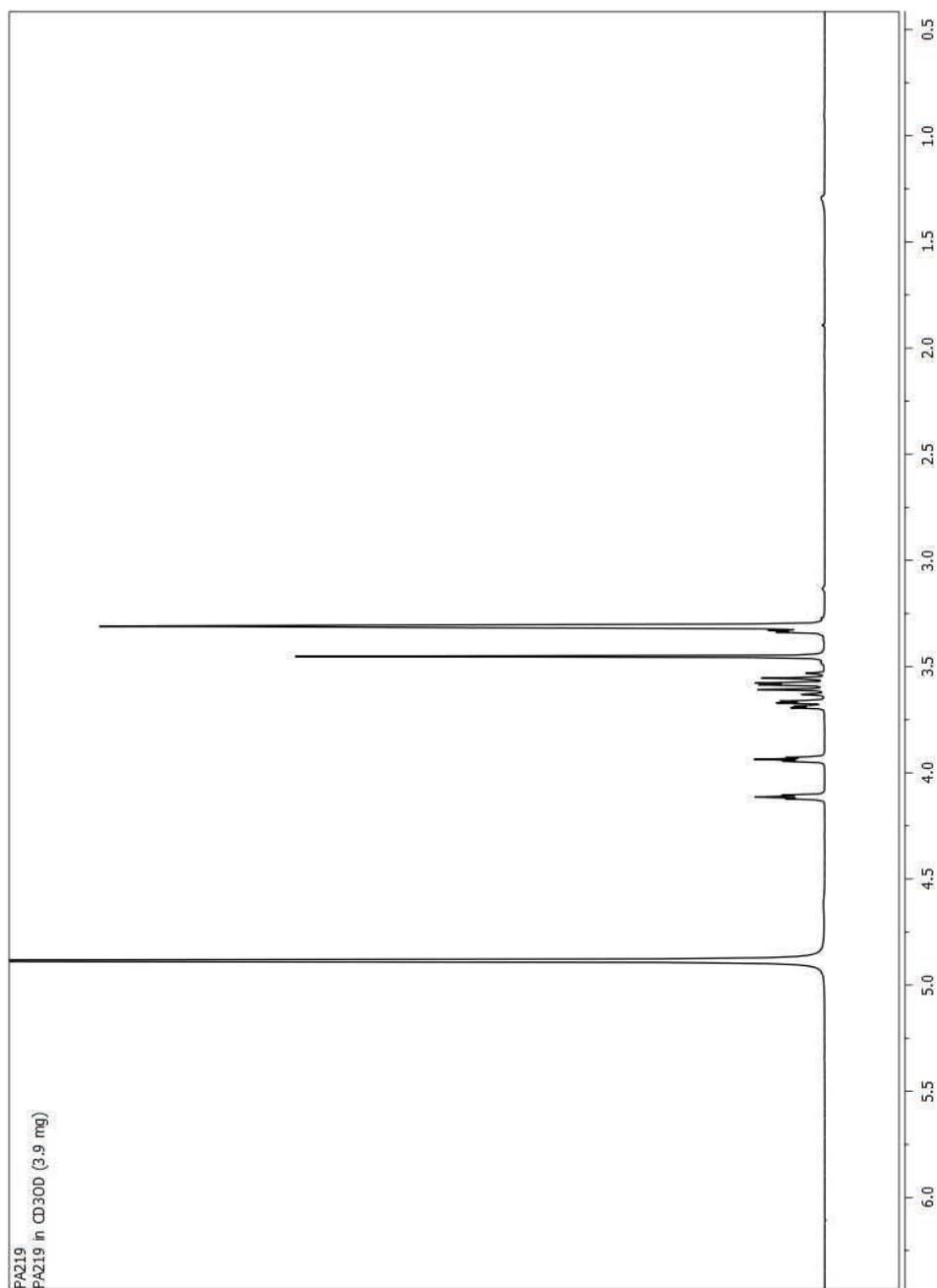
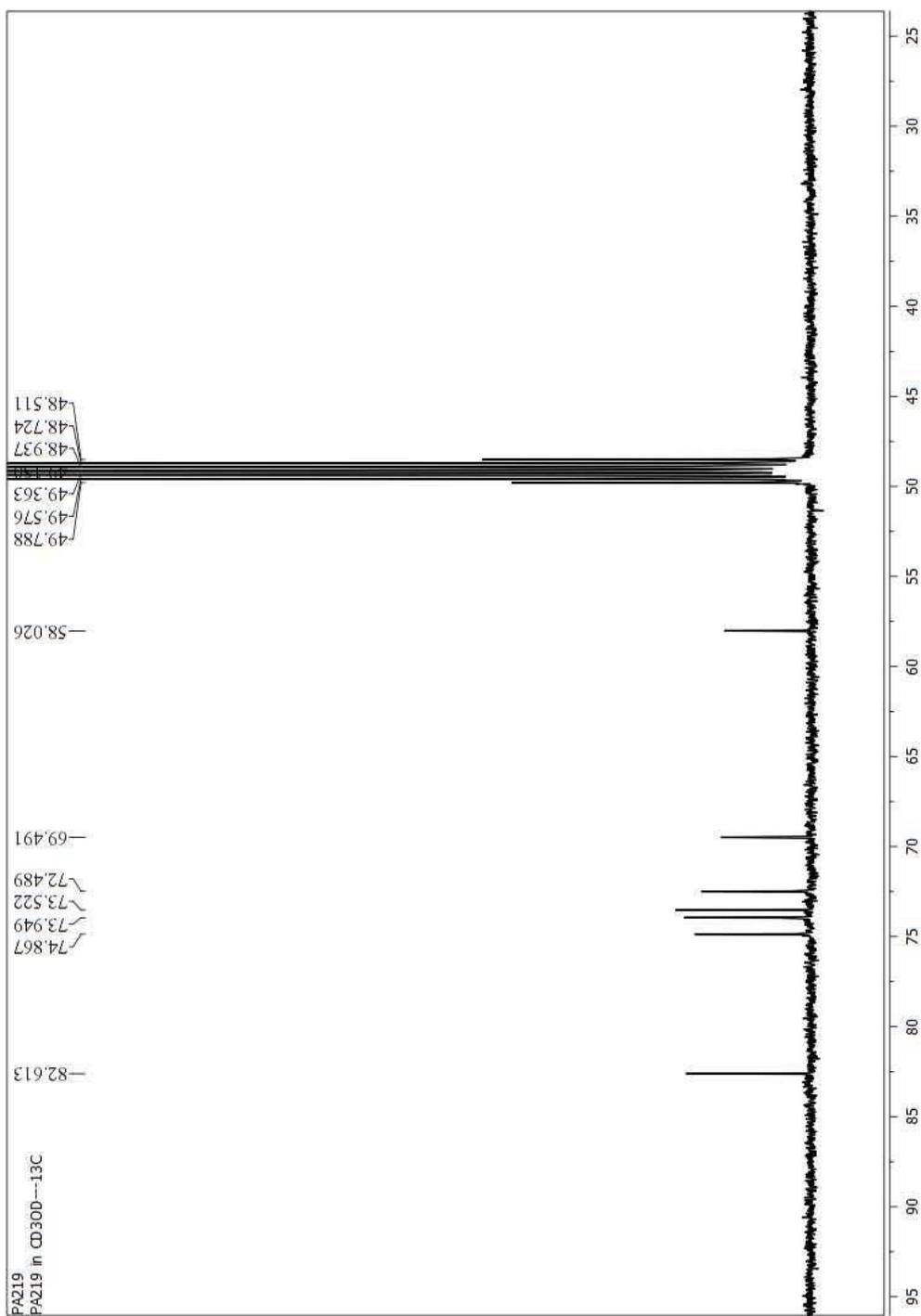


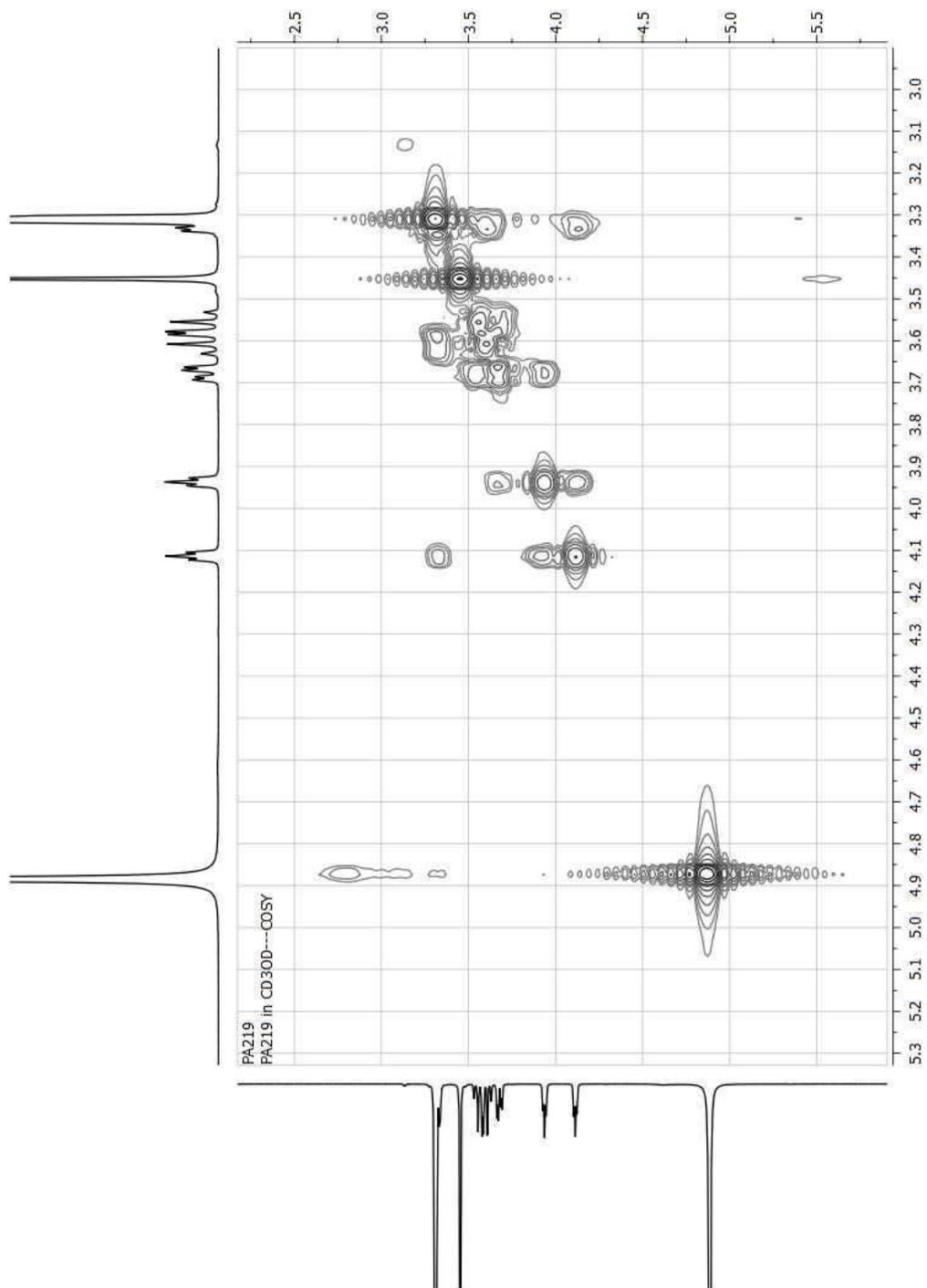
# **APPENDIX**

NMR spectrum

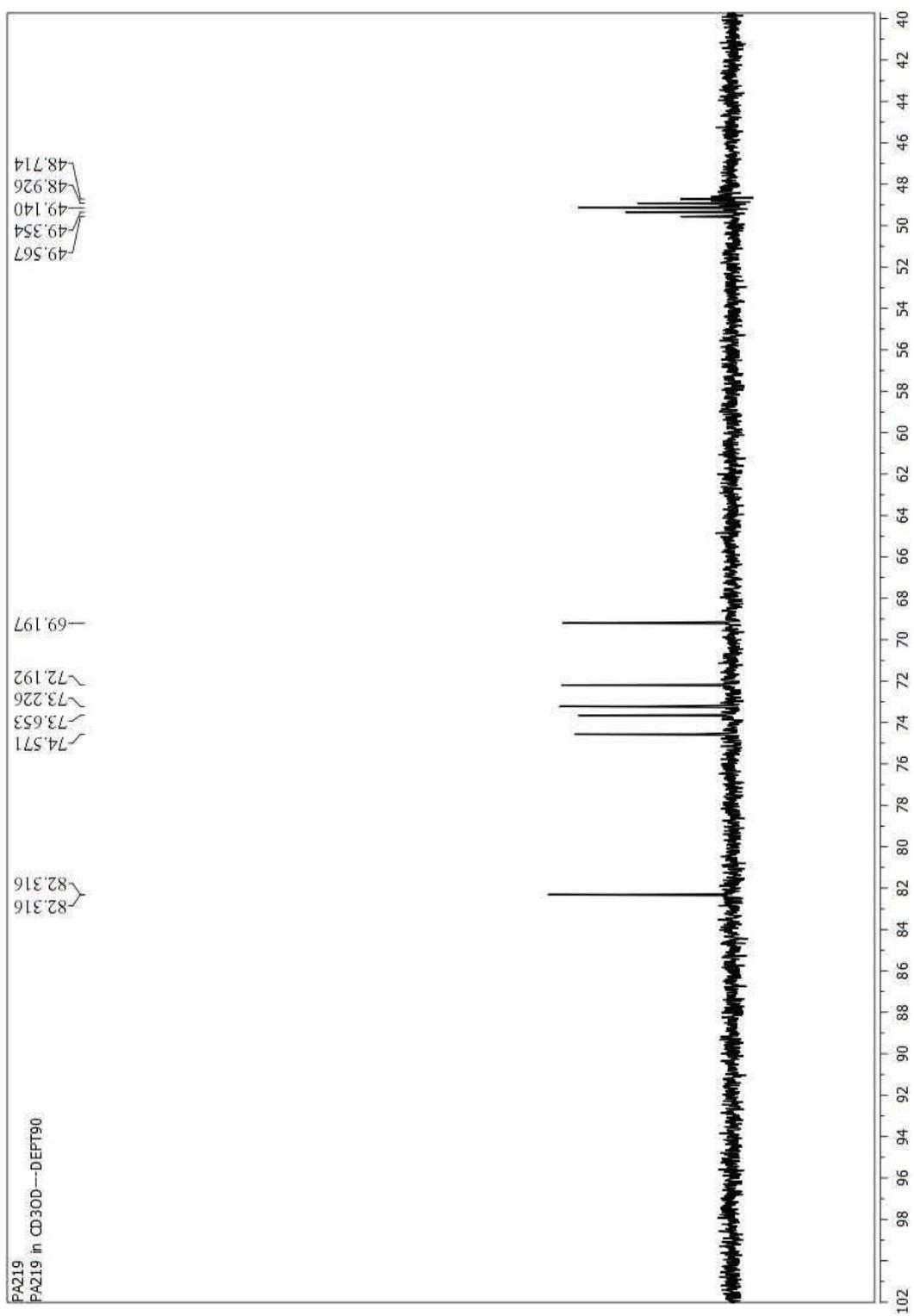
**Figure A.**  $^1\text{H}$  NMR spectrum of *L*-quebrachitol (PA219\*)



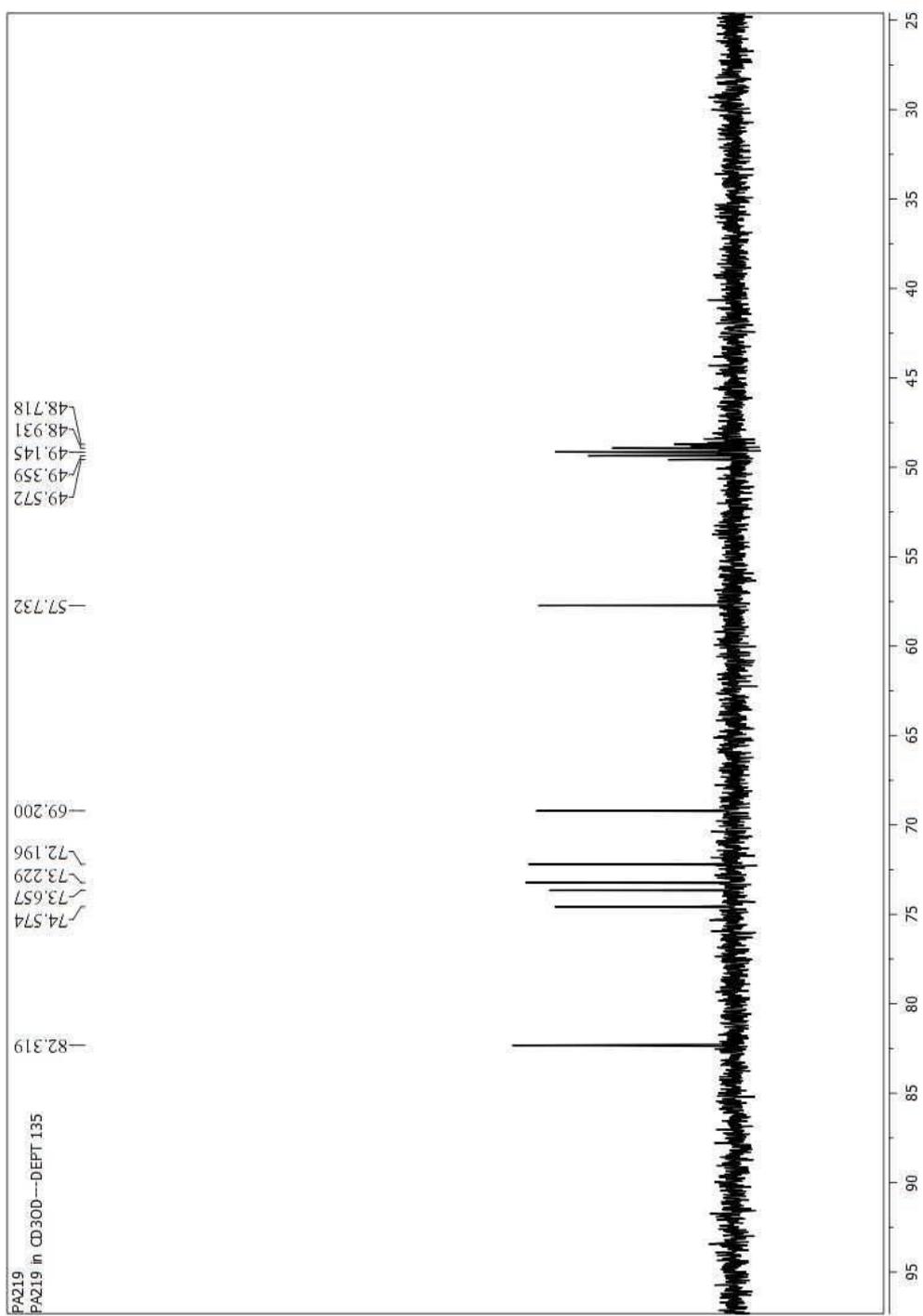
**Figure B.** <sup>13</sup>C NMR spectrum of *L*-quebrachitol (PA219\*)



**Figure C.** COSY spectrum of *L*-quebrachitol (PA219\*)



**Figure D.** DEPT 90 spectrum of *L*-quebrachitol (PA219\*)



**Figure E.** DEPT 135 spectrum of *L*-quebrachitol (PA219\*)

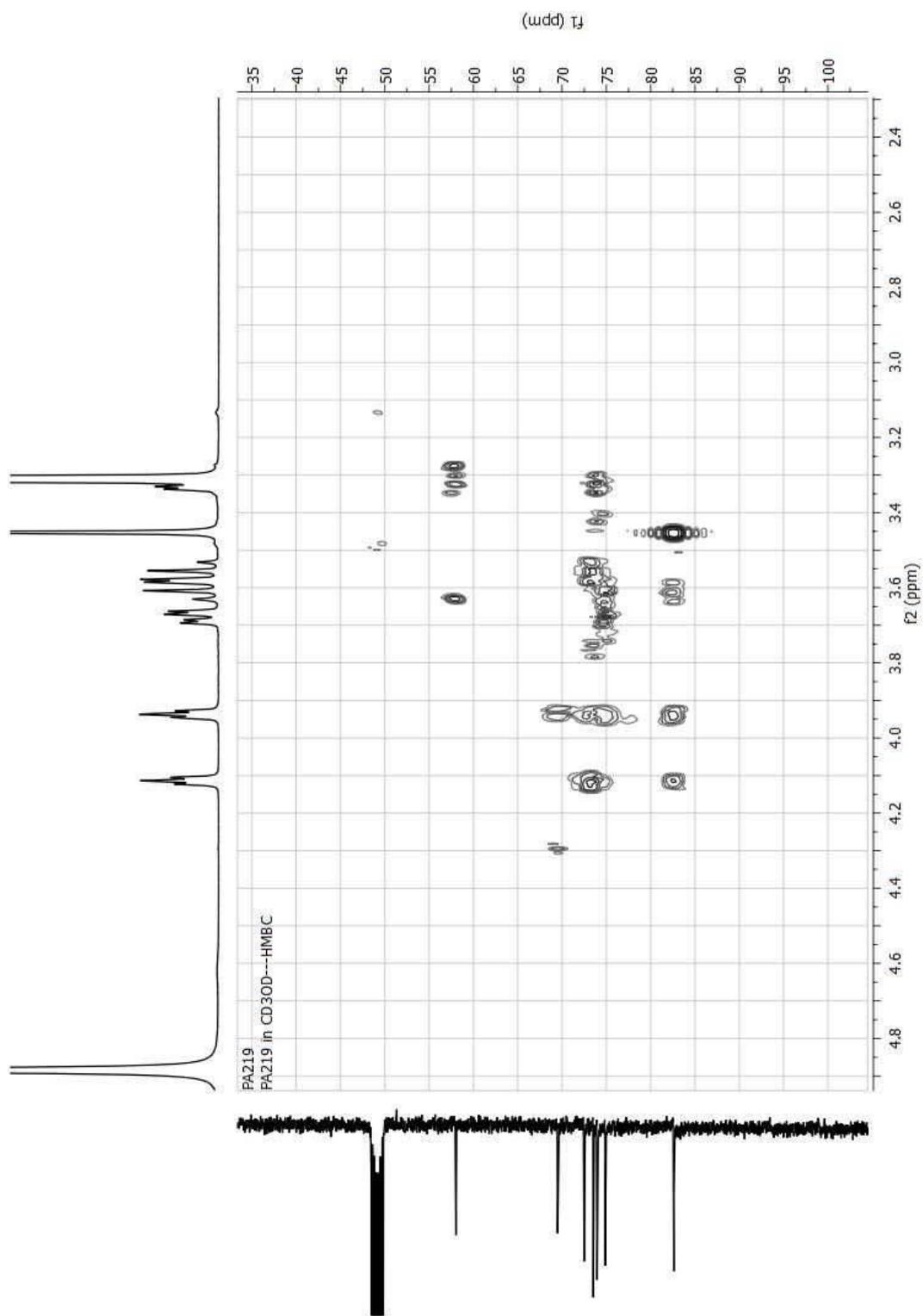
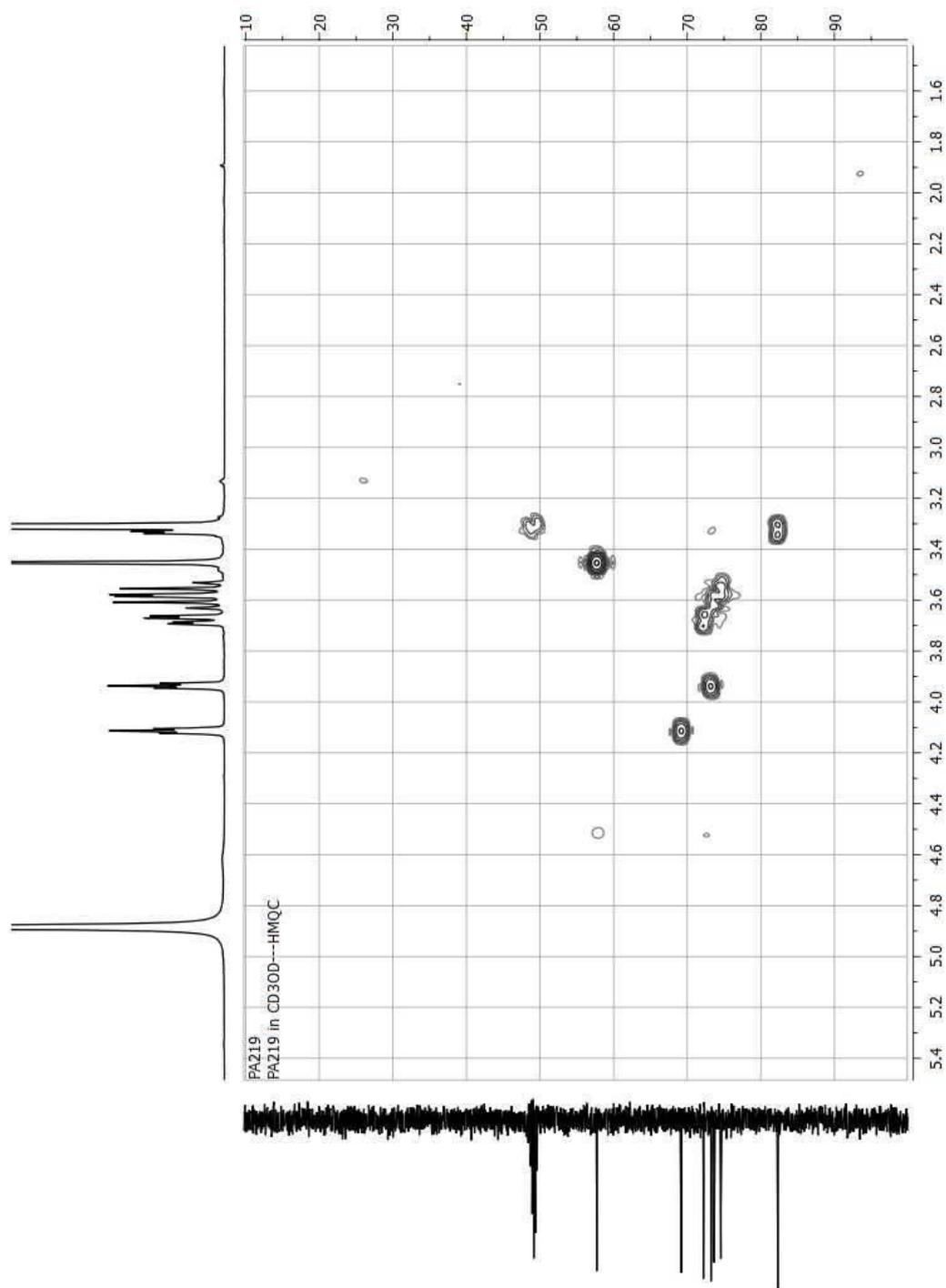
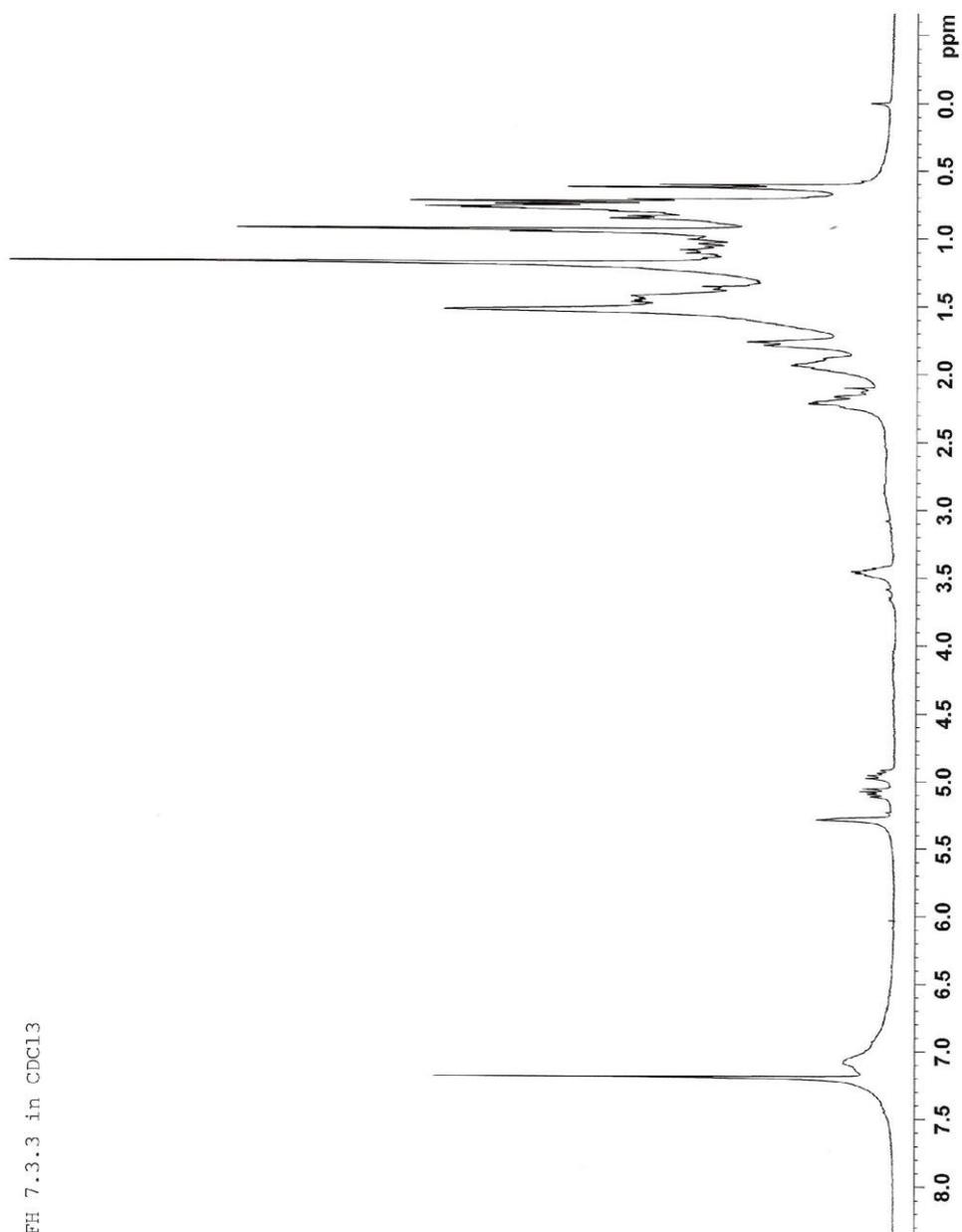


Figure F. HMBC spectrum of *L*-quebrachitol (PA219\*)



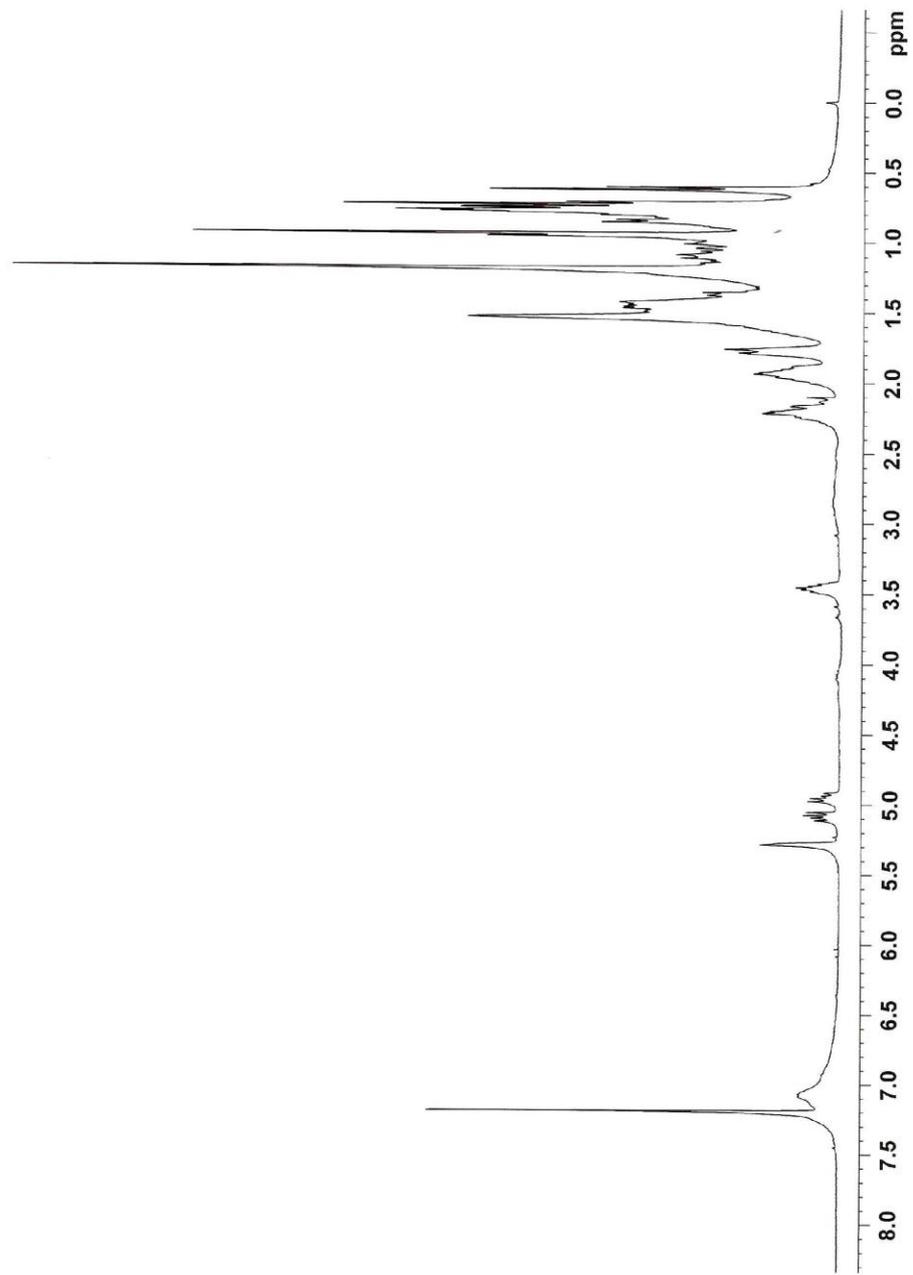
**Figure G.** HMQC spectrum of *L*-quebrachitol (PA219\*)

DfH 7.3.3 in CDCl<sub>3</sub>

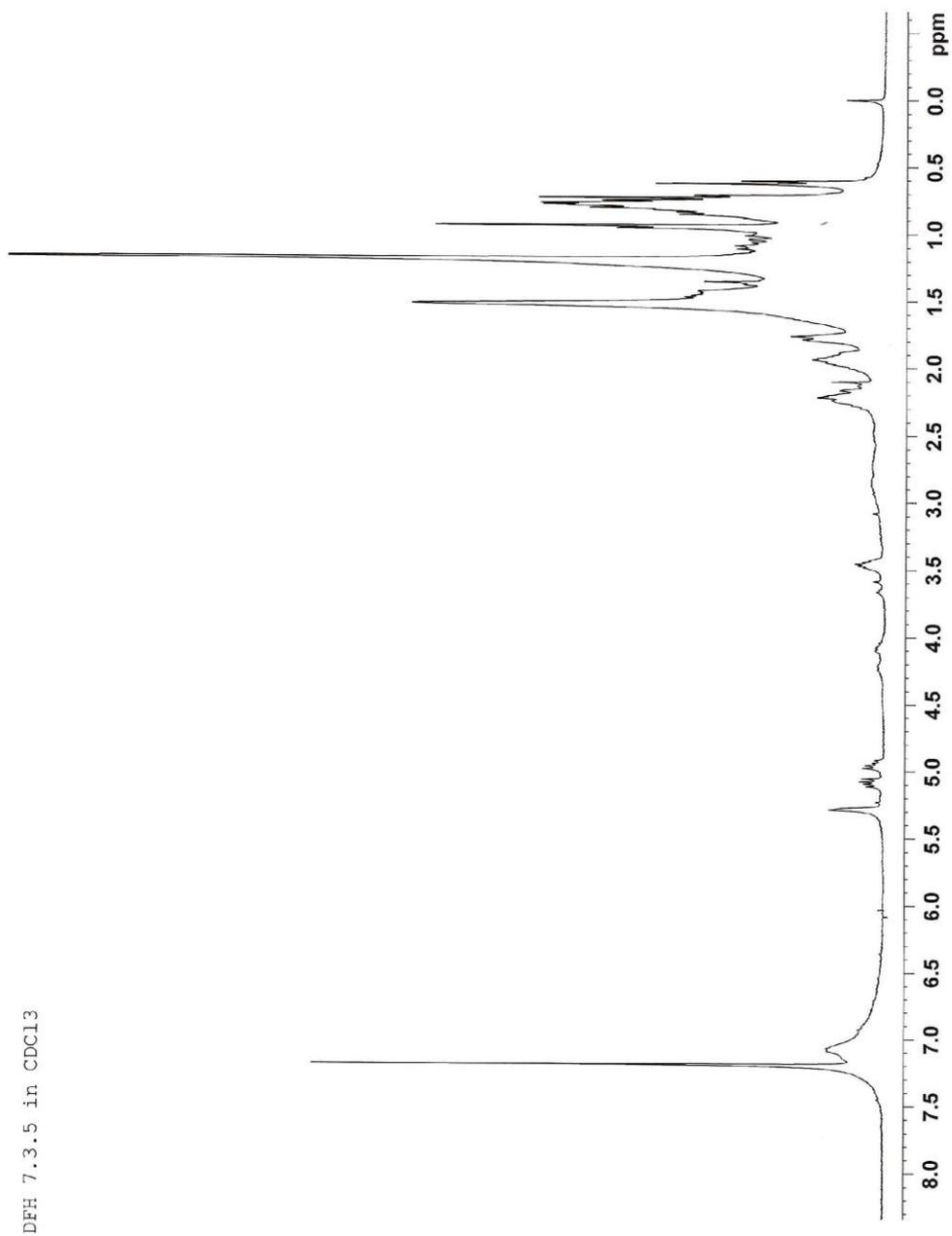


**Figure H.** <sup>1</sup>H-NMR spectrum of stigmasterol (DfH7.3.3\*)

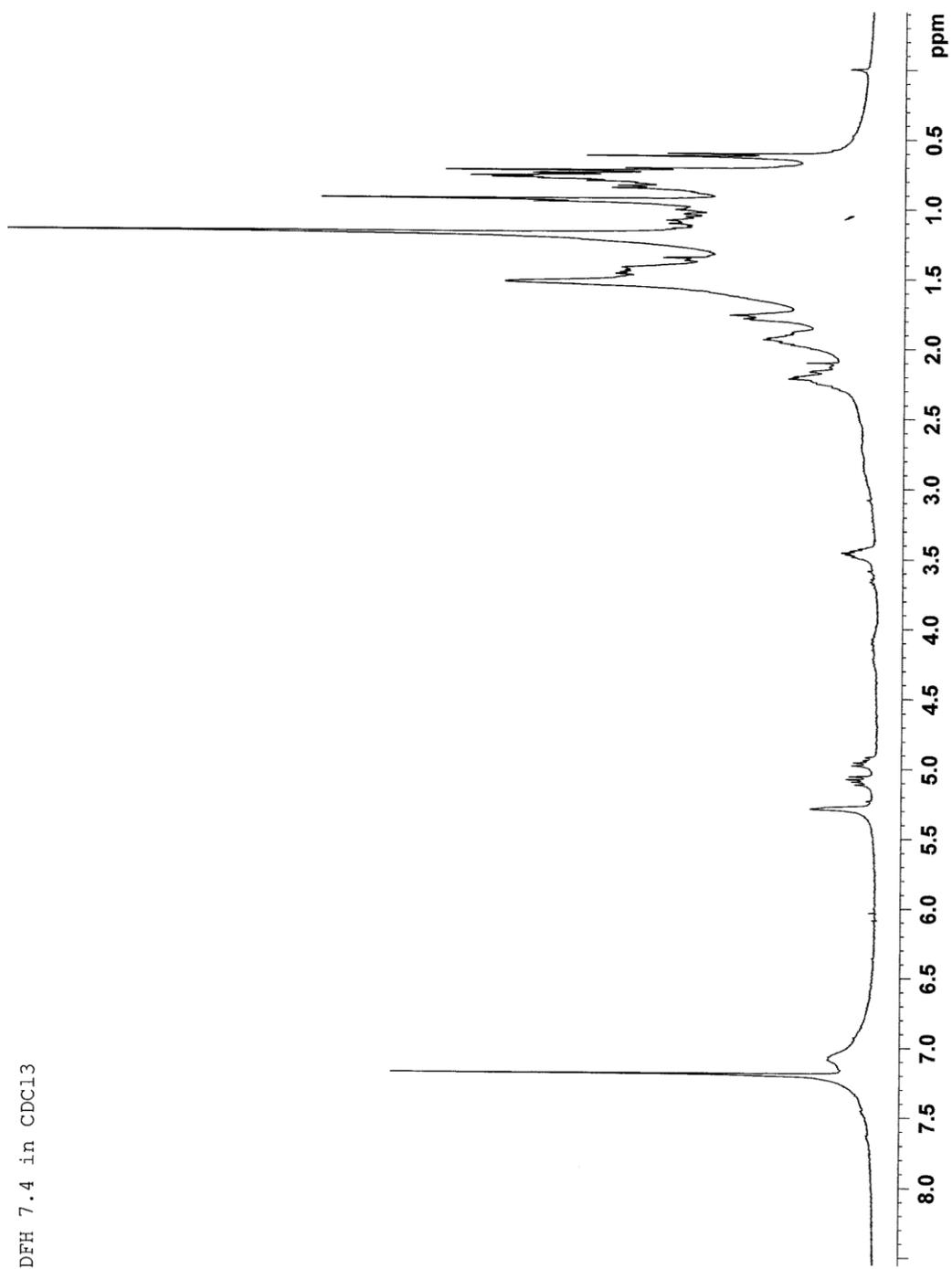
DFH 7.3.4 in CDCl3



**Figure I.** <sup>1</sup>H-NMR spectrum of stigmasterol (DFH7.3.4\*)



**Figure J.**  $^1\text{H-NMR}$  spectrum of stigmasterol (DFH7.3.5\*)



**Figure K.** <sup>1</sup>H-NMR spectrum of stigmasterol (DFH7.4\*)

TfM 8.5 in CD3OD (8.1 mg)

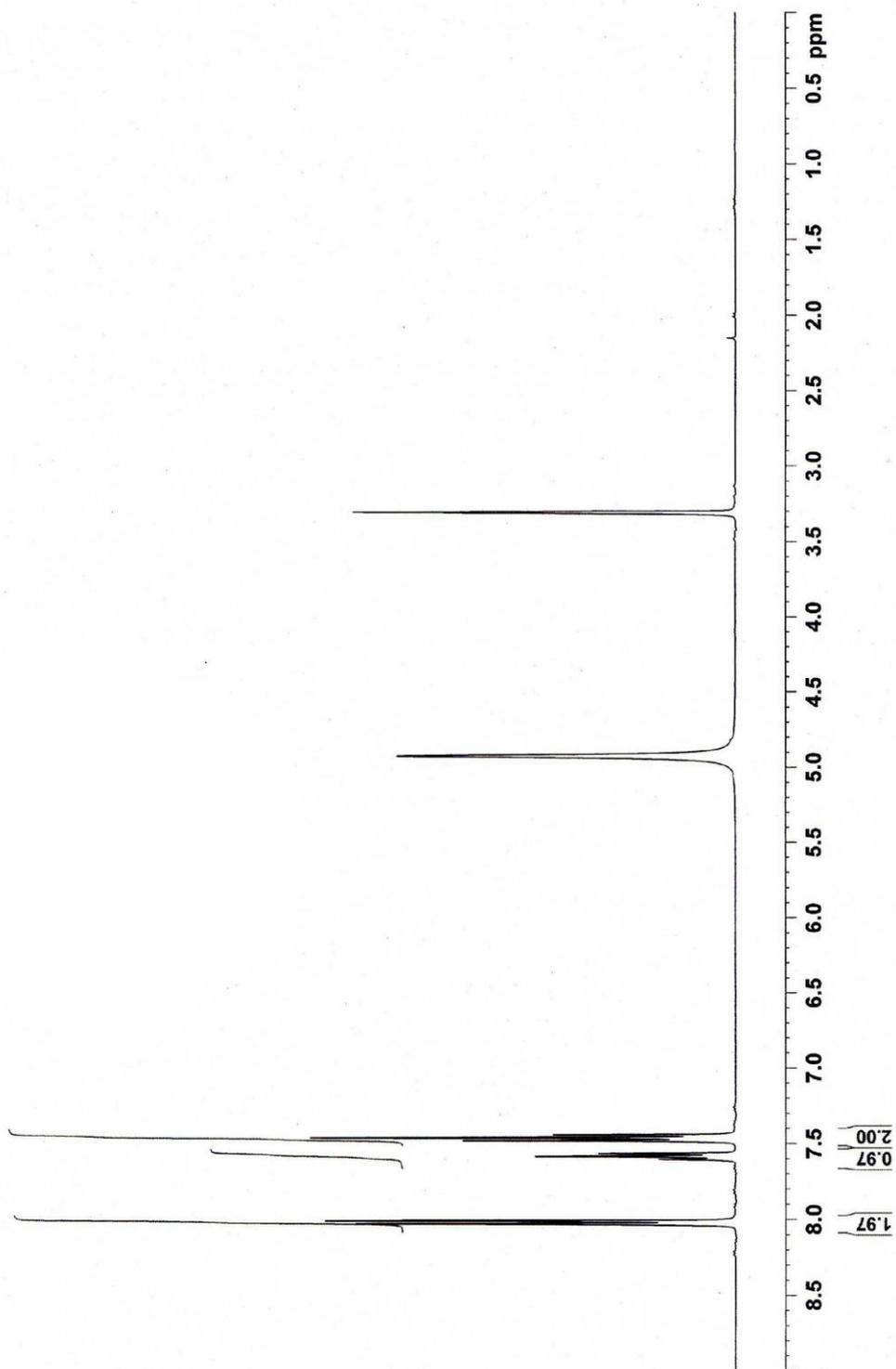


Figure L. <sup>1</sup>H-NMR spectrum of benzoic acid (TfM8.5\*)

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**Publications**

1. **Duangsuree Sanseera**, Wirat Niwatananun, Boonsom Liawruangrath, Saisunee Liawruangrath, Aphiwat Baramee and Stephen G Pyne, Antimicrobial Activities of Various Medicinal Plant Extracts in Family Euphorbiaceae, Pure and Applied Chemistry International Conference 2010, 21<sup>st</sup>-23<sup>rd</sup> January 2010, 708-711, Ubon Ratchathani, Thailand
2. **Duangsuree Sanseera**, Wirat Niwatananun, Boonsom Liawruangrath, Saisunee Liawruangrath, Aphiwat Baramee and Stephen G Pyne, 2012. Chemical Composition and Biological Activities of the Essential Oil from Leaves of *Cleidion javanicum* Bl., *Journal of Essential Oil Bearing Plants*. 15 (2): 186-194.
3. **Duangsuree Sanseera**, Wirat Niwatananun, Boonsom Liawruangrath, Saisunee Liawruangrath, Aphiwat Baramee, Kongkiat Trisuwan and Stephen G Pyne, Antioxidant and Anticancer Activities from Aerial Parts of *Acalypha indica* Linn, will be published in Chiang Mai University Journal of Natural Sciences Volume 12 Number 1 January-June, 2013 (in press).