SUPPLEMENTARY MATERIAL

Flavone glucosides from *Artemisia juncea*

Bakhodir S. Okhundedaev[1], Markus Bacher[2], Rimma F. Mukhamatkhanova[1], Ildar J. Shamyanov[1], Gokhan Zengin[3], Stefan Böhmdorfer[2], Nilufar Z. Mamadalieva[1], Thomas Rosenau[2*]

[1] *Institute of the Chemistry of Plant Substances of the Academy Sciences of Uzbekistan, 100170 Tashkent, Uzbekistan*

[2] *University of Natural Resources and Life Sciences, Vienna (BOKU University), Department of Chemistry, Division of Chemistry of Renewables, Konrad-Lorenz-Straße 24, 3430 Tulln, Austria*

[3] *University of Selcuk, Faculty of Science, Department of Biology, Campus, Konya, Turkey.*

*Corresponding author: Prof. Thomas Rosenau E-mail: thomas.rosenau@boku.ac.at

Abstract

A new flavone glucoside, 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside was obtained from aerial parts of *Artemisia juncea*, together with the known flavone eupatilin (5,7-dihydroxy-3',4',6-trimethoxyflavone). The compounds were comprehensively analytically characterized by IR, UV, NMR and HR-MS, and their chemical structures ascertained. The EtOAc fraction of *A. juncea* showed the strongest DPPH radical scavenging ability as well as reducing power (in CUPRAC and FRAP assays) and phosphomolybdenum activity. This fraction also exhibited the strongest inhibitory effects on tyrosinase. Additionally, the best antidiabetic effects were observed for eupatilin and the $CHCl_3$ fraction.

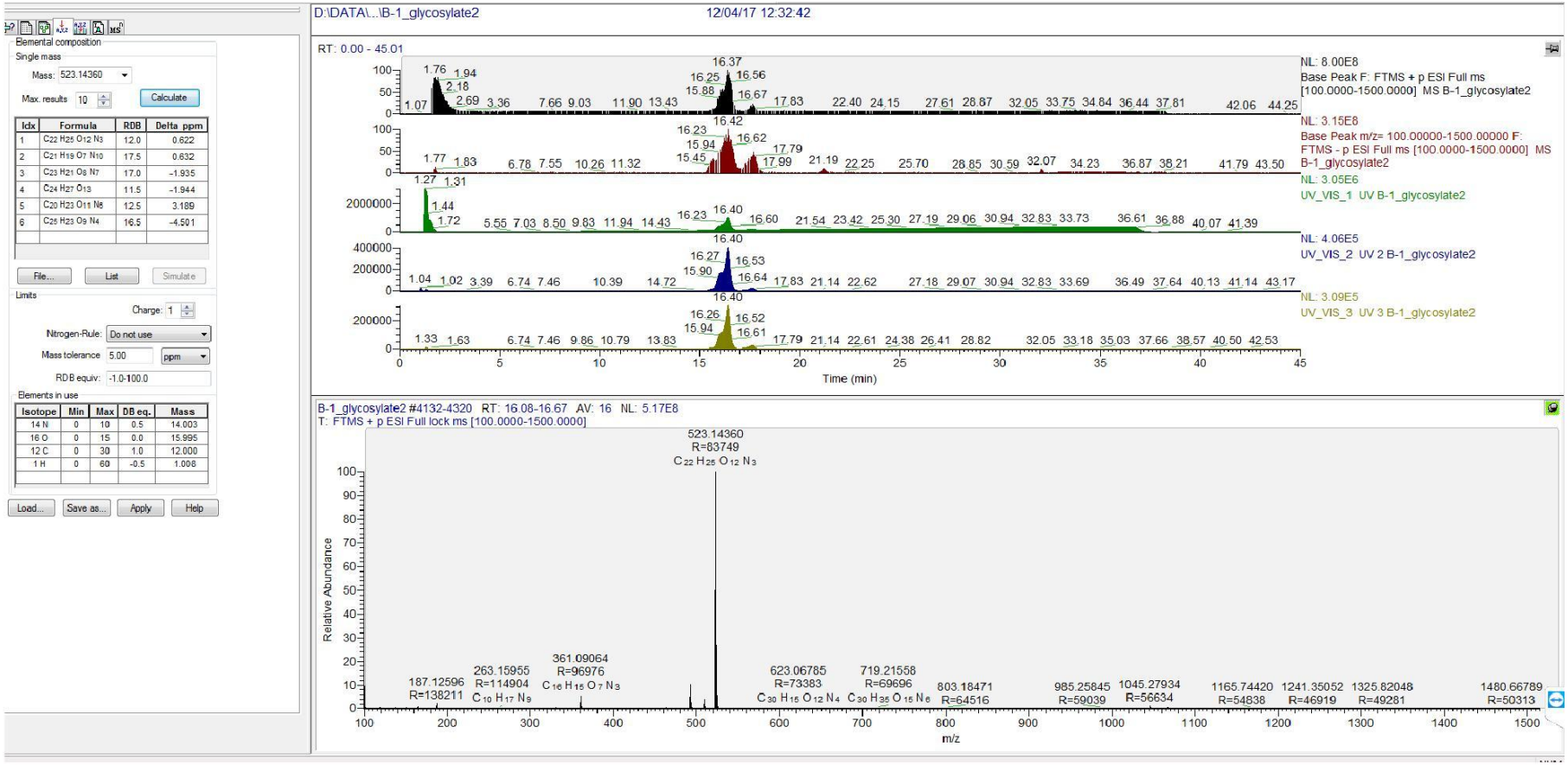

Figure S1. HR-ESI-MS spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside (positive ion mode)

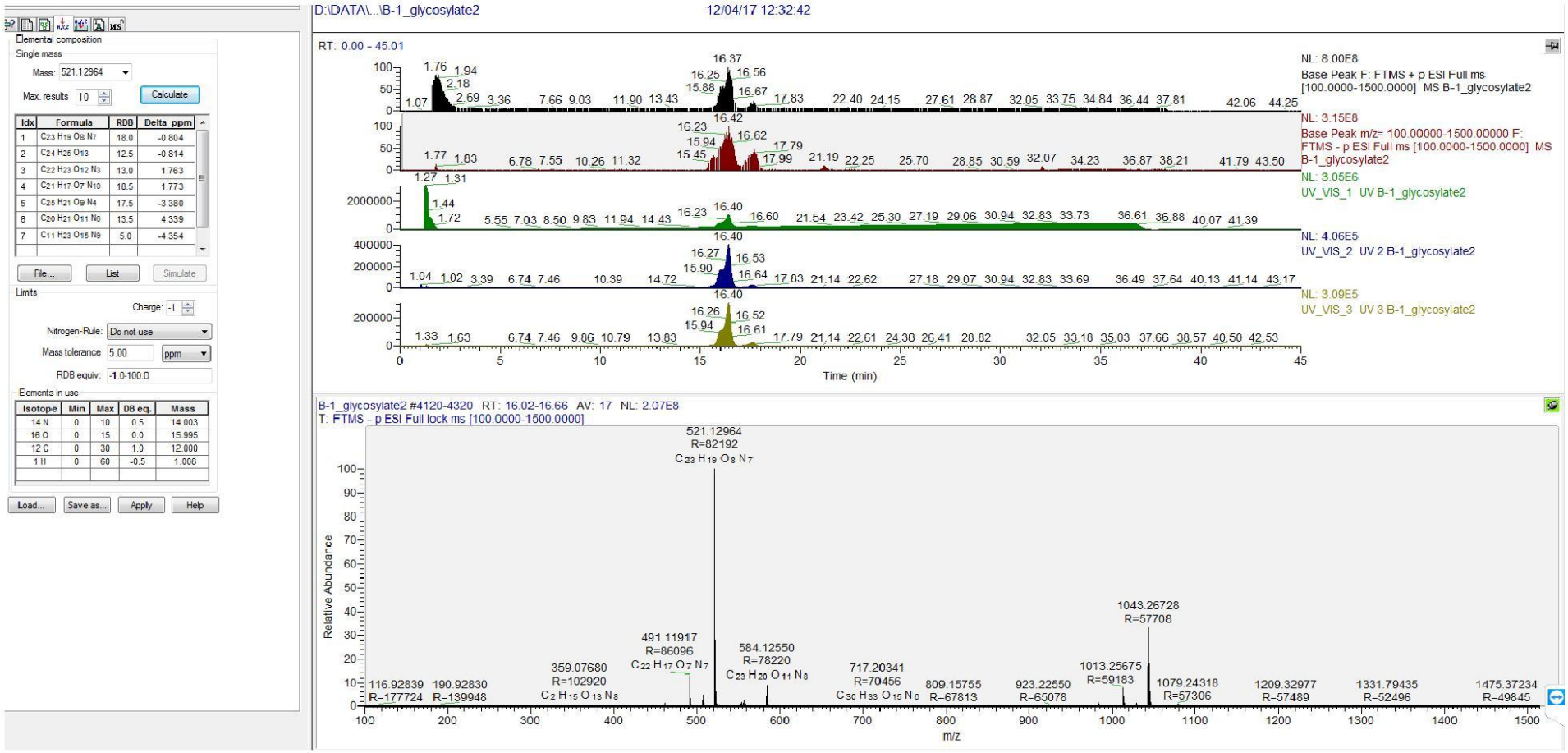

Figure S2. HR-ESI-MS spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside (negative ion mode)

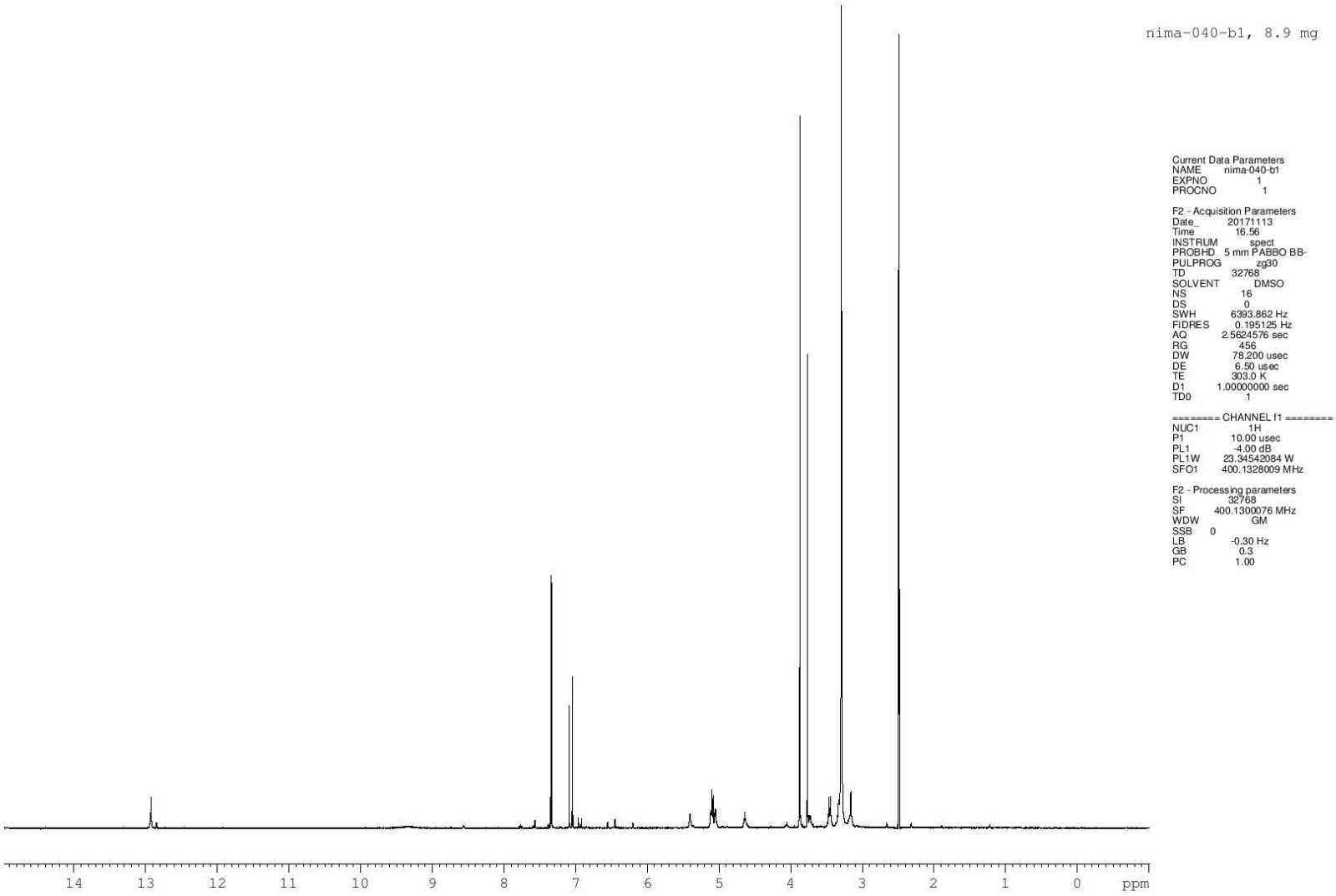

Figure S3. ^{1}H NMR spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

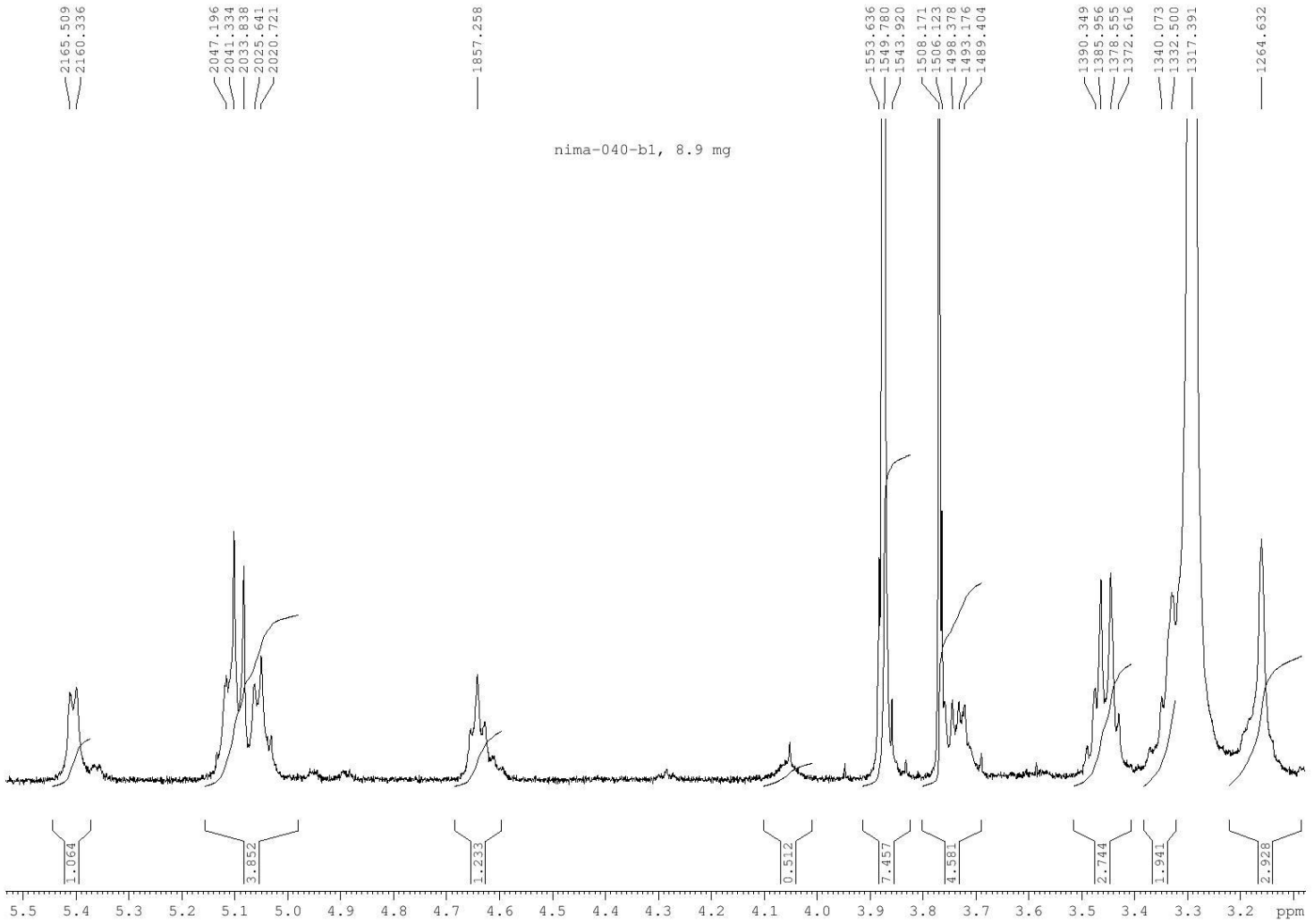

Figure S4. ^{1}H NMR spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

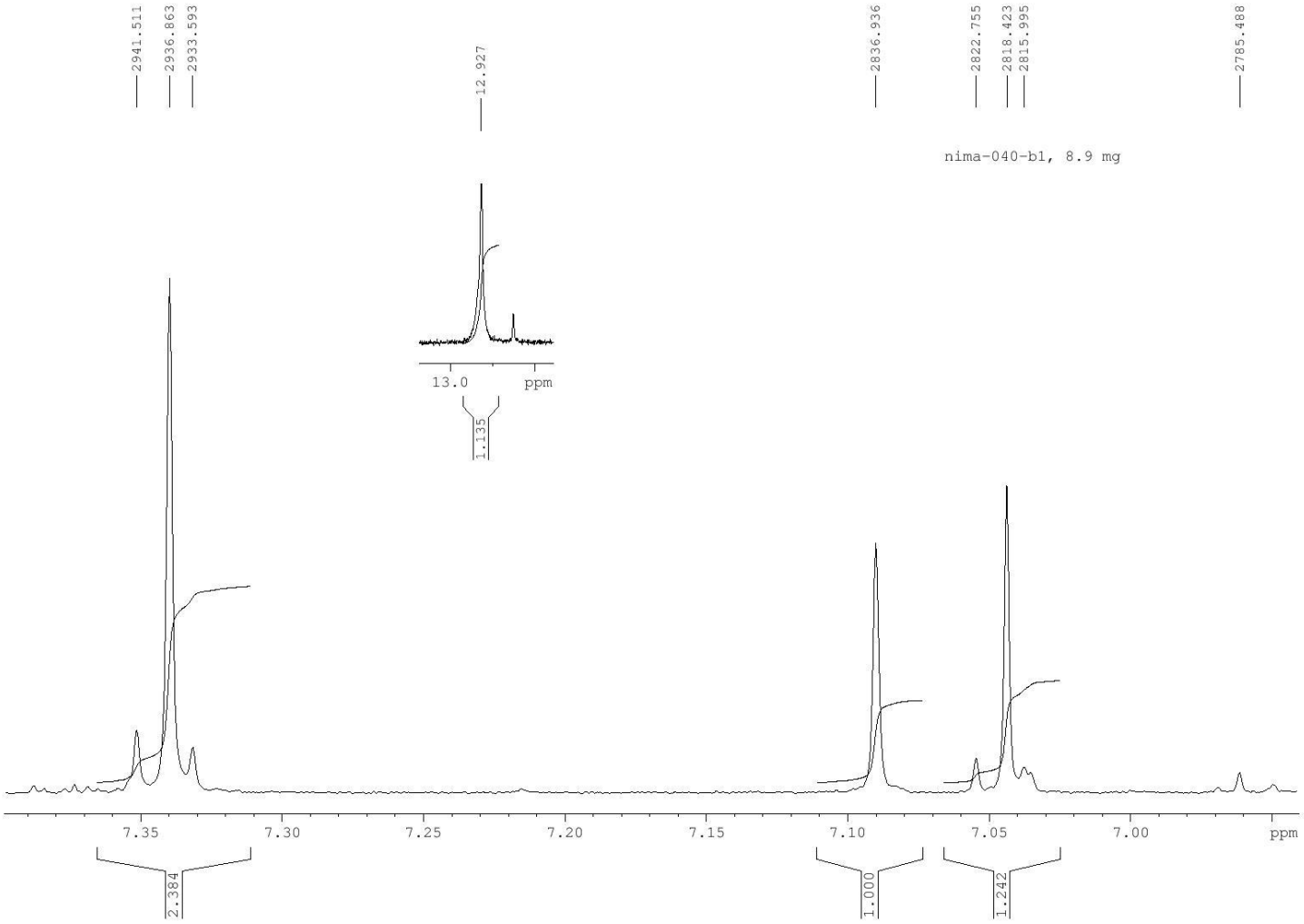

Figure S5. [1]H NMR spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

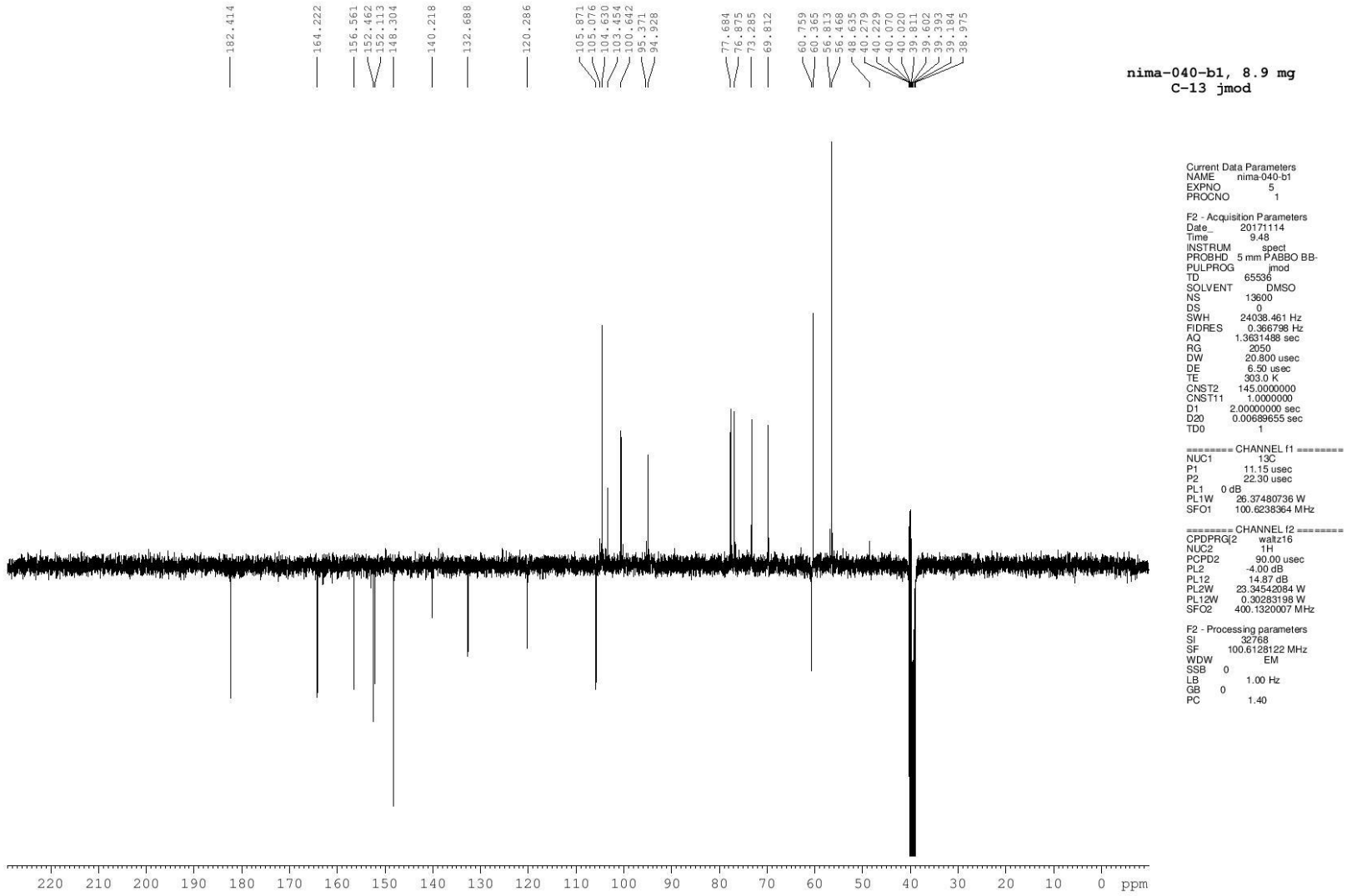

Figure S6. ^{13}C APT spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

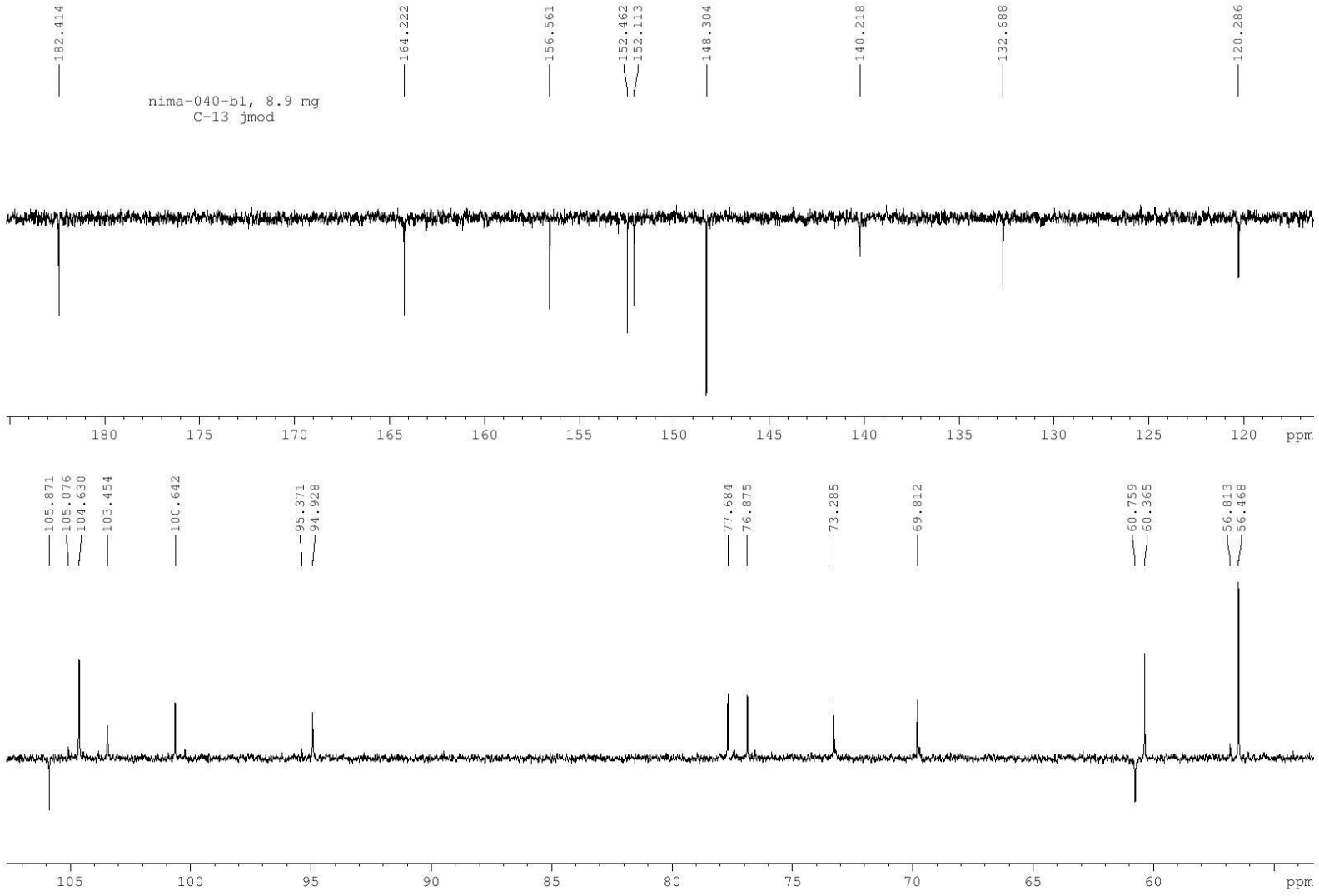

Figure S7. ^{13}C APT spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

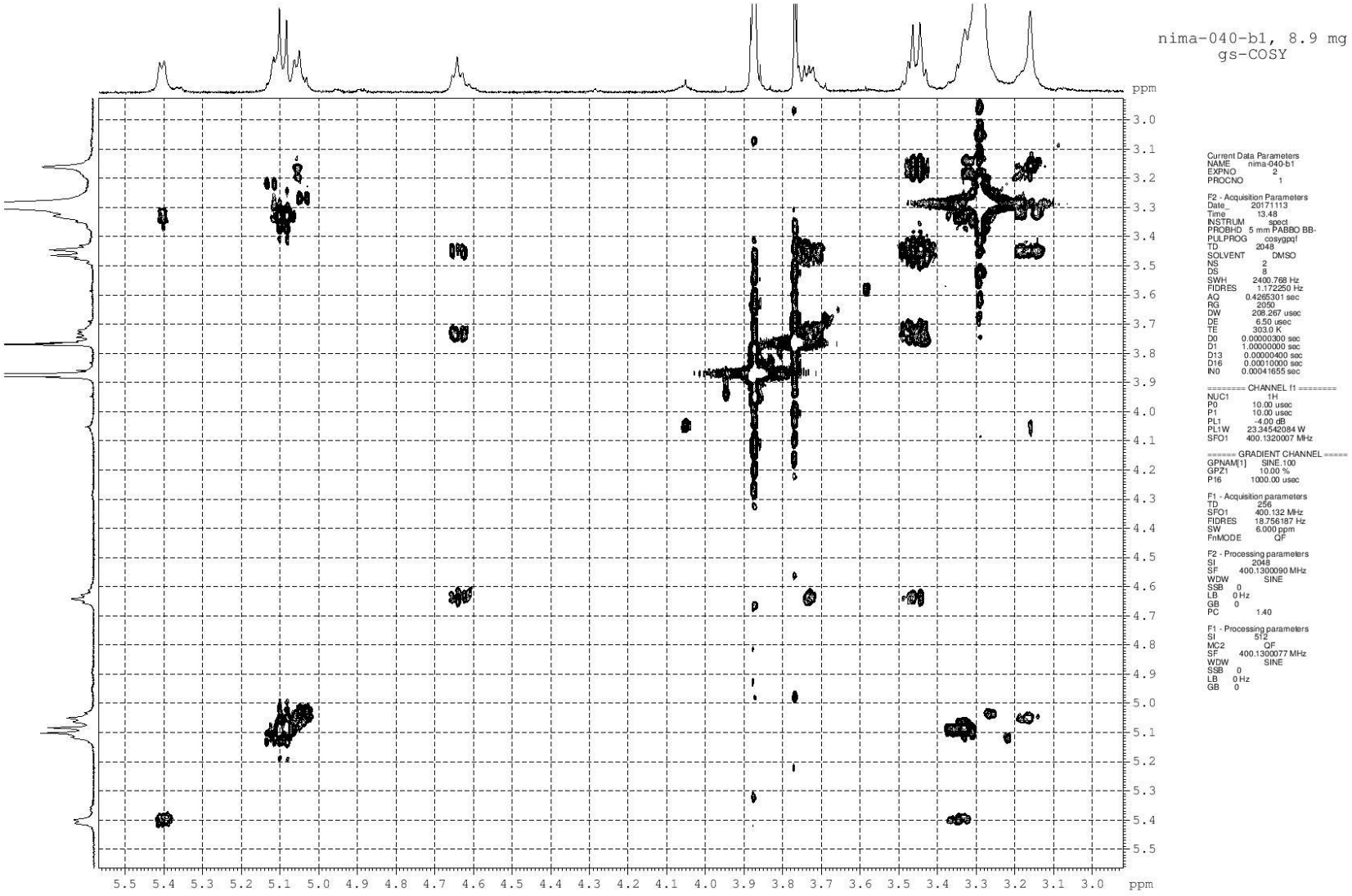

Figure S8. COSY ($^{1}H/^{13}C$) spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

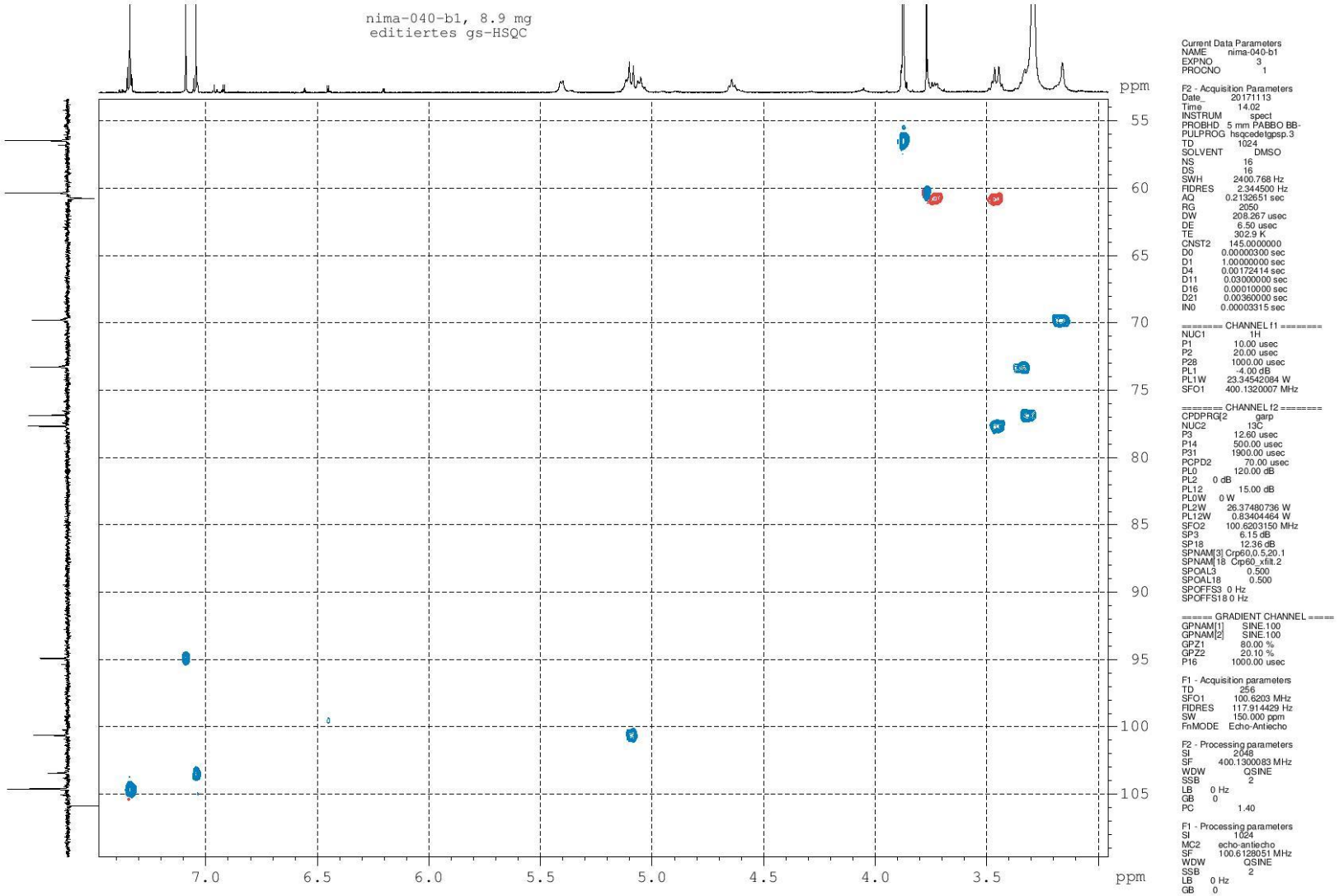

Figure S9. HSQC ($^{1}H/^{13}C$) spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

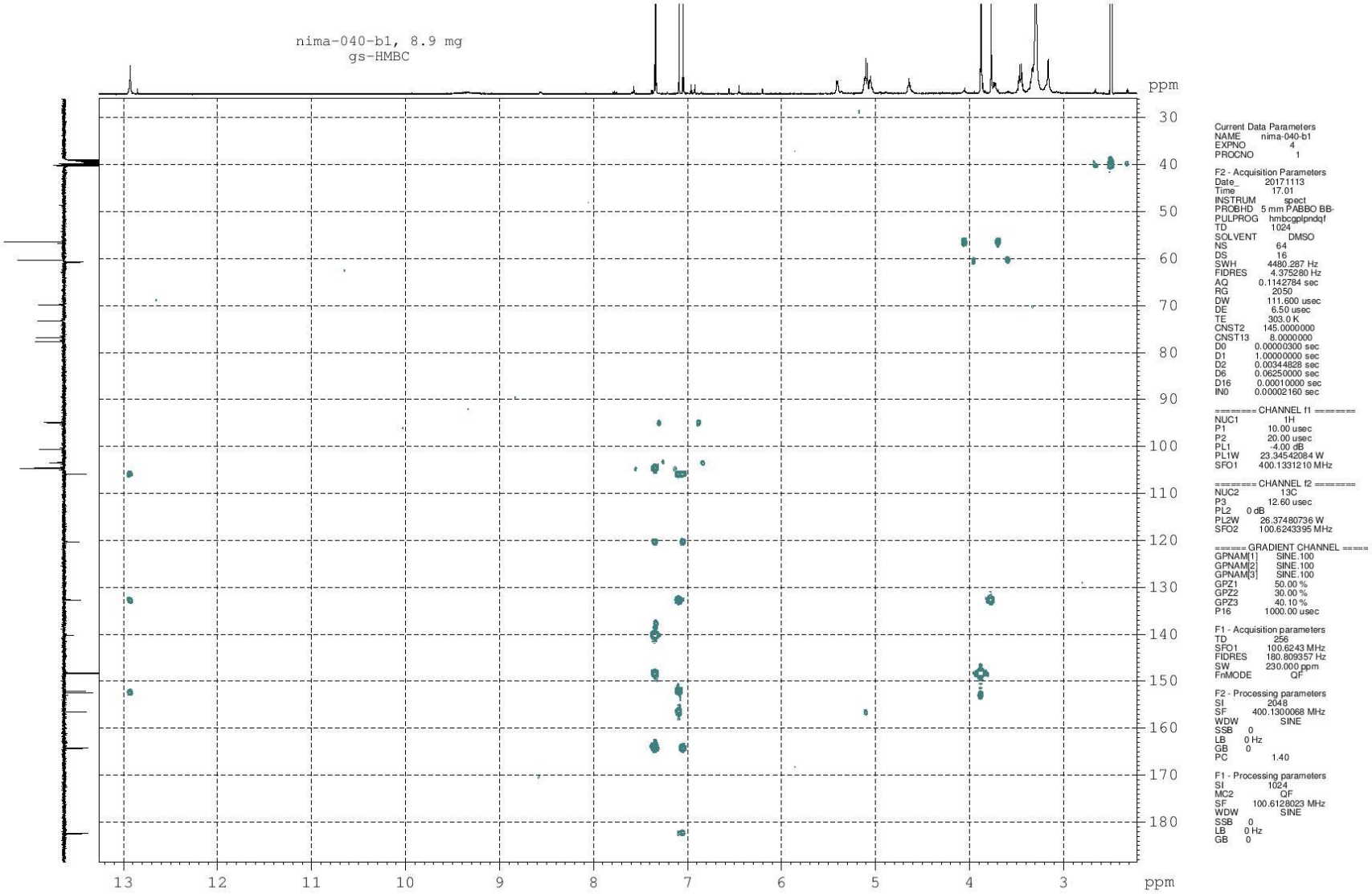

Figure S10. HMBC ($^{1}H/^{13}C$) spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

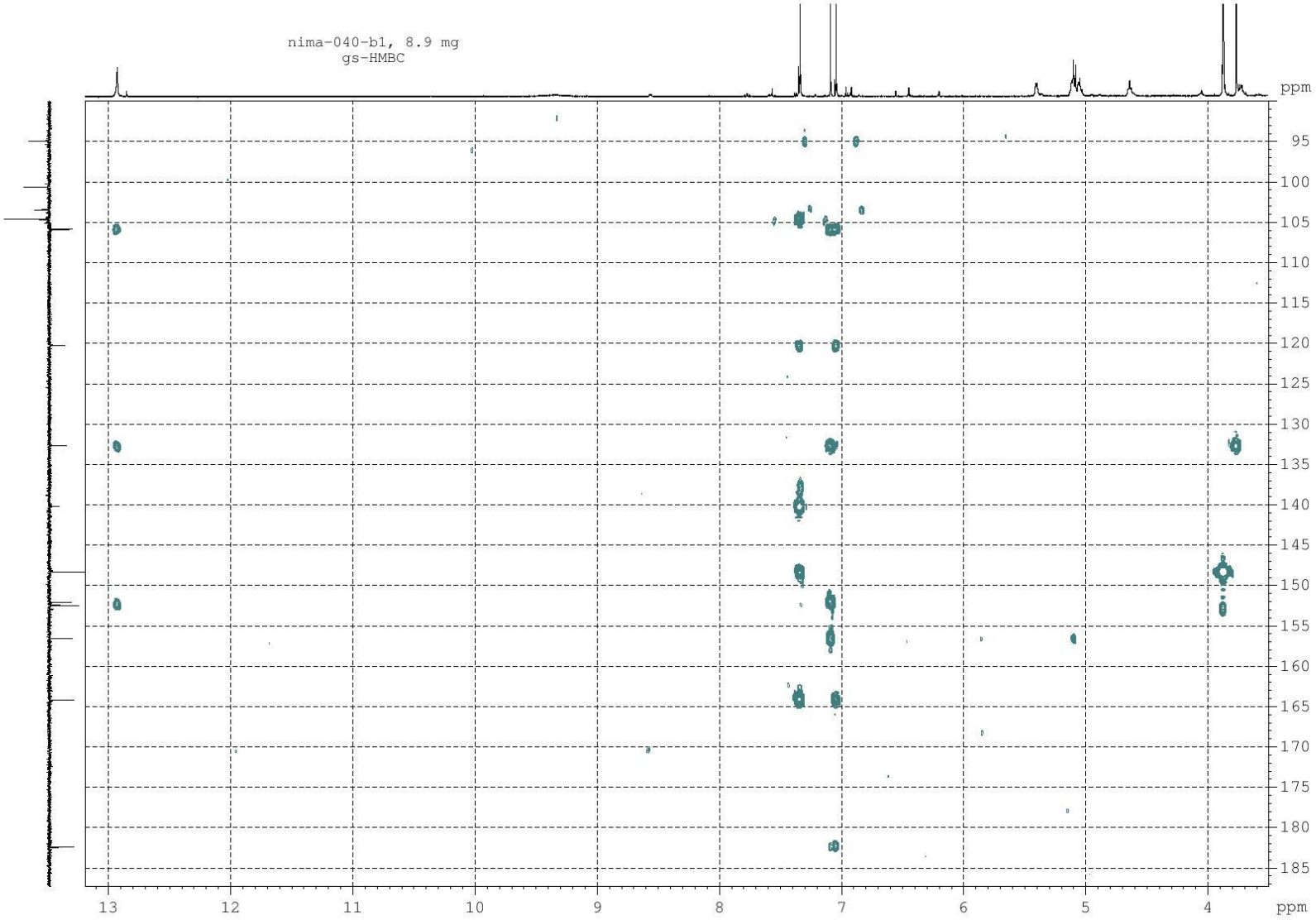

Figure S11. HMBC ($^{1}H/^{13}C$) spectrum of 4',5-dihydroxy-3',5',6-trimethoxyflavone-7-*O*-β-D-glucoside

Table S1. ^{1}H and ^{13}C NMR data for eupatilin (**2**)

Position	**2 (pyridine-d_5)**	
	δ_C	**δ_H (J/Hz)**
2	164.56	-
3	104.75	7.00, s
4	183.52	-
4a	105.77	-
5	154.51	-
6	133.04	-
7	154.15	-
8	95.72	6.95, s
8a	159.32	-
1`	124.65	-
2`	110.53	7.59 (d, *J* = 2.2)
3`	150.46	-
4`	153.51	-
5`	112.50	7.07 (d, *J* = 8.5)
6`	121.02	7.69 (dd, *J* = 8.5 + 2.2)
6-OCH_3	60.68	3.99, s
3` - OCH_3	56.47	3.86, s
4` - OCH_3	56.29	3.82, s
5-OH		13.85, br.s
7-OH		n.d.

n.d.- not detected