

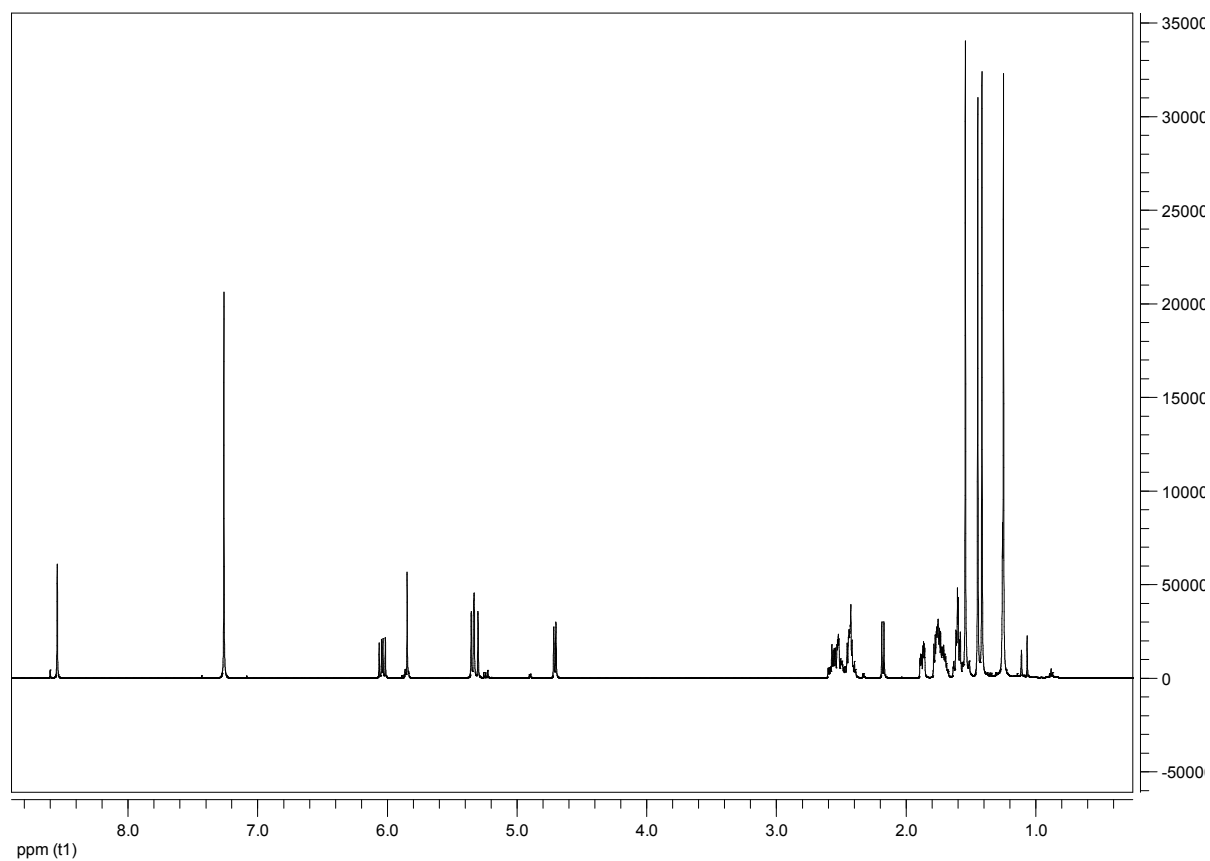
Diplopimarane, a phytotoxic *20-nor-ent*-Pimarane Produced by the Oak Pathogen *Diplodia quercivora*

Anna Andolfi,[†] Lucia Maddau,[‡] Sara Basso,[†] Benedetto T. Linaldeddu,[‡] Alessio Cimmino,[†] Bruno Scanu,[‡] Antonio Deidda,[‡] Angela Tuzi,[†] and Antonio Evidente^{*,†}

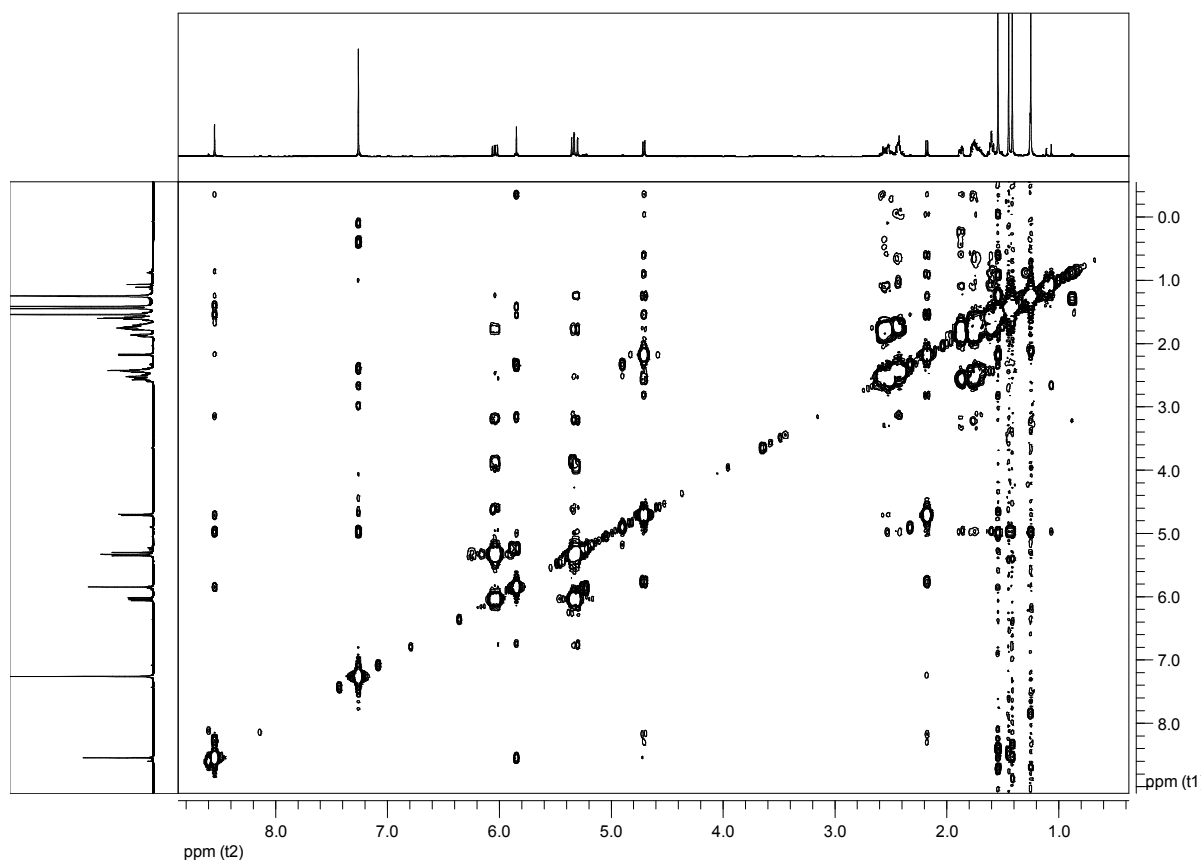
[†]Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Complesso Universitario Monte Sant' Angelo, Via Cintia 4, 80126, Napoli, Italy

[‡] Dipartimento di Agraria, Sezione di Patologia vegetale ed Entomologia, Università degli Studi di Sassari, Viale Italia 39, 07100 Sassari, Italy

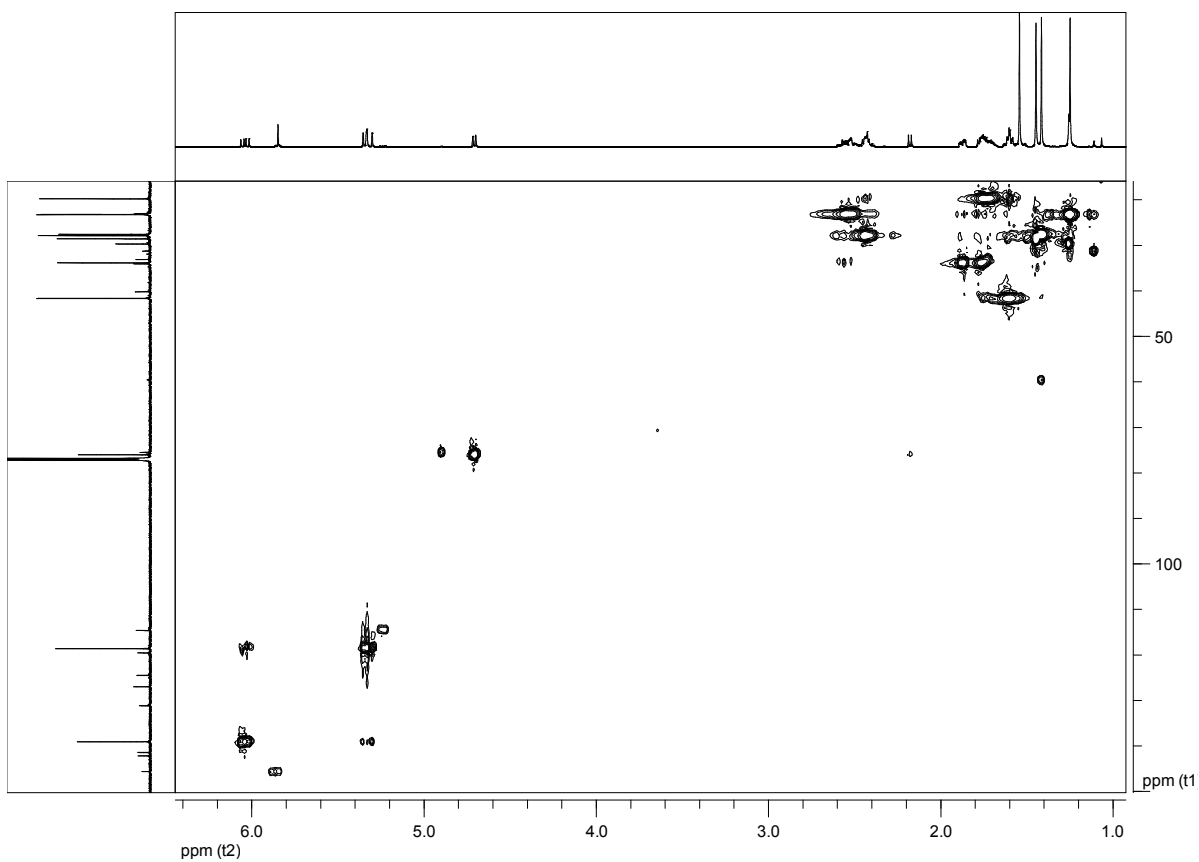
^1H NMR spectrum of diplopimarane (**1**)



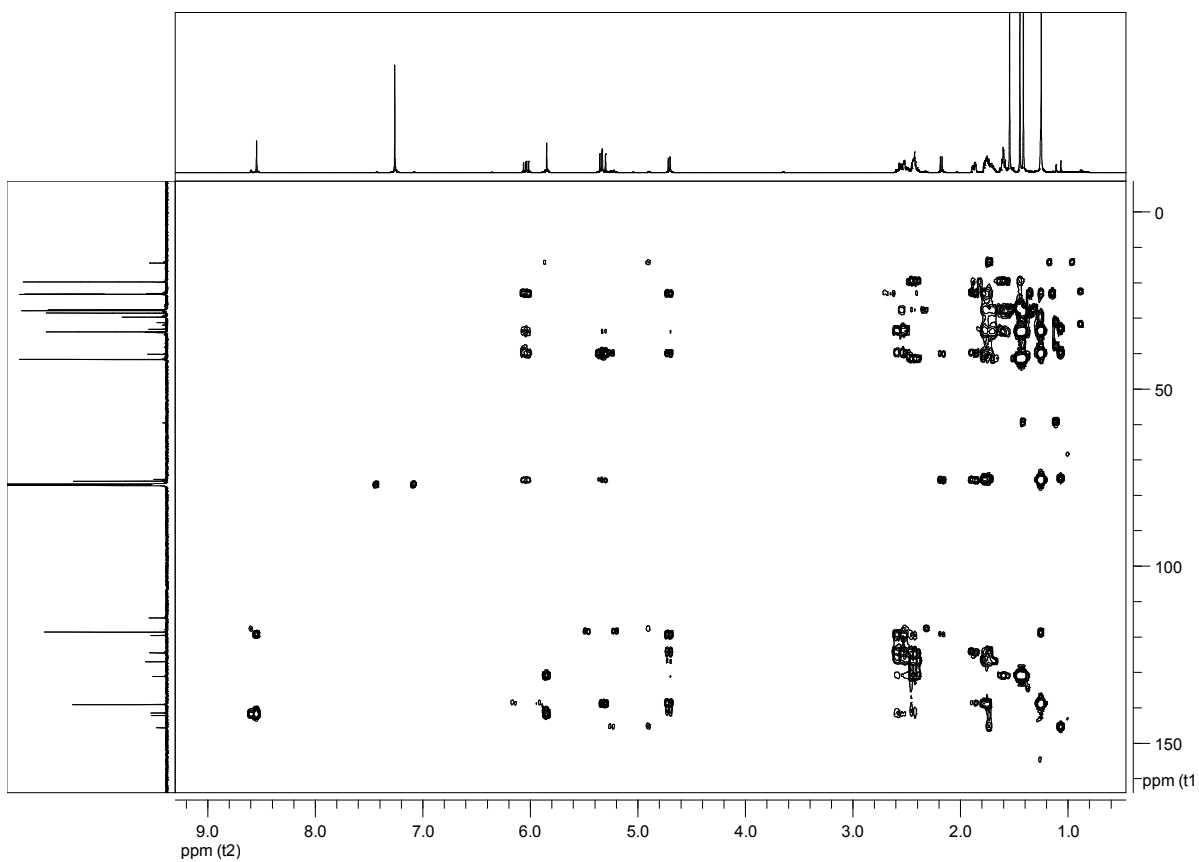
COSY spectrum of diplopimarane (**1**)



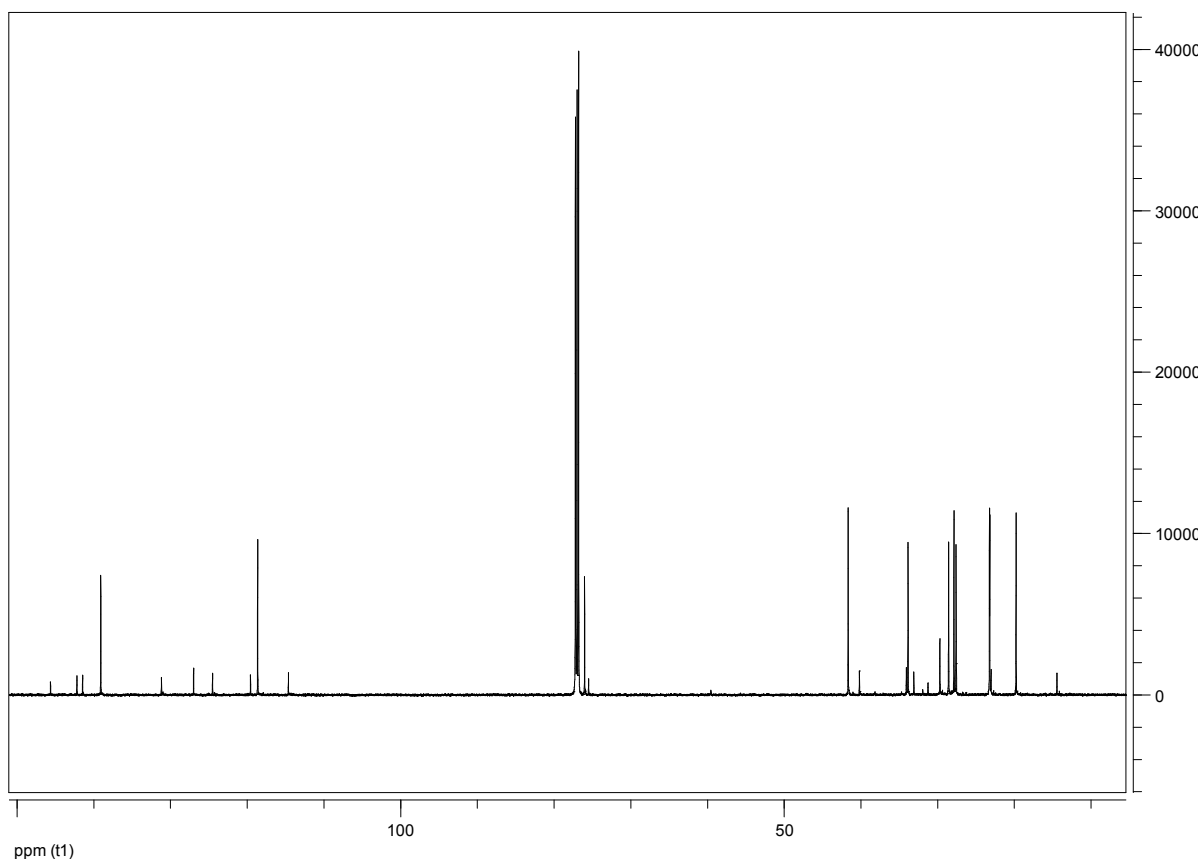
HSQC spectrum of diplopimarane (1)



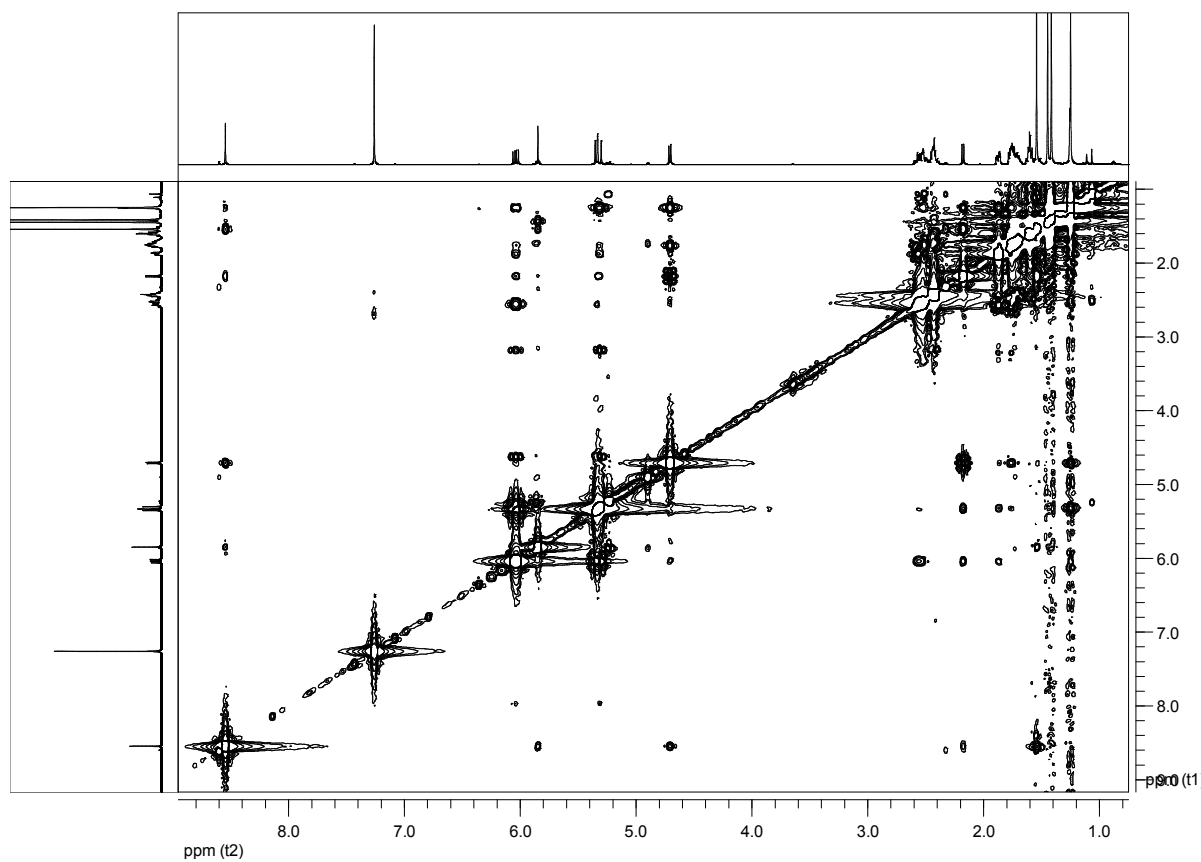
HMBC spectrum of diplopimarane (**1**)



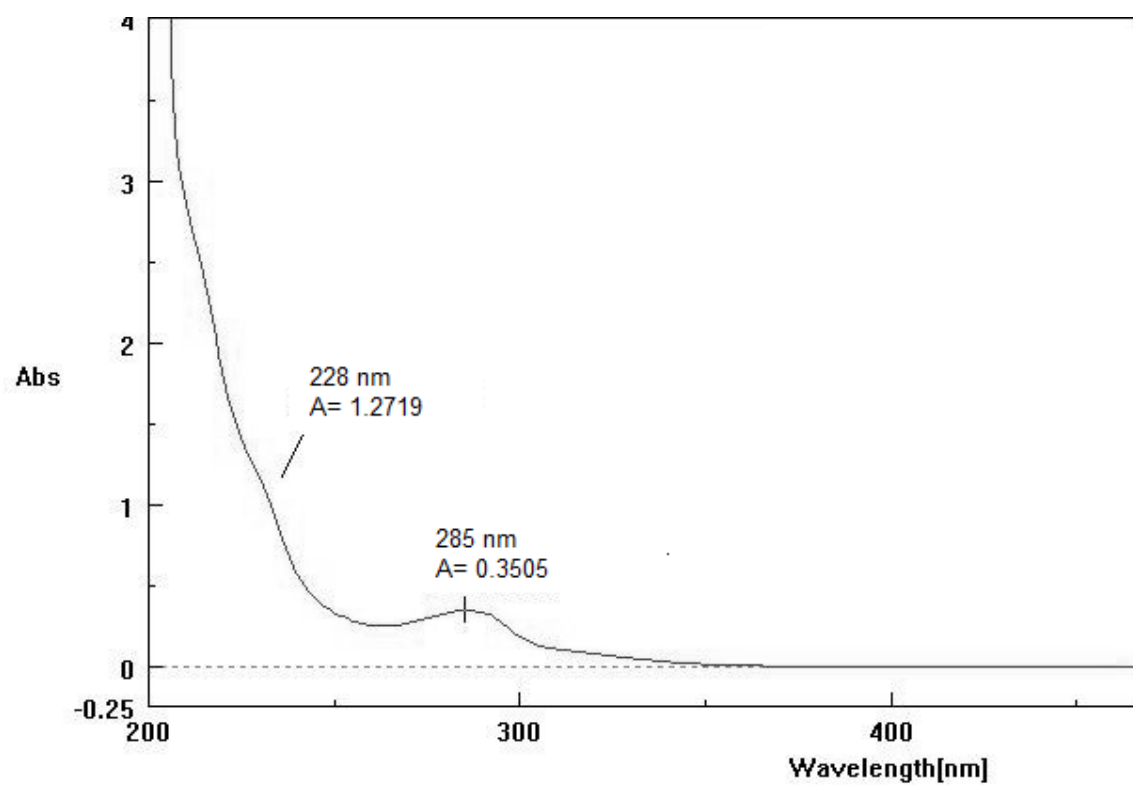
^{13}C NMR spectrum of diplopimarane (**1**)



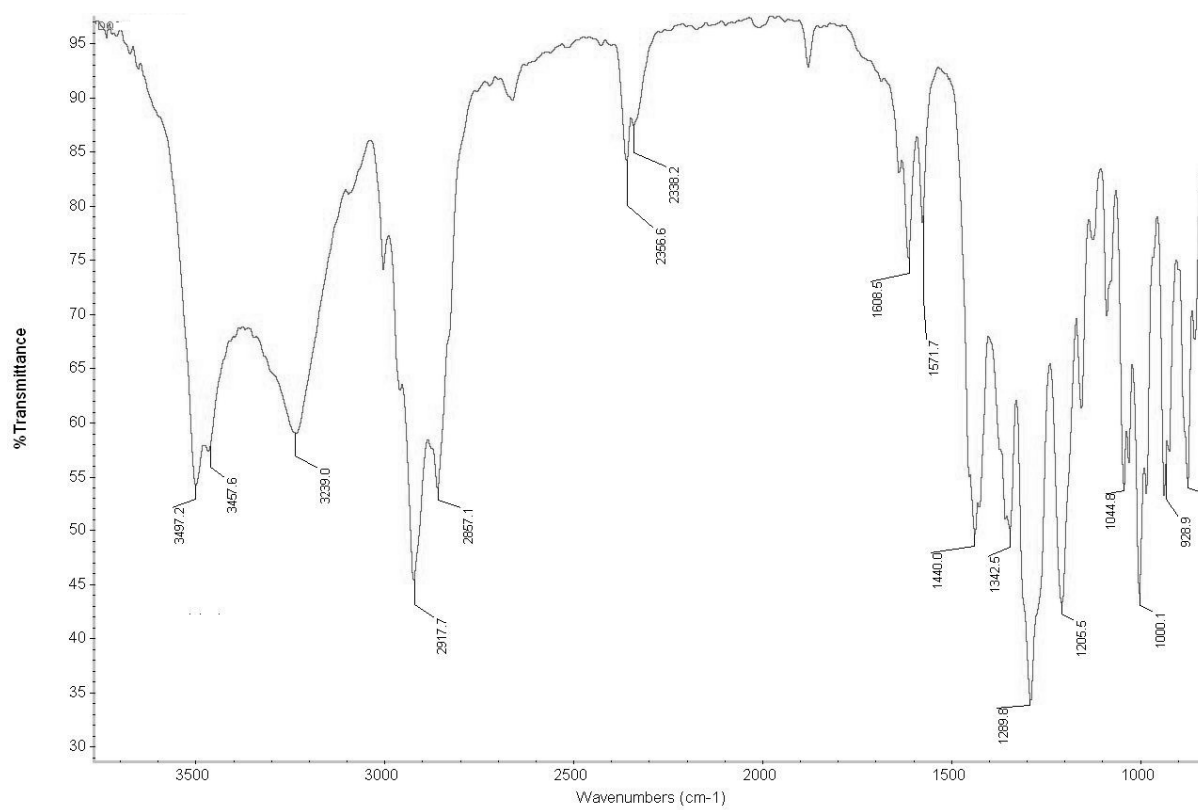
Noesy spectrum of diplopimarane (1)



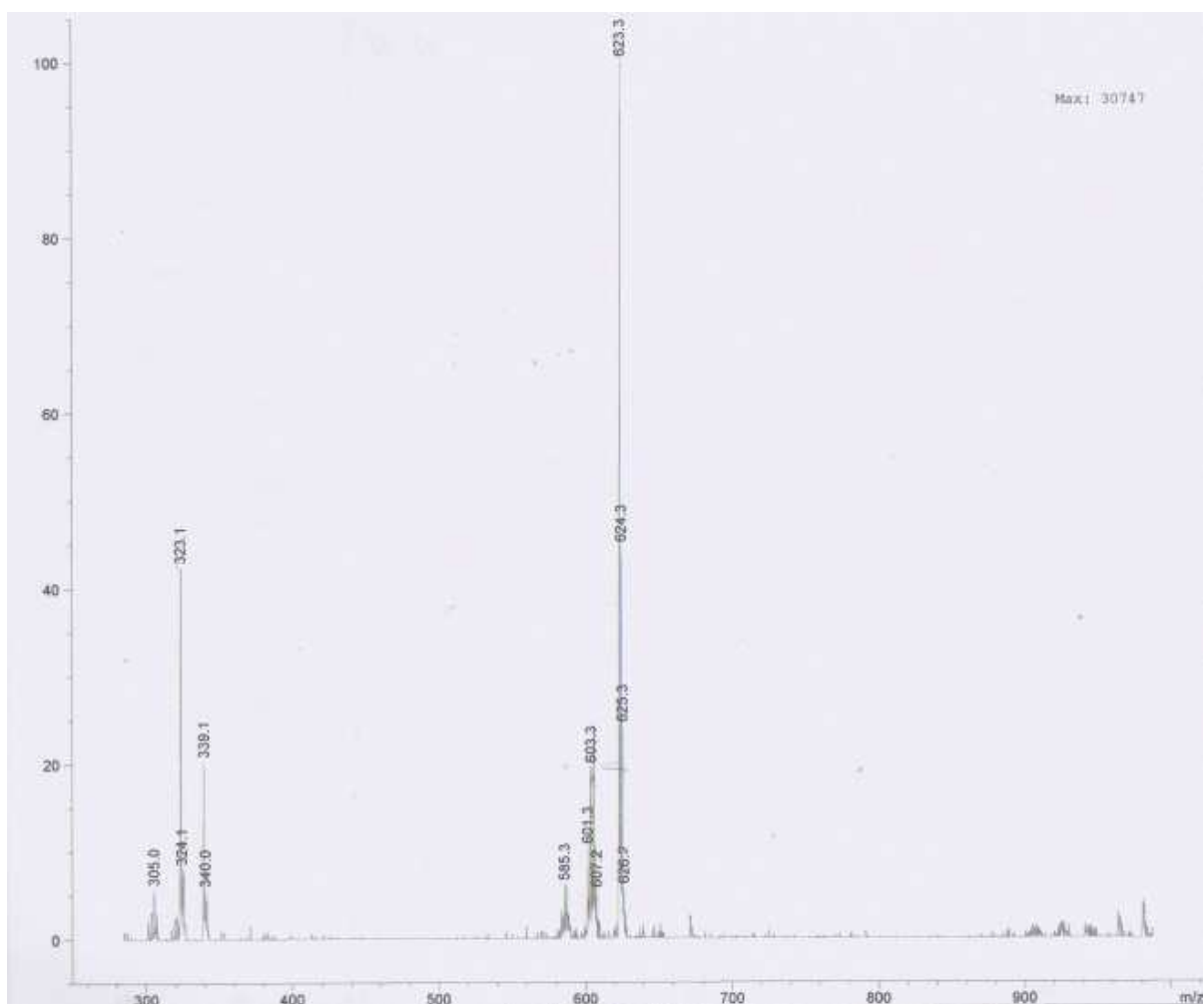
UV spectrum of diplopimarane (**1**)



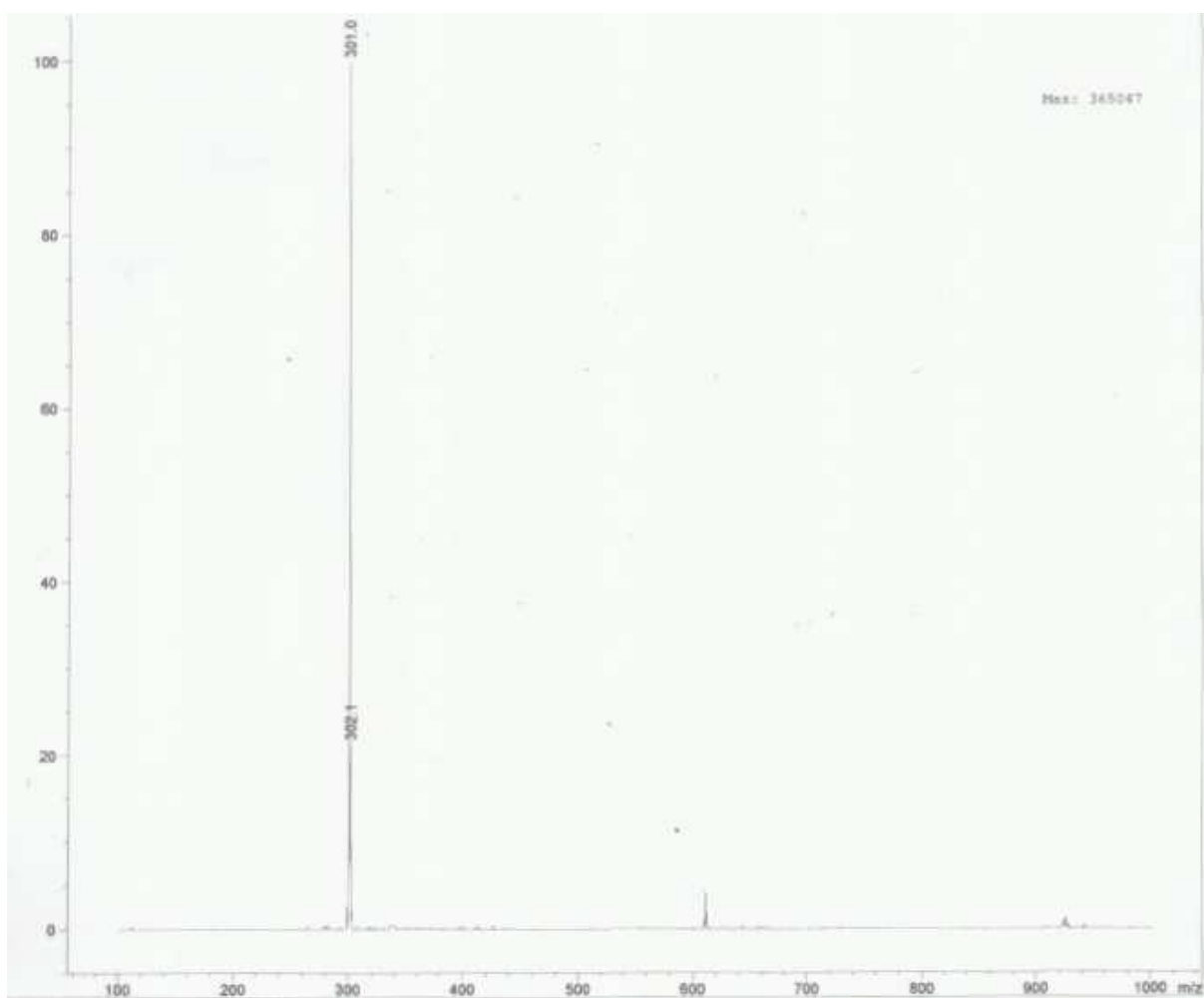
IR spectrum of diplopimarane (1)



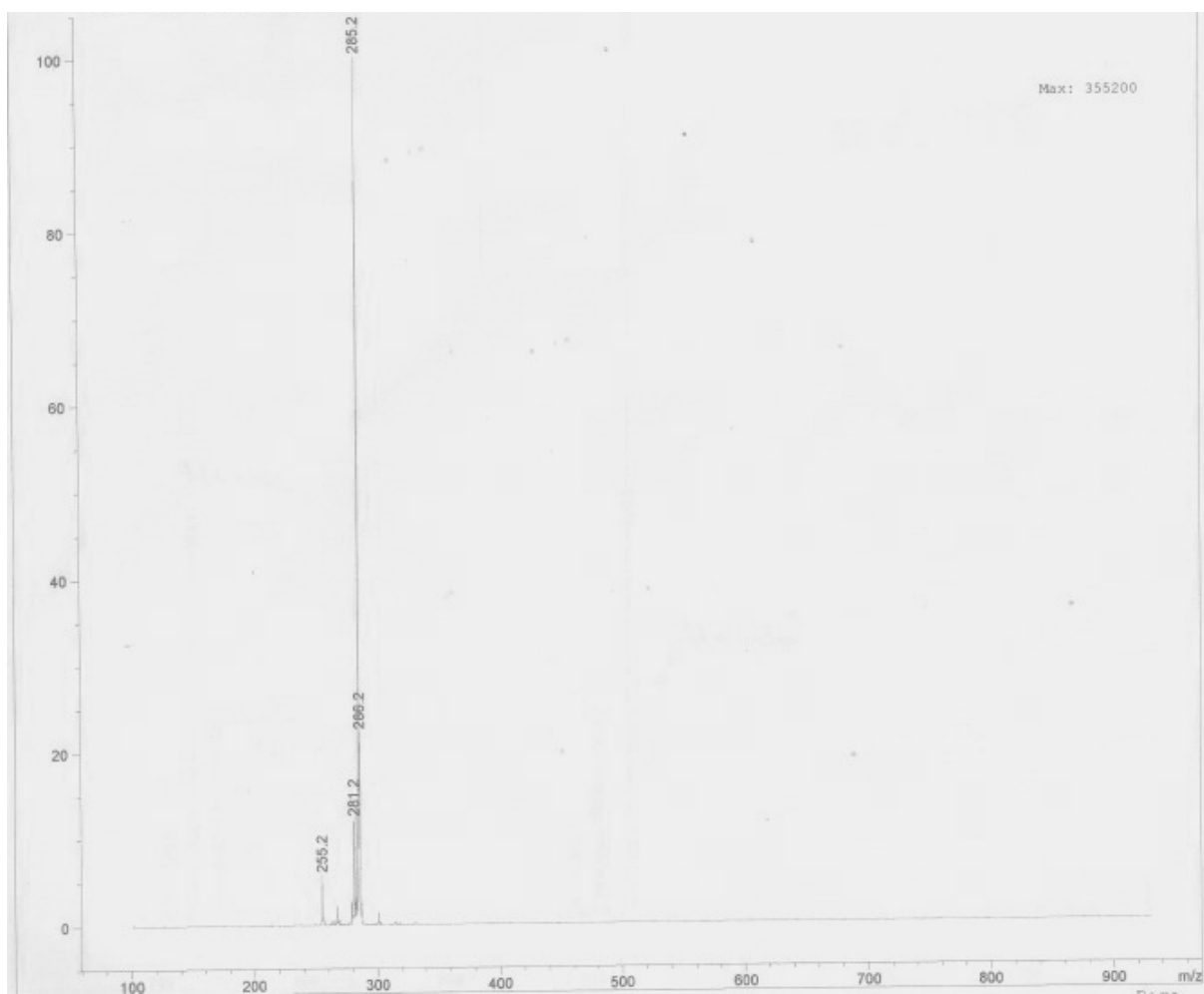
ESIMS (+) spectrum of diplopimarane (**1**)



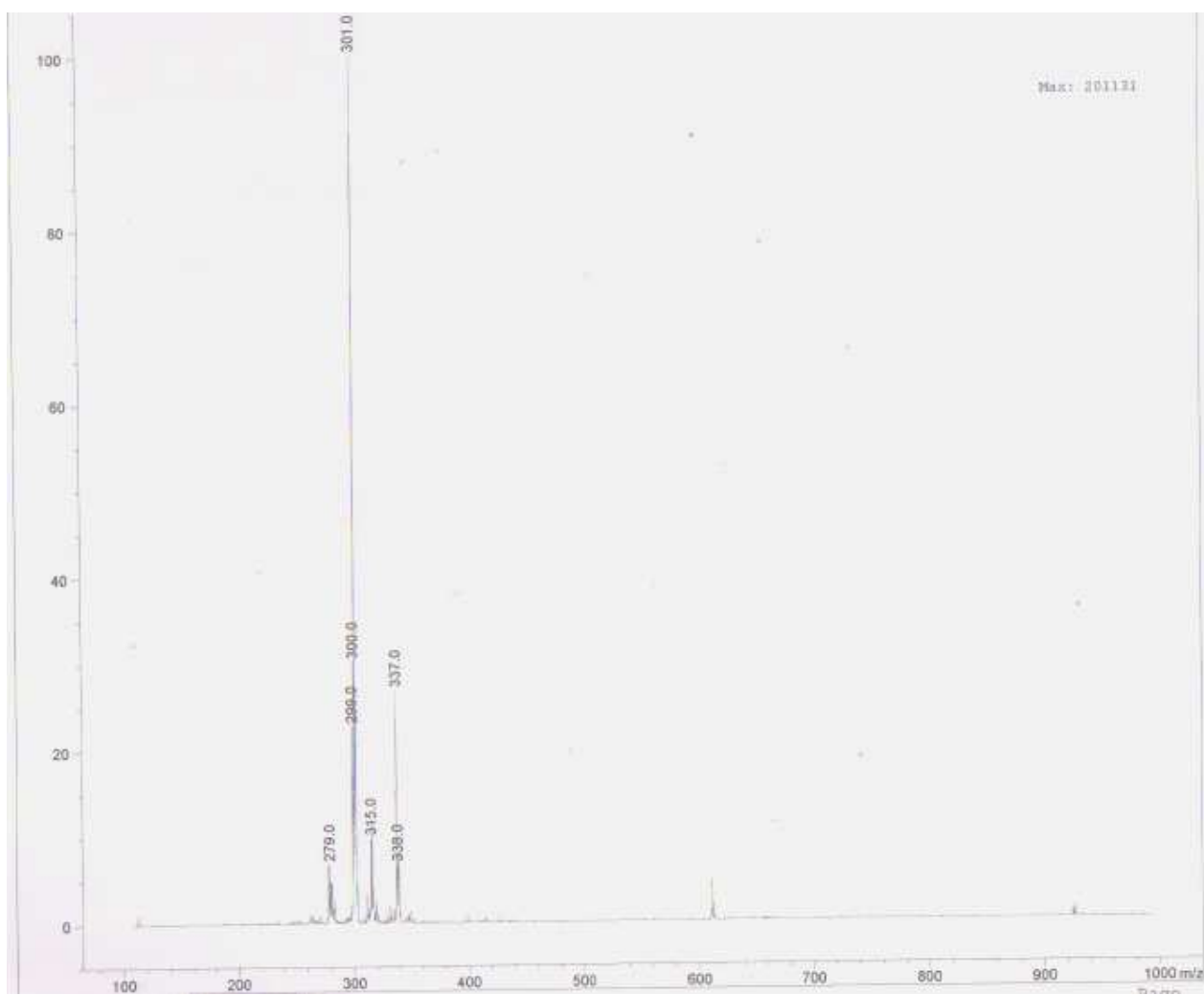
ESIMS (-) spectrum of diplopimarane (**1**)



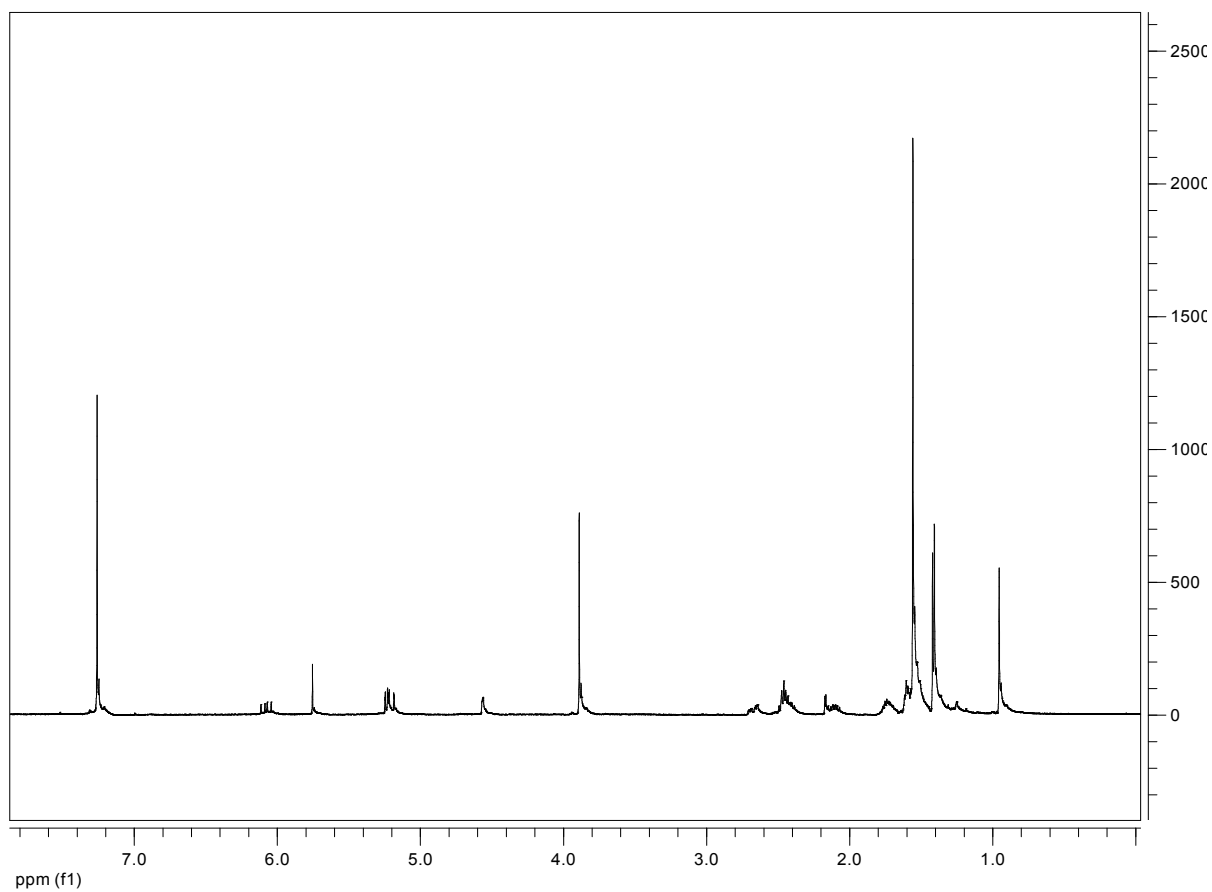
APCIMS (+) spectrum of diplopimarane (**1**)



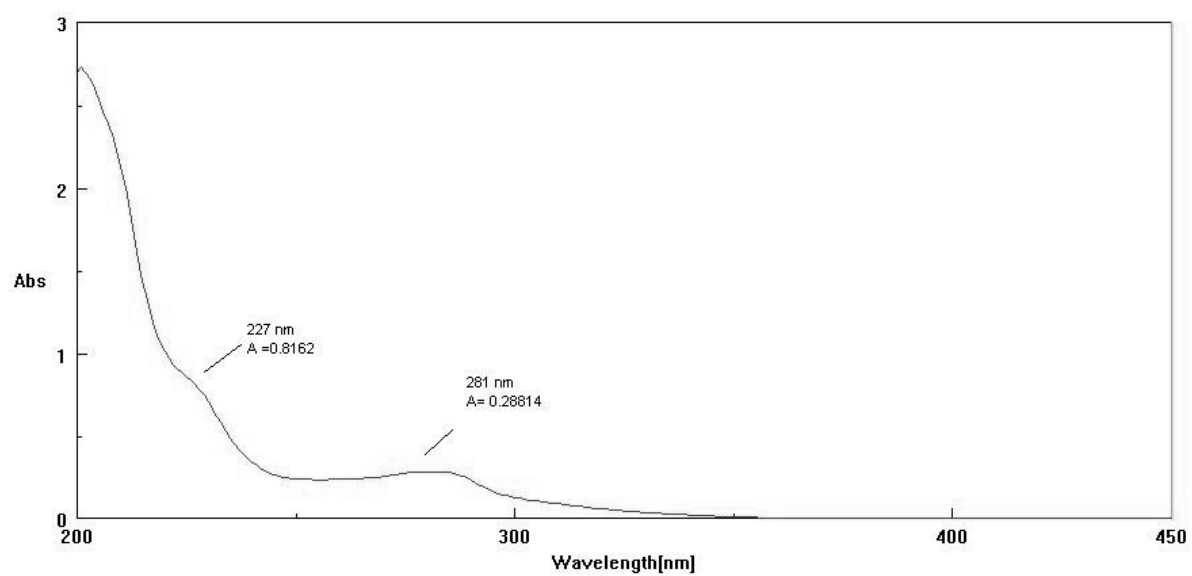
APCIMS (-) spectrum of diplopimarane (**1**)



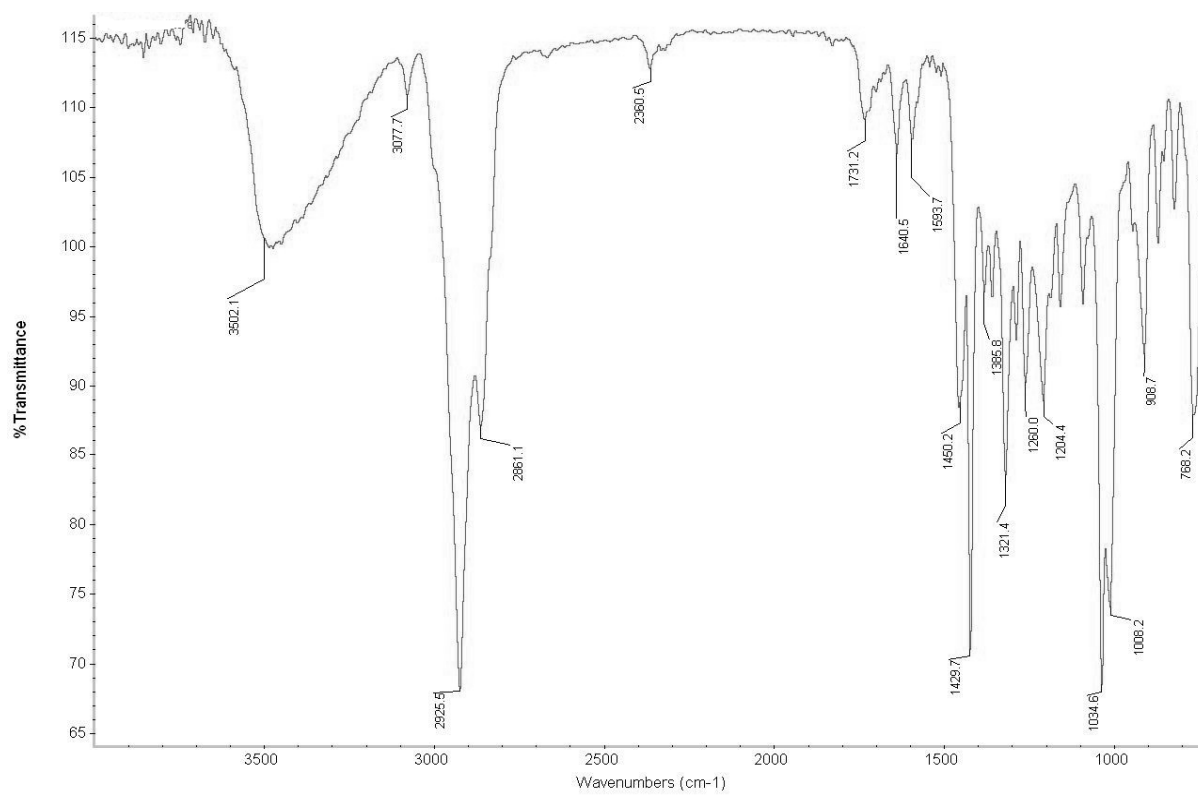
^1H NMR spectrum of 6-*O*-Methyldiplopimarane (**2**)



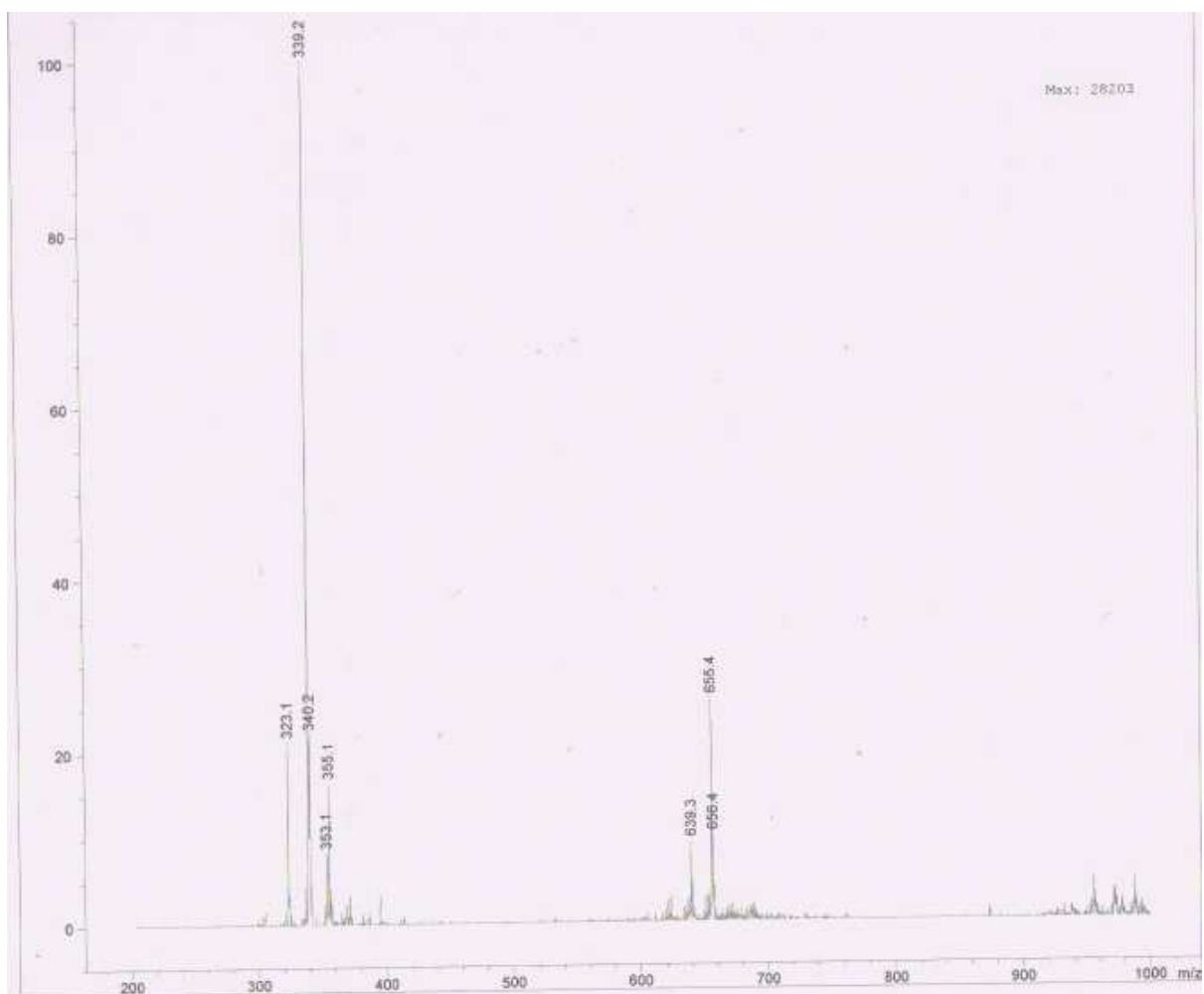
UV spectrum of 6-*O*-Methyldiplopimarane (**2**)



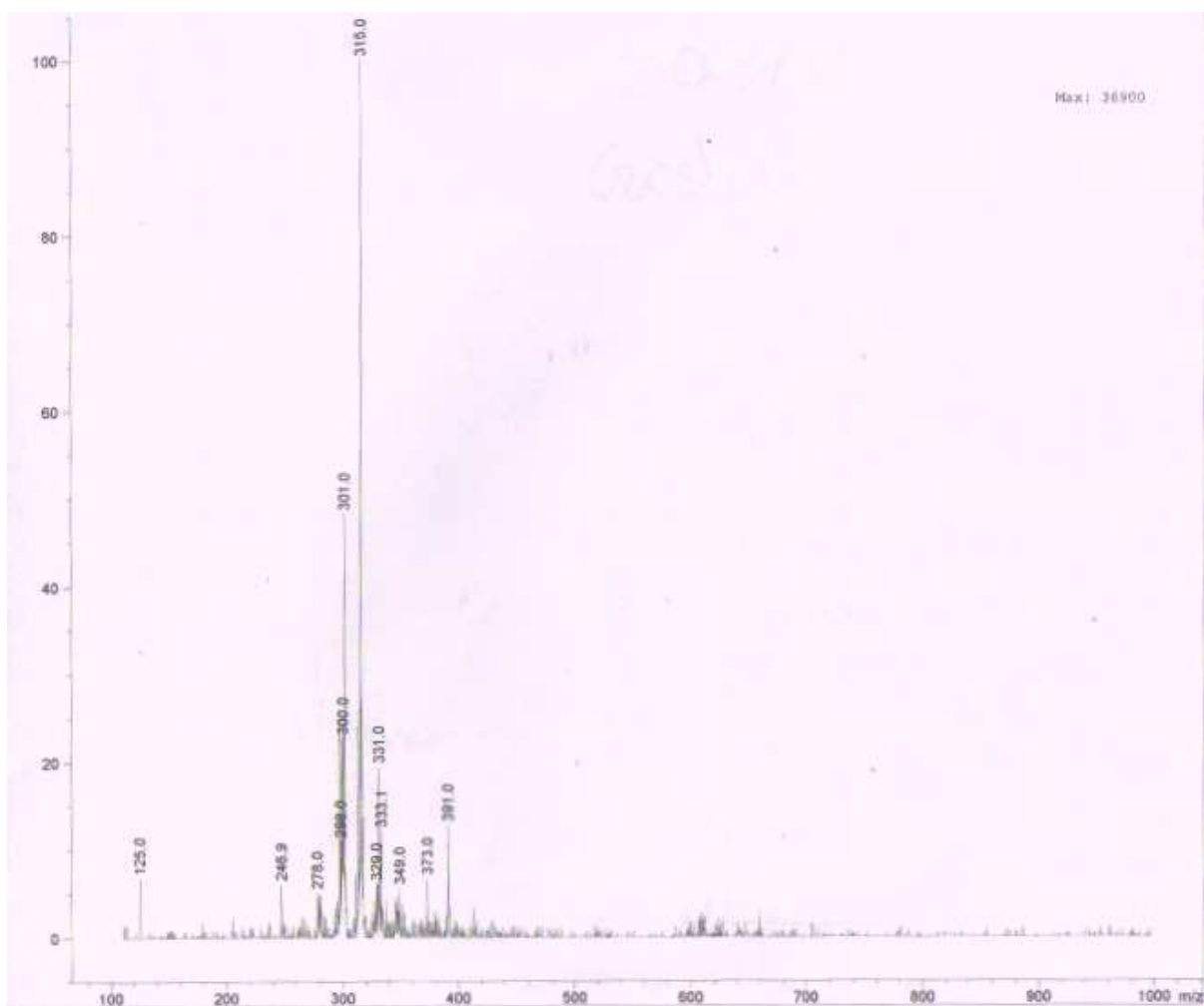
IR spectrum of 6-*O*-Methyldiplopimarane (**2**)



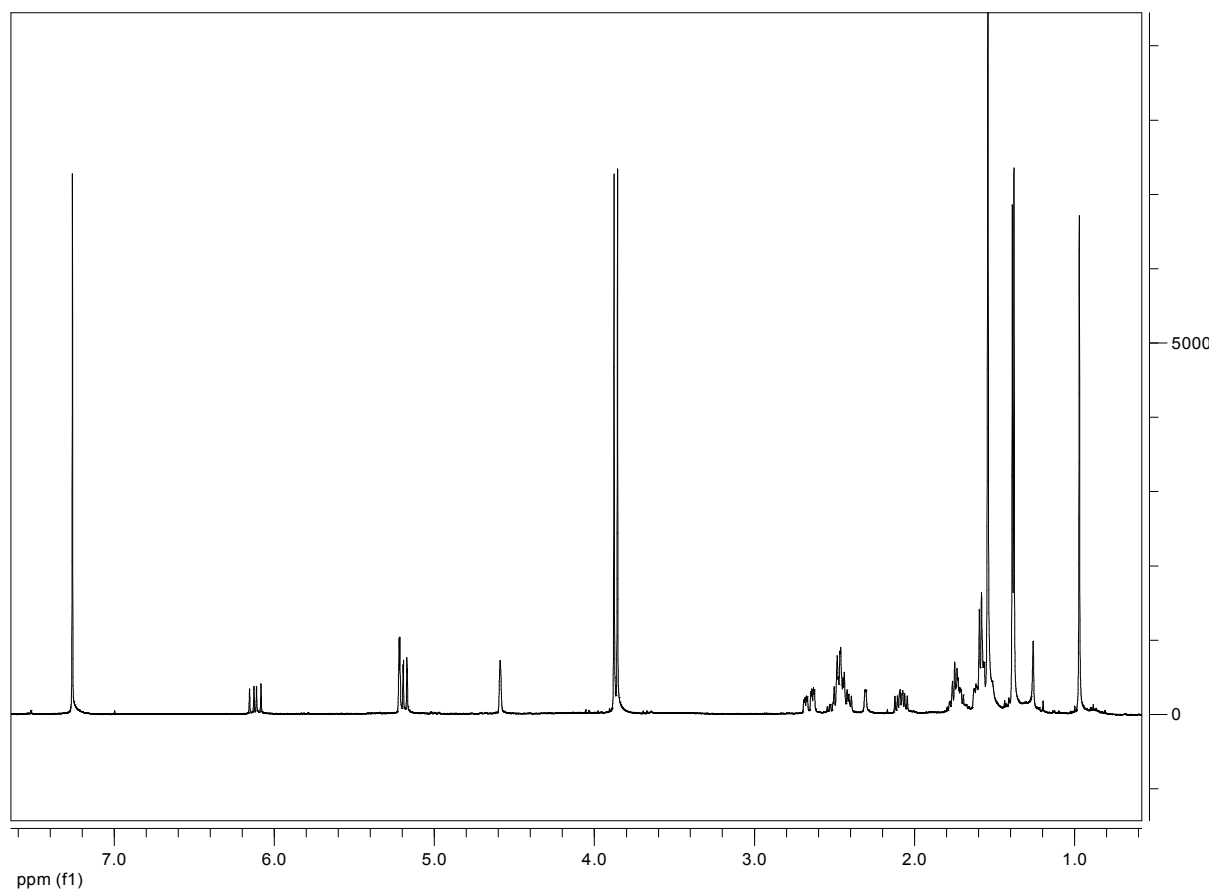
ESIMS (+) spectrum of 6-*O*-Methyldiplopimarane (**2**)



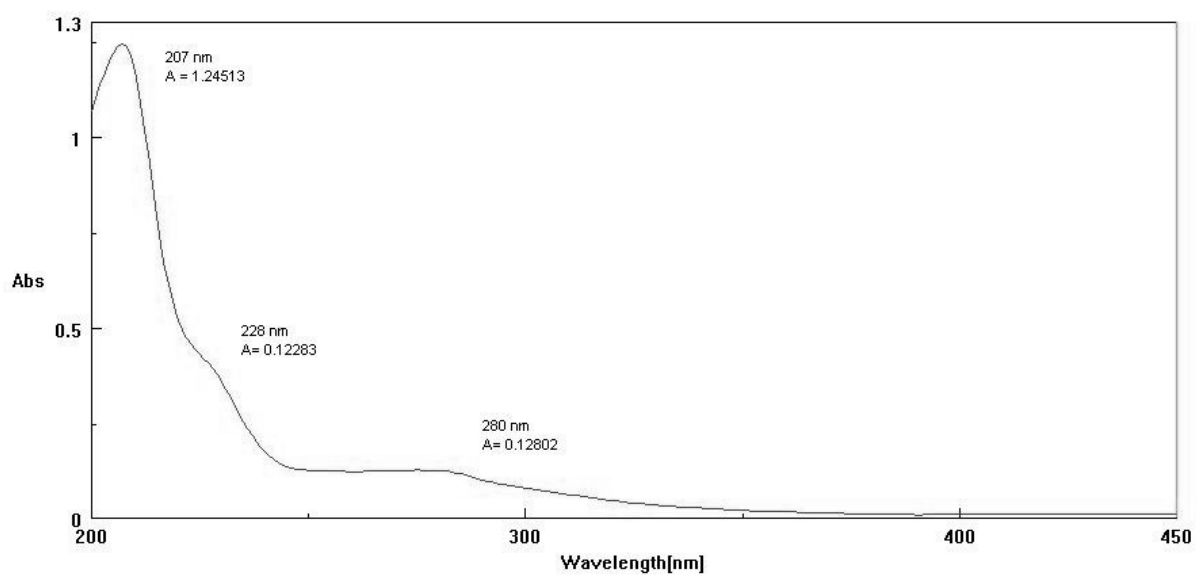
APCIMS (-) spectrum of 6-*O*-Methyldiplopimarane (**2**)



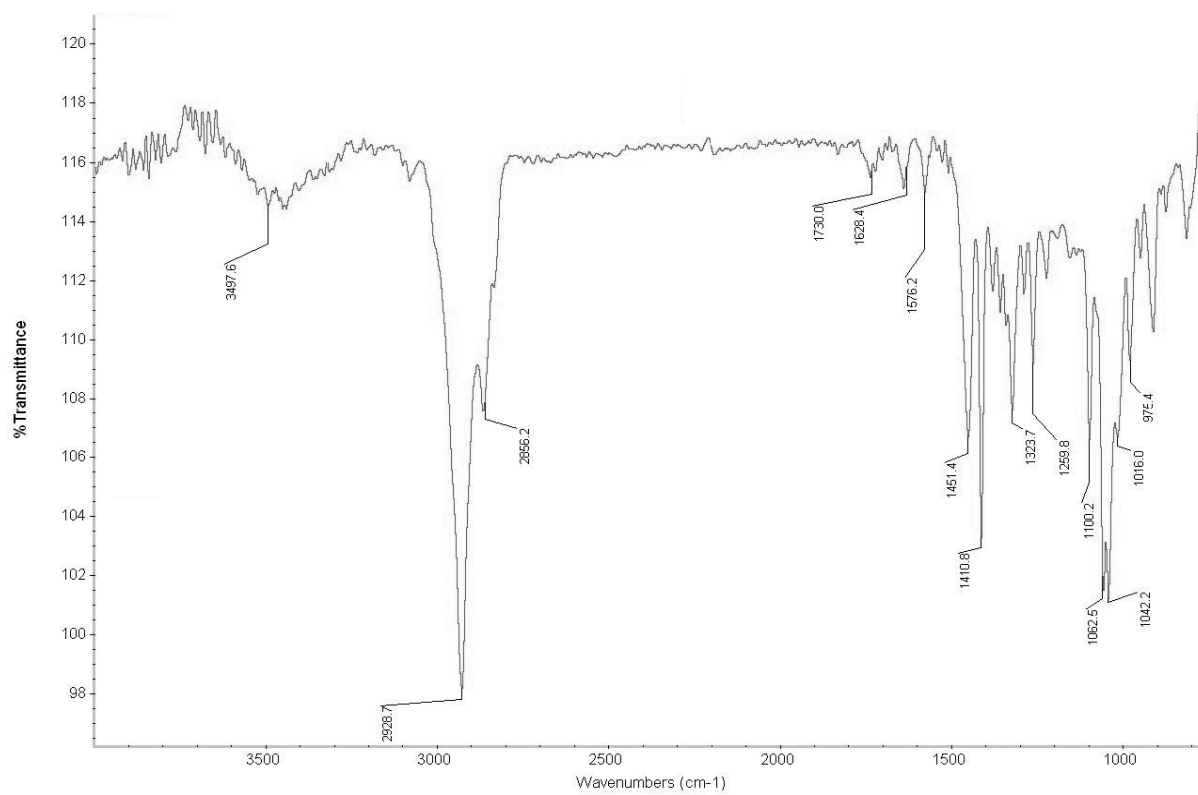
^1H NMR spectrum of 6,7-*O,O'*-Dimethyldiplopimarane (**3**).



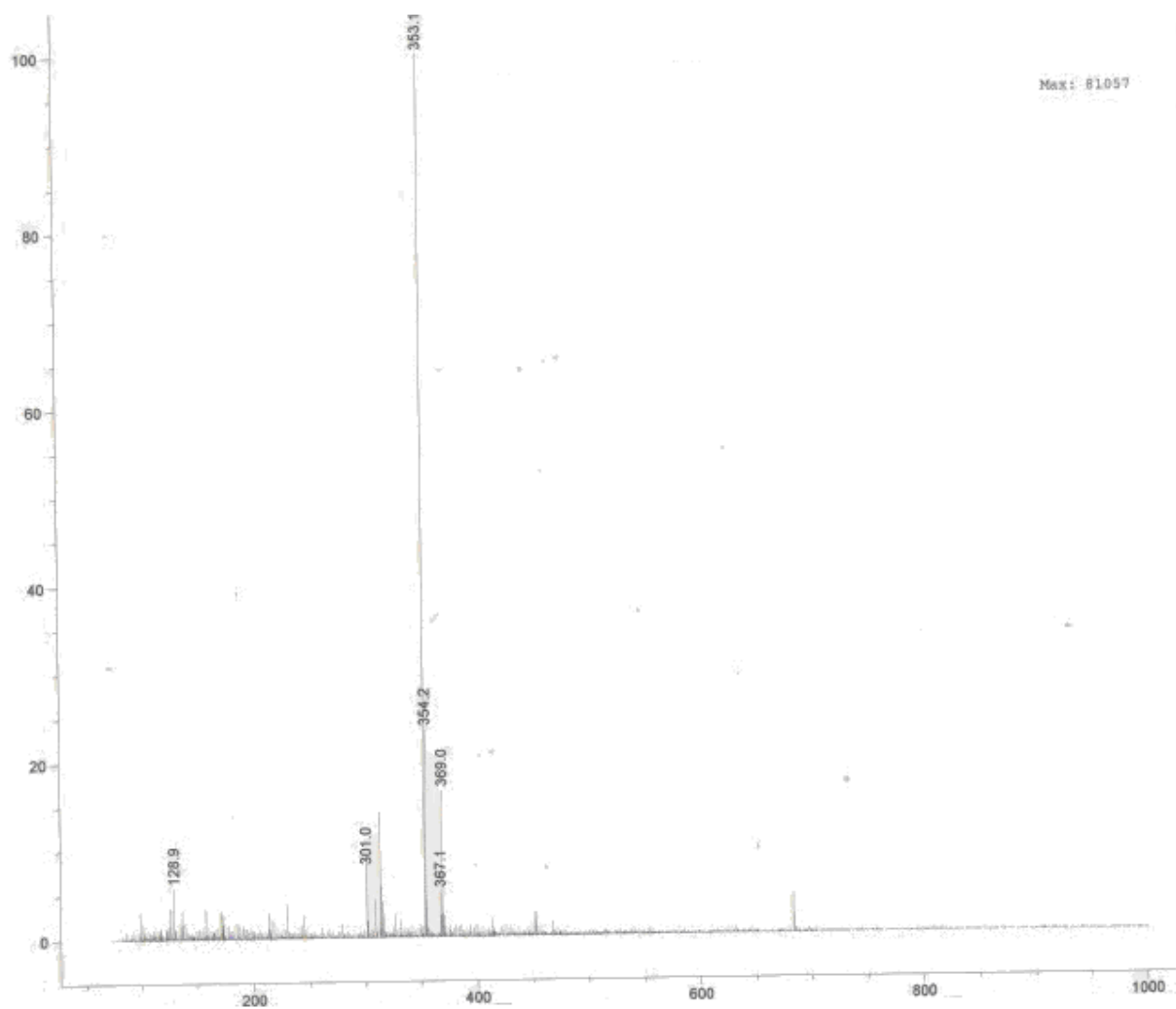
UV spectrum of 6,7-*O,O'*-Dimethyldiplopimarane (**3**).



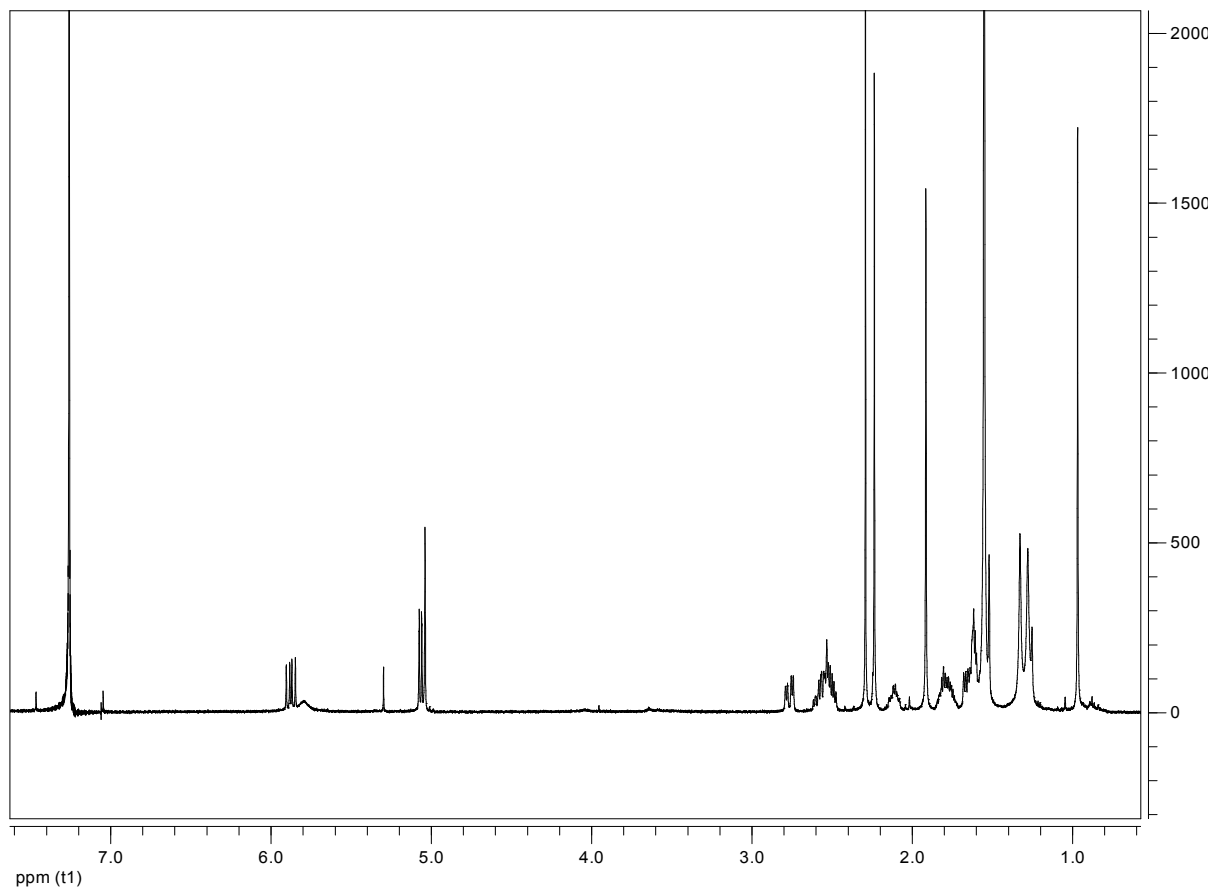
IR spectrum of 6,7-*O,O'*-Dimethyldiplopimarane (**3**).



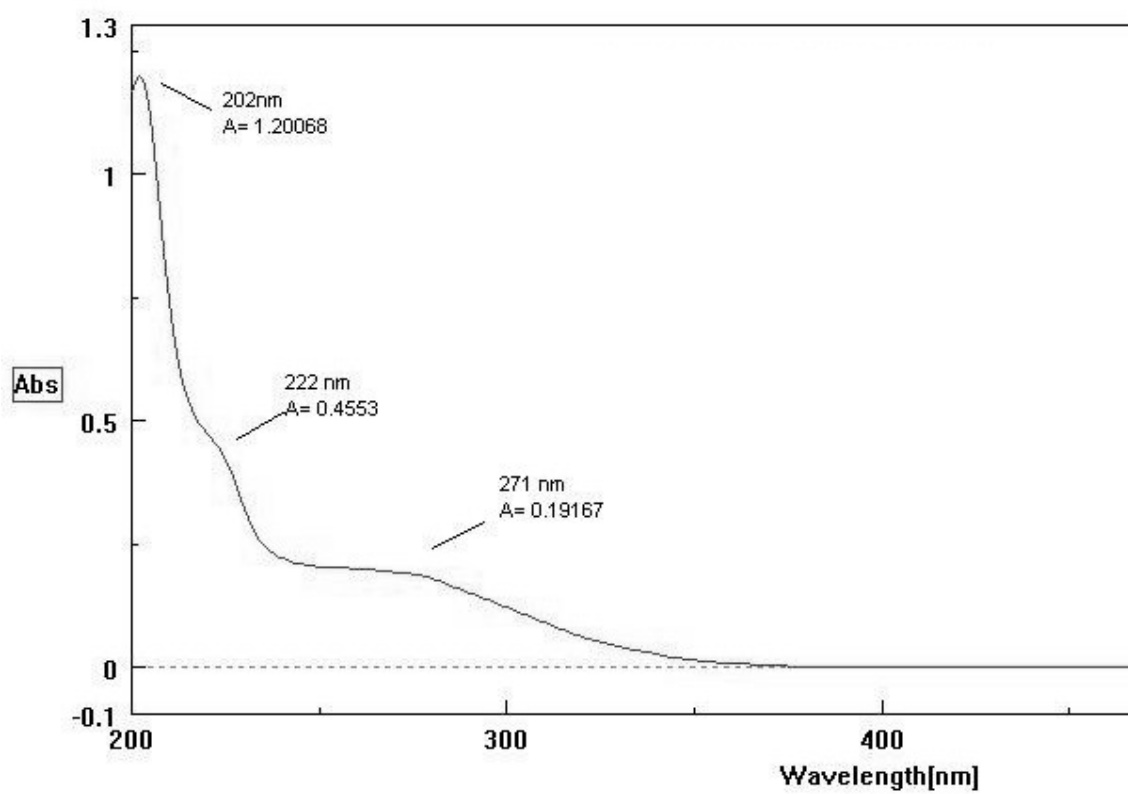
ESIMS (+) spectrum of 6,7-*O,O'*-Dimethyldiplopimarane (**3**).



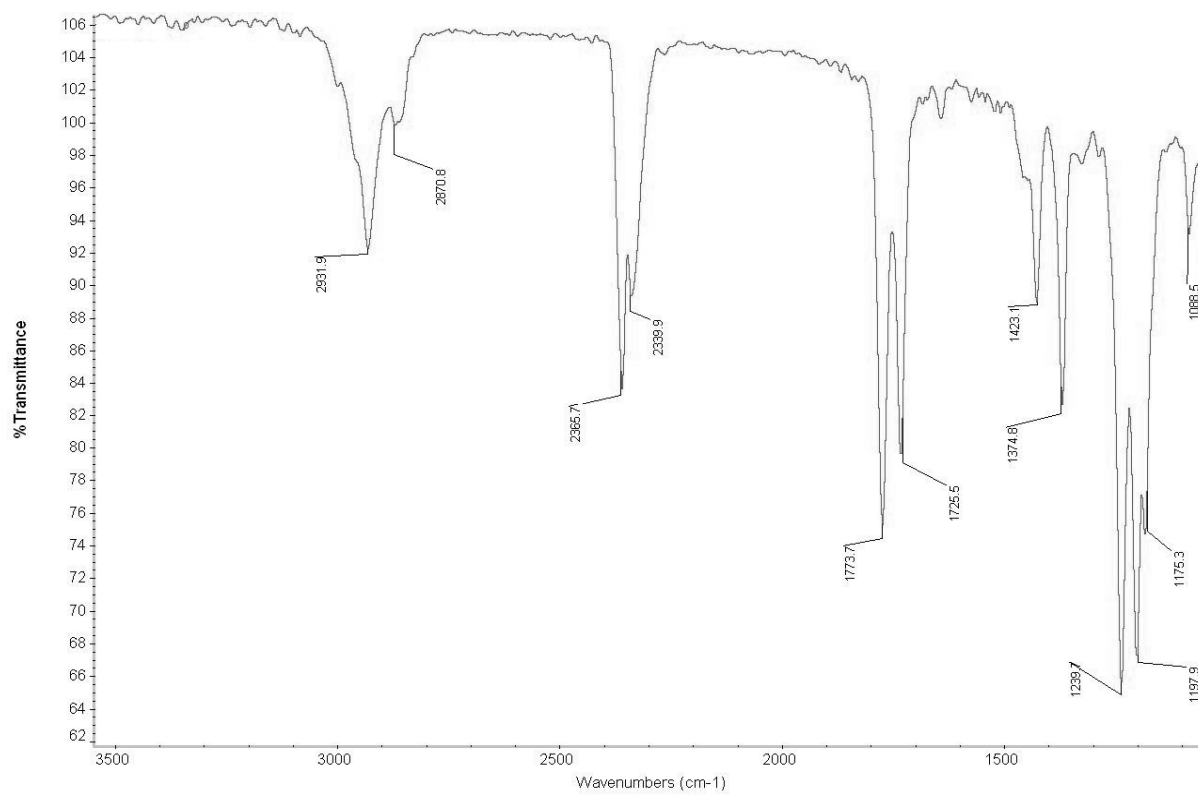
^1H NMR spectrum of 6,7,14-*O,O',O''*-Triacetyldiplopimarane (**4**)



UV spectrum of 6,7,14-*O,O',O''*-Triacetyldiplopimarane (**4**).



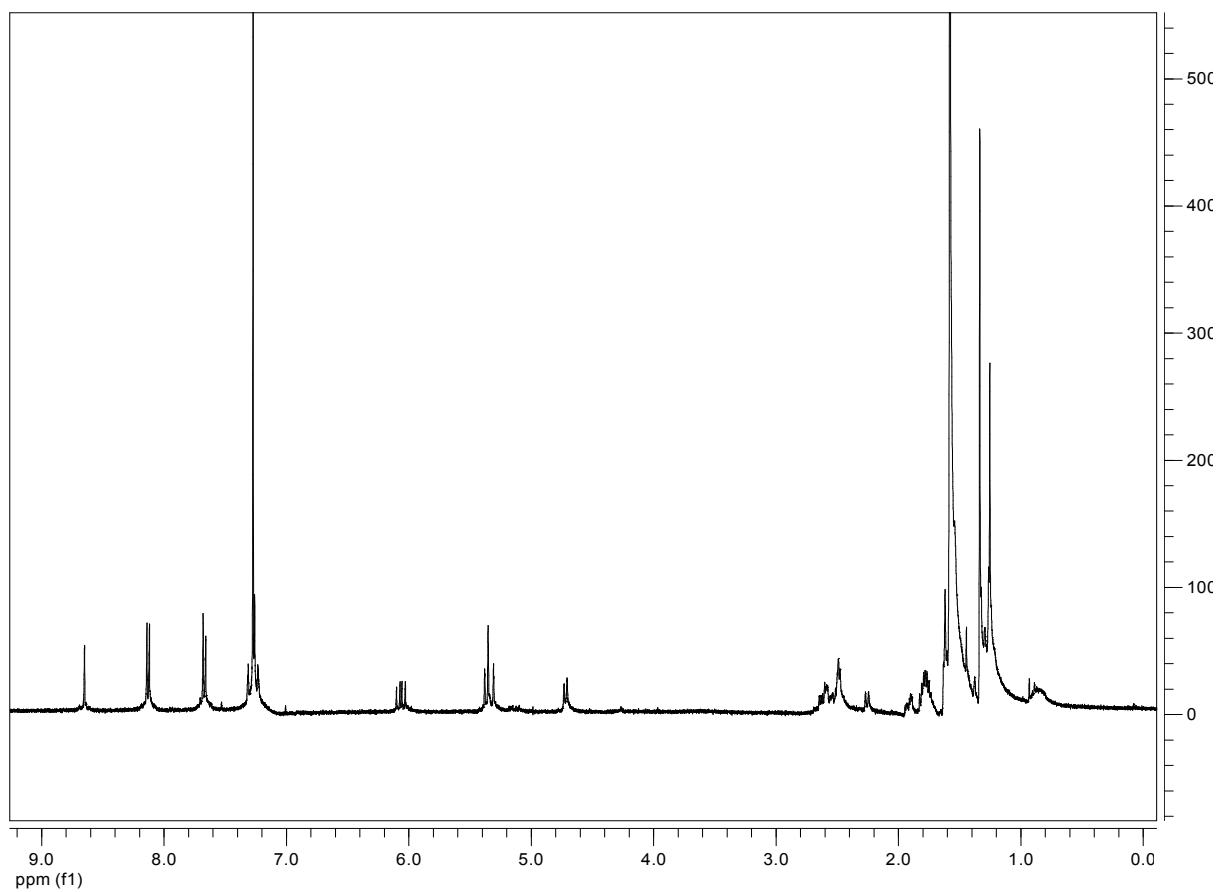
IR spectrum of 6,7,14-*O,O',O''*-Triacetyldiplopimarane (**4**).



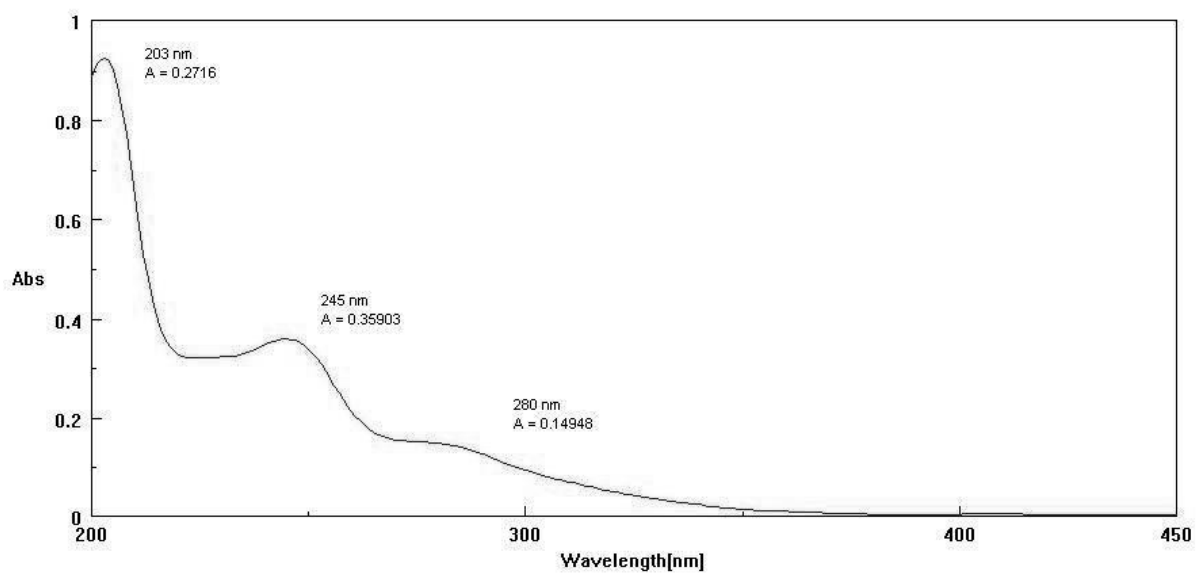
ESIMS (+) spectrum of 6,7,14-*O,O',O''*-Triacetyldiplopimarane (**4**)



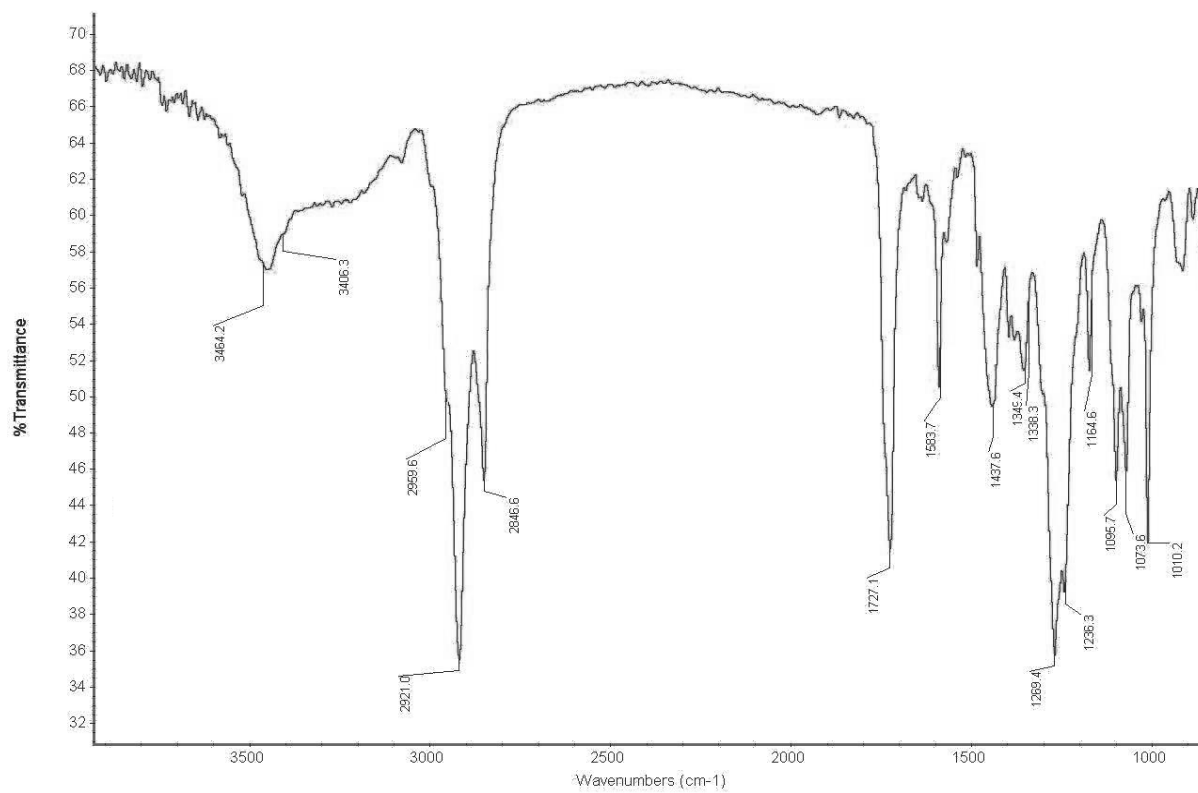
^1H NMR spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



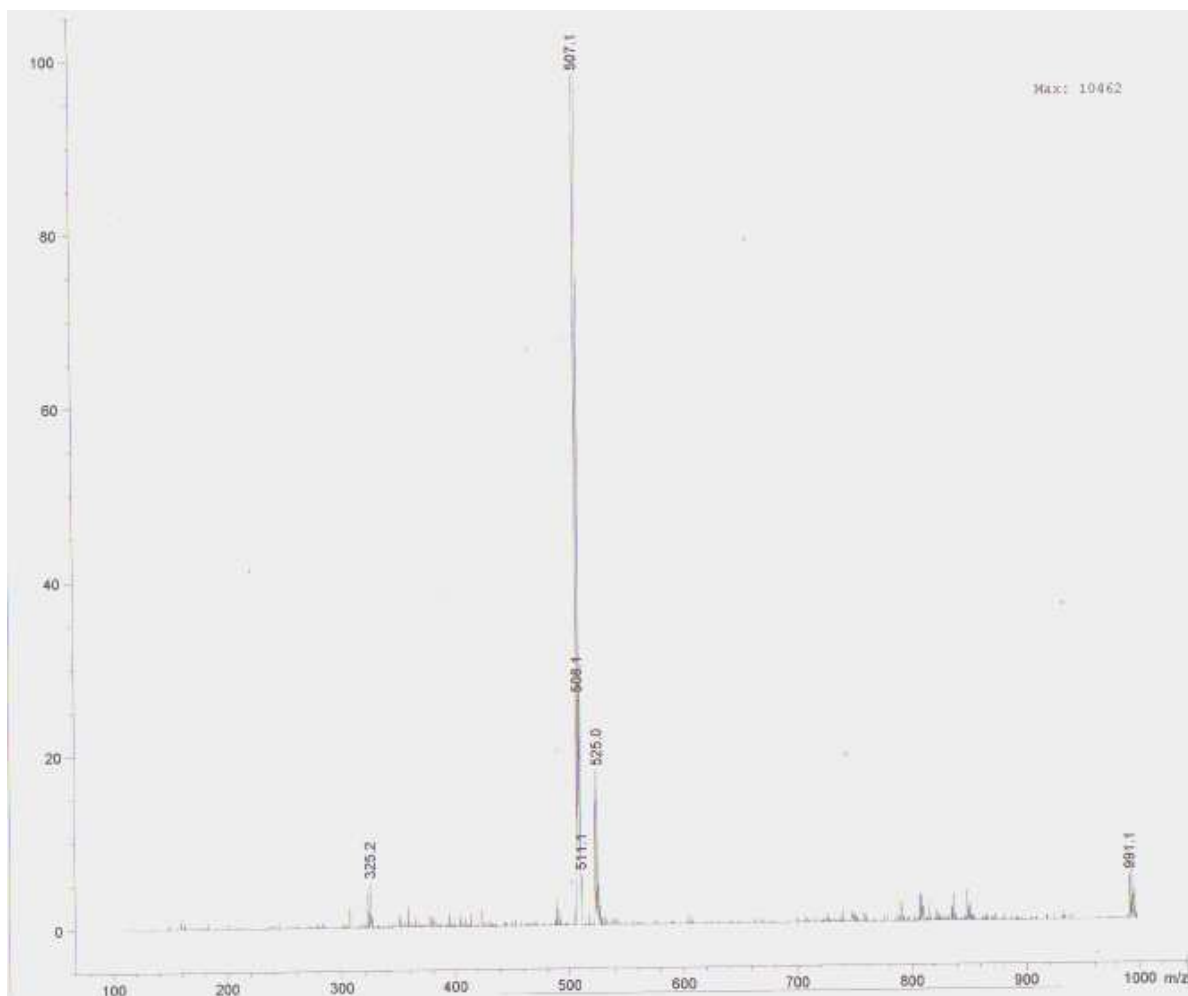
UV spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



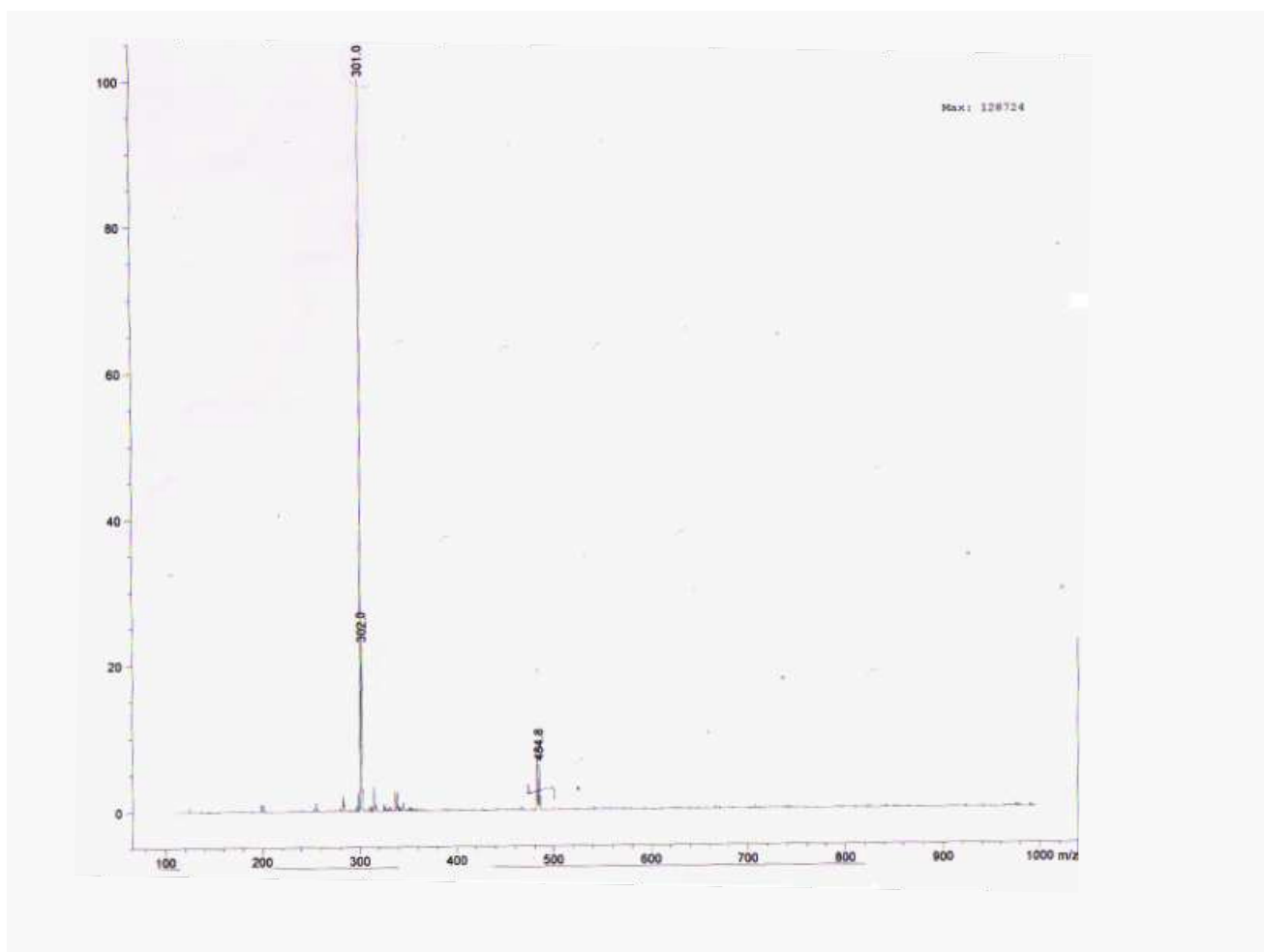
IR spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



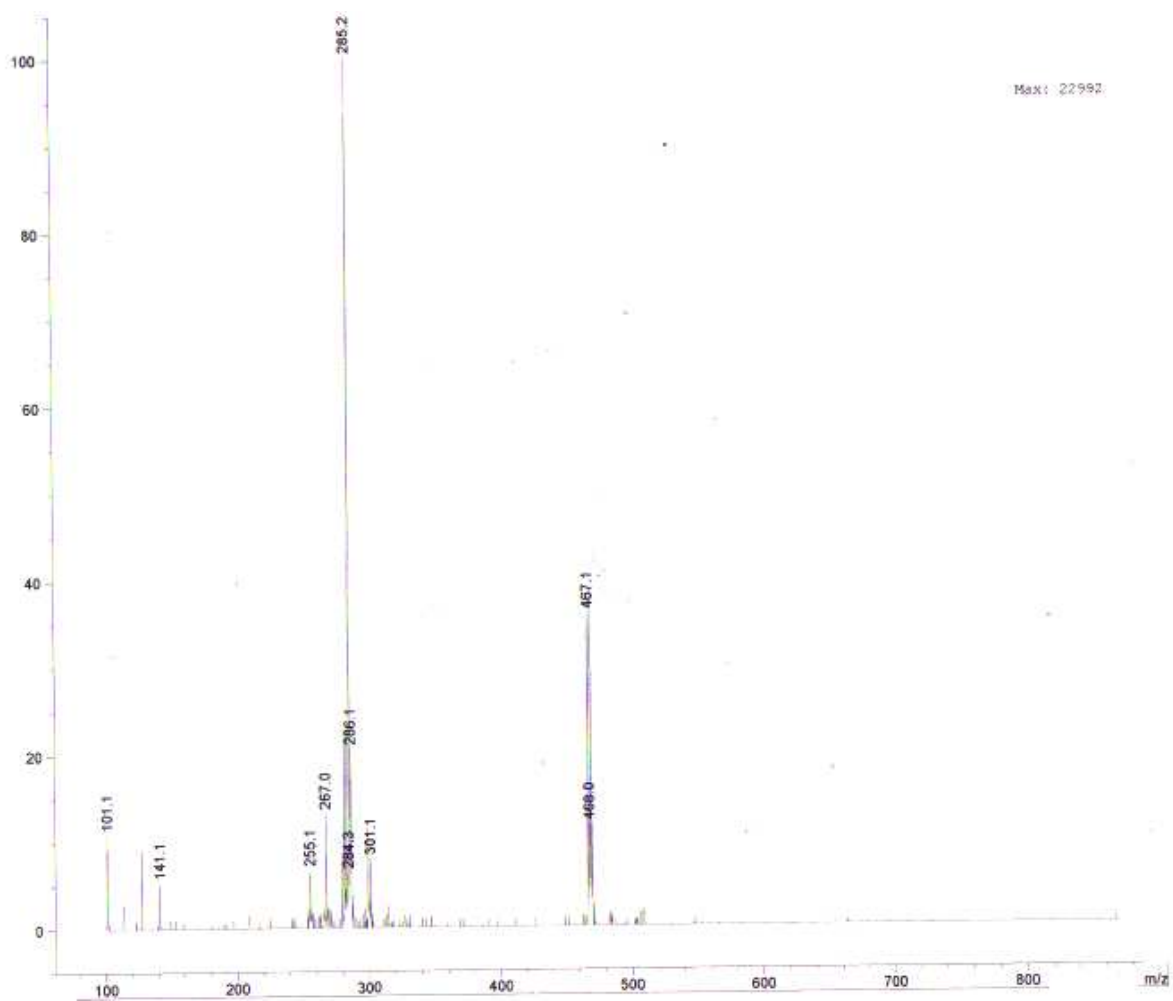
ESIMS (+) spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



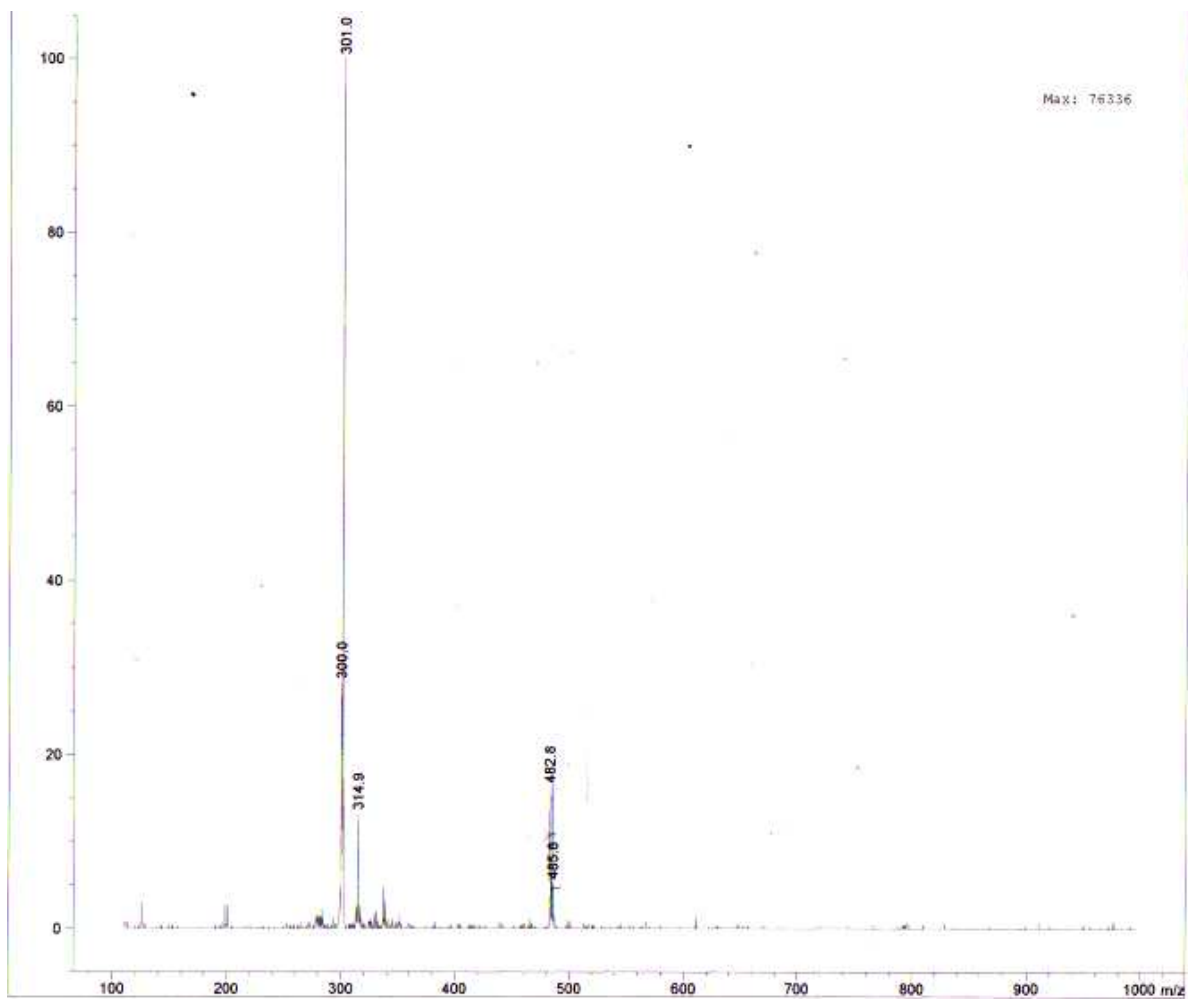
ESIMS (-) spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



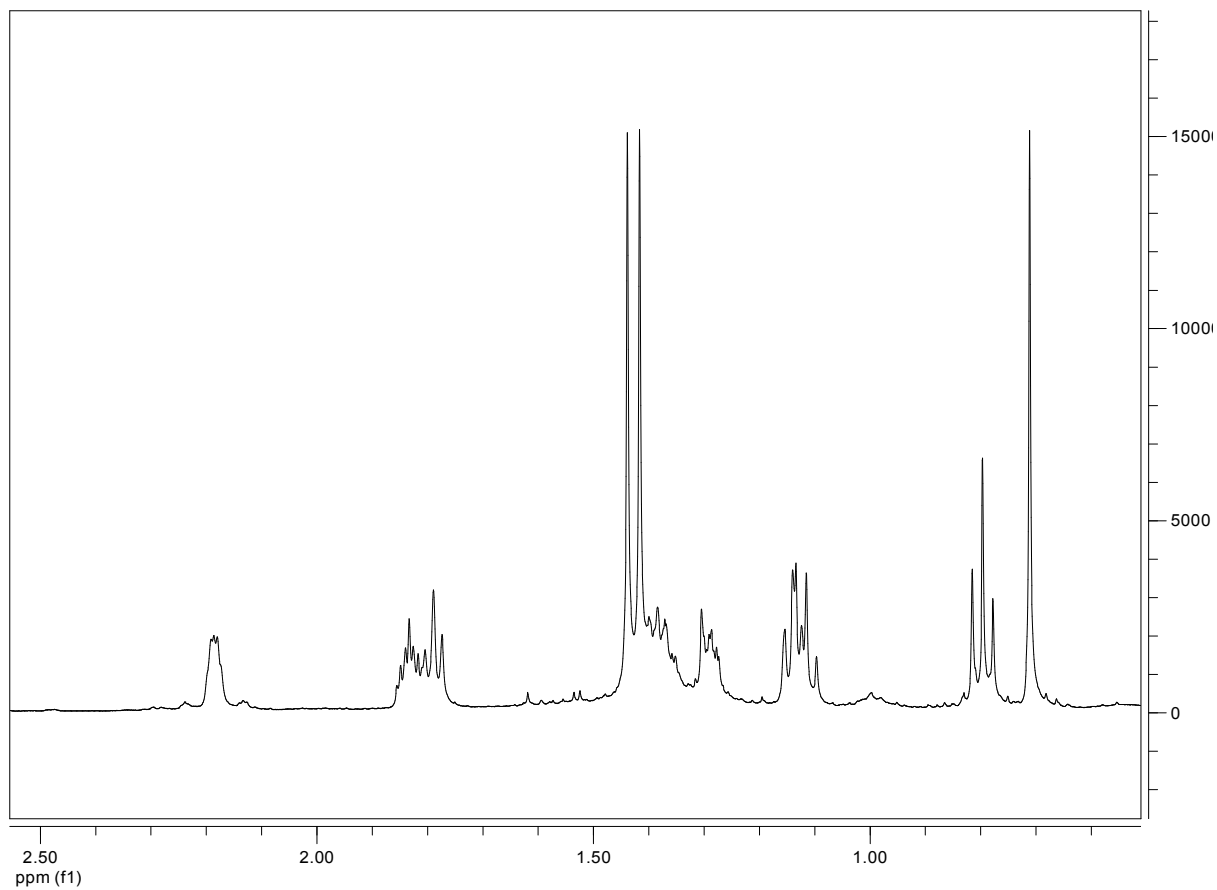
APCIMS (+) spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



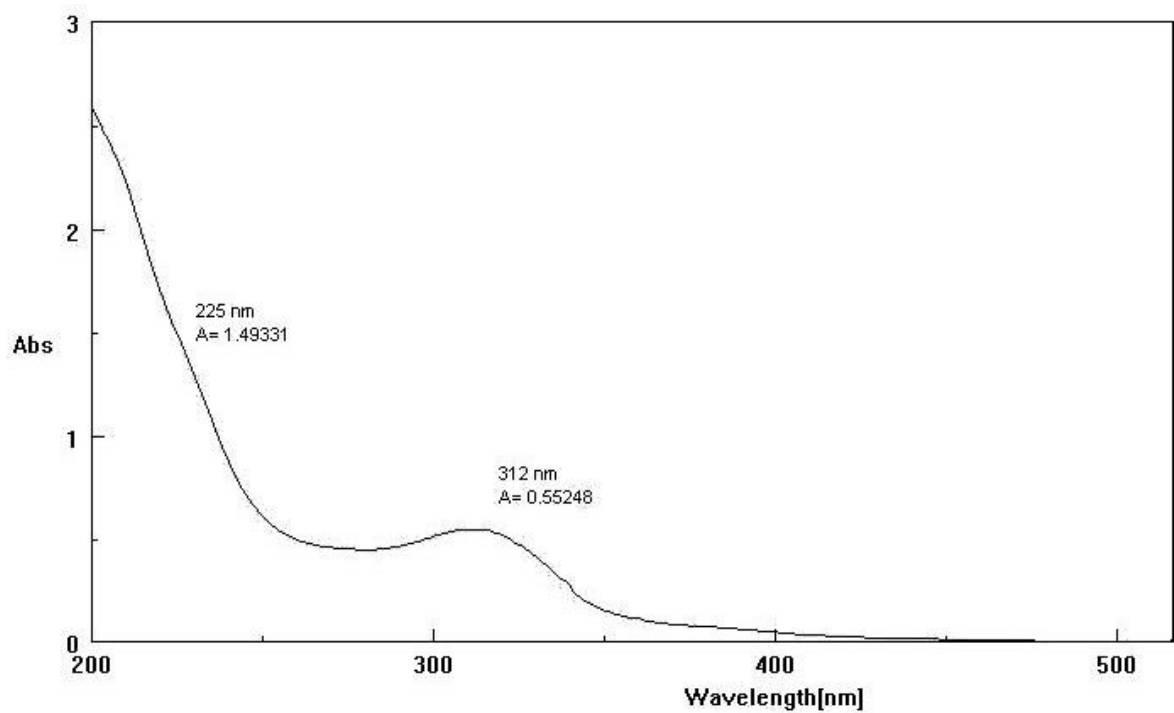
APCIMS (-) spectrum of 6-*O*-*p*-Bromobenzoyl Ester of Diplopimarane (**5**).



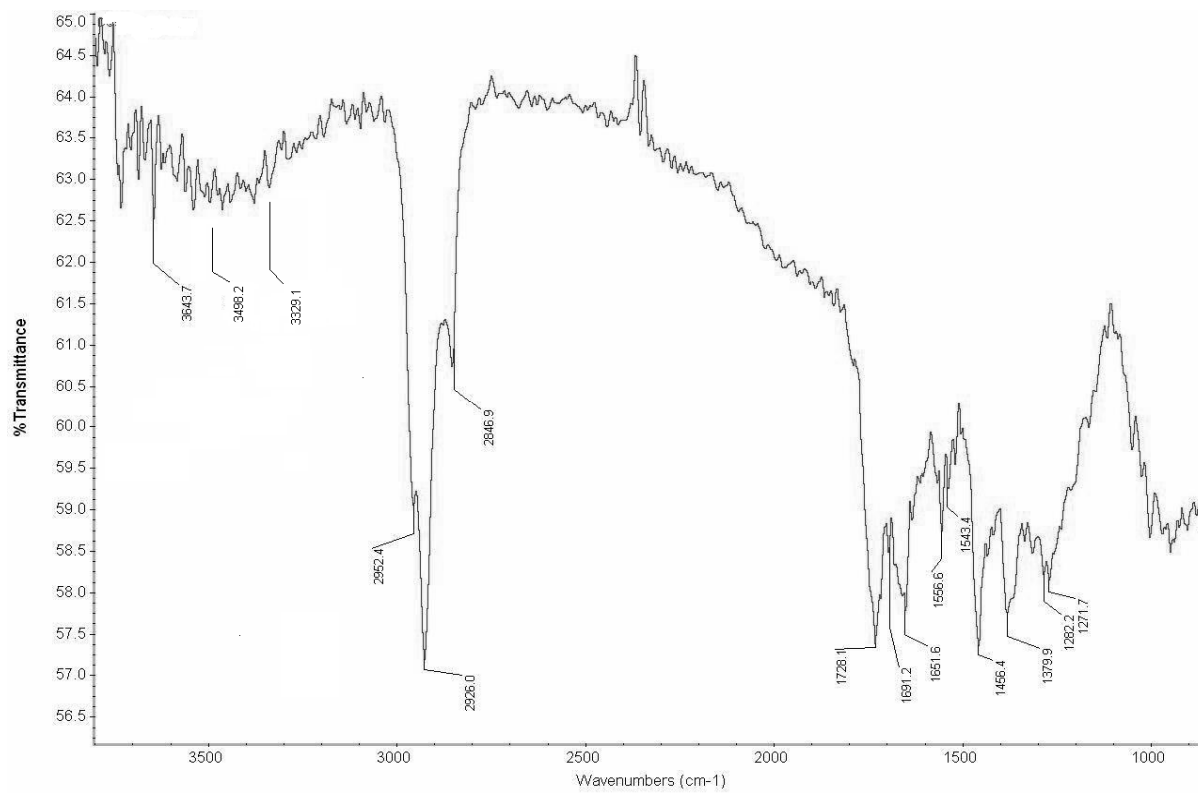
^1H NMR spectrum of 15,16-Dihydrodiplopimarane (**6**).



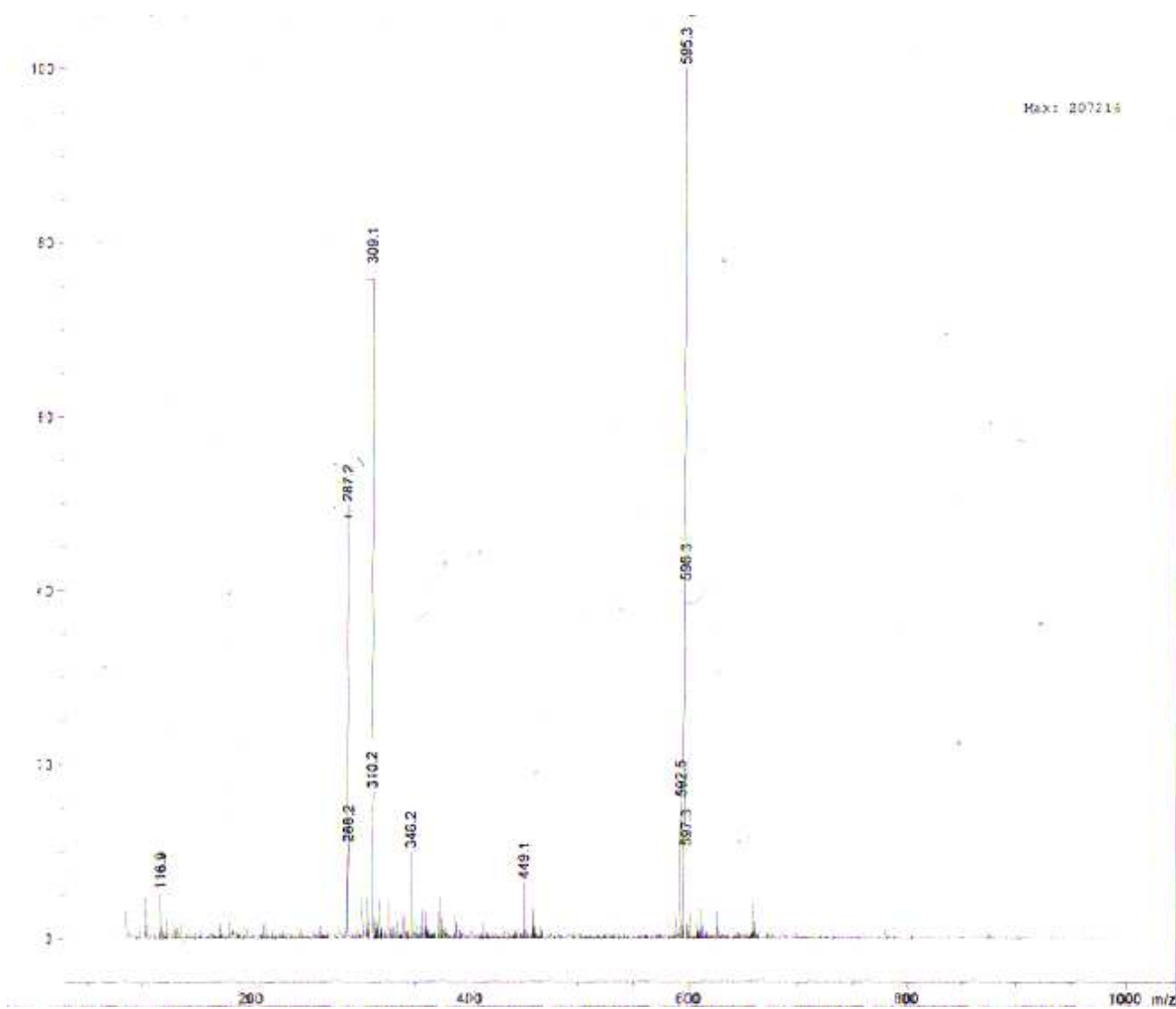
UV spectrum of 15,16-Dihydrodiplopimarane (**6**).



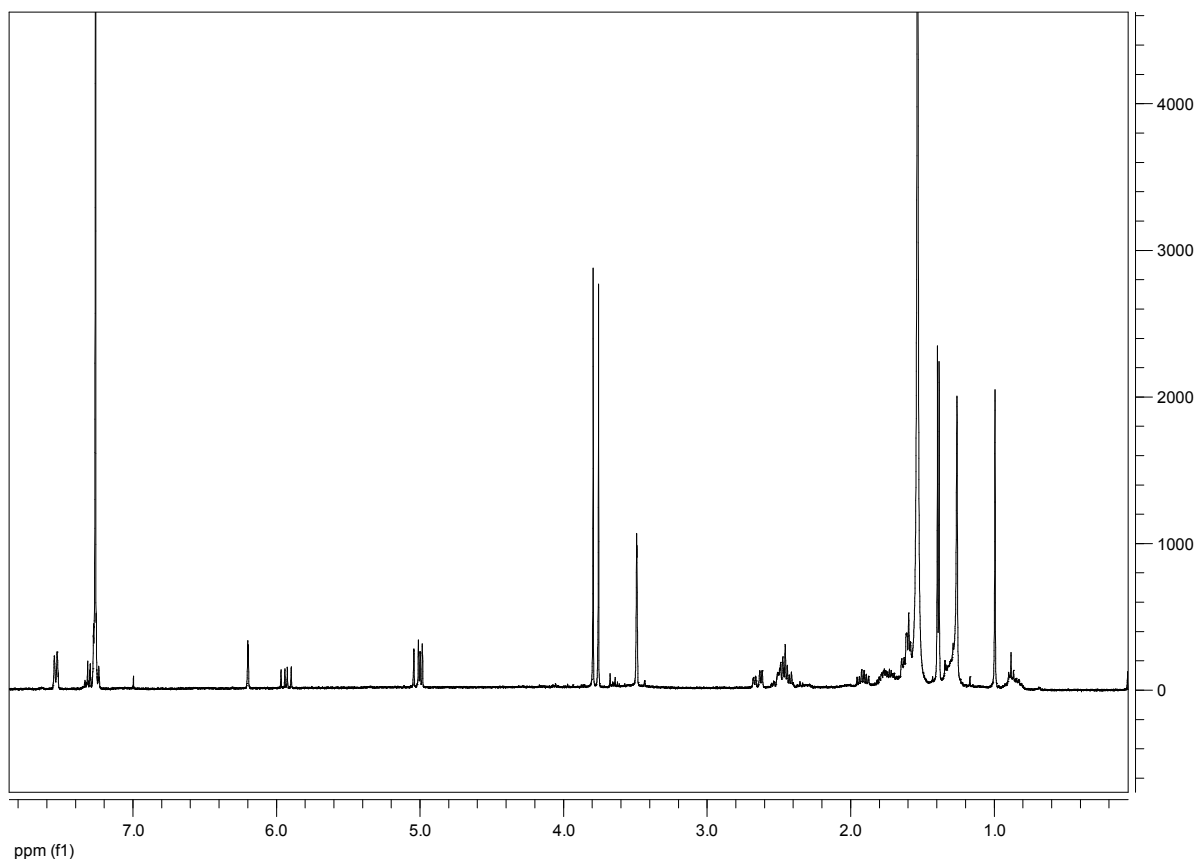
IR spectrum of 15,16-Dihydrodiplopimarane (**6**).



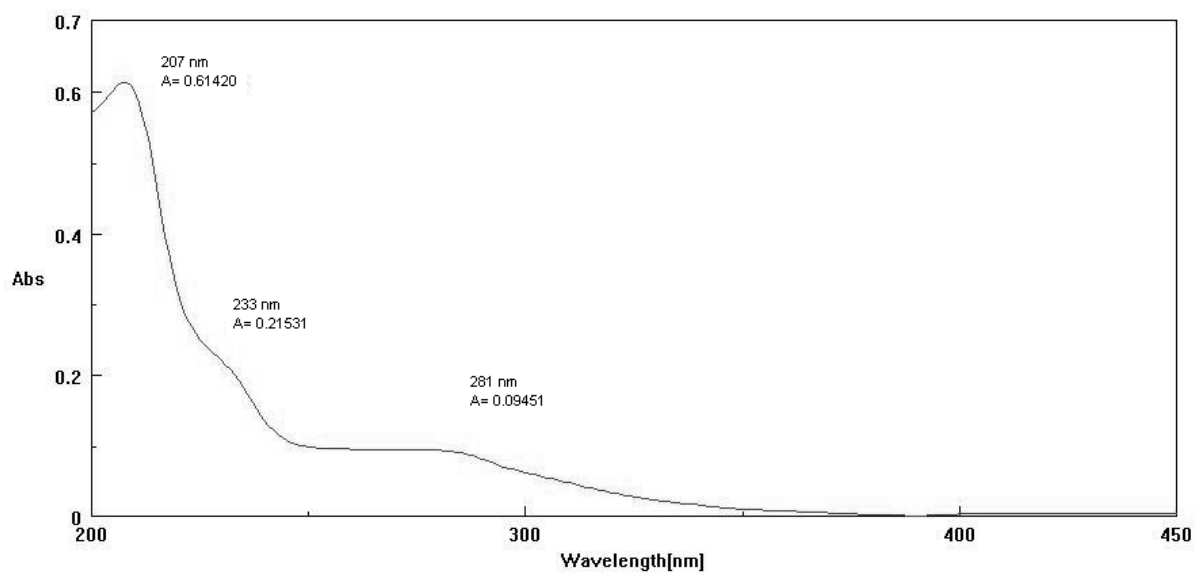
ESIMS (+) spectrum of 15,16-Dihydrodiplopimarane (**6**).



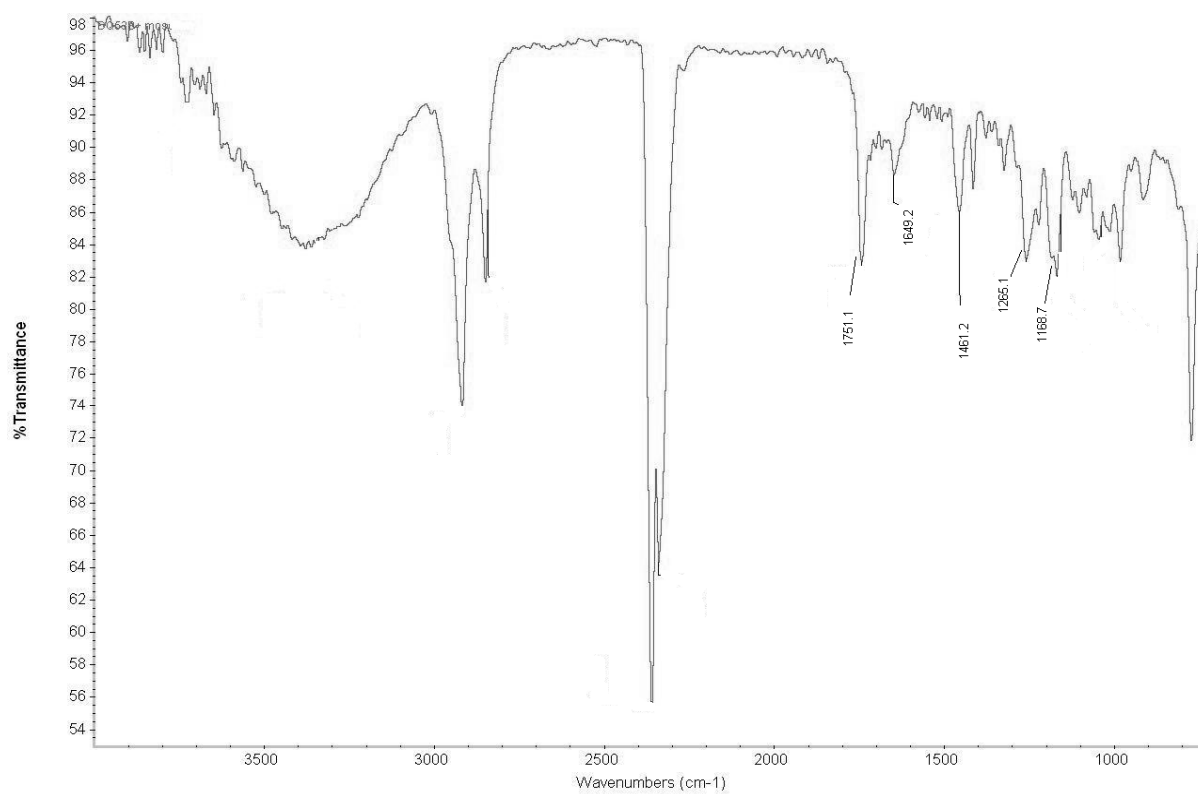
^1H NMR spectrum of 14-*O*-(*S*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-dimethyldiplopimarane (7)



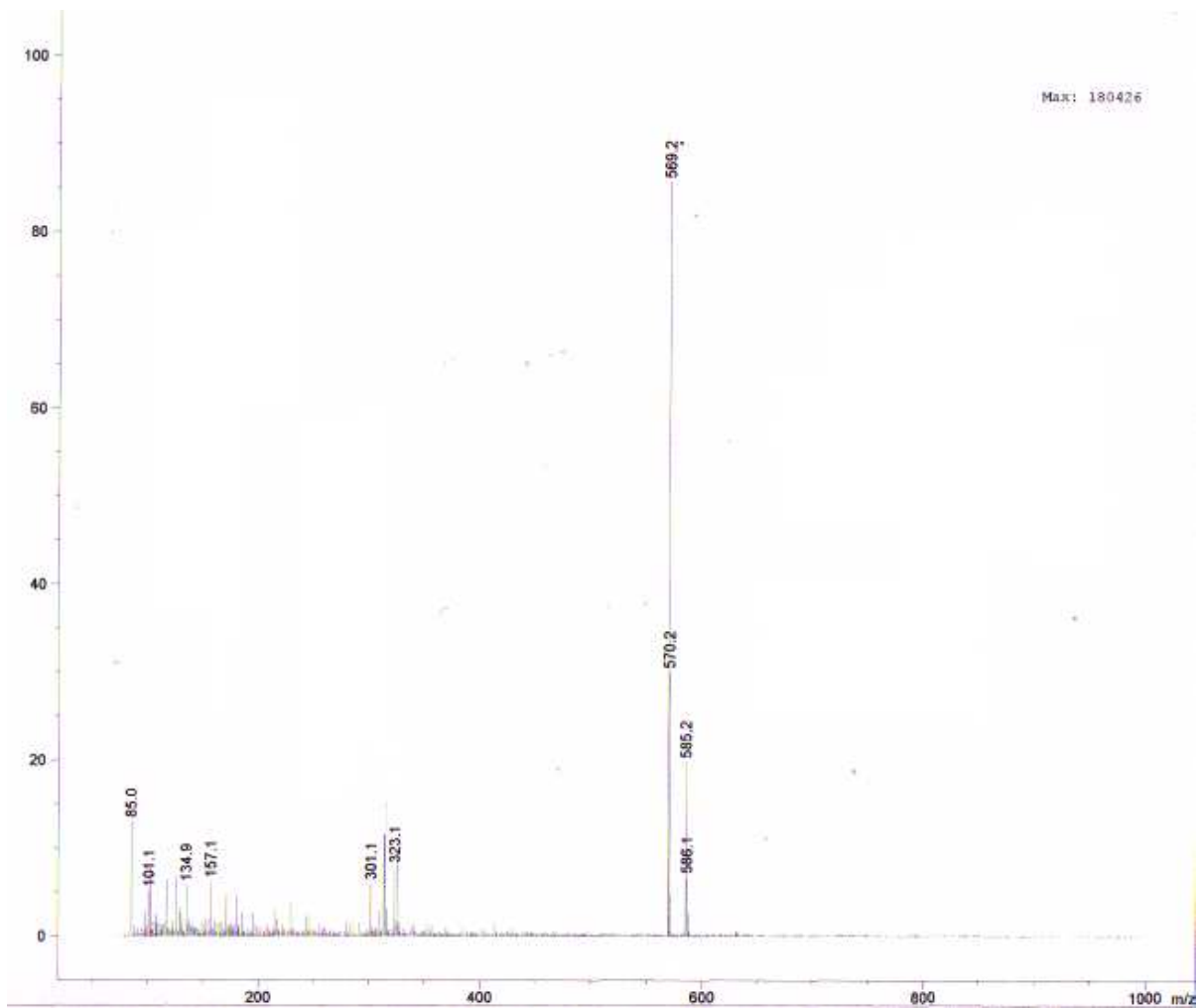
UV spectrum of 14-*O*-(*S*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-dimethyldiplopimarane (7)



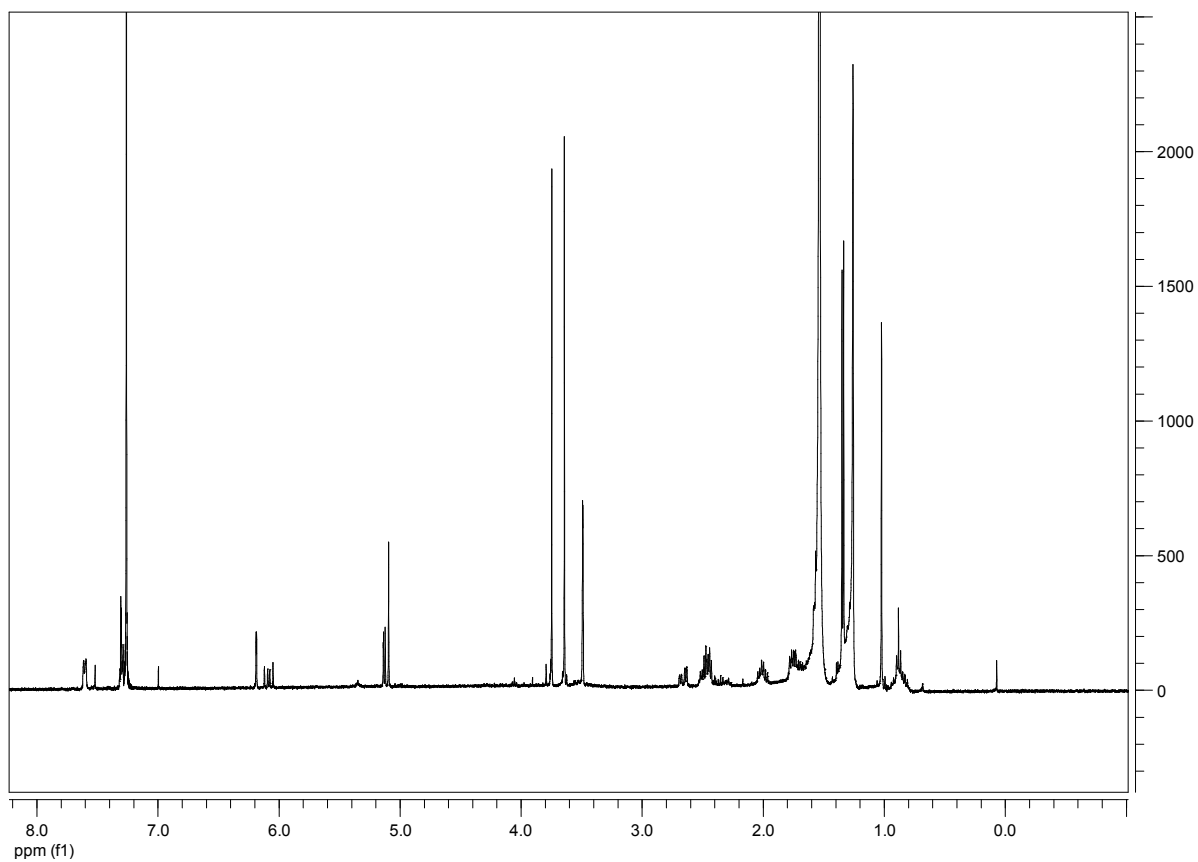
IR spectrum of 14-*O*-(*S*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-dimethyldiplopimarane (**7**)



ESIMS (+) spectrum of 14-*O*-(*S*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-dimethyldiplopimarane (7)

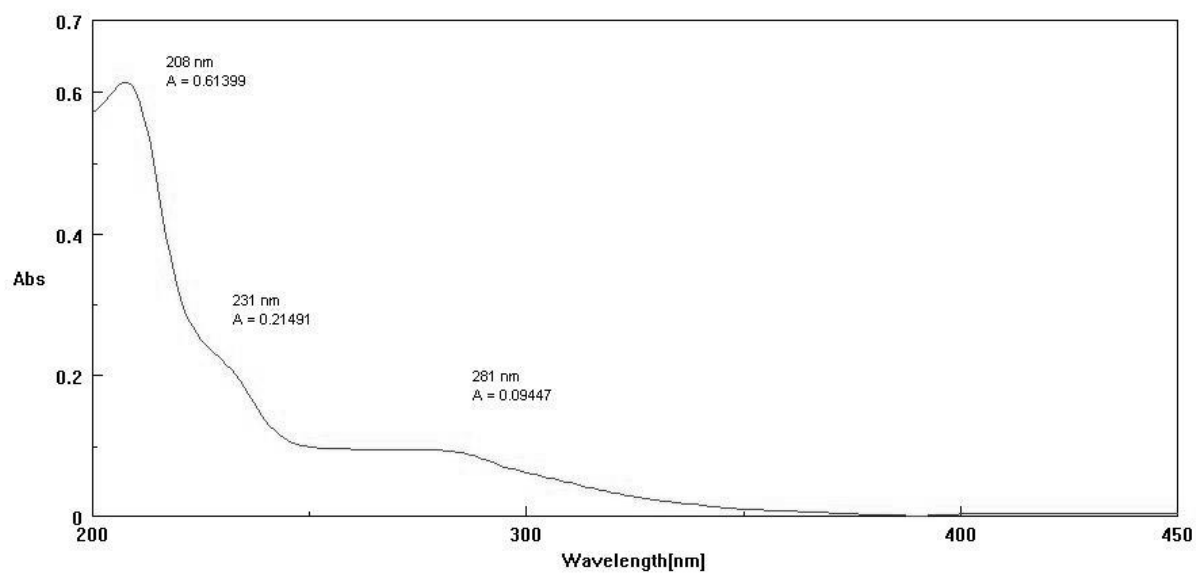


^1H NMR spectrum of 14-*O*-(*R*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-Dimethyldiplopimarane (**8**)

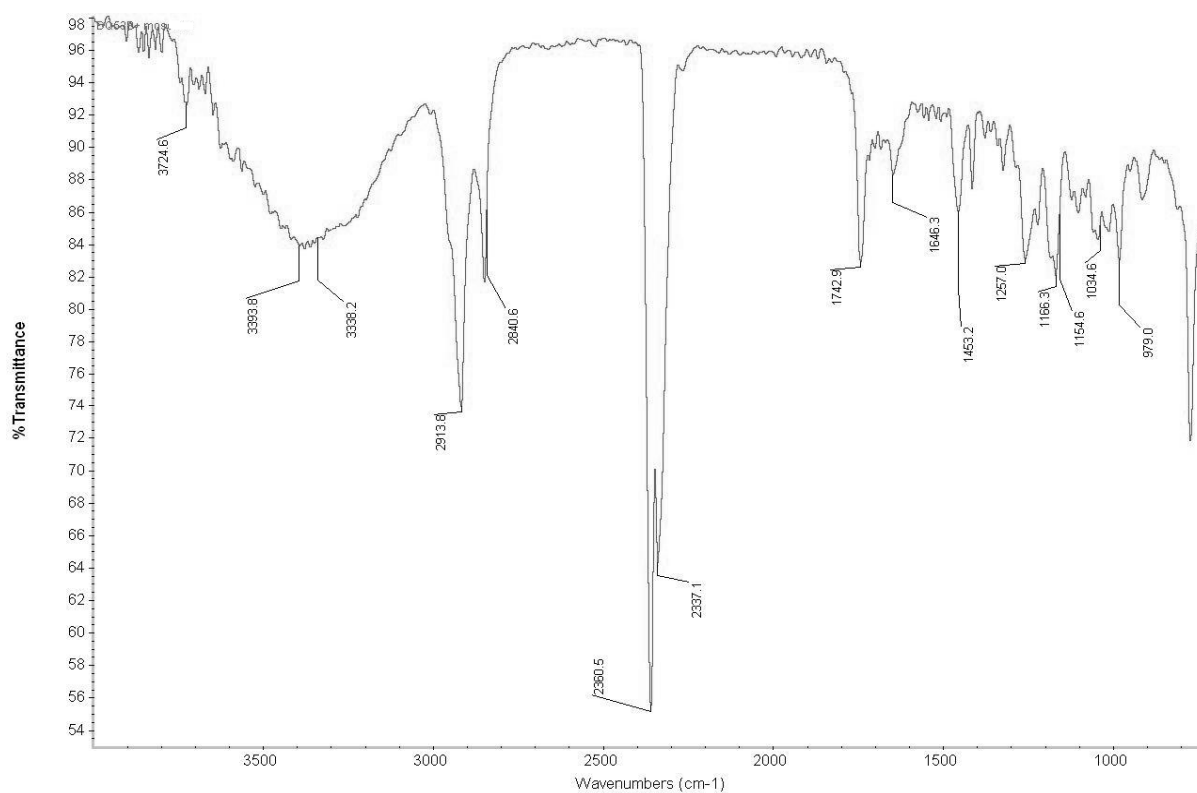


UV spectrum of 14-*O*-(*R*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-Dimethyldiplopimarane (8)

(8)



IR spectrum of 14-*O*-(*R*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-Dimethyldiplopimarane (**8**)



ESIMS (+) spectrum of 14-*O*-(*R*)- α -Methoxy- α -trifluoromethyl- α -phenylacetate (MTPA) ester of 6, 7-*O,O'*-Dimethyldiplopimarane (**8**)

