

Supporting Information

Symmetric Dimeric Adamantanes for Exploring the Structure of The Two Viroporins: Influenza Virus M2 and HCV p7

Yasmine M. Mandour ^{a*}, Ulrike Breitinge^r ^b, Chunlong Ma ^c, Jun Wang ^c, Frank Boeckler ^d,
Hans-Georg Breitinge^r ^b, Darius Zlotos ^a

^a German University in Cairo, Department of Pharmaceutical Chemistry, New Cairo City, 11835 Cairo, Egypt.

^b German University in Cairo, Department of Biochemistry, New Cairo City, 11835 Cairo, Egypt.

^c University of Arizona, Department of Pharmacology and Toxicology, Tucson, AZ 85721, USA.

^d Eberhard Karls University Tuebingen, Department of Pharmaceutical and Medicinal Chemistry, Auf der Morgenstelle 8, 72076 Tuebingen, Germany

* The German University in Cairo, Department of Pharmaceutical Chemistry, New Cairo City, 11835 Cairo, Egypt. Tel: +202-27590715; Fax: +202-27581041; E-mail: yasmine.magdy@guc.edu.eg

- Figure S1.** ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of Octanedioic acid bis-adamantan-1-ylamide (**1c**)
- Figure S2.** ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ - Di-adamantan-1-yl-butane-1,4-diamine (**2a**)
- Figure S3.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ - Di-adamantan-1-yl-hexane-1,4-diamine (**2b**)
- Figure S4.** ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ - Di-adamantan-1-yl-octane-1,4-diamine (**2c**)
- Figure S5.** ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ - Di-adamantan-1-yl-decane-1,4-diamine (**2d**)
- Figure S6.** ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ - Di-adamantan-1-yl-dodecane-1,4-diamine (**2e**)
- Figure S7.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ -Bis-(1-adamantan-1-yl-ethyl)-butane-1,4-diamine (**4a**)
- Figure S8.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ -Bis-(1-adamantan-1-yl-ethyl)-hexane-1,6-diamine (**4b**)
- Figure S9.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ -Bis-(1-adamantan-1-yl-ethyl)-octane-1,8-diamine (**4c**)
- Figure S10.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ -Bis-(1-adamantan-1-yl-ethyl)-decane-1,10-diamine (**4d**)
- Figure S11.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of $\text{N,N}'$ -Bis-(1-adamantan-1-yl-ethyl)-dodecane-1,12-diamine (**4e**)
- Figure S12.** ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of (1-Adamantan-1-yl-ethyl)-butyl-amine (**5a**)

Figure S1. ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of Octanedioic acid bis-adamantan-1-ylamide (**1c**)

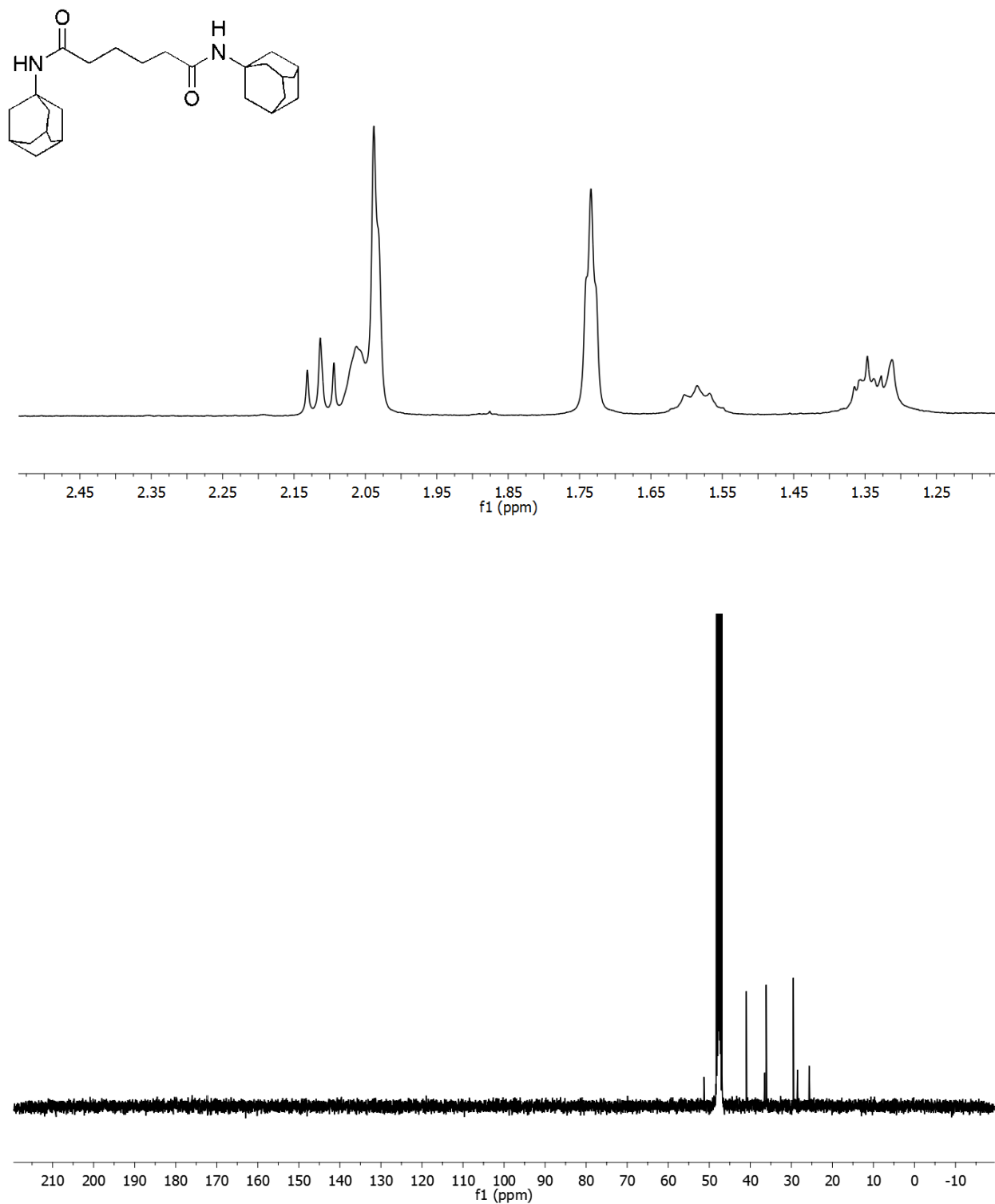


Figure S2. ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Di-adamantan-1-yl-butane-1,4-diamine (**2a**)

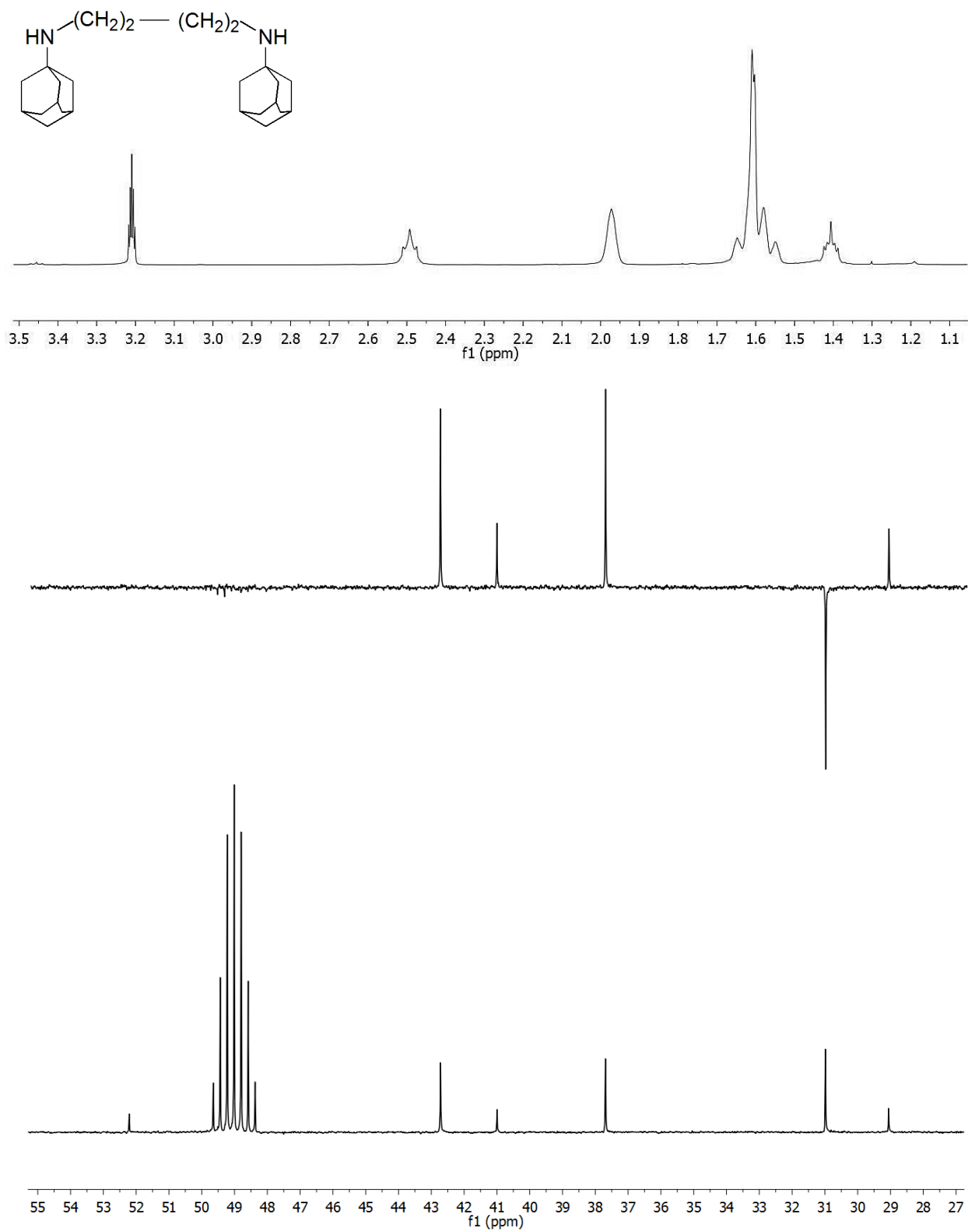


Figure S3. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N'- Di-adamantan-1-yl-hexane-1,4-diamine (**2b**)

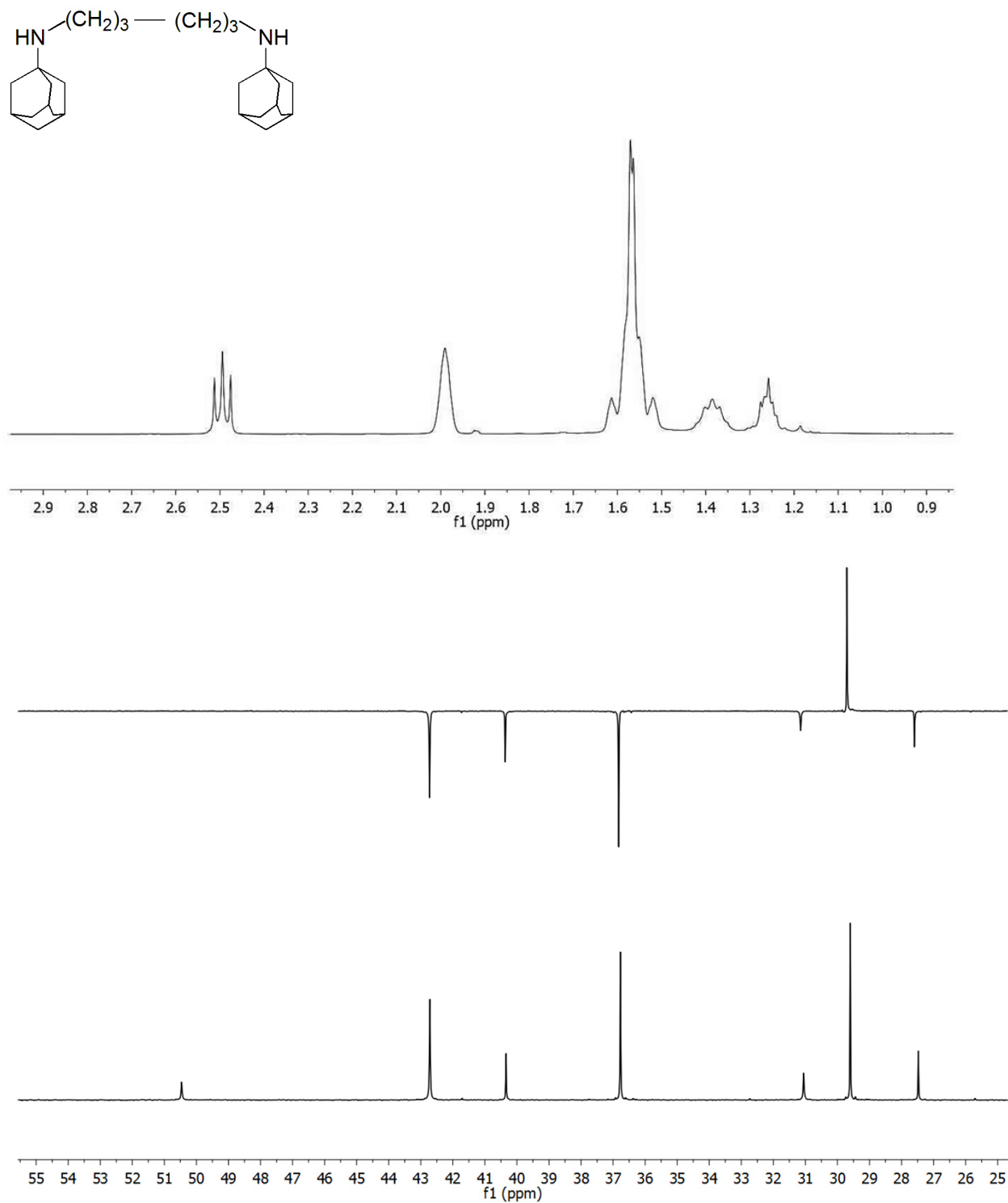


Figure S4. ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Di-adamantan-1-yl-octane-1,4-diamine (**2c**)

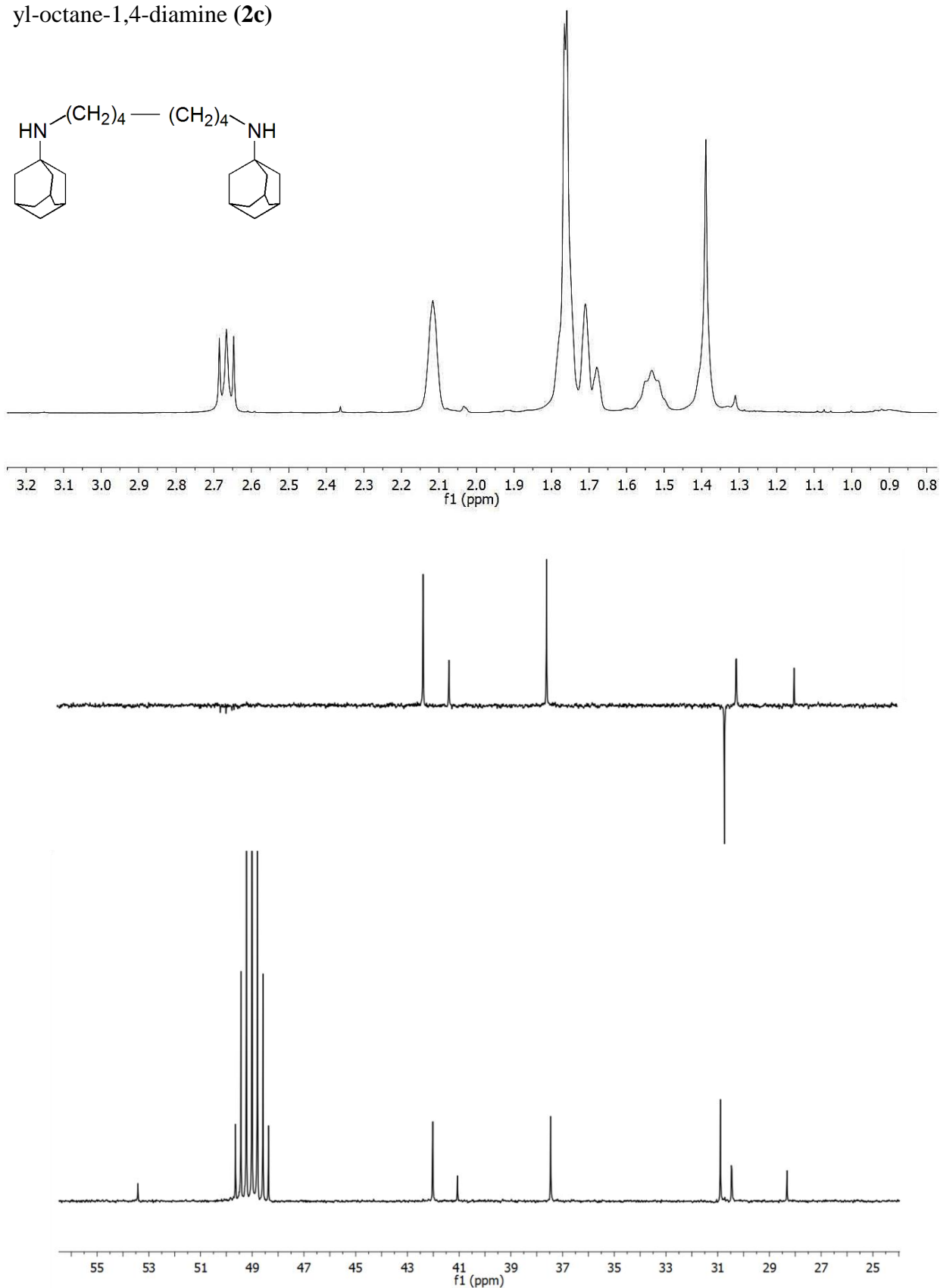


Figure S5. ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Di-adamantan-1-yl-decane-1,4-diamine (**2d**)

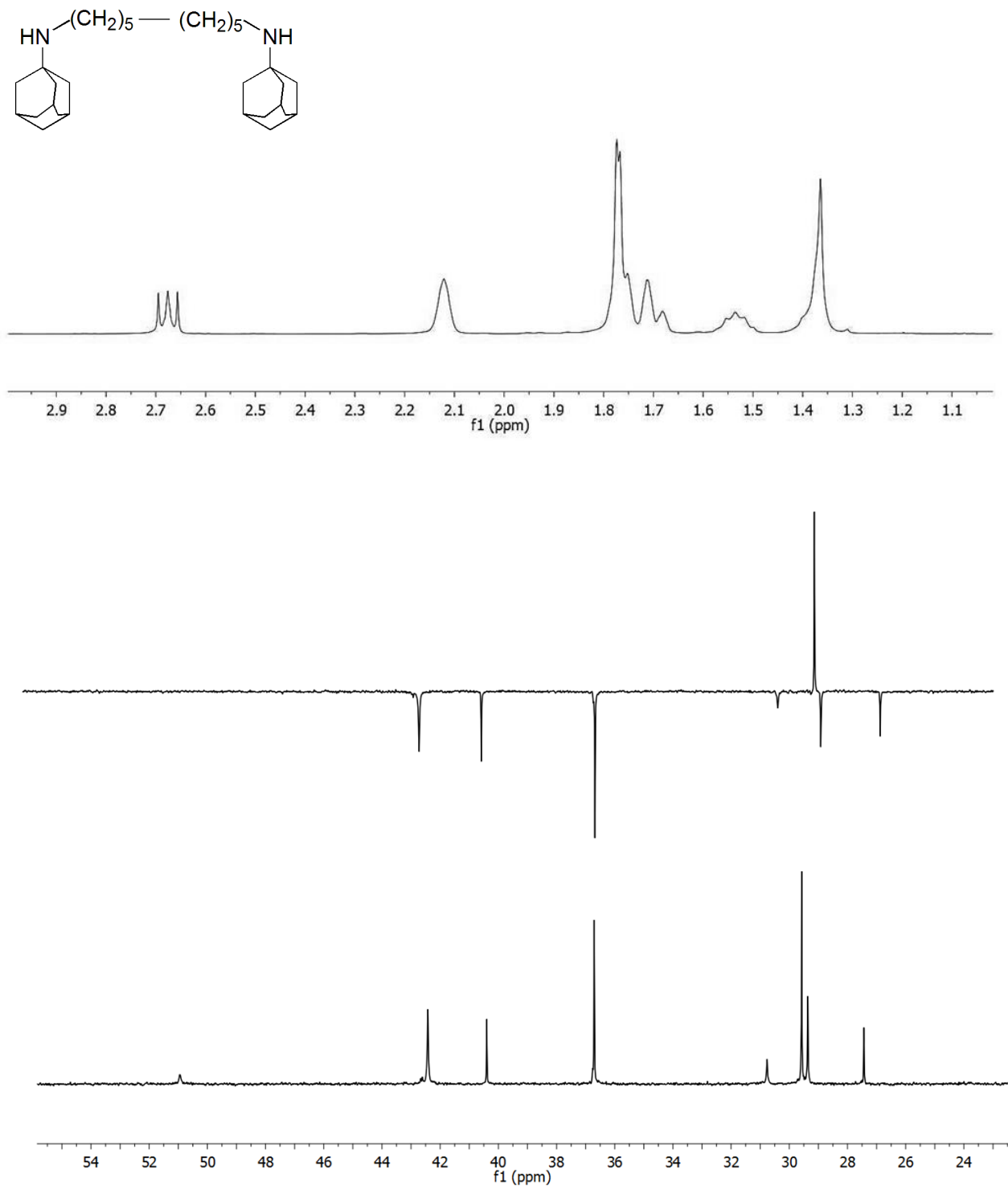


Figure S6. ^1H (CD_3OD , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Di-adamantan-1-yl-dodecane-1,4-diamine (**2e**)

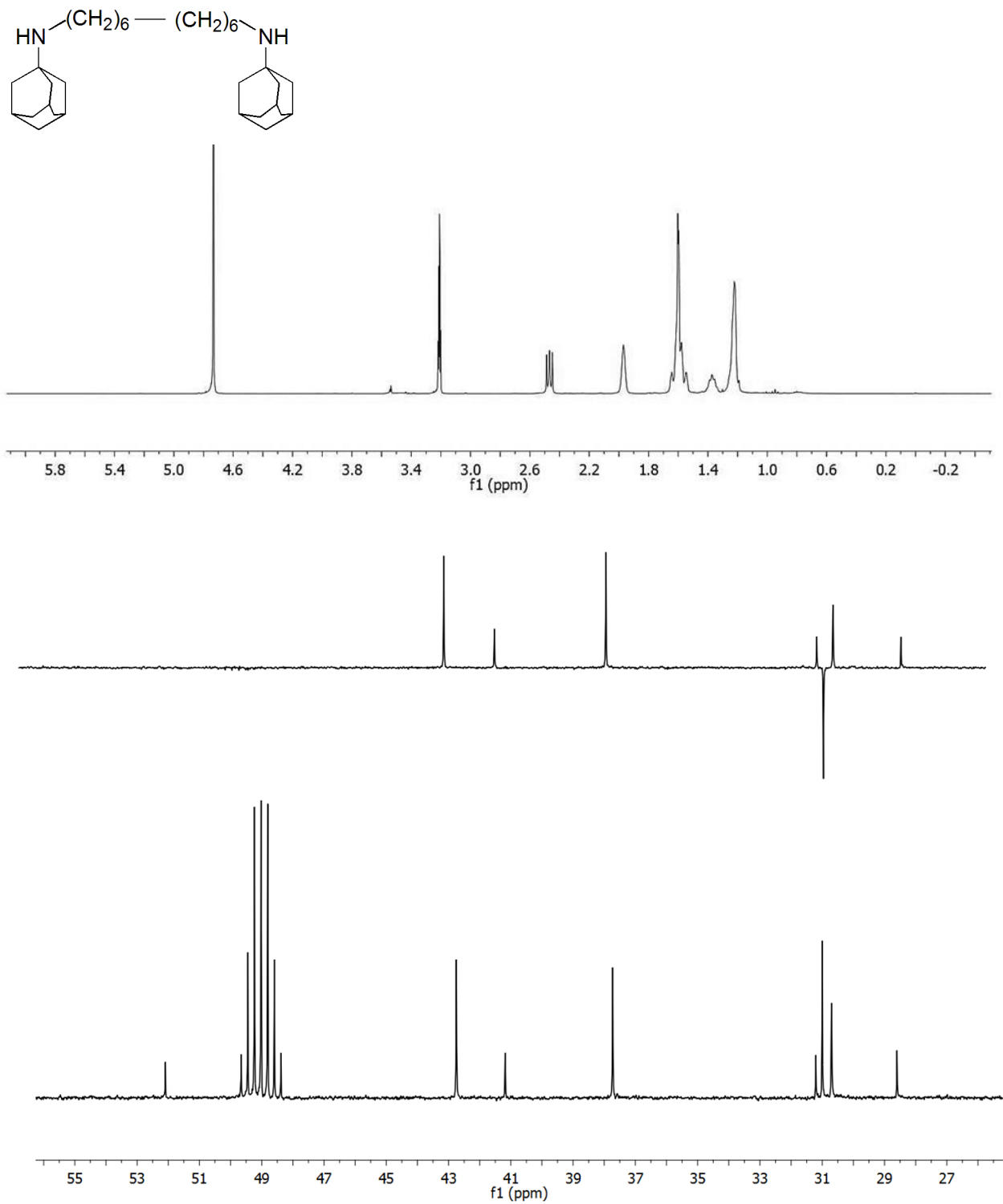


Figure S7. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Bis-(1-adamantan-1-yl-ethyl)-butane-1,4-diamine (**4a**)

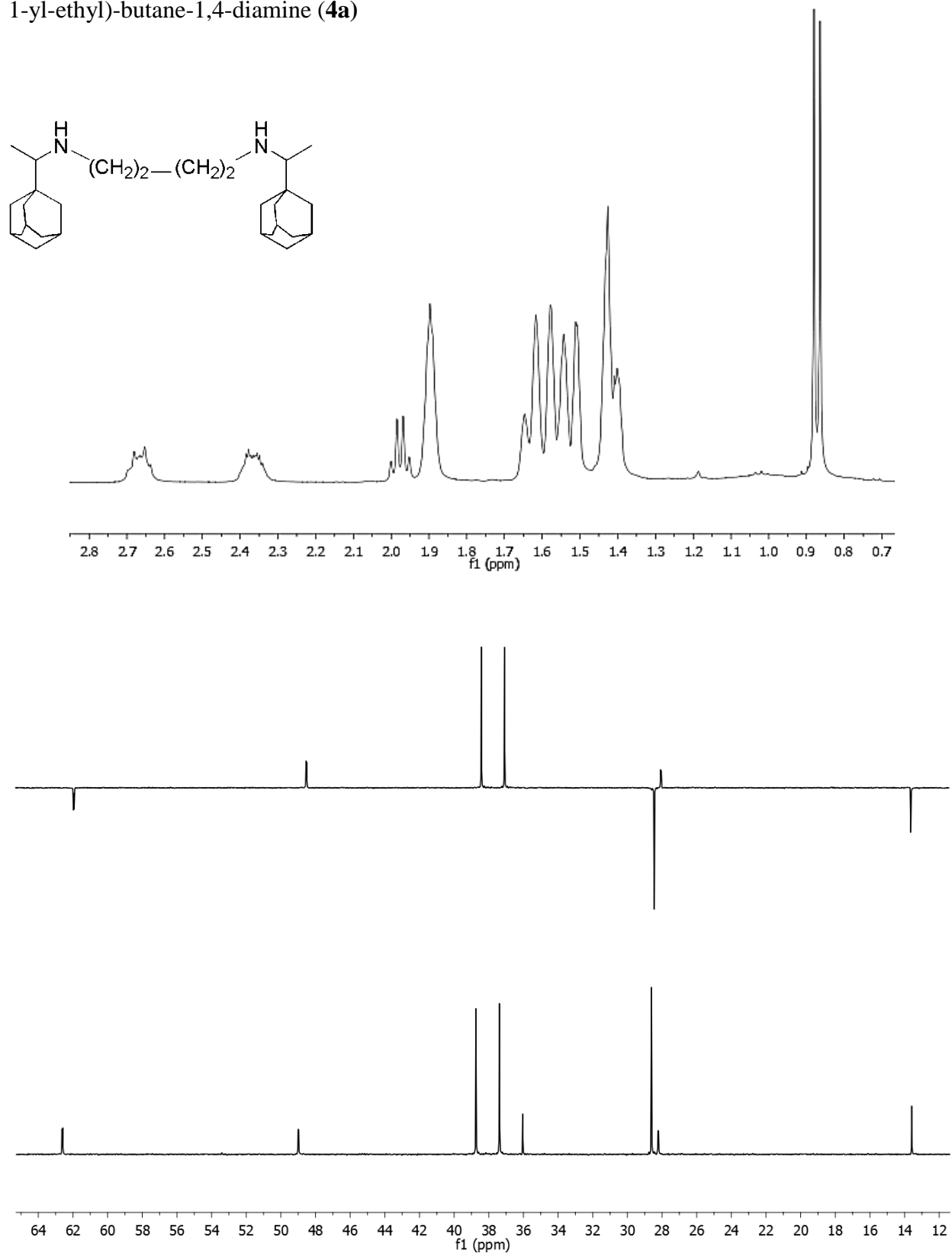


Figure S8. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Bis-(1-adamantan-1-yl-ethyl)-hexane-1,6-diamine (**4b**)

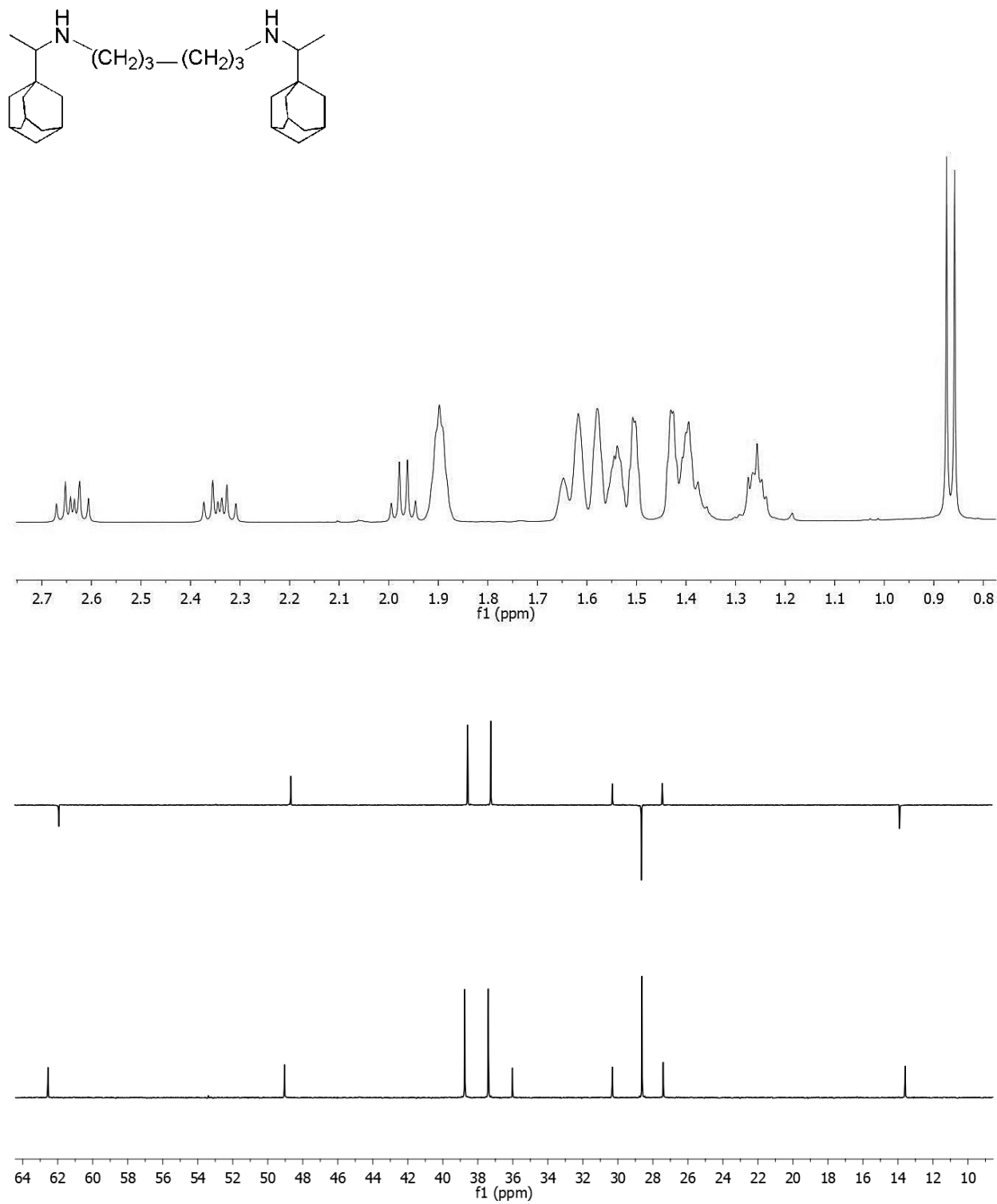


Figure S9. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Bis-(1-adamantan-1-yl-ethyl)-octane-1,8-diamine (**4c**)

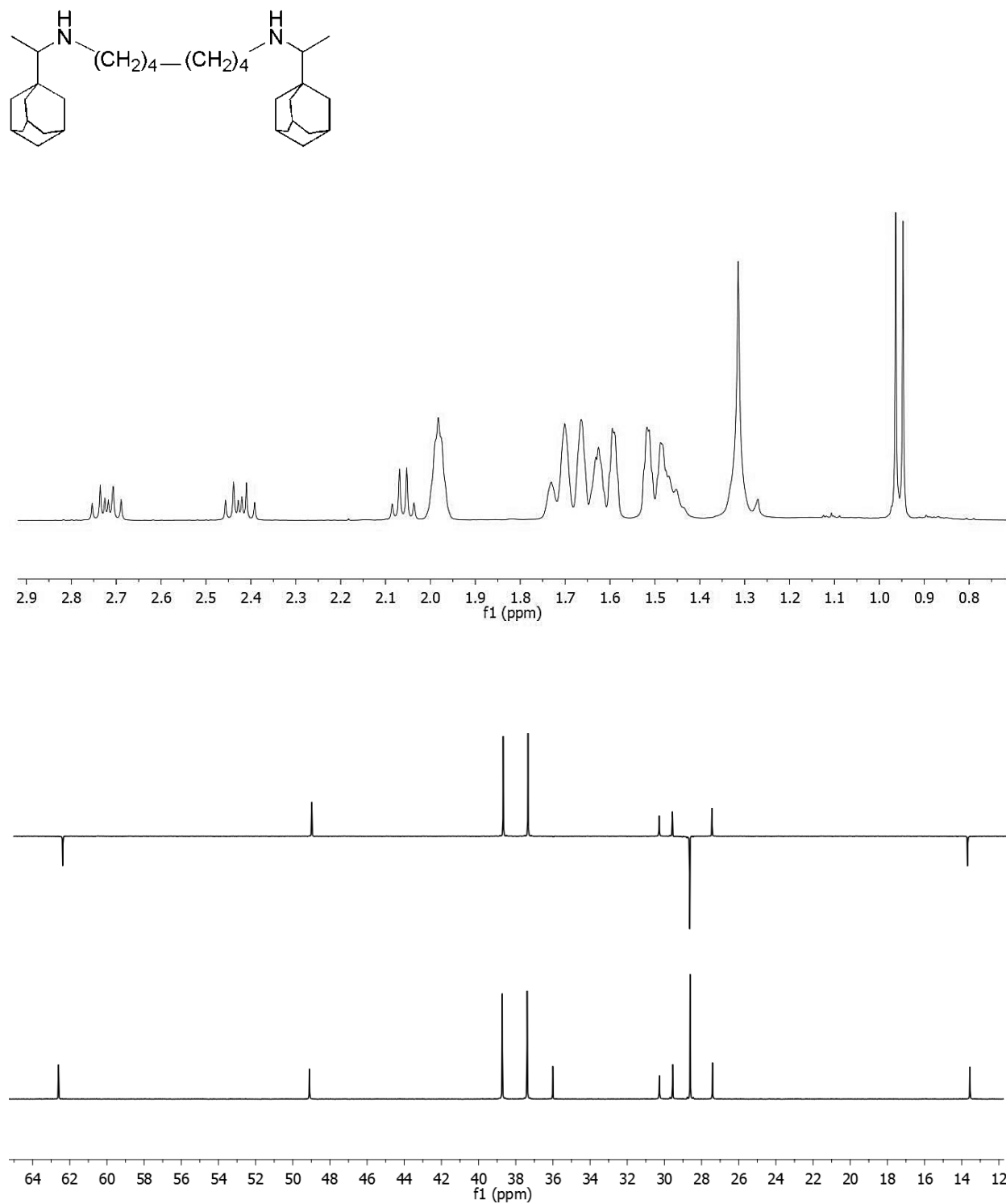


Figure S10. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Bis-(1-adamantan-1-yl-ethyl)-decane-1,10-diamine (**4d**)

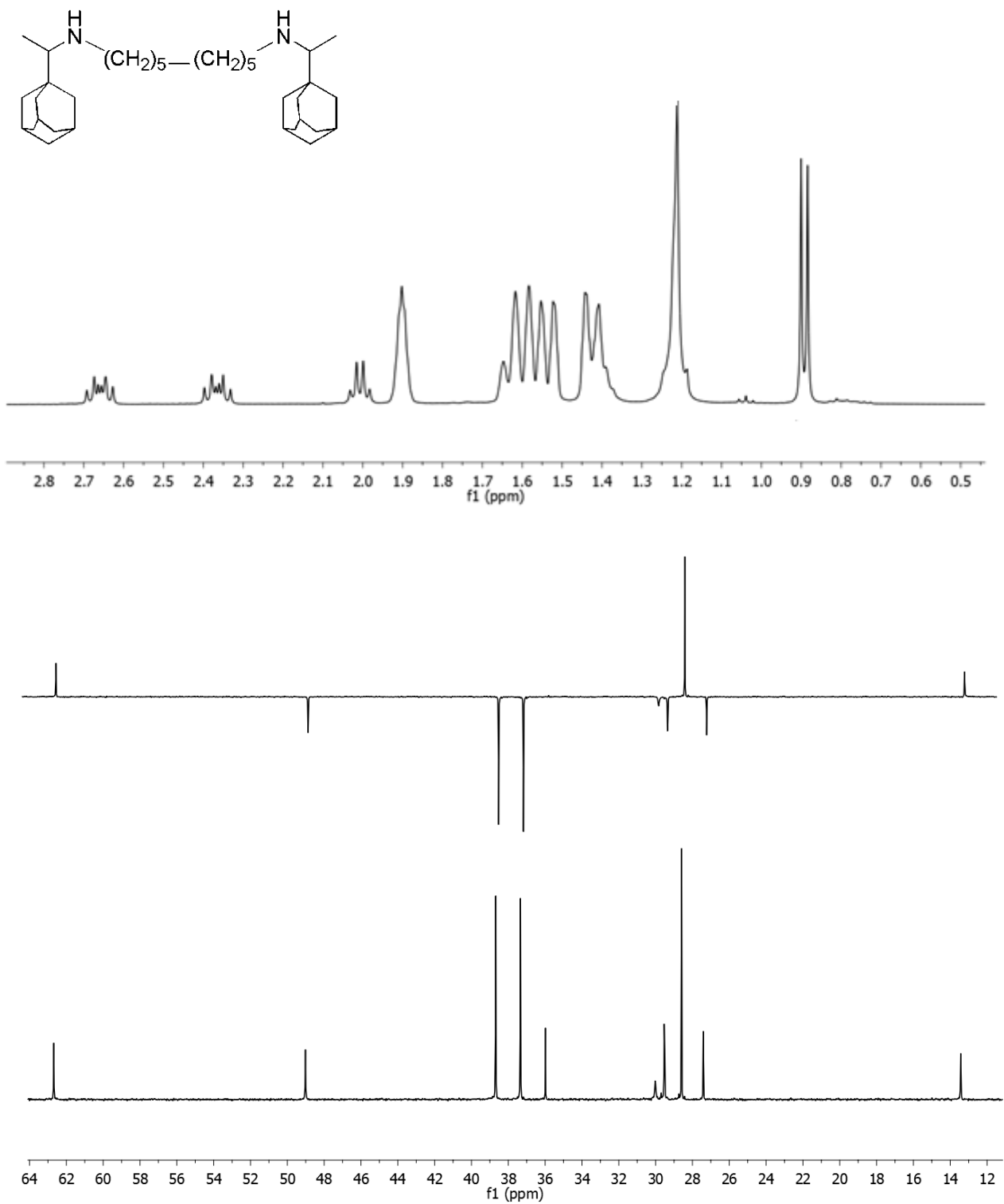


Figure S11. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of N,N' -Bis-(1-adamantan-1-yl-ethyl)-dodecane-1,12-diamine (**4e**)

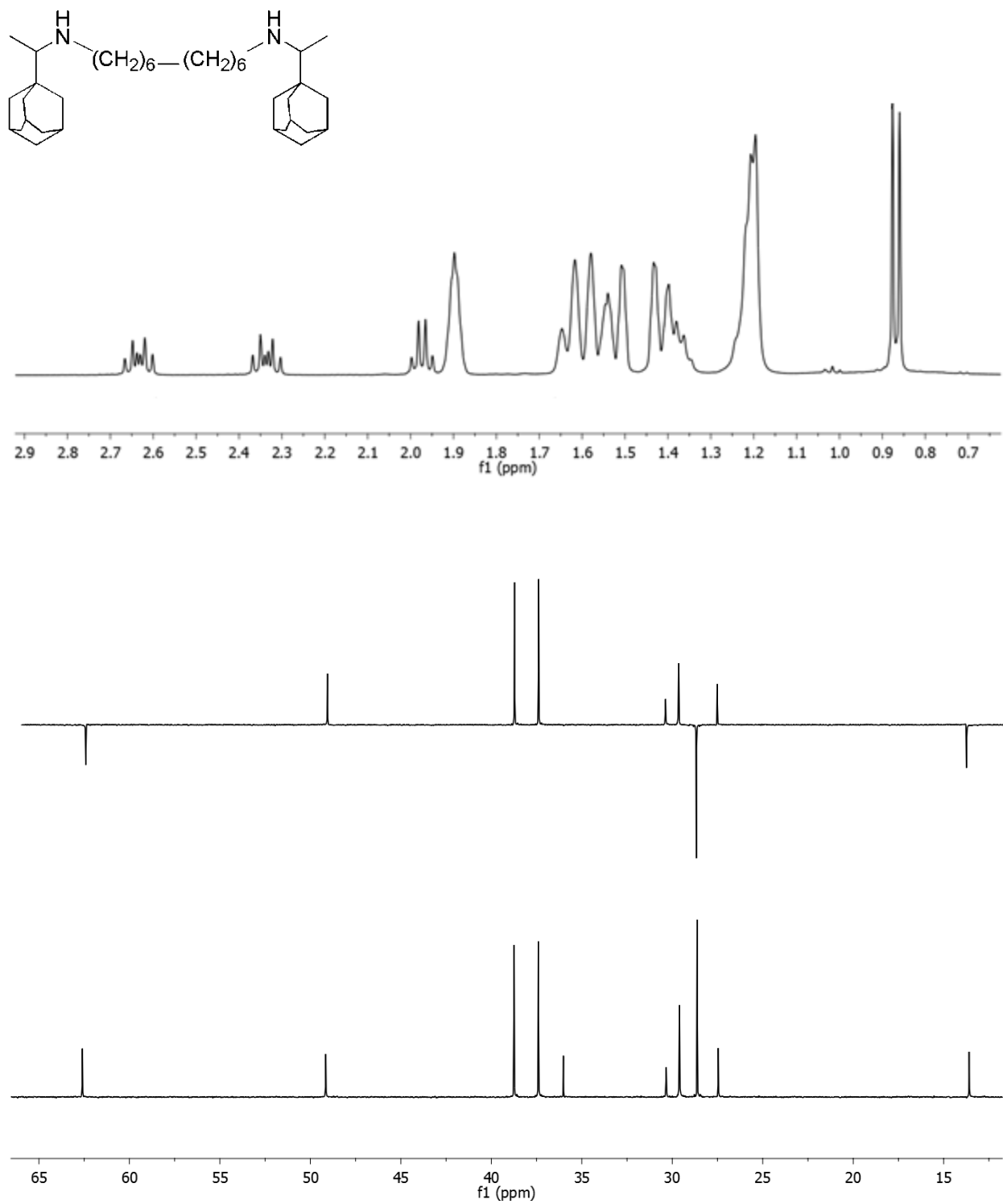


Figure S12. ^1H (CDCl_3 , 400 MHz), DEPT-135 and ^{13}C NMR spectra of (1-Adamantan-1-yl-ethyl)-butyl-amine (**5a**)

