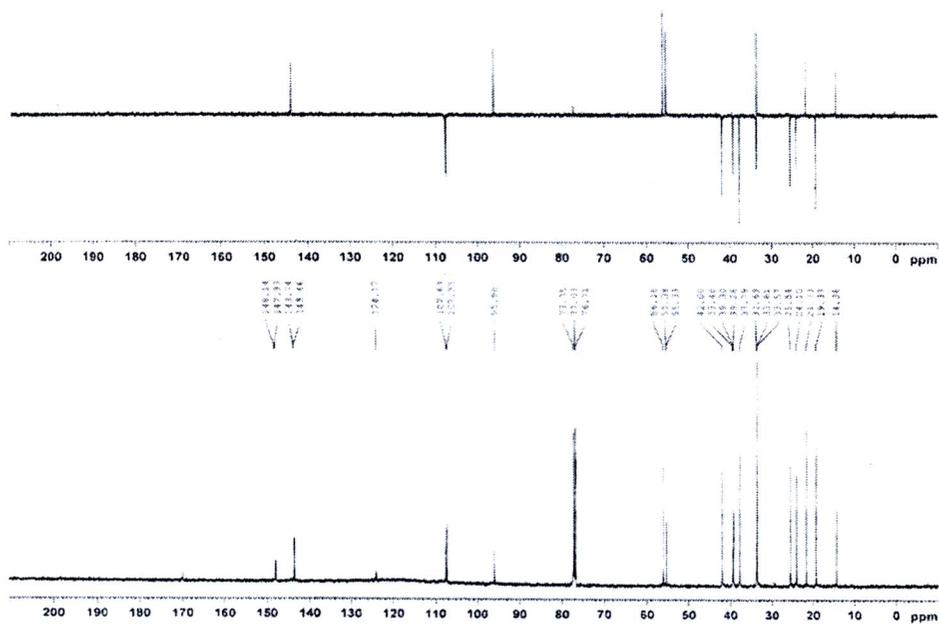


Figure 43  $^{13}\text{C}$  NMR and DEPT 135 spectra of coronarin D (32)

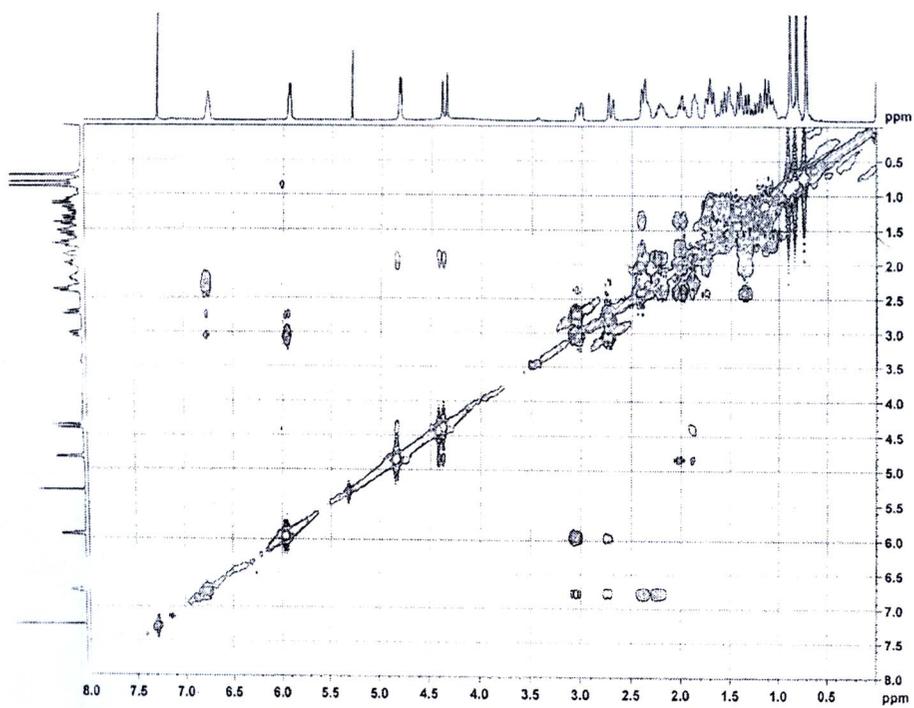


Figure 44 COSY spectrum of coronarin D (32)

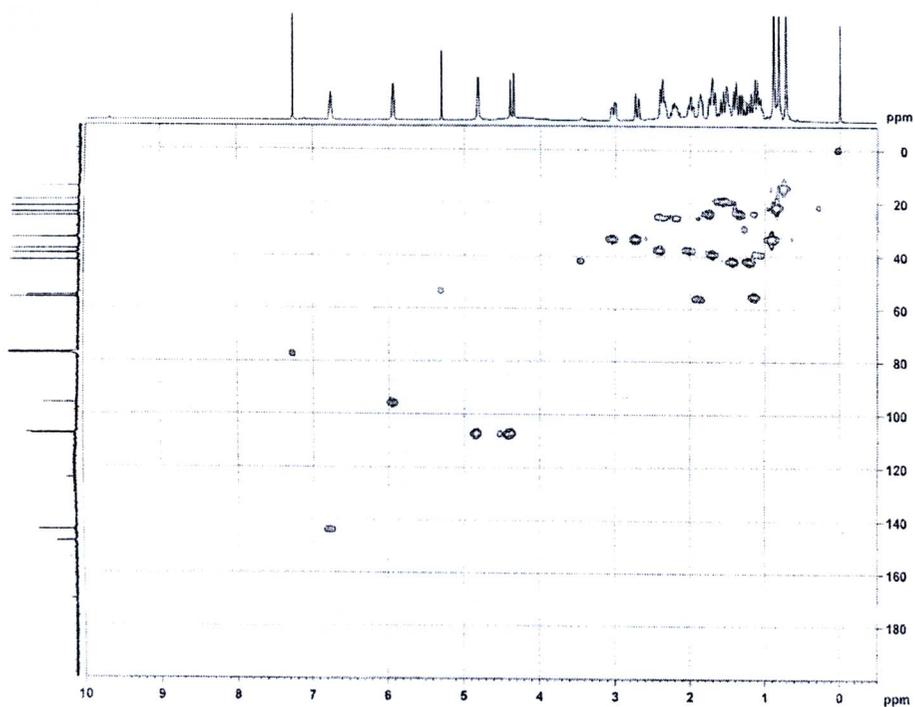


Figure 45 HMBC spectrum of coronarin D (32)

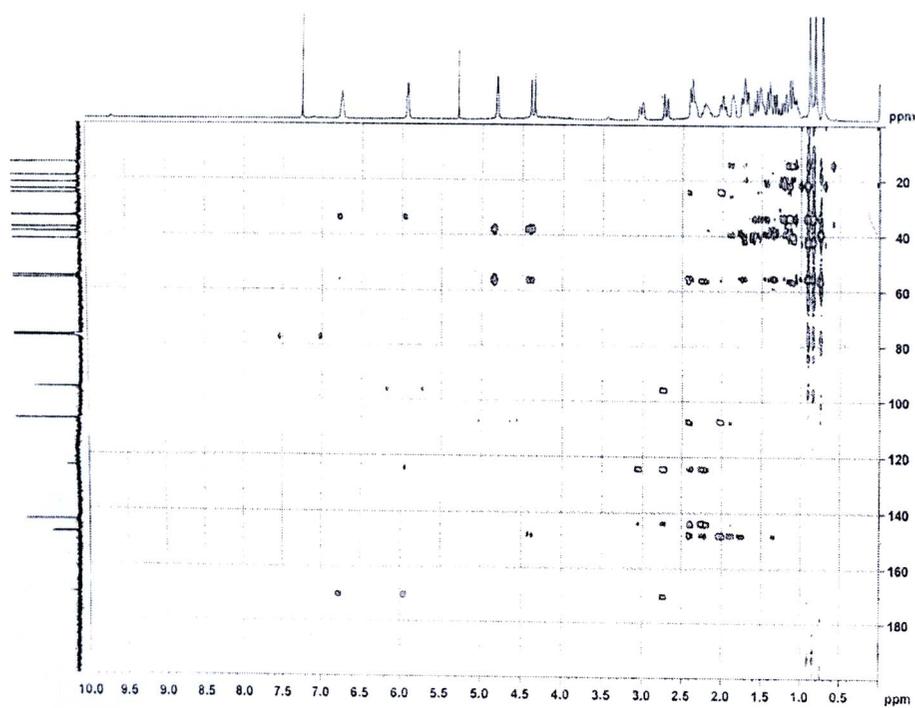


Figure 46 HMBC spectrum of coronarin D (32)

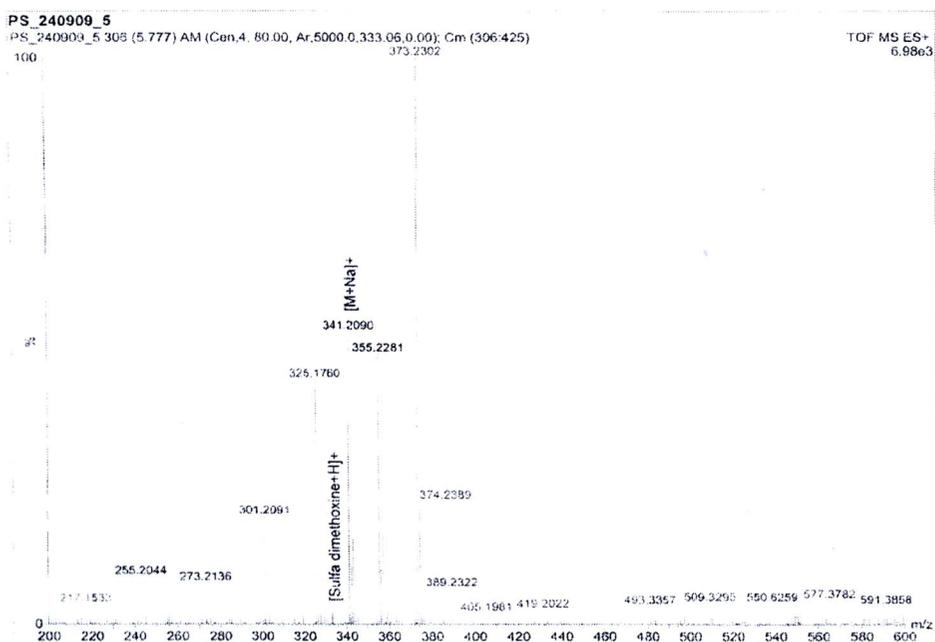


Figure 47 Mass spectrum of coronarin D (32)

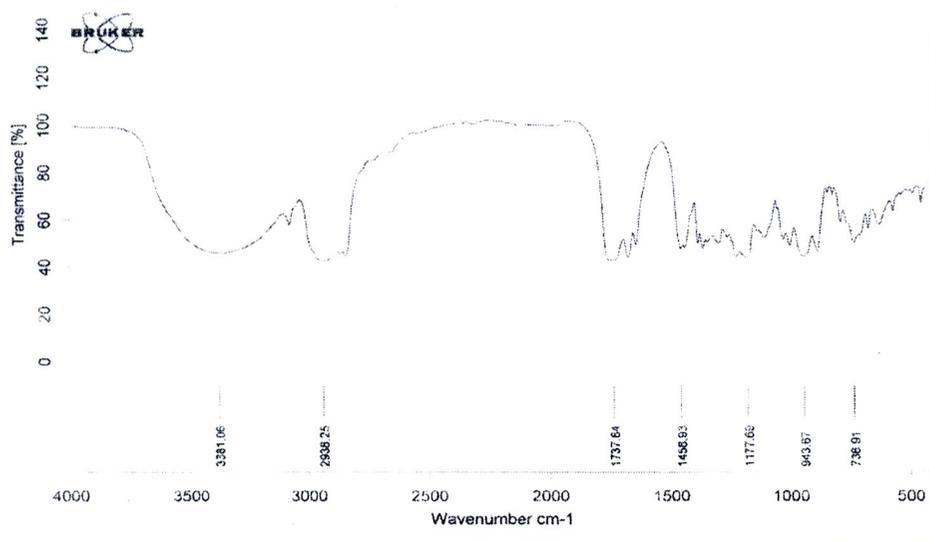


Figure 48 IR spectrum of coronarin D (32)

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