Supplementary data contents page

Title: Oxysterols from a Marine Sponge *Inflatella* sp. and their Action in 6-Hydroxydopamine-Induced Cell Model of Parkinson's Disease

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† These authors contributed equally to the work.

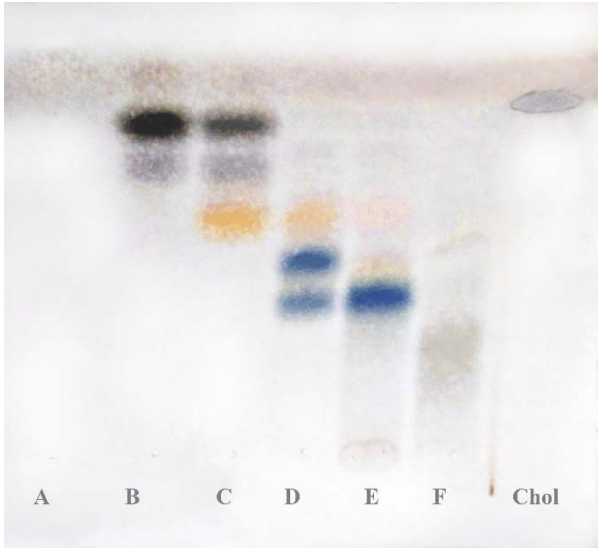
S1 Experimental Section

General experimental procedure:

^{1}H NMR (500.13, 700.13 MHz) and ^{13}C NMR (125.75 MHz, 176.04 MHz) spectra were recorded in $CDCl_3$ on a Avance-III 700 and DRX-500 «Bruker». The ^{1}H and ^{13}C NMR chemical shifts were referenced to the TMS or to solvent peak for $CDCl_3$ at δ_H 7.26 and δ_C 77.0.

HRESI-MS: Agilent 6510 Q-TOF LC/MS, 0.01 mg/ml ($CDCl_3$), 5µl min^{-1}. LSI-MS: AMD-604 (AMD Intectra), 1 mg/ml. HPLC: YMC-Pack ODS-A (5μ, 250×4.6 mm).

TLC examination of fractions A-F :



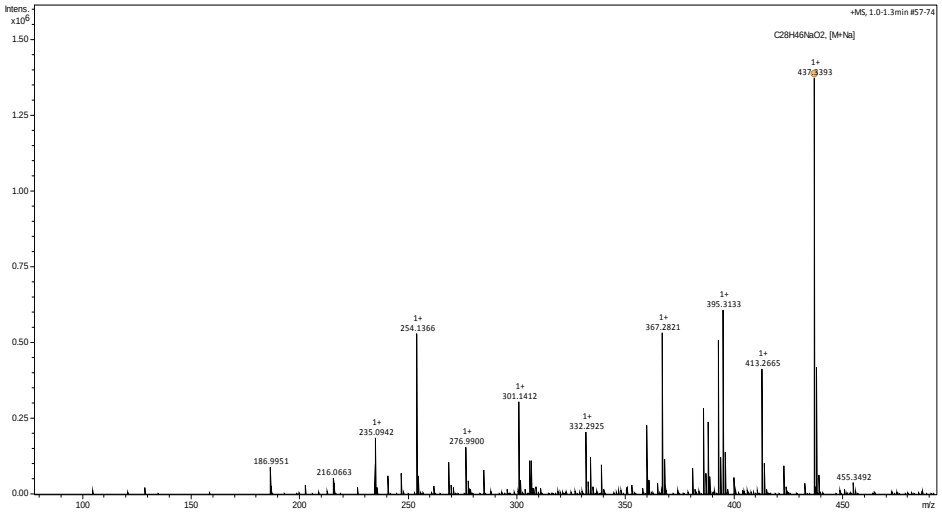
TLC was carried out on silica gel plates (CTX-1A, 5-17 µm, Sorbfil, Russia), $CHCl_3$/EtOH (25:1).

Statistical analysis

All assays were performed at least in triplicate. The results are expressed as the mean ± standard deviation (SD). A Student's *t*-test was used to evaluate the data with the significance level of $p < 0.05$. The means and standard errors for each treatment were calculated and plotted using SigmaPlot 3.02 software (Jandel Scientific, San Rafael, CA).

S2 HRESI MS Spectra (Positive Ion Mode) of compounds **1-4** in $CDCl_3$

1



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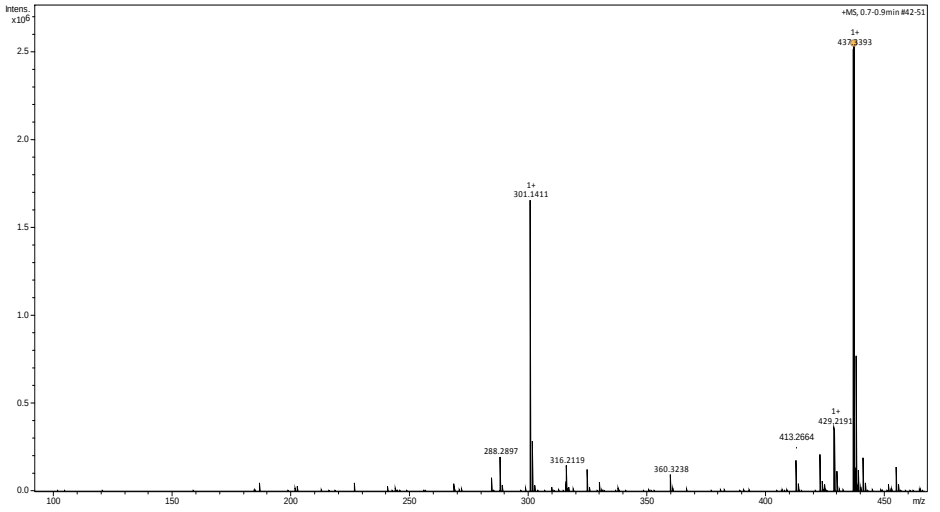

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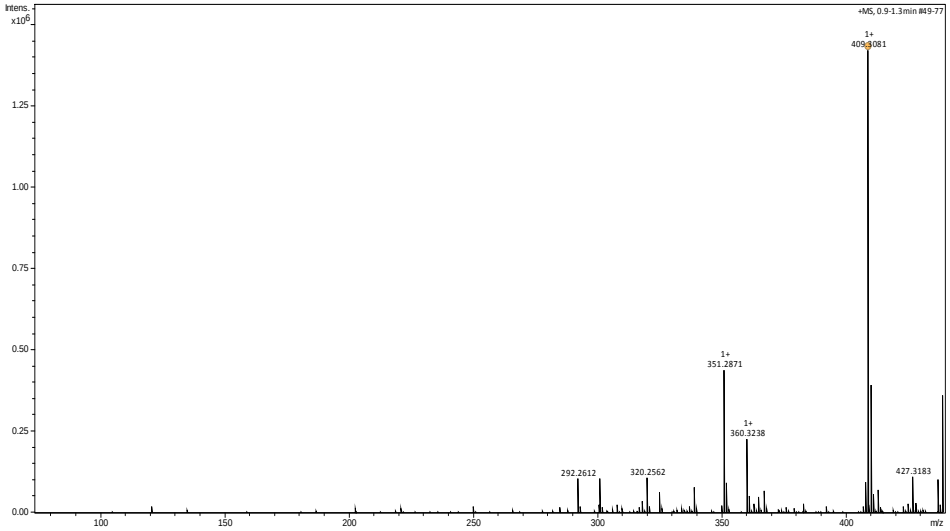

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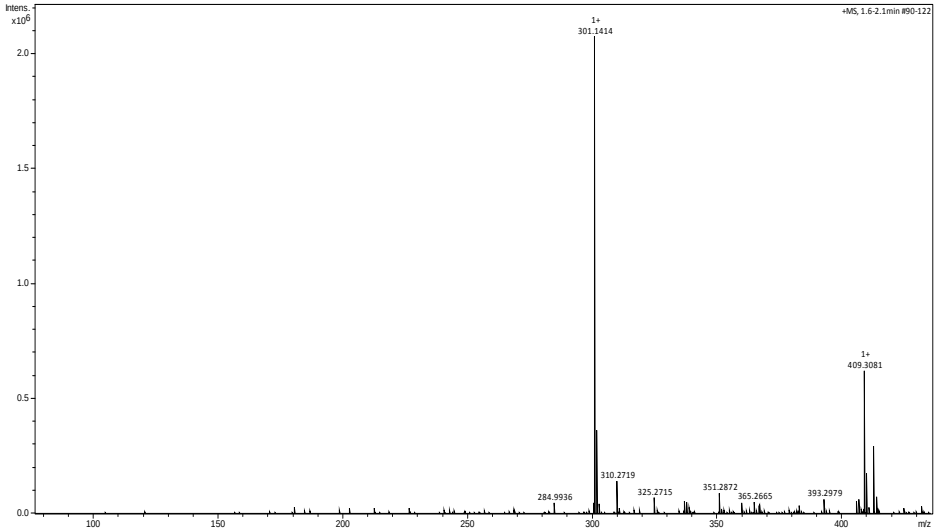
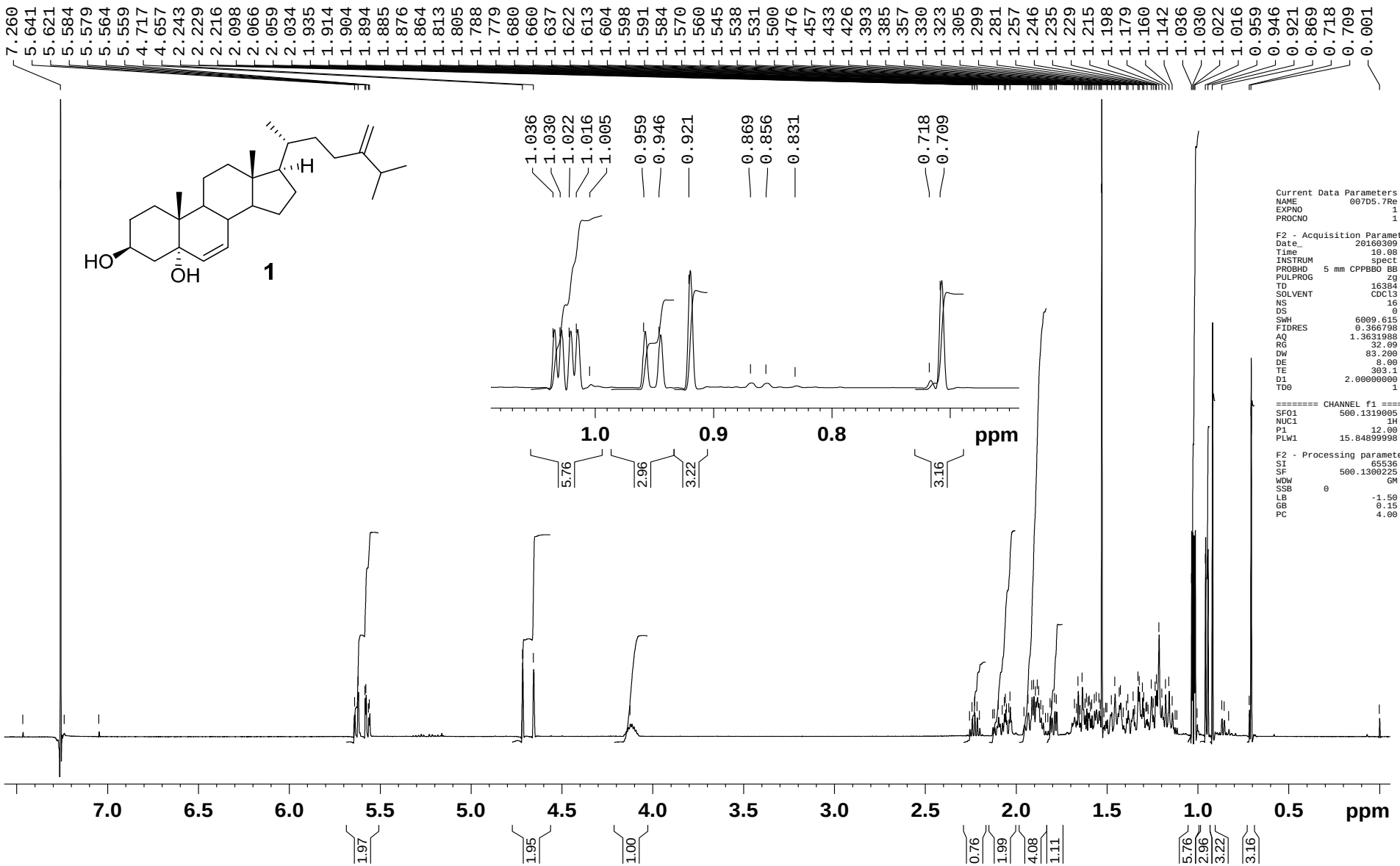
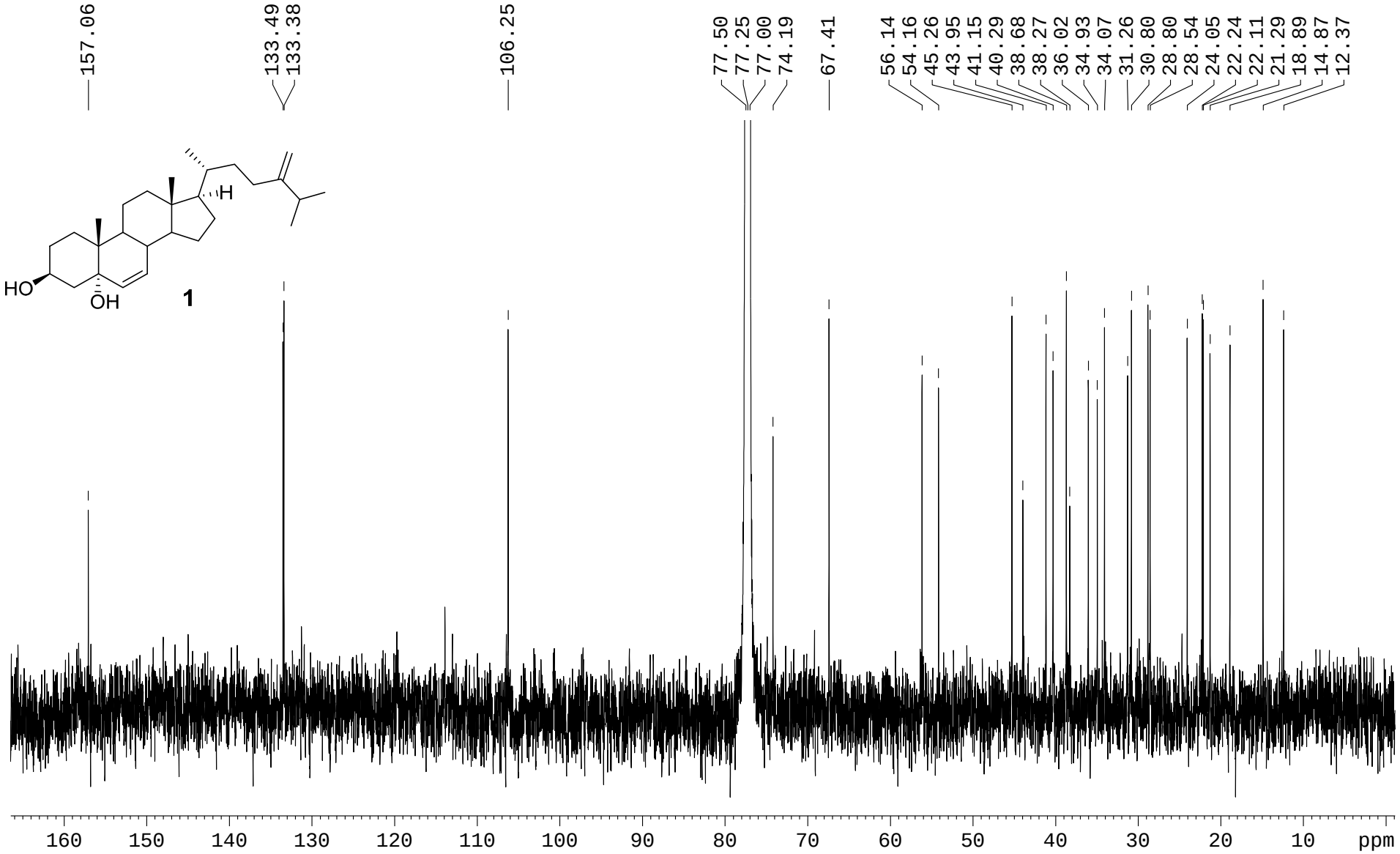


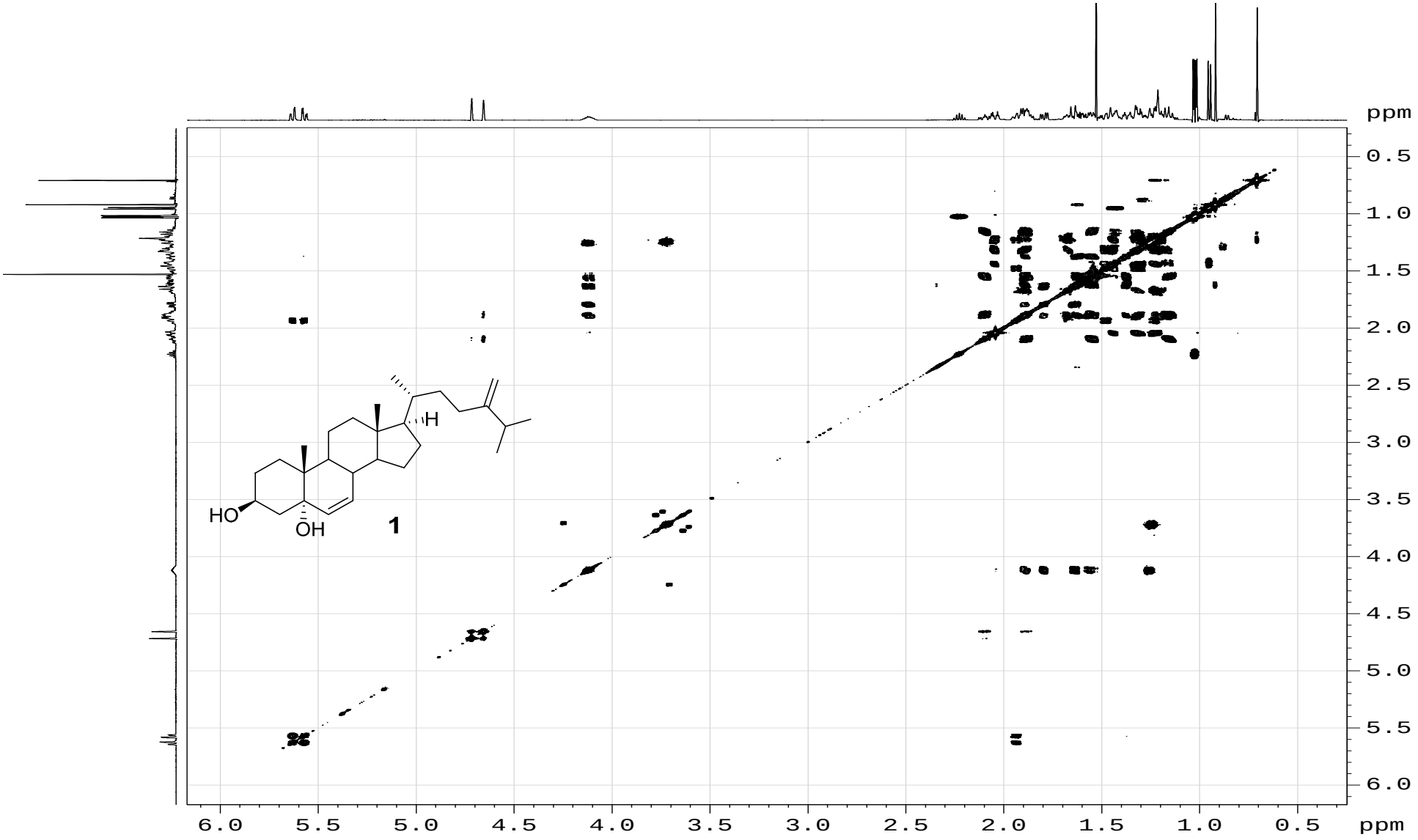
S3 ^{1}H NMR (700.13 MHz) spectrum for the 24-methylcholesta-6,24(28)-diene-3β,5α-diol (**1**) in $CDCl_3$



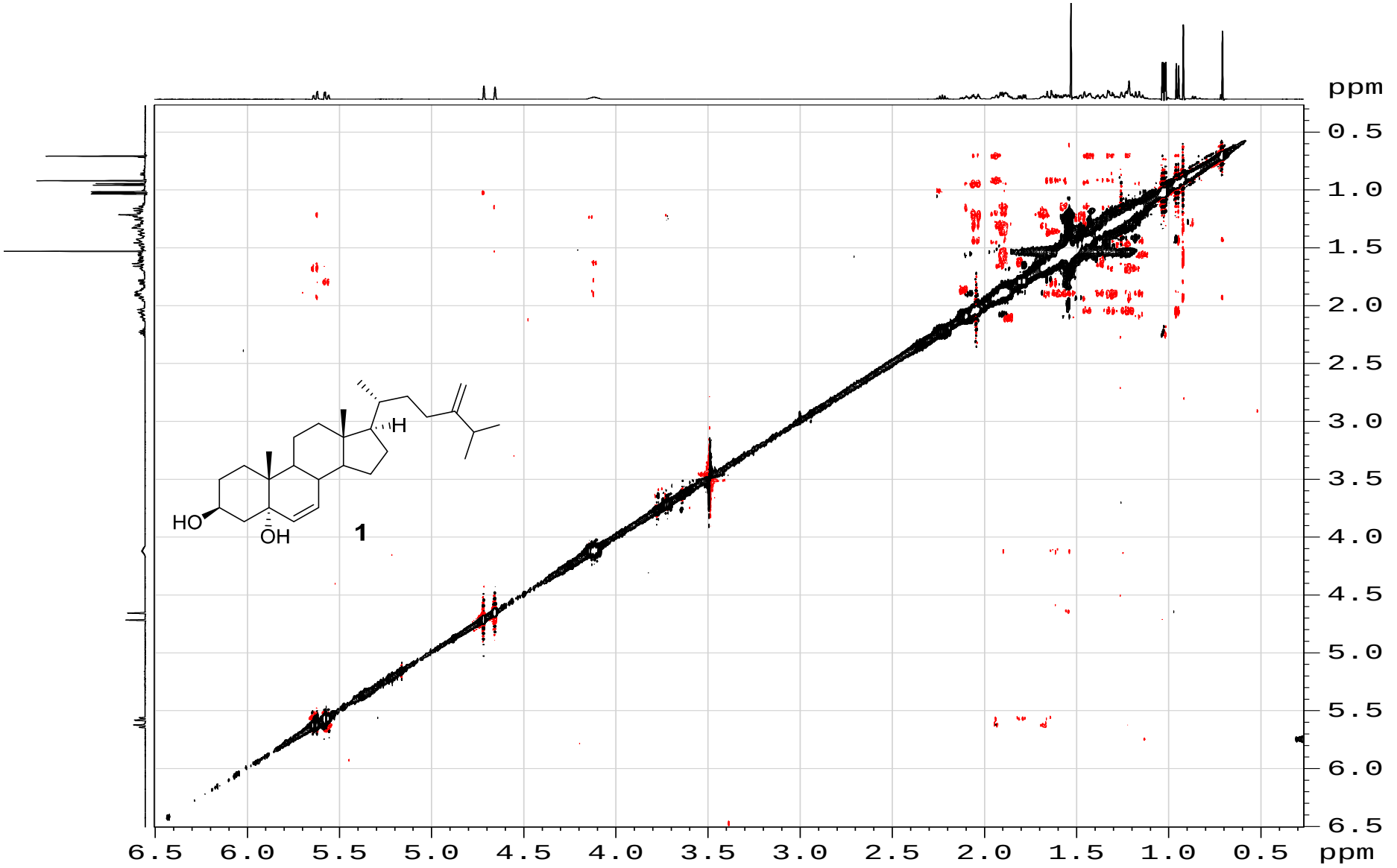
S4 ^{13}C NMR (176.04 MHz) spectrum for the 24-methylcholesta-6,24(28)-diene-3β,5α-diol (**1**) in $CDCl_3$



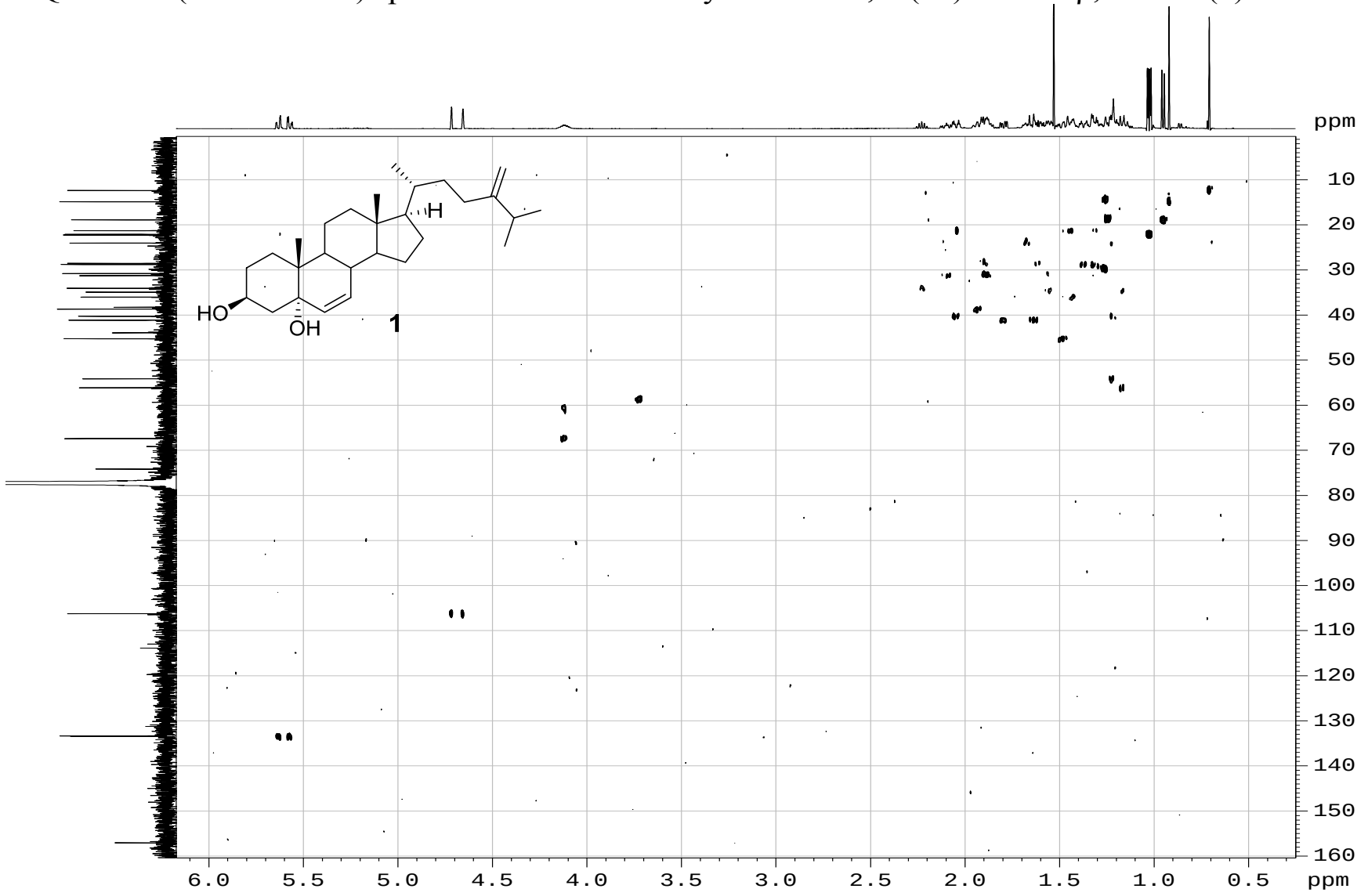
S5 COSY NMR (700.13 MHz) spectrum of the 24-methylcholesta-6,24(28)-diene-3β,5α-diol (**1**) in $CDCl_3$



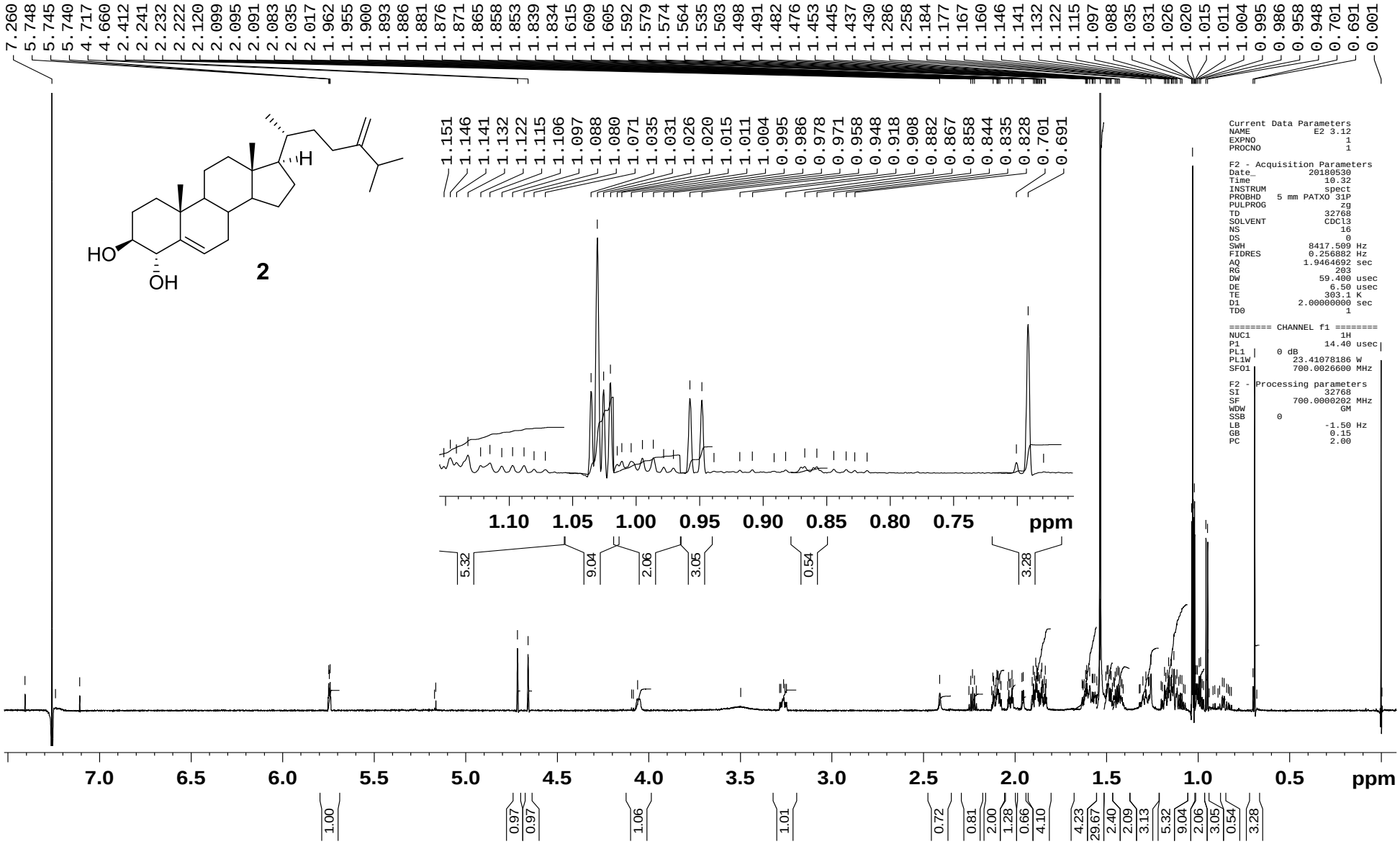
S6 ROESY NMR (500.13 MHz) spectrum of the 24-methylcholesta-6,24(28)-diene-3β,5α-diol (**1**) in $CDCl_3$



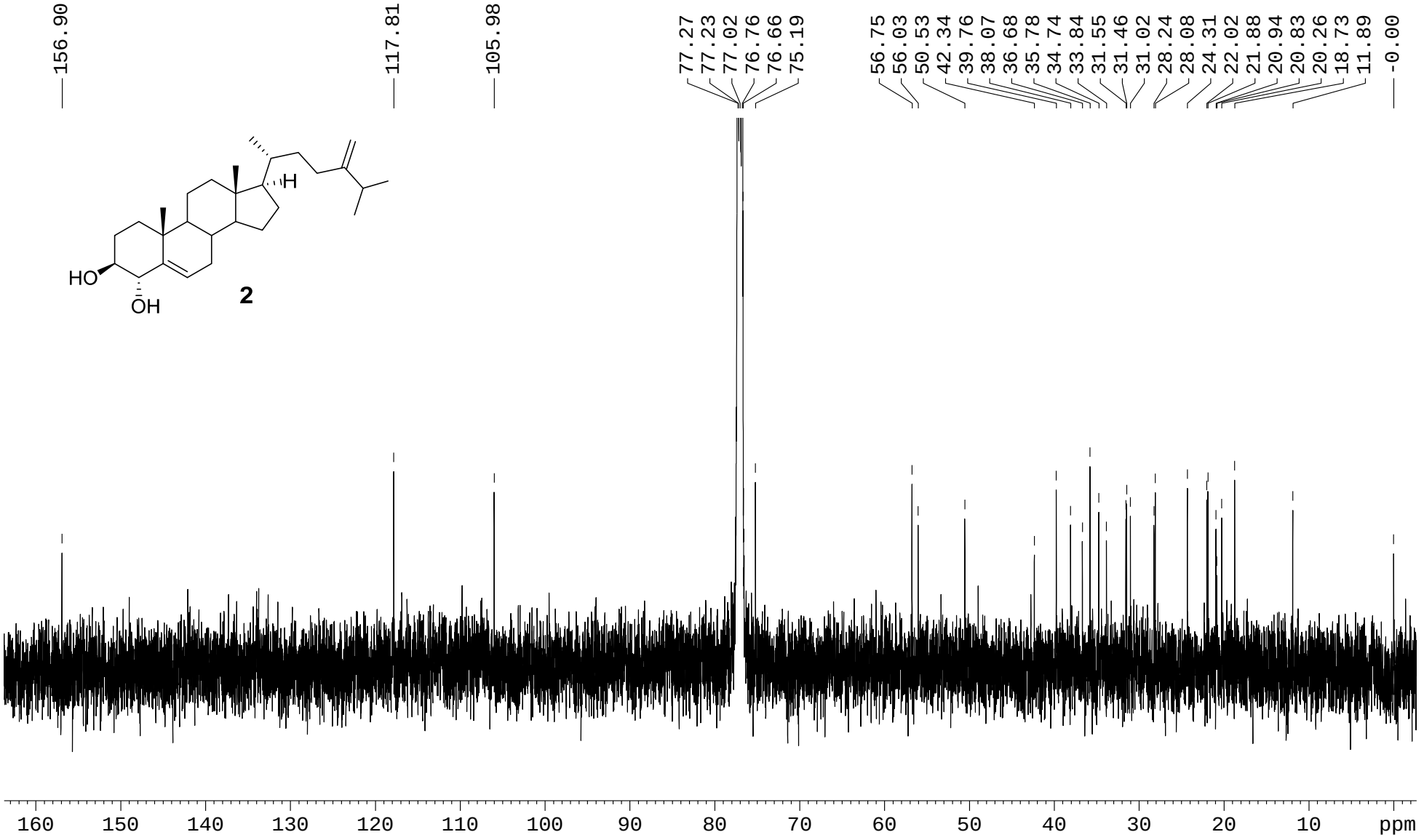
S7 HSQC NMR (700.13 MHz) spectrum of the 24-methylcholesta-6,24(28)-diene-3β,5α-diol (**1**) in $CDCl_3$



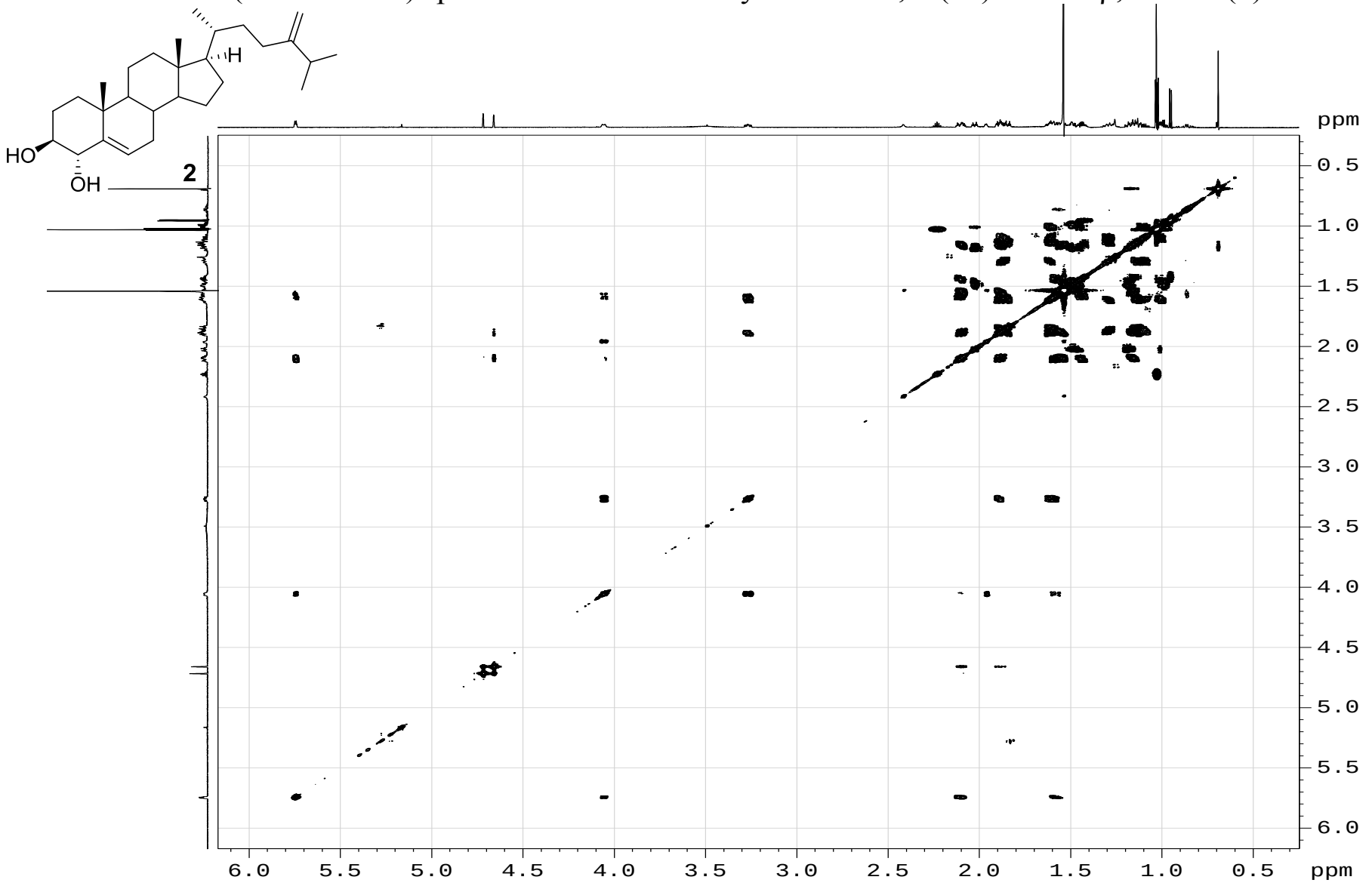
S 8 ^{1}H NMR (700.13 MHz) spectrum of the 24-methylcholesta-5,24(28)-diene-3β,4α-diol (**2**) in $CDCl_3$



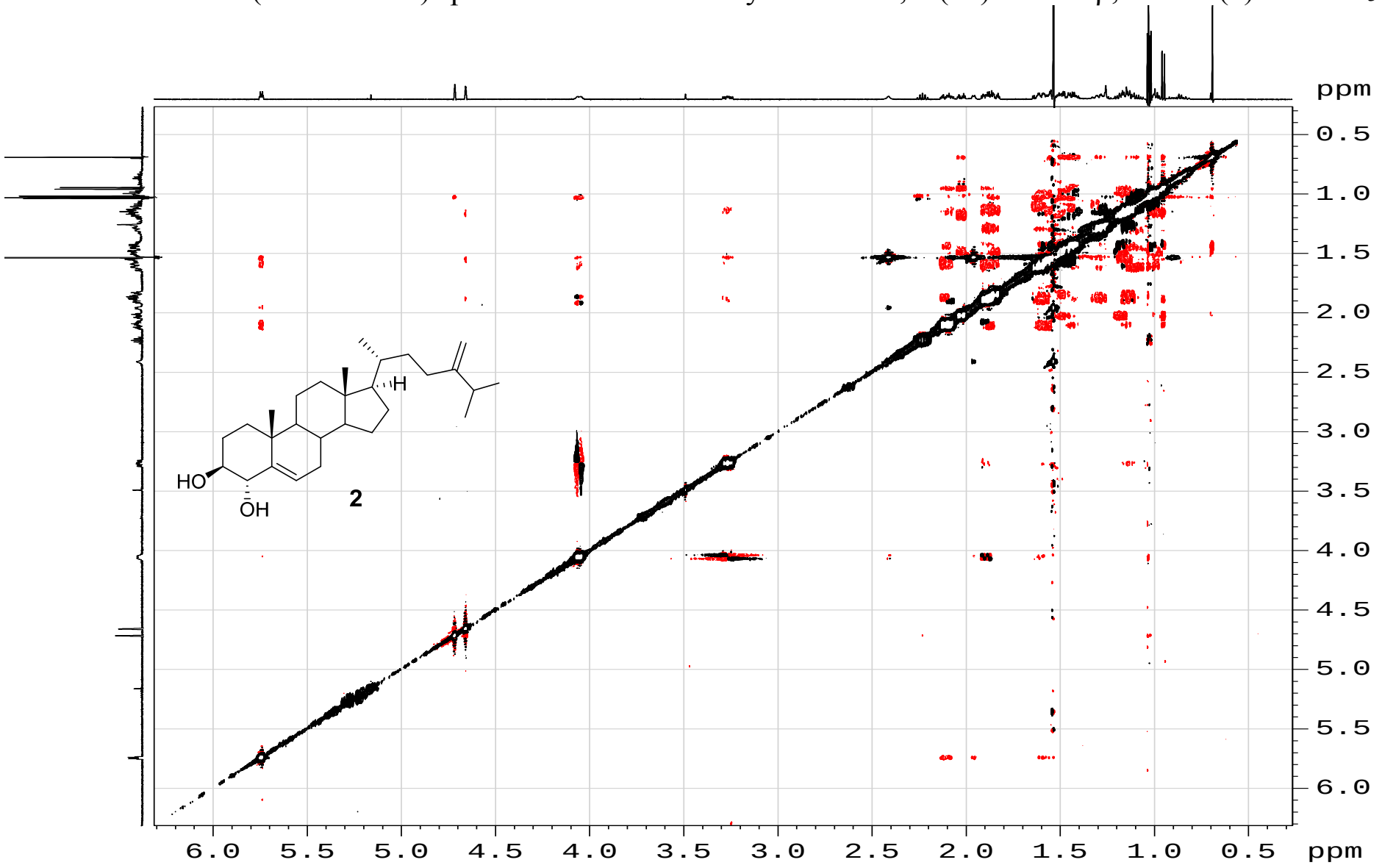
S9 ^{13}C NMR (176.04 MHz) spectrum of the 24-methylcholesta-5,24(28)-diene-3β,4α-diol (**2**) in $CDCl_3$



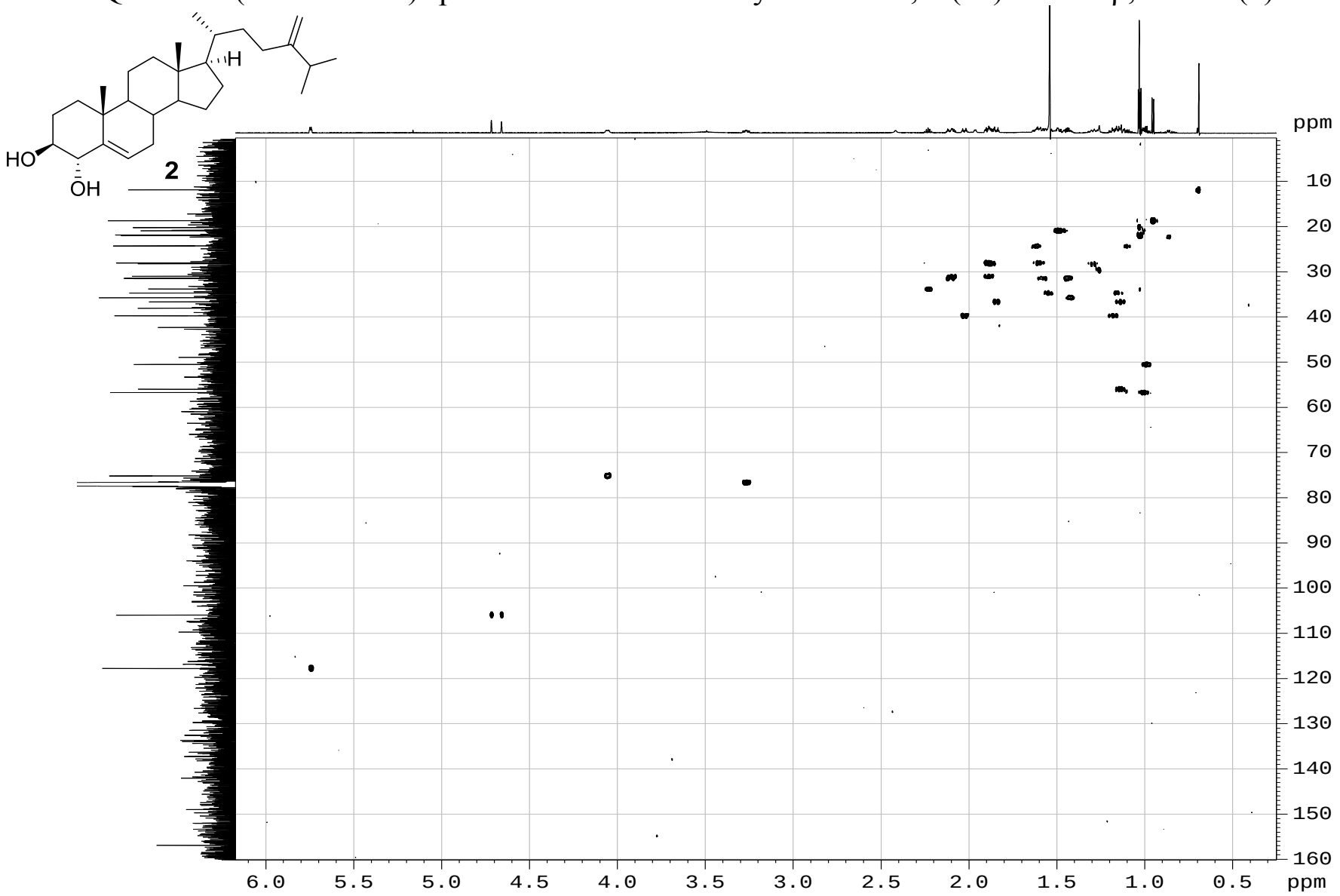
S10 COSY NMR (700.13 MHz) spectrum of the 24-methylcholesta-5,24(28)-diene-3β,4α-diol (**2**) in $CDCl_3$



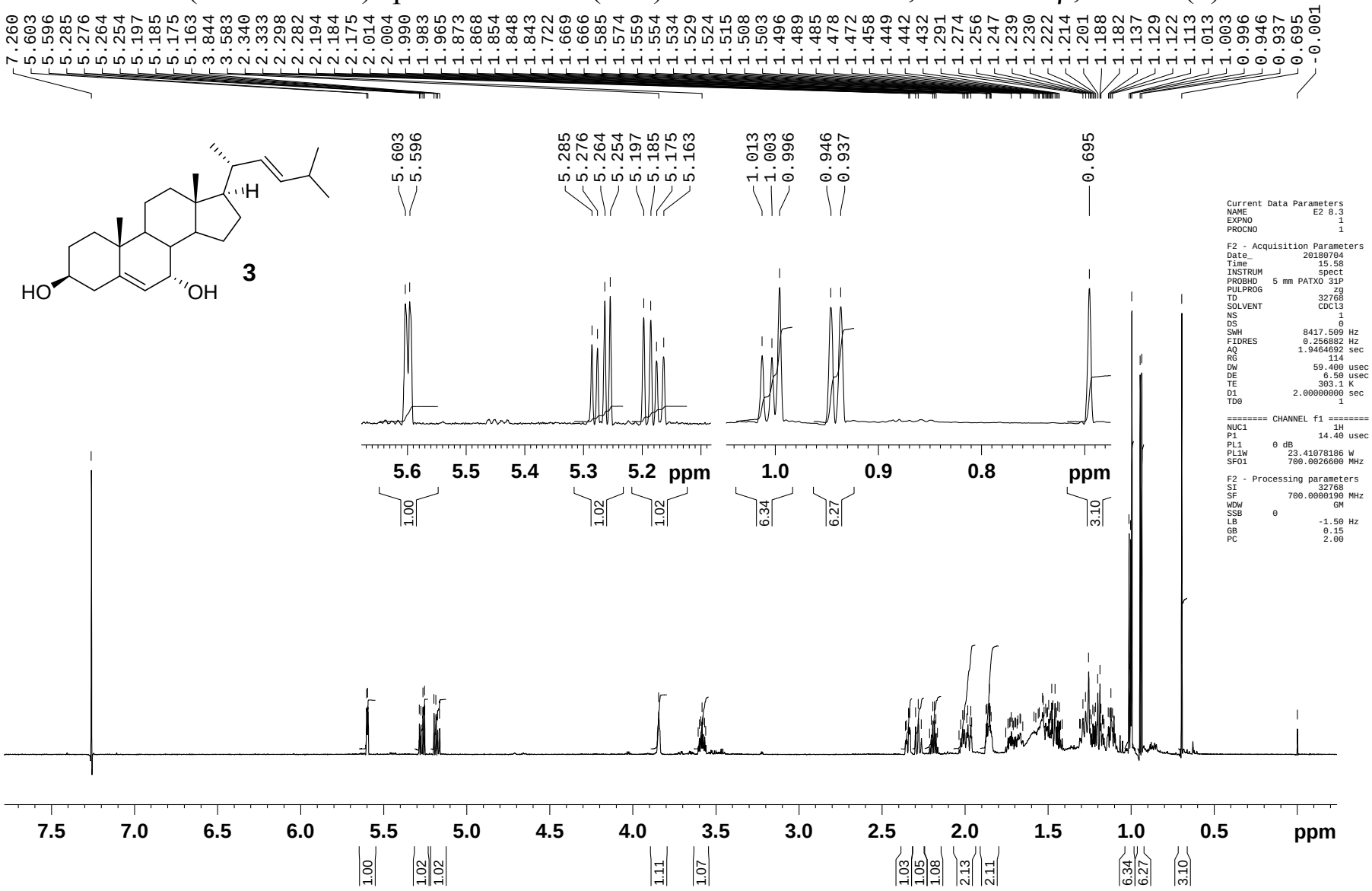
S11 ROESY NMR (500.13 MHz) spectrum of the 24-methylcholesta-5,24(28)-diene-3β,4α-diol (**2**) in $CDCl_3$



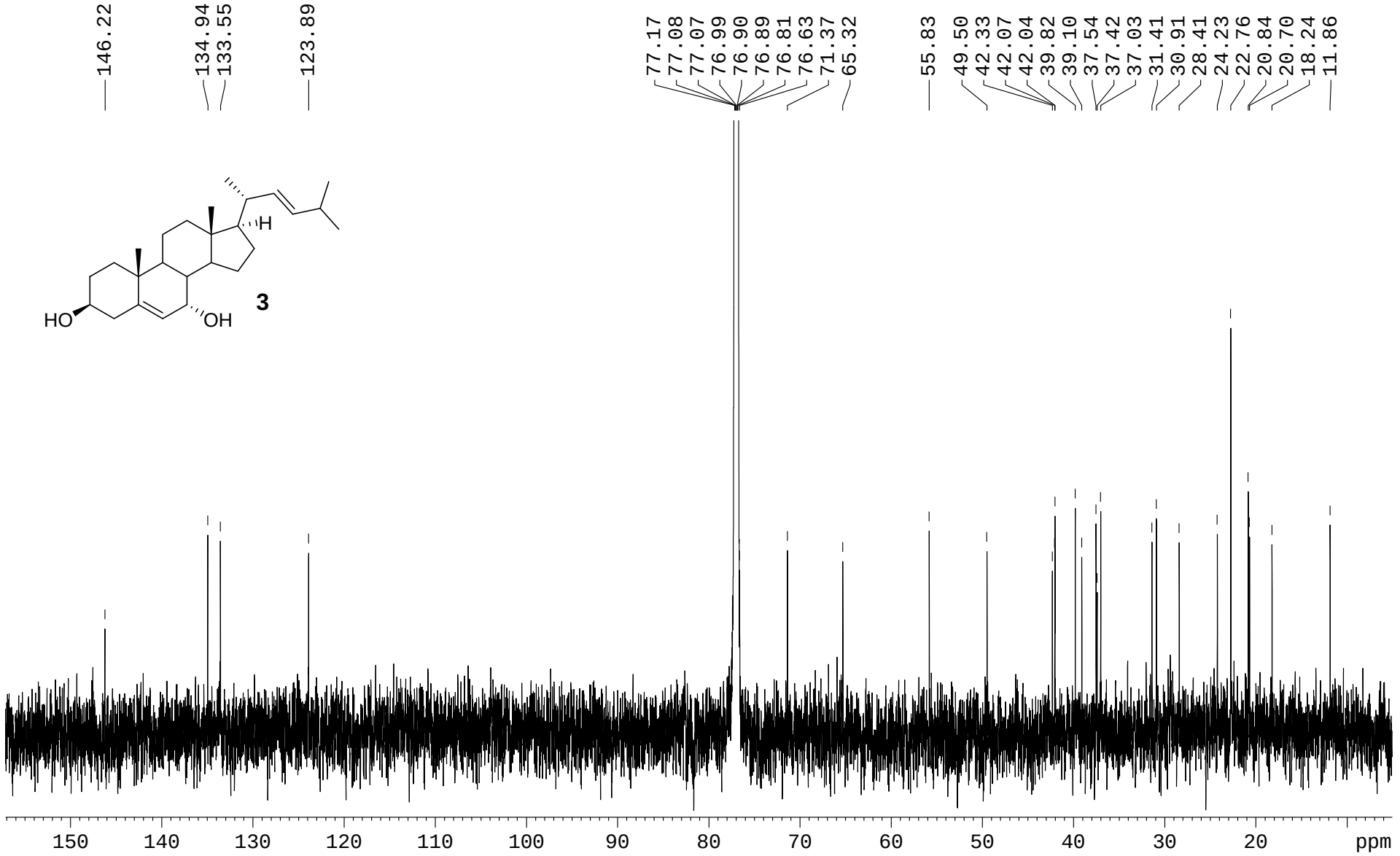
S12 HSQC NMR (700.13 MHz) spectrum for the 24-methylcholesta-5,24(28)-diene-3β,4α-diol (**2**) in $CDCl_3$



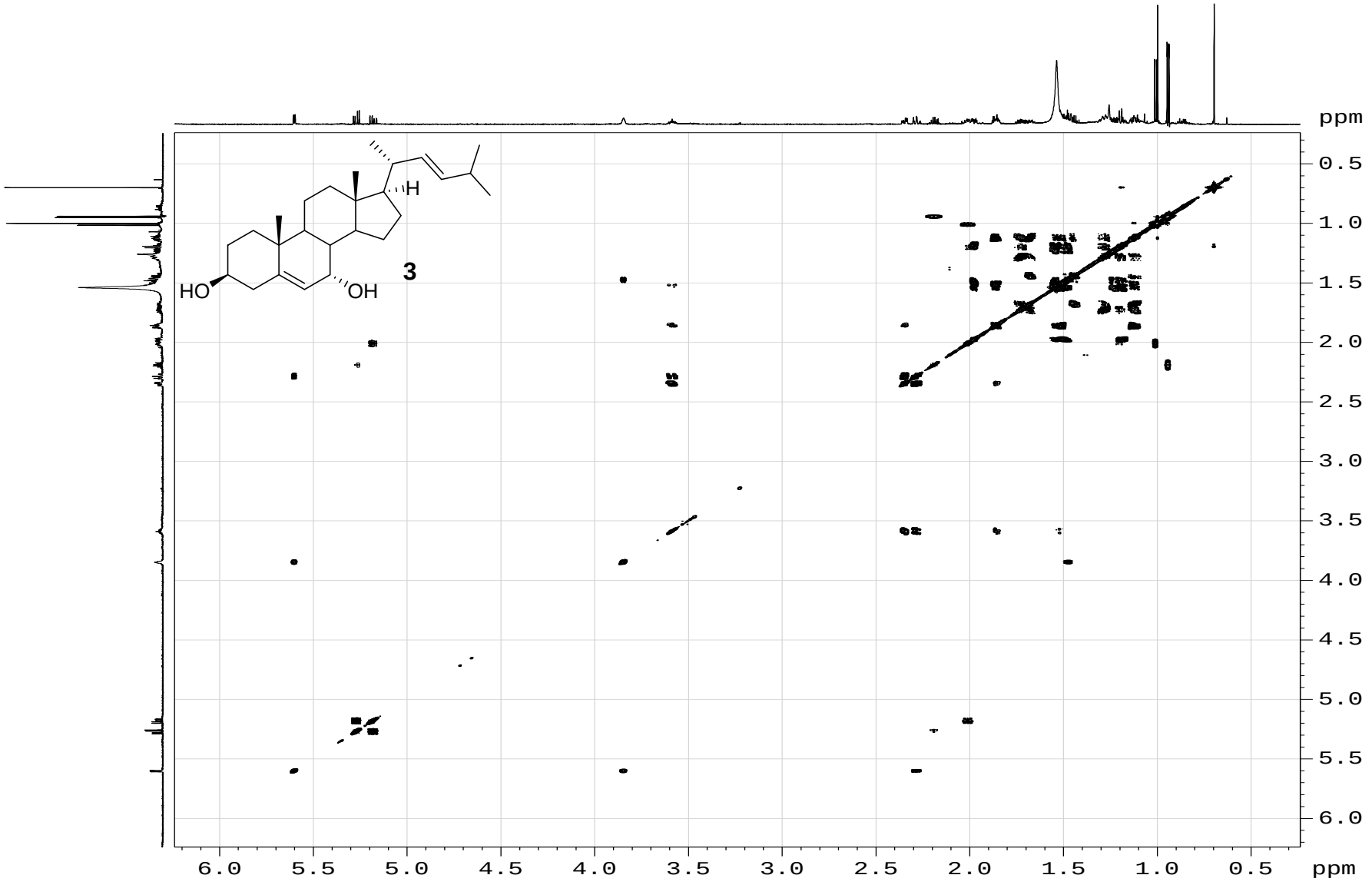
S13 ^{1}H NMR (700.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7α-diol (**3**) in $CDCl_3$



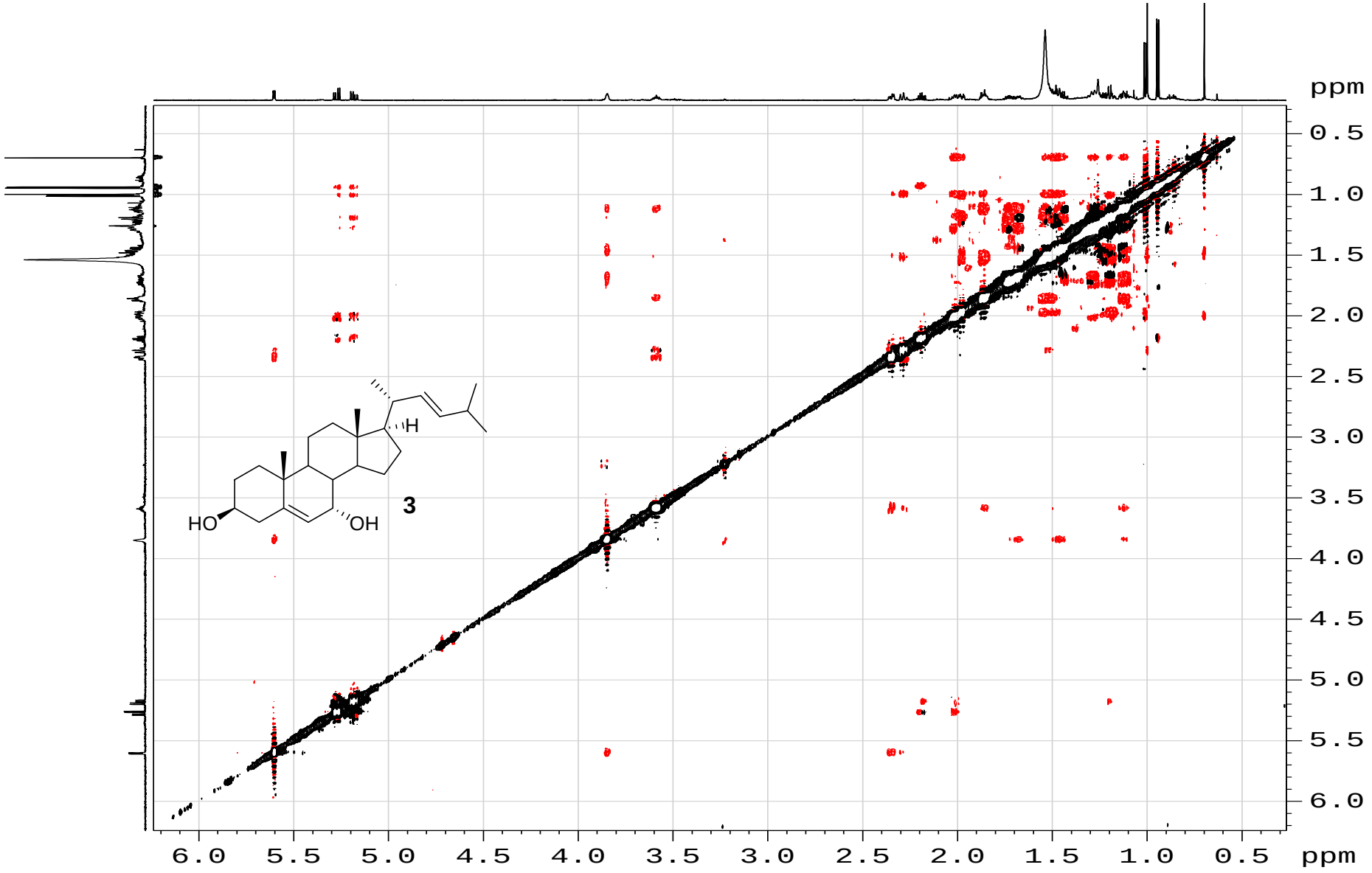
S14 ^{13}C NMR (176.04 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7α-diol (**3**) in $CDCl_3$



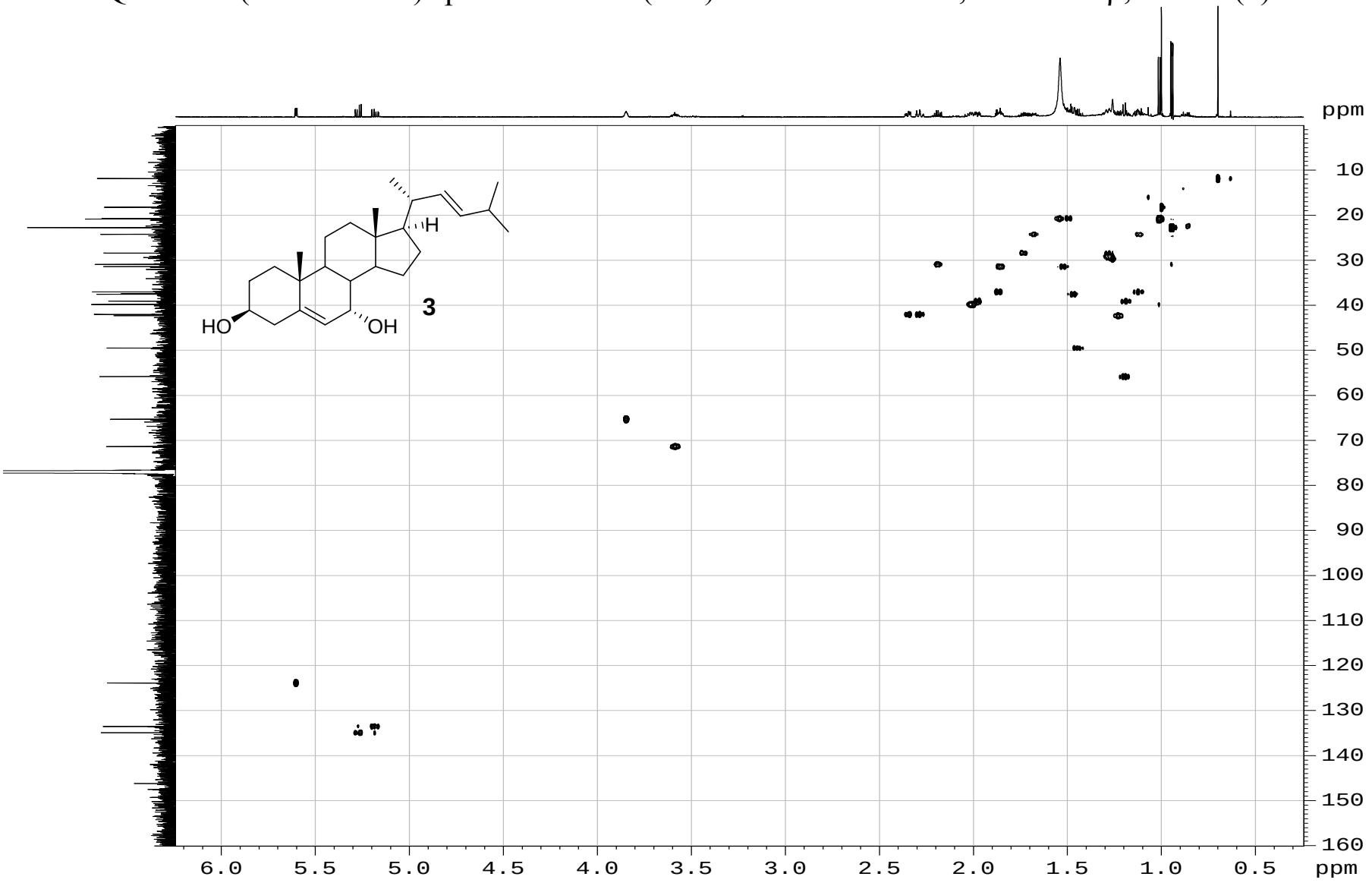
S15 COSY NMR (700.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7α-diol (**3**) in $CDCl_3$



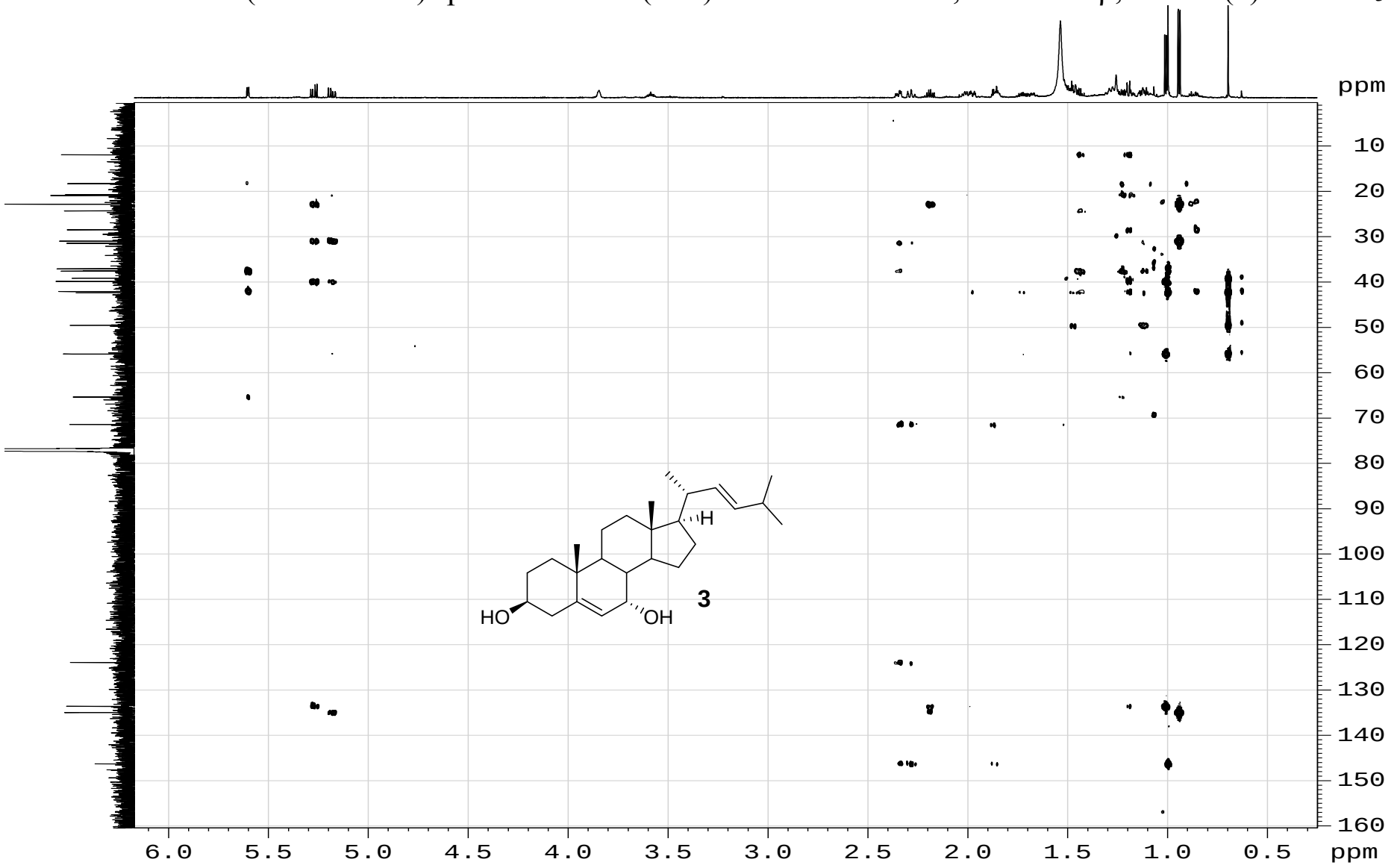
S16 ROESY NMR (700.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7α-diol (**3**) in $CDCl_3$



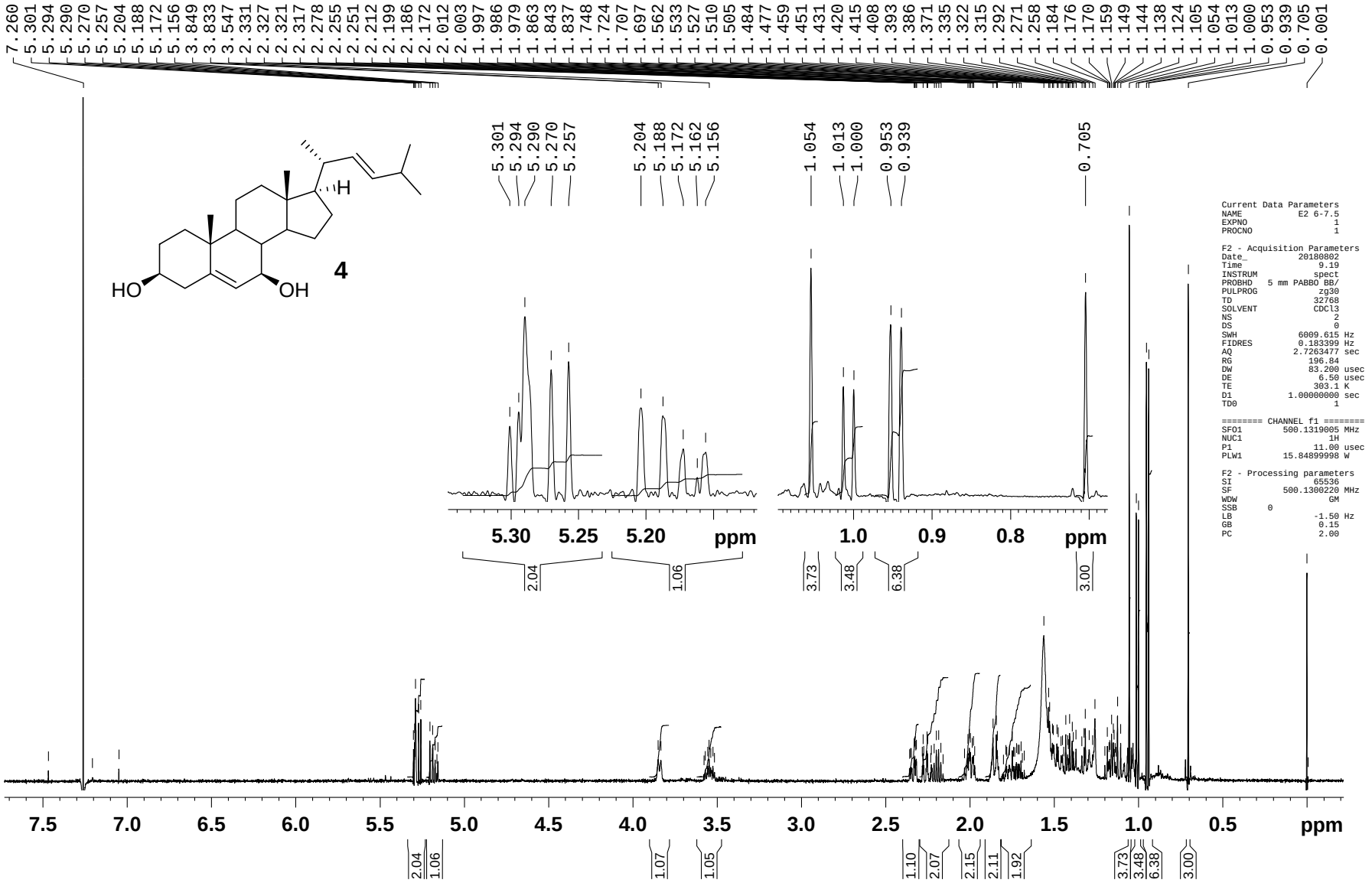
S17 HSQC NMR (700.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7α-diol (**3**) in $CDCl_3$



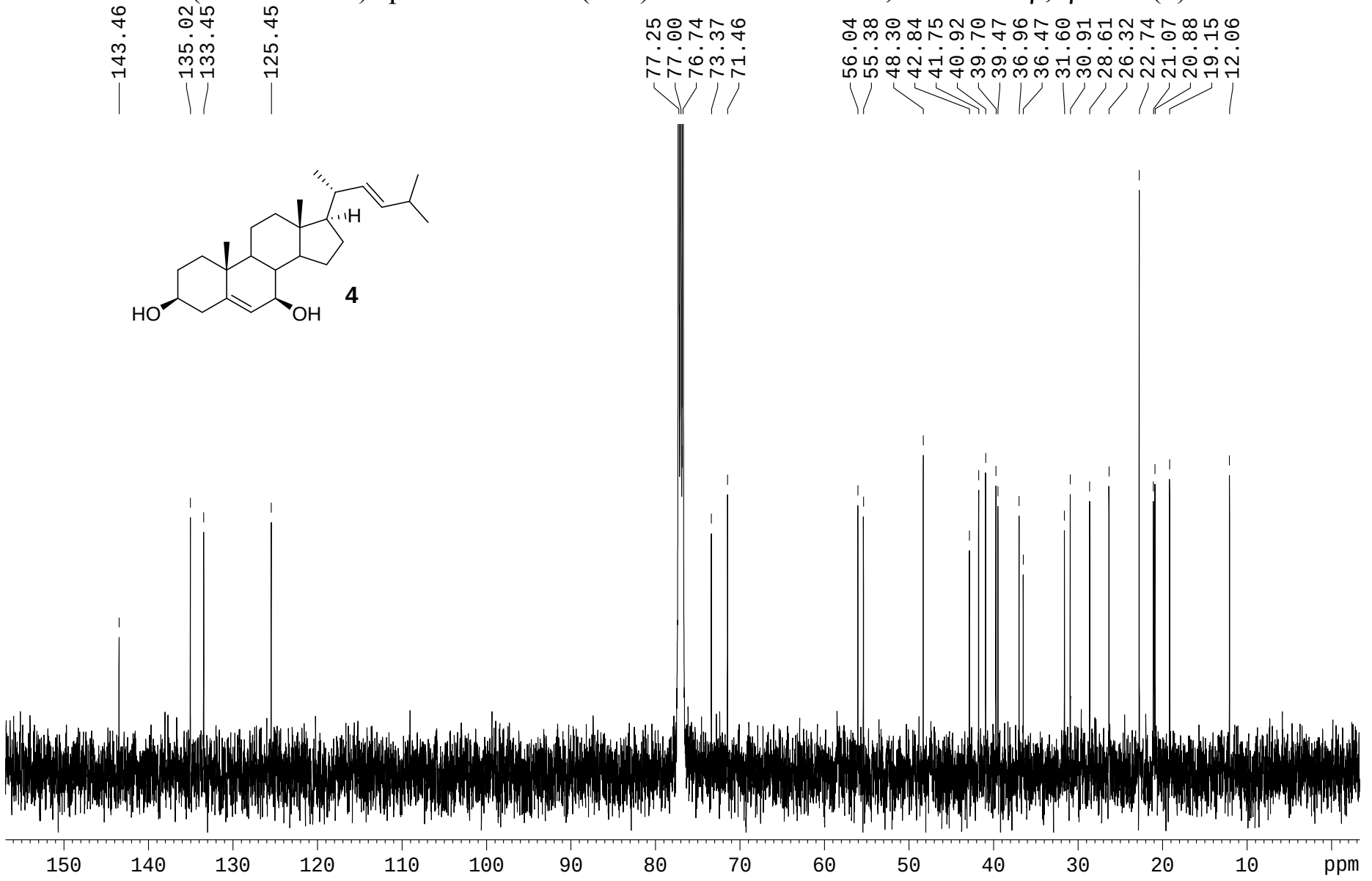
S18 HMBC NMR (700.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7α-diol (**3**) in $CDCl_3$



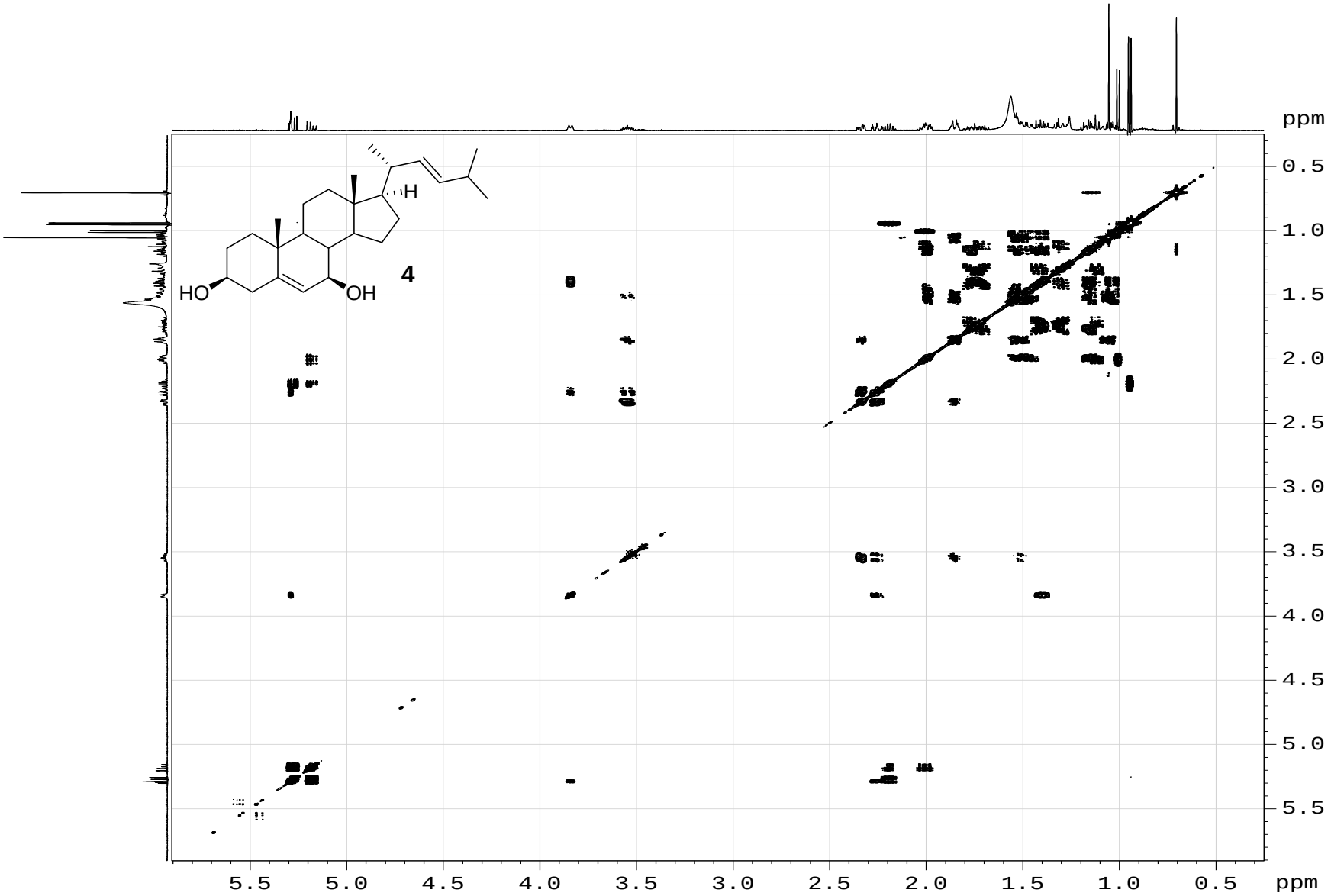
S19 ^{1}H NMR (500.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7β -diol (**4**) in $CDCl_3$



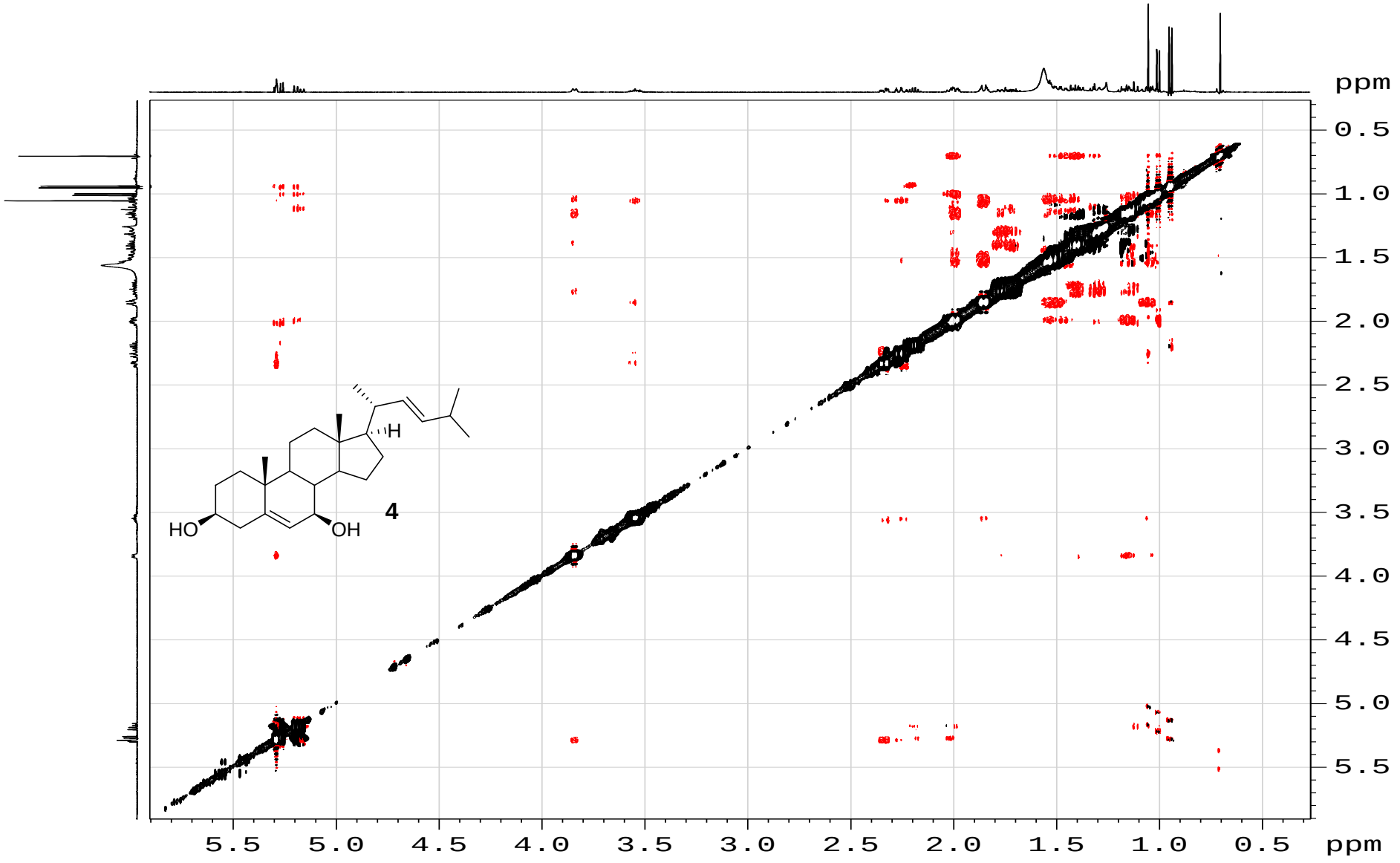
S20 ^{13}C NMR (125.76 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7β-diol (**4**) in $CDCl_3$



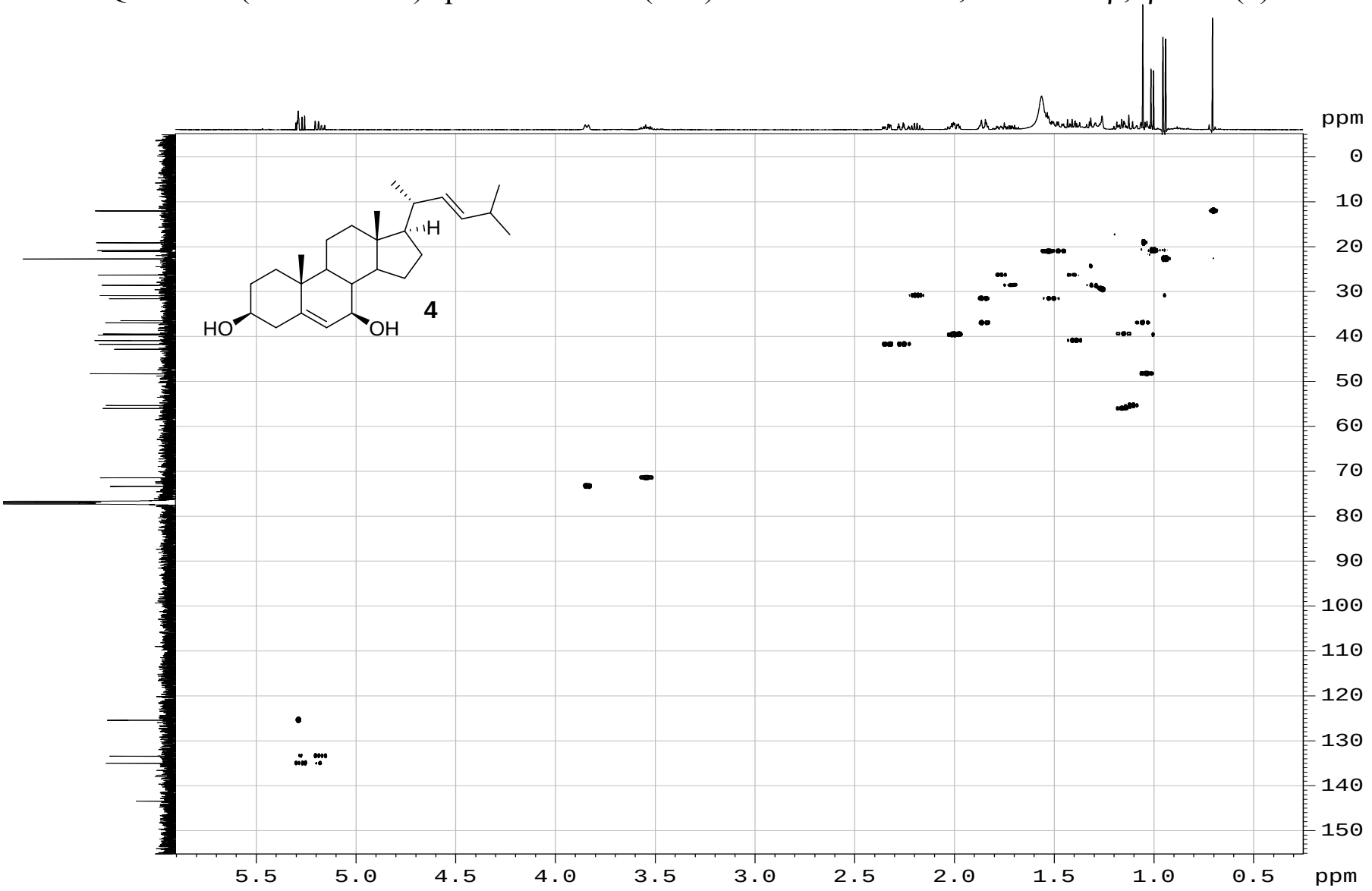
S21 COSY NMR (500.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7β-diol (**4**) in $CDCl_3$



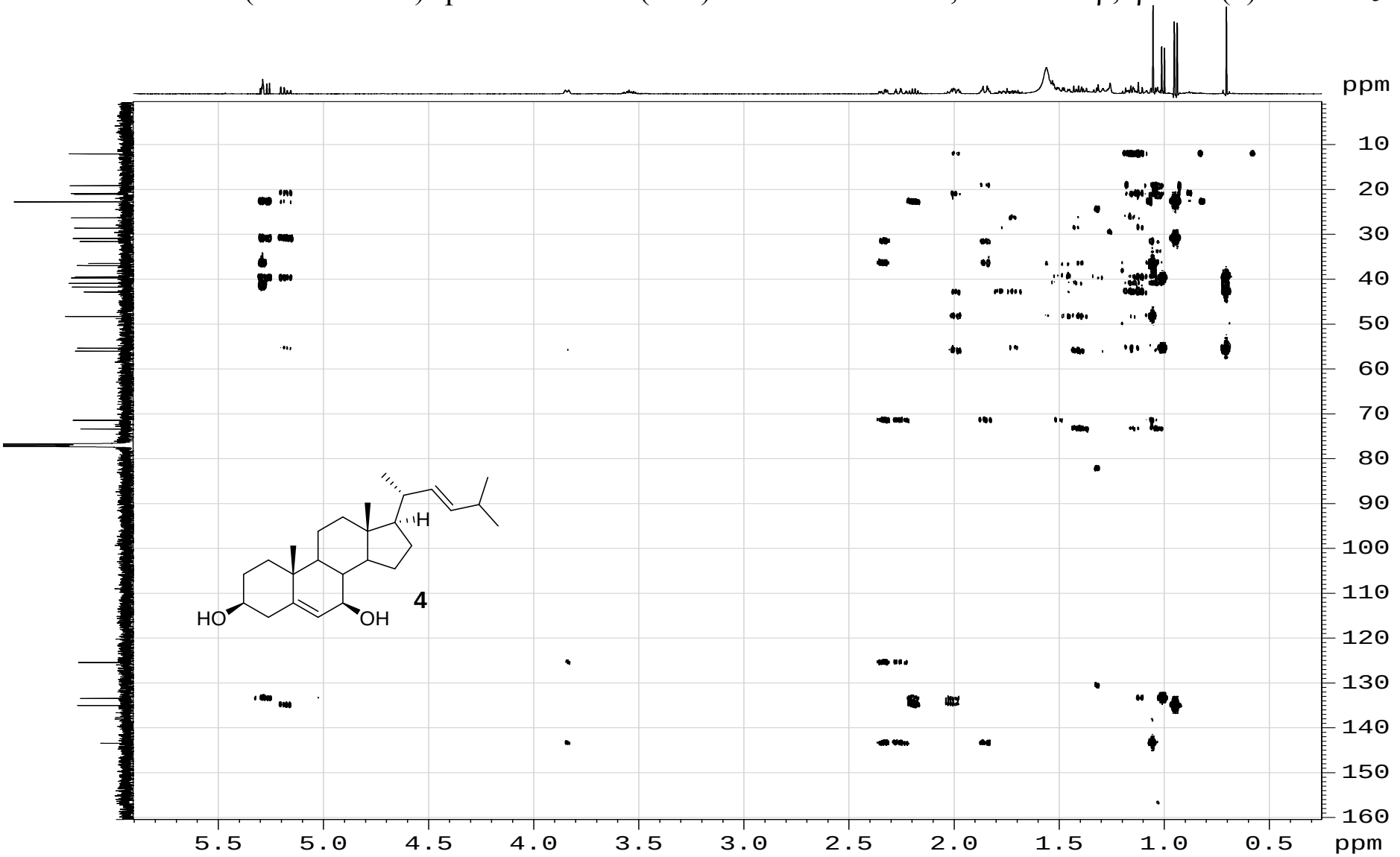
S22 ROESY NMR (500.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7β-diol (**4**) in $CDCl_3$



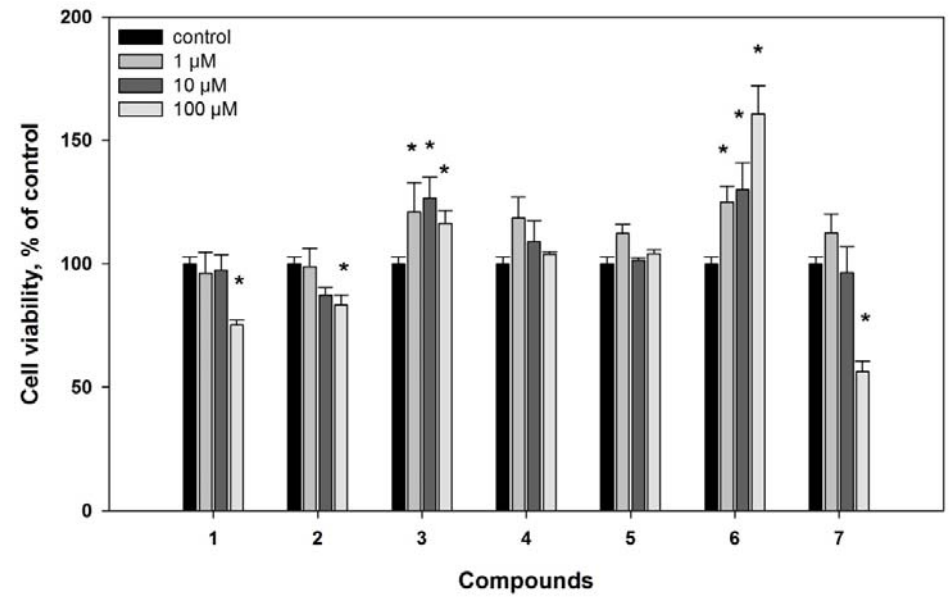
S23 HSQC NMR (500.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7β-diol (**4**) in $CDCl_3$



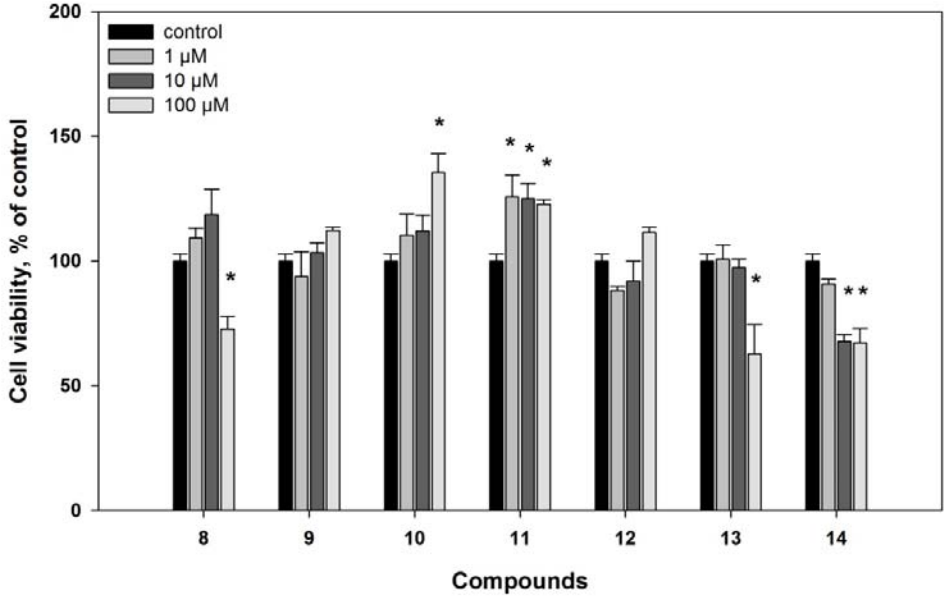
S24 HMBC NMR (500.13 MHz) spectrum of the (22*E*)-24-*nor*-cholesta-5,22-diene-3β,7β-diol (**4**) in $CDCl_3$



S25 Viability of Neuro2a cells



(a)

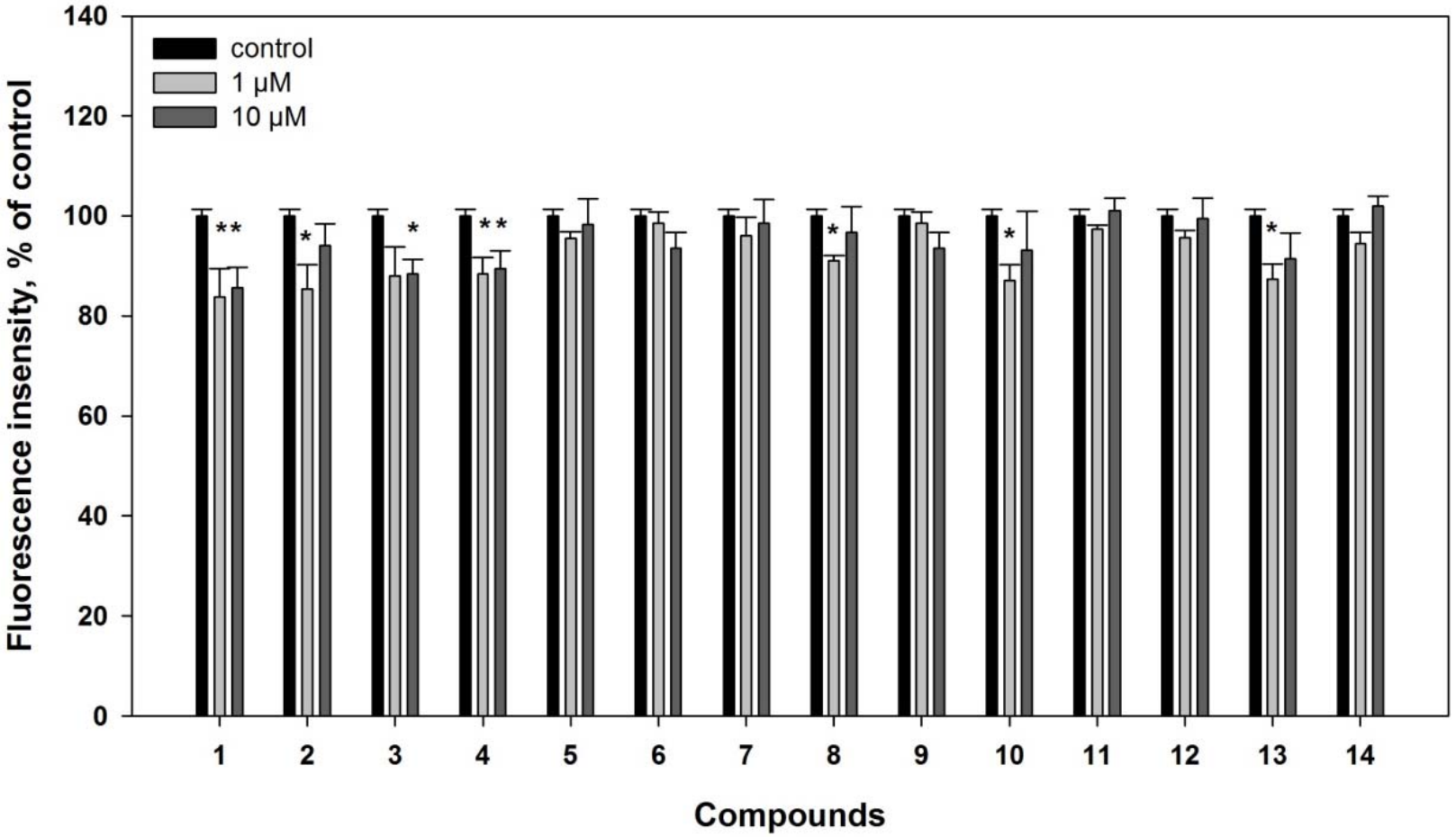


(b)

Influence of compounds **1**-**7** (**a**) and **8**-**14** (**b**) on viability of Neuro2a cells by MTT assay.

***** Statistically significant differences ($p \leq 0.05$) between results for control cells and cells incubated with compounds.

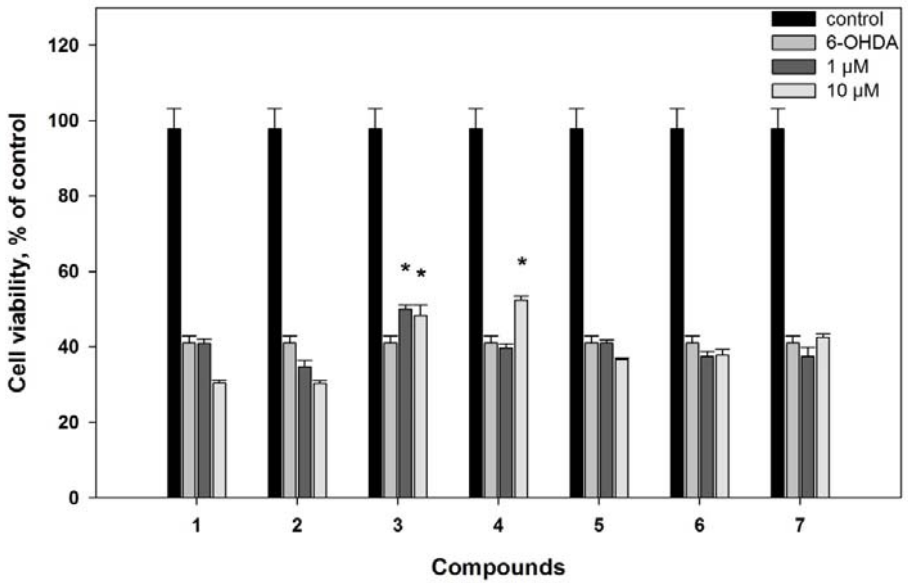
S26 ROS formation in Neuro2a cells



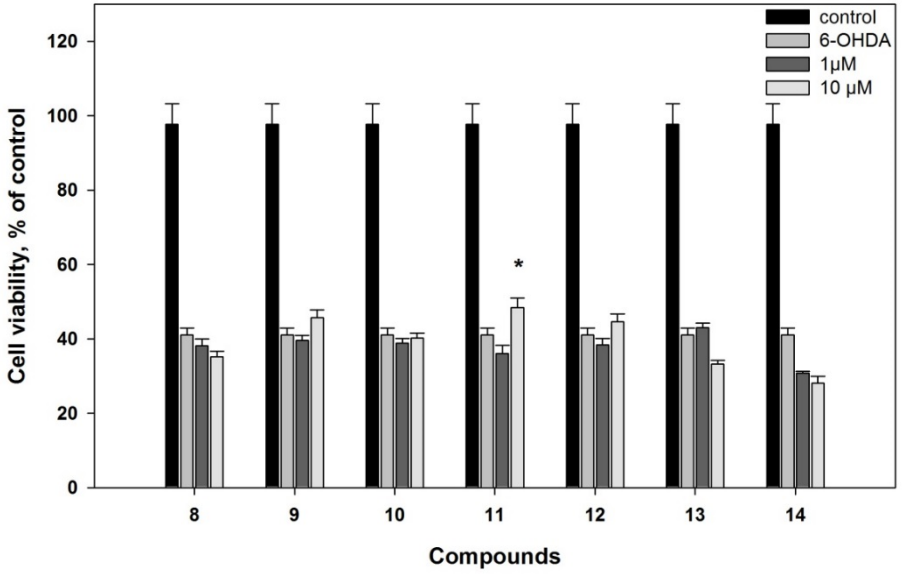
Influence of compounds **1**-**14** on ROS formation in Neuro2a cells.

*Statistically significant differences ($p \leq 0.05$) between results for control cells and cells incubated with compounds.

S27 Viability of Neuro2a cells treated with 6-OHDA



(a)



(b)

Influence of compounds **1**-**7** (**a**) and **8**-**14** (**b**) on viability of Neuro2a cells treated with 6-OHDA (50 μM).

***** Statistically significant differences ($p \leq 0.05$) between results for 6-OHDA-treated cells and cells incubated with compounds.