Supporting Information

Biotransformation of two guaiane-type sesquiterpene lactones with filamentous fungi and extremophile bacteria.

Gabriela I. Furque,[1,2] Carina N. Casero,[3] Marcela Kurina-Sanz,[4] Carlos G. Nieto-Peñalver[5,6], María E. Farias[6], José M. Padrón[7], Viviana E. Nicotra[3]

[1]*Departamento de Química, Facultad de Ciencias Exactas y Naturales. Universidad Nacional de Catamarca, Belgrano al 300, CP K4700AAP, San Fernando del Valle de Catamarca, Catamarca, Argentina.*

[2]*Centro Regional de Energía y Ambiente para el Desarrollo Sostenible (CREAS-CONICET), Universidad Nacional de Catamarca, Prado 366, CP K4700BDH, San Fernando del Valle de Catamarca, Catamarca, Argentina.*

[3]*Departamento de Química Orgánica. Facultad de Ciencias Químicas. Instituto de Investigaciones en Físico-Química de Córdoba (INFIQC-CONICET), Universidad Nacional de Córdoba, Haya de la Torre y Medina Allende, Ciudad Universitaria, CP X5000HUA Córdoba, Argentina.*

[4]*Facultad de Química, Bioquímica y Farmacia. Instituto de Investigación en Tecnología Química (INTEQUI-CONICET), Universidad Nacional de San Luis, Almirante Brown 1455, CP D5700ANW, San Luis, Argentina.*

[5]*Universidad Nacional de Tucumán. Facultad de Bioquímica, Química y Farmacia. Instituto de Microbiología. Ayacucho 471, CP T4000INI, Tucumán, Argentina.*

[6]*Planta Piloto de Procesos Industriales Microbiológicos (PROIMI, CONICET), Av. Belgrano y Pje. Caseros CP T4001MVB, Tucumán, Argentina.*

[7]*BioLab, Instituto Universitario de Bio-Orgánica "Antonio González" (IUBO-AG), Universidad de La Laguna, C/Astrofísico Francisco Sánchez 2, 38206 La Laguna, Spain.*

*Corresponding Author: Tel: +54-351-535-3864. E-mail: vnicotra@unc.edu.ar

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Supporting information list

Table 1S: ^{1}H NMR and ^{13}C NMR Data of Compounds **1**, **3**–**6**

Table 2S: ^{1}H NMR and ^{13}C NMR Data of Compounds **2**, **7**–**9**

Figure 1S. ^{1}H NMR spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 400.13 MHz)

Figure 2S. ^{13}C NMR spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 100.03 MHz)

Figure 3S. COSY spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 400.13 MHz)

Figure 4S. Expanded COSY correlation spectrum of a mixture composed of compounds **5** and **3** (region 2.28–1.78 ppm), ($CDCl_3$, 400.13 MHz)

Figure 5S. HSQC spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 400.13 MHz)

Figure 6S. HMBC spectrum of compound **5** ($CDCl_3$, 400.13 MHz)

Figure 7S. Minimized structure of compound **5** (3α,4β-dihydroxy, C-11*S* derivative), the stereoisomer A (3β,4α -dihydroxy, C-11*S* isomer), and the stereoisomer B (3α,4β-dihydroxy and C-11*R* isomer)

Figure 8S. ^{1}H NMR spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

Figure 9S. COSY spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

Figure 10S. HSQC spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

Figure 11S. HMBC spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

Figure 12S. NOESY spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

Figure 13S. Expanded NOESY correlation spectrum of **6** (region 2.70–1.25 ppm), ($CDCl_3$, 400.13 MHz)

Figure 14S. ^{1}H NMR spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

Figure 15S. COSY spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

Figure 16S. Expanded COSY correlation spectrum of **9** (region 2.42–1.50 ppm), ($CDCl_3$, 400.13 MHz)

Figure 17S. HSQC spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

Figure 18S. HMBC spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

Figure 19S. Minimized structure of compound **5** (3α,4β-dihydroxy, C-11*S* derivative), the stereoisomer A (3β,4α -dihydroxy, C-11*S* isomer), and the stereoisomer B (3α,4β-dihydroxy and C-11*R* isomer)

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Table 1S: ^{1}H NMR and ^{13}C NMR Data of Compounds **1**, **3**–**6** in $CDCl_3$[a]

	1		**3**		**4**		**5**		**6**	
Position	**δ_C**	**δ_H (J in Hz)**	**δ_C**	**δ_H (J in Hz)**	**δ_C**	**δ_H (J in Hz)**	**δ_C**	**δ_H (J in Hz)**	**δ_C**	**δ_H (J in Hz)**
1	133.8	-	134.5	-	133.5	-	134.4	-	85.9	-
2a	33.6	2.71 brd (17.7)	39.3	2.83 m	33.5	2.64 brd (17.5)	39.1	2.80 m	44.1	2.60 dd (14.7,3.8)
2b		2.44 dq (17.7,1.7)		2.36 d (17.3)		2.36 brd (17.5)		2.35 brd (16.5)		1.64 d (14.7)
3	63.8	3.38 brs	79.0	3.87 brd (4.0)	63.8	3.31 brs	79.0	3.84 d (4.0)	83.0	3.82 brs
4	67.1	-	83.1	-	67.2	-	83.1	-	81.9	-
5	52.5	3.09 brd (10.7)	51.5	2.78 m	51.9	2.93 brd (10.8)	53.7	2.73 m	64.2	2.50 m
6	80.7	3.64 dd (10.5,10.0)	82.9	3.95 t (10.1)	80.5	3.58 t (10.2)	82.5	3.94 t (10.0)	80.9	4.62 dd (10.7,9.5)
7	54.5	2.77 m	54.2	2.83 m	57.7	1.78 m	55.2	1.85 m	44.8	2.88 m
8a	25.8	2.12 m	25.8	2.08 m	27.5	1.80 m	27.2	1.86 m	24.6	1.89 m
8b		1.30 m		1.33 m		1.13 m		1.26 m		1.61 m
9a	33.9	2.25 brt (13.5)	34.4	2.28 brd (14.0)	34.3	2.10 m	34.6	2.18 m	35.1	2.29 td (14.1,4.0)
9b		2.06 m		2.19 ddd (14.0,5.4,2.2)		1.98 ddd (14.2,5.6,1.1)		2.11 m		1.56 m
10	134.9	-	132.3	-	135.3	-	132.6	-	76.9	-
11	139.4	-	139.3	-	41.3	2.13 m	41.6	2.22 m	139.4	-
12	169.5	-	170.0	-	177.7	-	178.5	-	170.6	-
13a	117.8	6.12 d (3.3)	118.8	6.17 d (3.2)	12.3	1.16 d (7.0)	12.3	1.23 d (7.0)	118.9	6.15 d (3.5)
13b		5.38 d (3.0)		5.45 d (3.2)						5.44 d (3.1)
14	22.6	1.66 brs	24.1	1.75 brs	22.6	1.62 brs	23.8	1.73 brs	22.0	1.28 s
15	19.0	1.69 brs	23.9	1.59	19.1	1.57 s	24.0	1.55	28.8	1.48 s

[a]Chemical shifts (δ) downfield from TMS, *J* couplings (in parentheses) in Hz run at 400.13 MHz.

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Table 2S: ^{1}H NMR and ^{13}C NMR Data of Compounds **2**, **7**–**9** in $CDCl_3$[a]

	2		**7**		**8**		**9**	
Position	**δ_C**	**δ_H (*J* in Hz)**	**δ_C**	**δ_H (*J* in Hz)**	**δ_C**	**δ_H(ppm) (*J* in Hz)**	**δ_C**	**δ_H(ppm) (*J* in Hz)**
1	44.9	2.98 ddd (10.5,8.5,7.5)	44.4	3.11 m	44.2	2.79 c (7.8)	44.4	3.07 m
2a	33.0	2.07 dd (14.0,7.5)	36.1	2.30 m	32.6	2.01 m	36.0	2.27 m
2b		1.81 ddd (14.0,10.5,1.2)		1.72 ddd (13.4,6.9,0.9)		1.70 dd (13.2,10.9)		1.70 m
3	63.2	3.38 brs	80.6	3.89 brd (3.6)	63.1	3.27 s	80.4	3.86 brd (3.1)
4	65.8	-	83.1	-	66.0	-	82.7	-
5	50.8	2.32 dd (11.0,8.5)	52.4	2.35 t (11.0)	50.4	2.18 m	52.3	2.23 m
6	80.5	4.08 dd (11.0,8.9)	82.6	4.18 dd (11.0,9.3)	80.7	3.87 t (10.2)	82.5	4.15 t (10.6)
7	44.1	2.87 m	48.4	2.72 m	49.9	1.81 m	52.7	1.79 m
8a	29.2	2.22 m	31.5	2.20 dd (13.1,3.9)	30.88	1.98 m	33.1	2.05 dd (13.1,3.7)
8b		1.53 m		1.32 dd (13.1,3.7)		1.26 dd (11.3,6.2)		1.21 m
9a	28.6	2.28 m	37.8	2.60 dt (13.0,3.9)	30.99	2.21 m	38.0	2.57 m
9b		2.19 m		1.88 td (13.0,3.7)		2.04 m		1.79 m
10	146.0	-	148.3	-	147.6	-	148.5	-
11	139.6	-	139.2	-	41.9	2.12 m	41.7	2.12 m
12	169.7	-	169.9	-	178.3	-	178.5	-
13a	120.2	6.21 d (3.6)	120.2	6.14 d (3.4)	13.2	1.12 d (6.8)	13.2	1.16 d (7.0)
13b		5.48 d (3.2)		5.43 d (3.1)				
14a	115.3	4.95 brs	112.8	4.89 brs	114.1	4.78 brs	112.12	4.85 brs
14b		4.86 d (1.7)				4.74 brs		4.85 brs
15	18.5	1.62 s	24.4	1.46 s	18.7	1.49 s	24.6	1.42 s

[a]Chemical shifts (δ) downfield from TMS, *J* couplings (in parentheses) in Hz run at 400.13 MHz

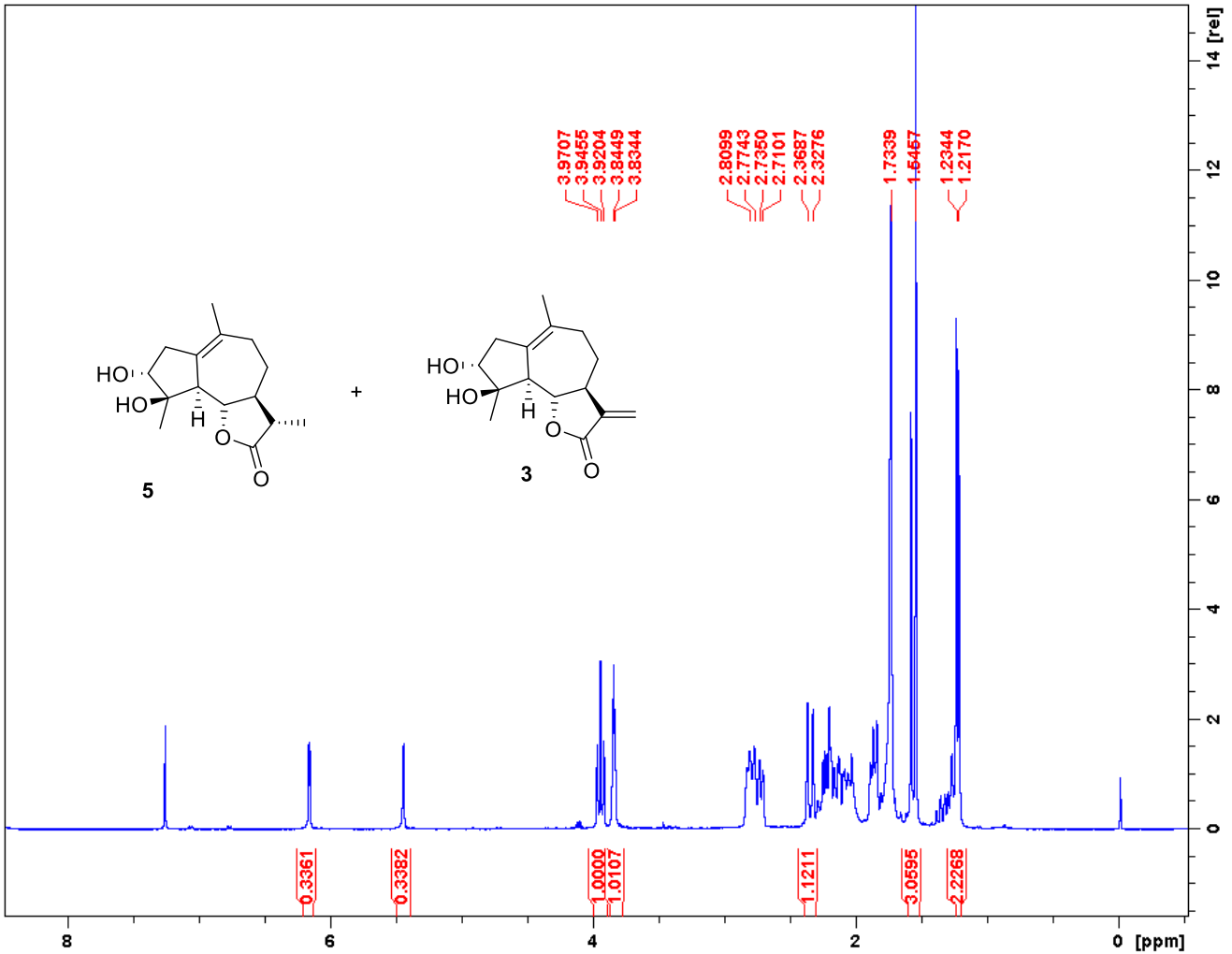

Figure 1S. ^{1}H NMR spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 400.13 MHz)

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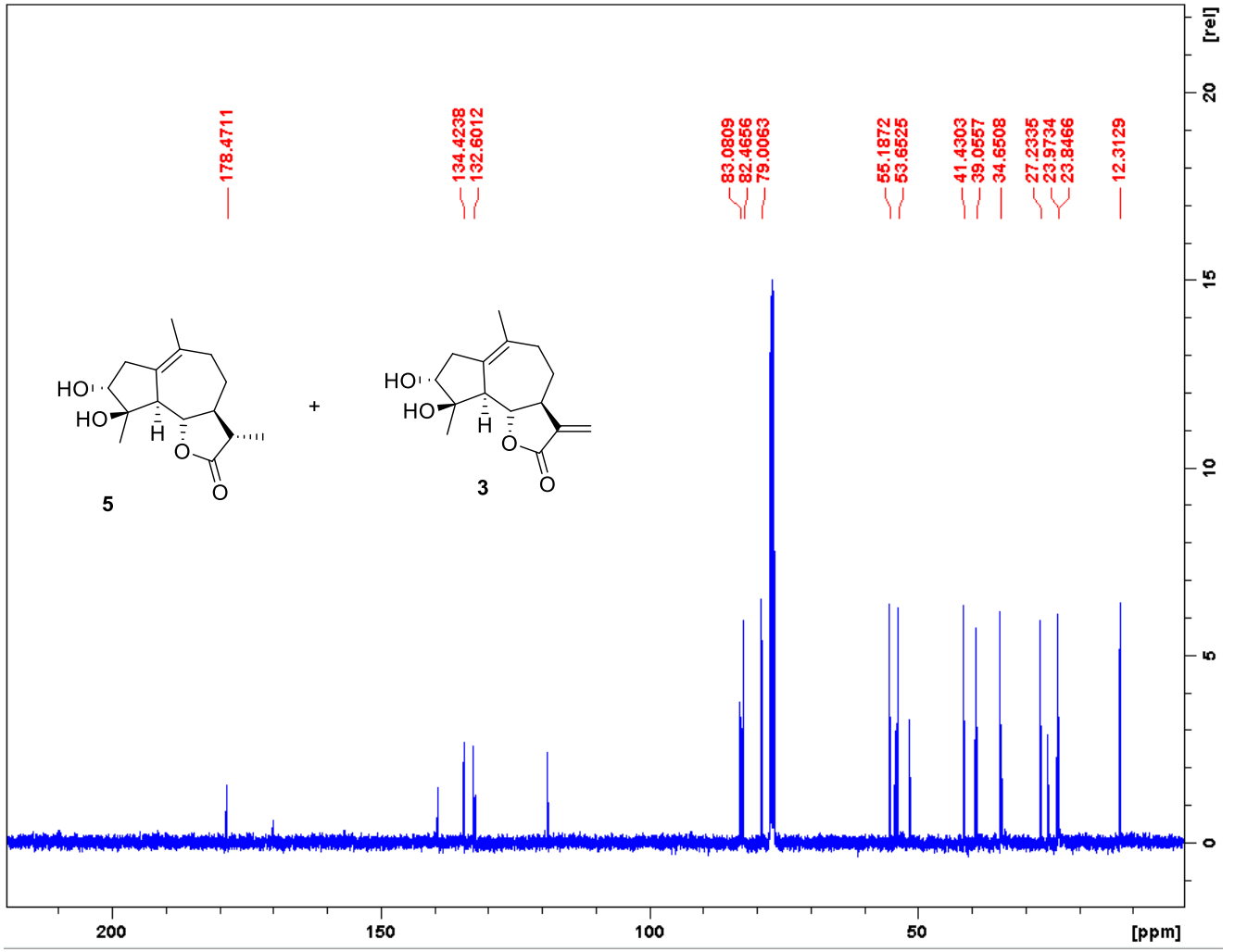

Figure 2S. ^{13}C NMR spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 100.03 MHz)

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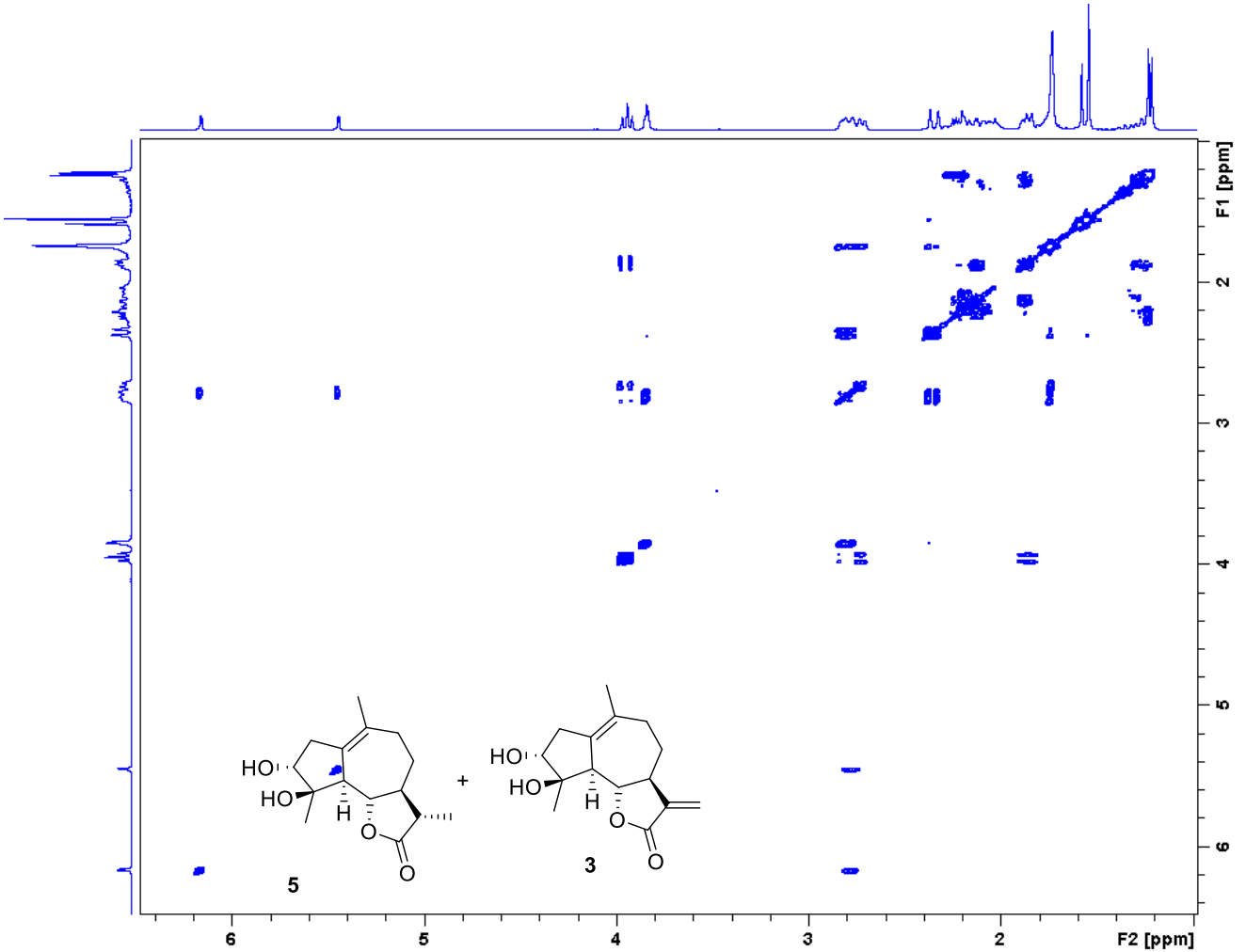

Figure 3S. COSY spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 400.13 MHz)

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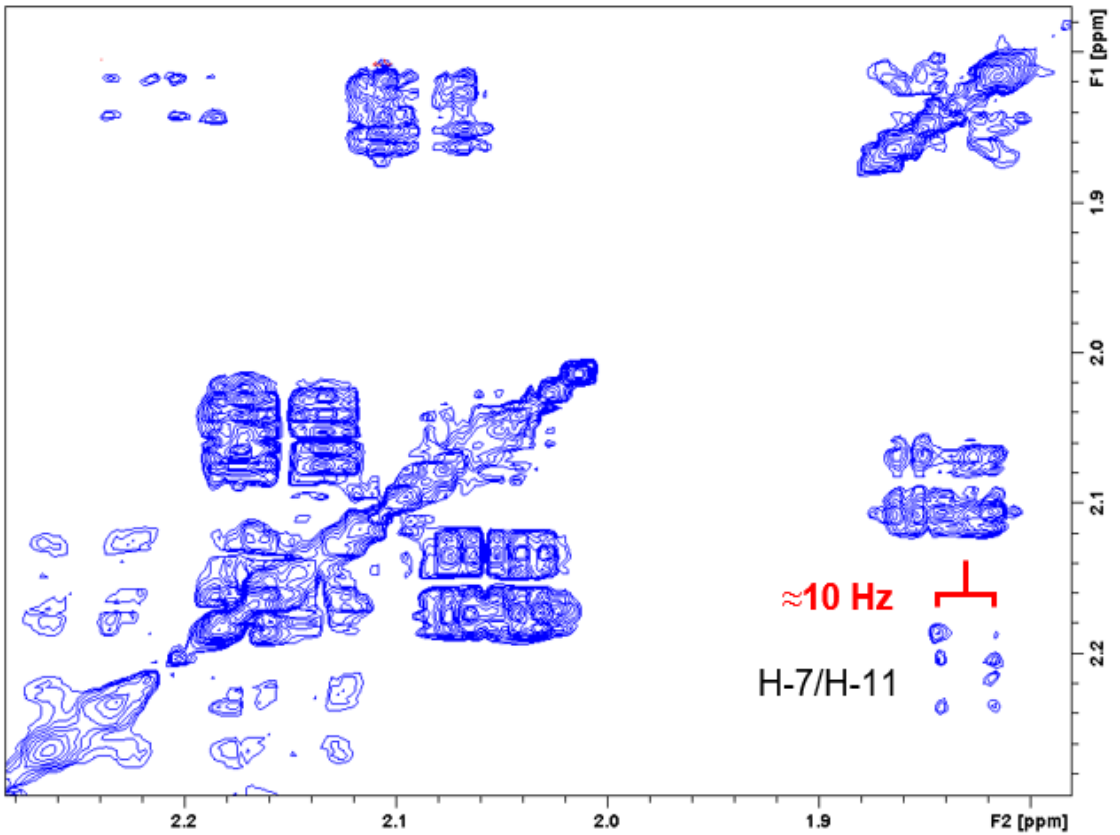

Figure 4S. Expanded COSY correlation spectrum of a mixture composed of compounds **5** and **3** (region 2.28–1.78 ppm), ($CDCl_3$, 400.13 MHz)

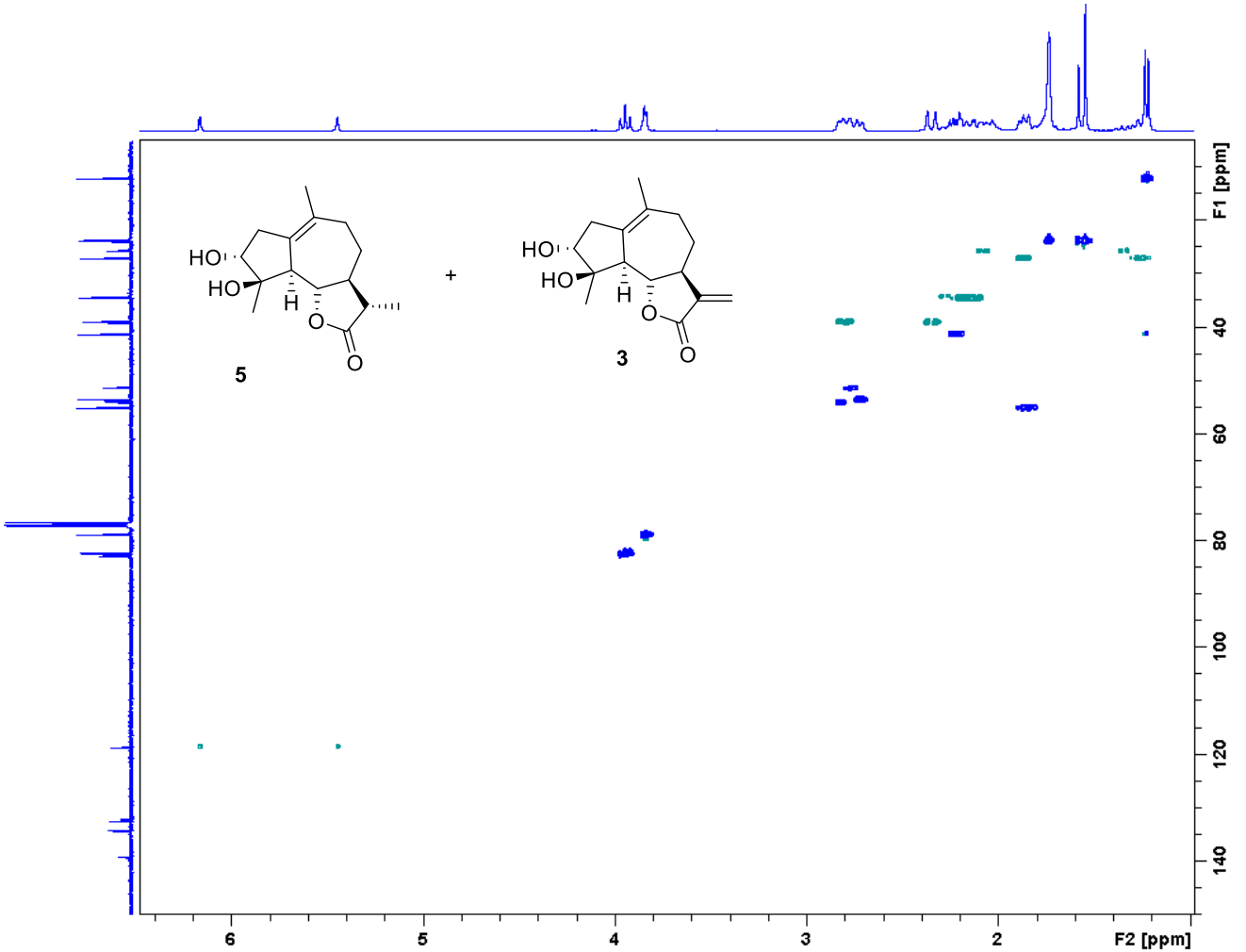

Figure 5S. HSQC spectrum of a mixture composed of compounds **5** and **3** ($CDCl_3$, 400.13 MHz)

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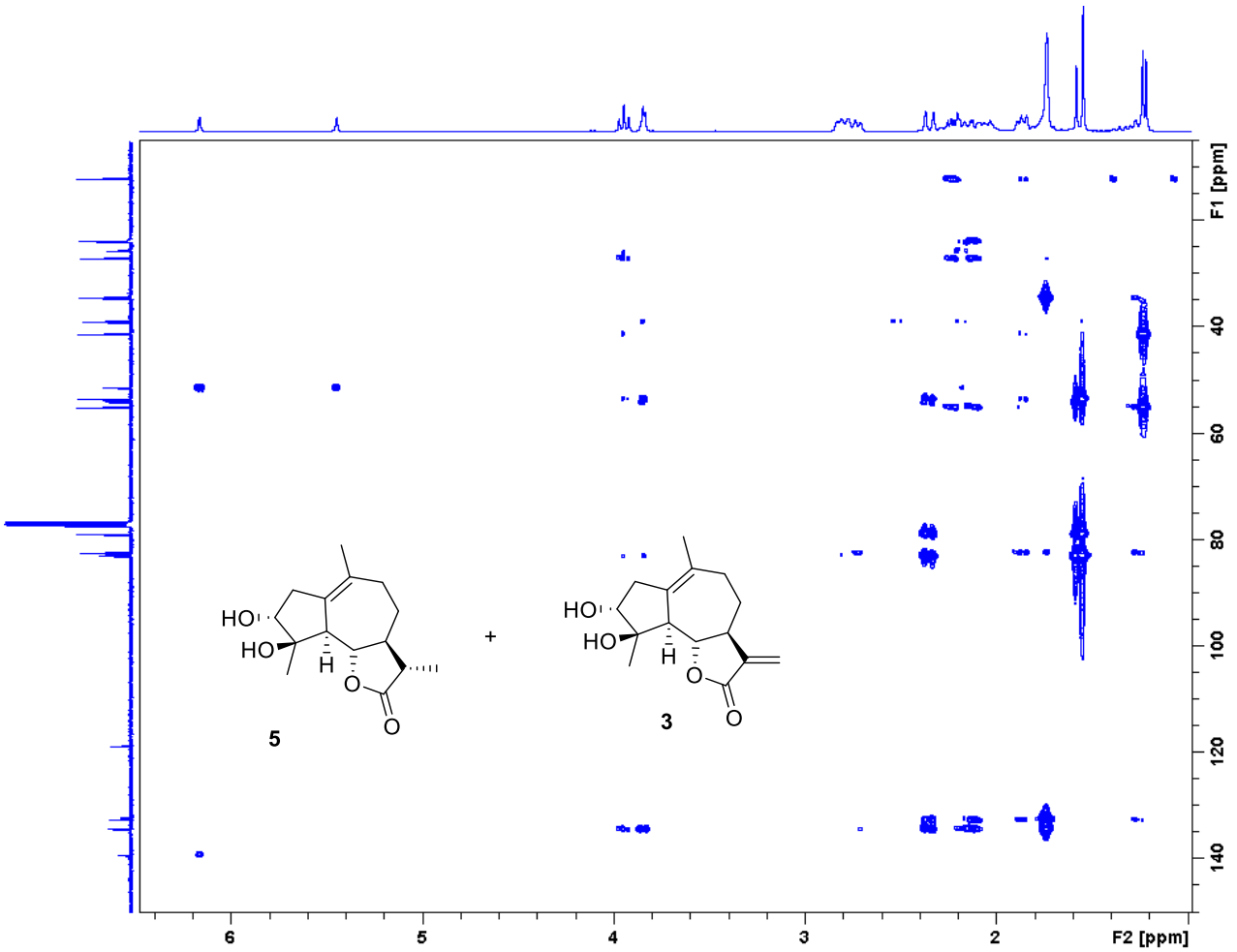

Figure 6S. HMBC spectrum of compound **5** ($CDCl_3$, 400.13 MHz)

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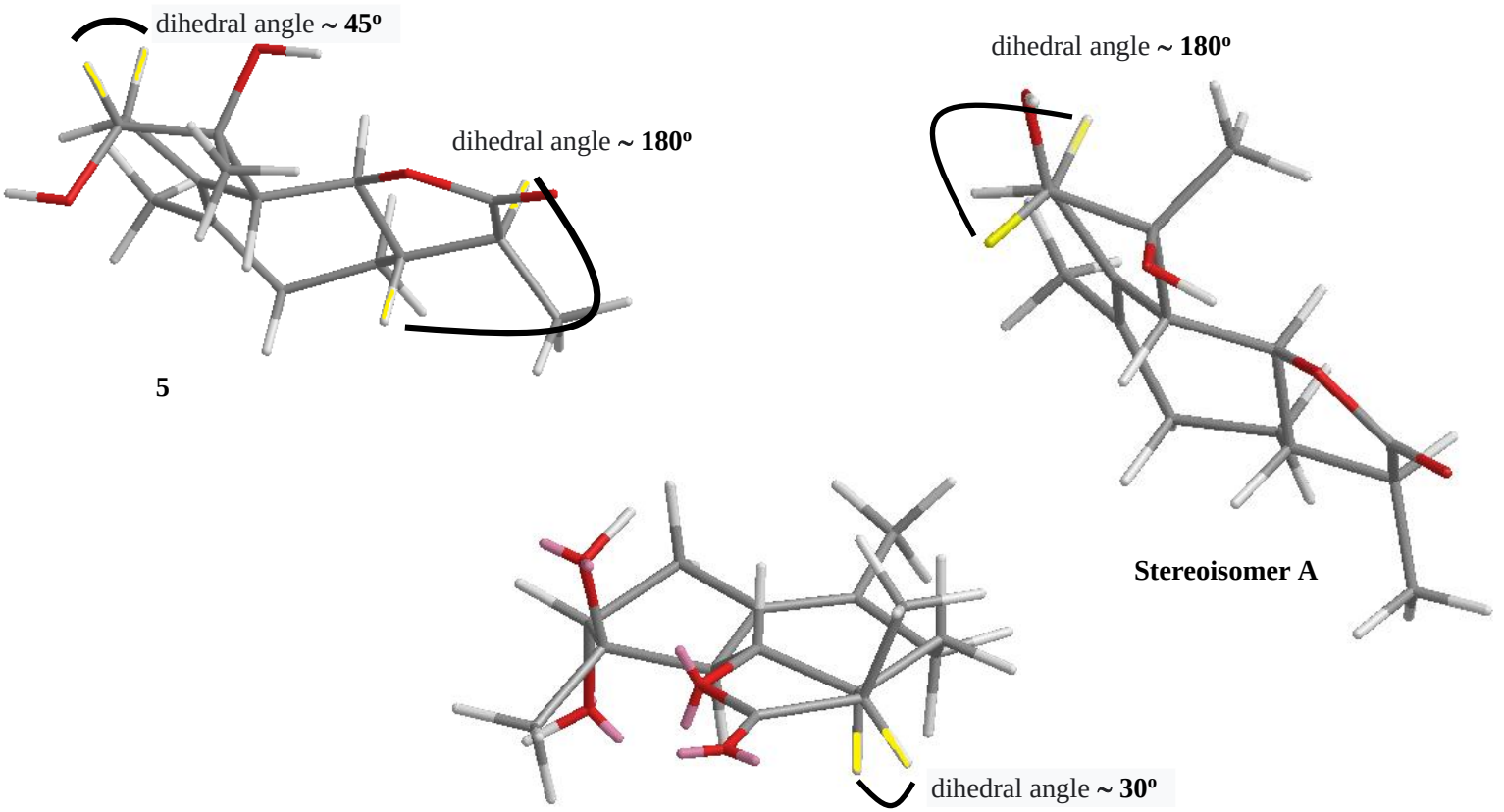

Figure 7S. Minimized structure of compound **5** (3α,4β-dihydroxy, C-11*S* derivative), the stereoisomer A (3β,4α -dihydroxy, C-11*S* isomer), and the stereoisomer B (3α,4β-dihydroxy and C-11*R* isomer)

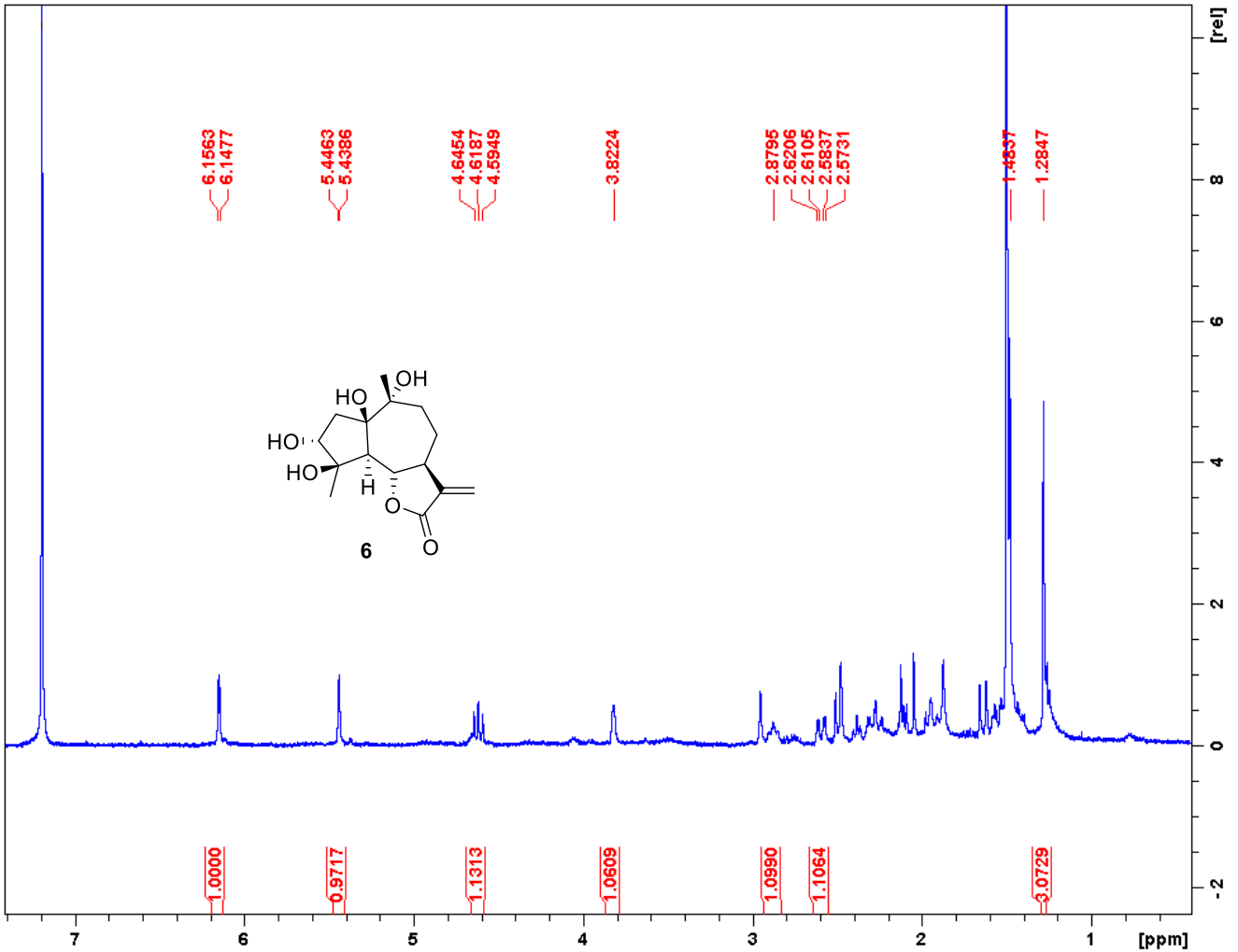

Figure 8S. ^{1}H NMR spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

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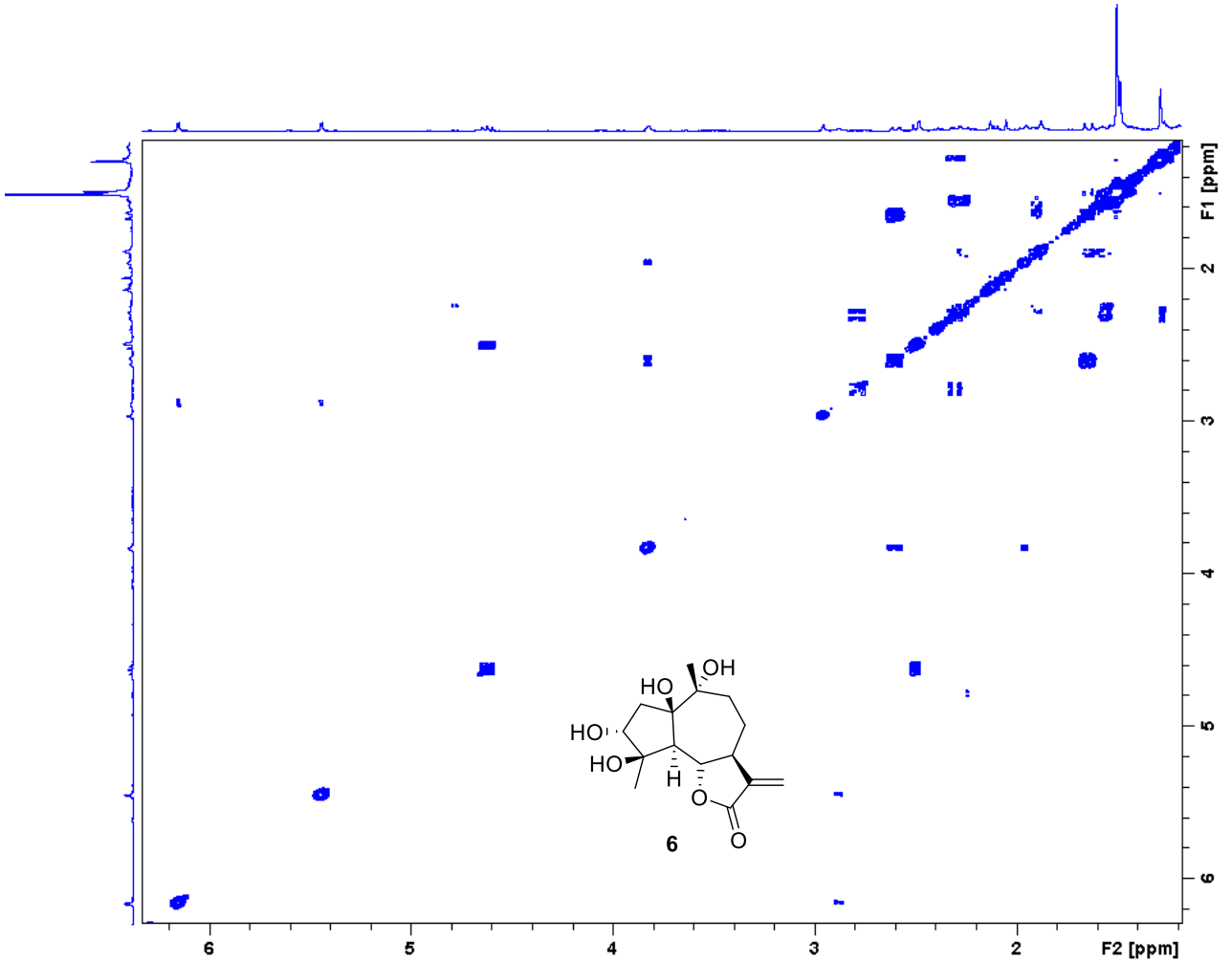

Figure 9S. COSY spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

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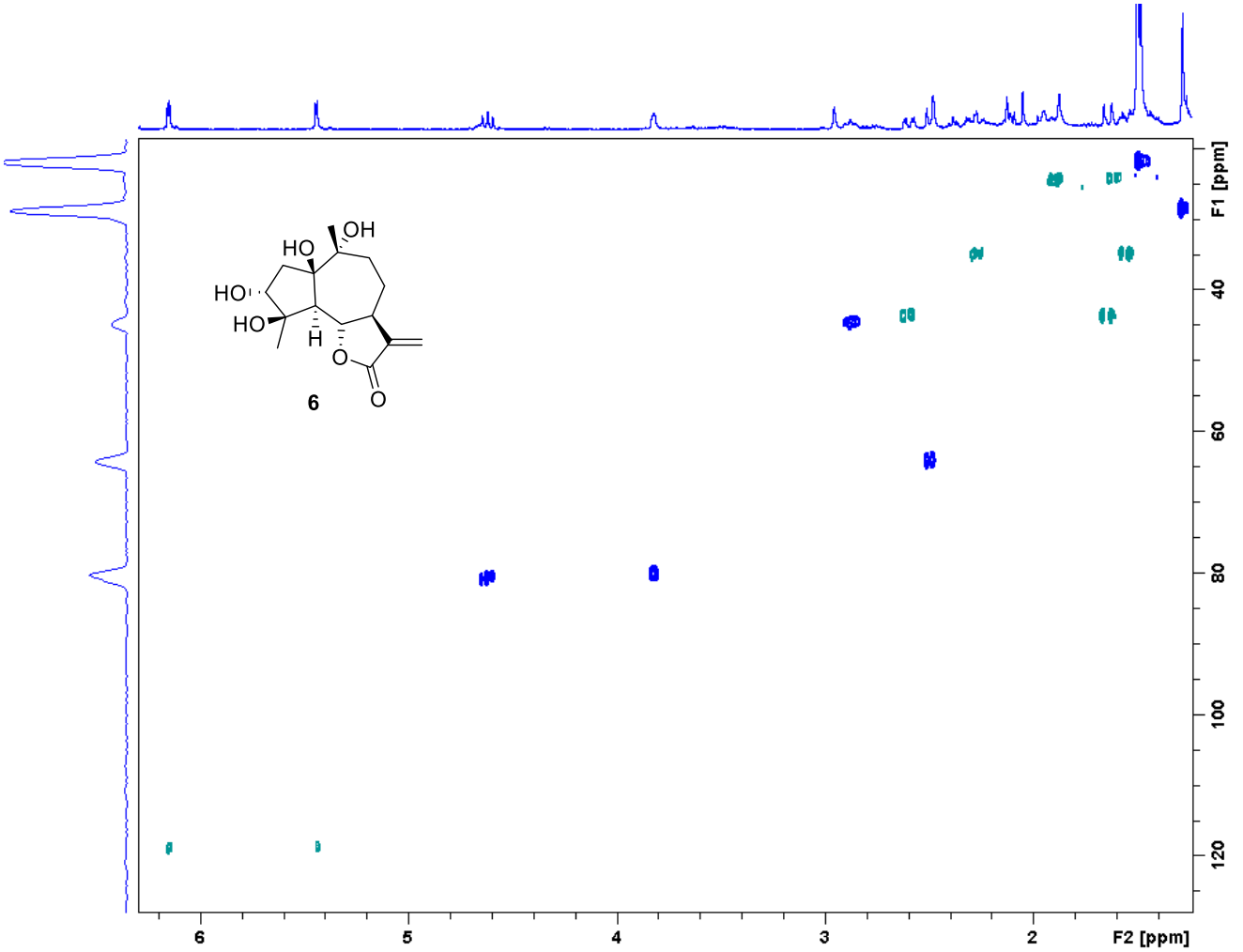

Figure 10S. HSQC spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

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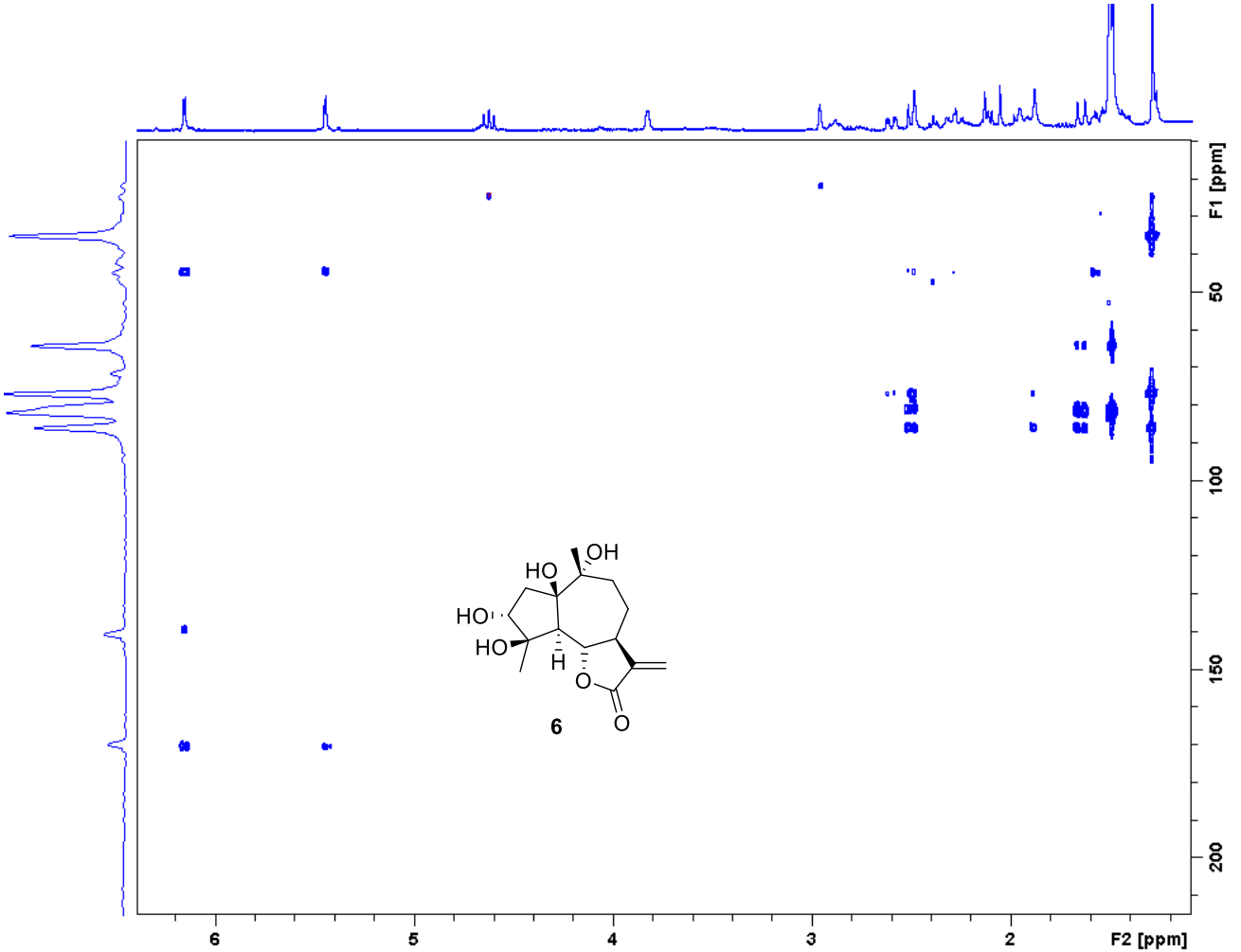

Figure 11S. HMBC spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

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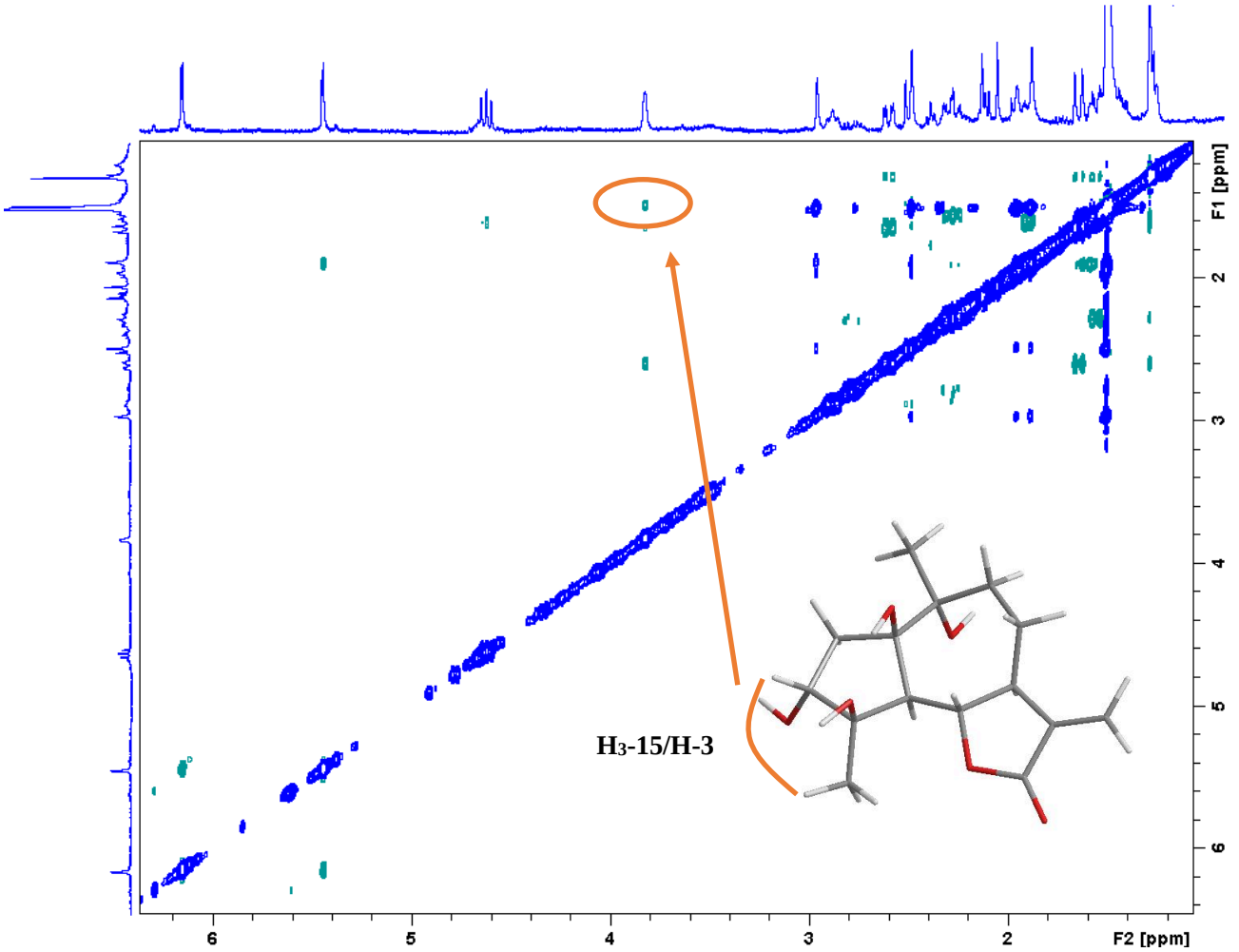

Figure 12S. NOESY spectrum of compound **6** ($CDCl_3$, 400.13 MHz)

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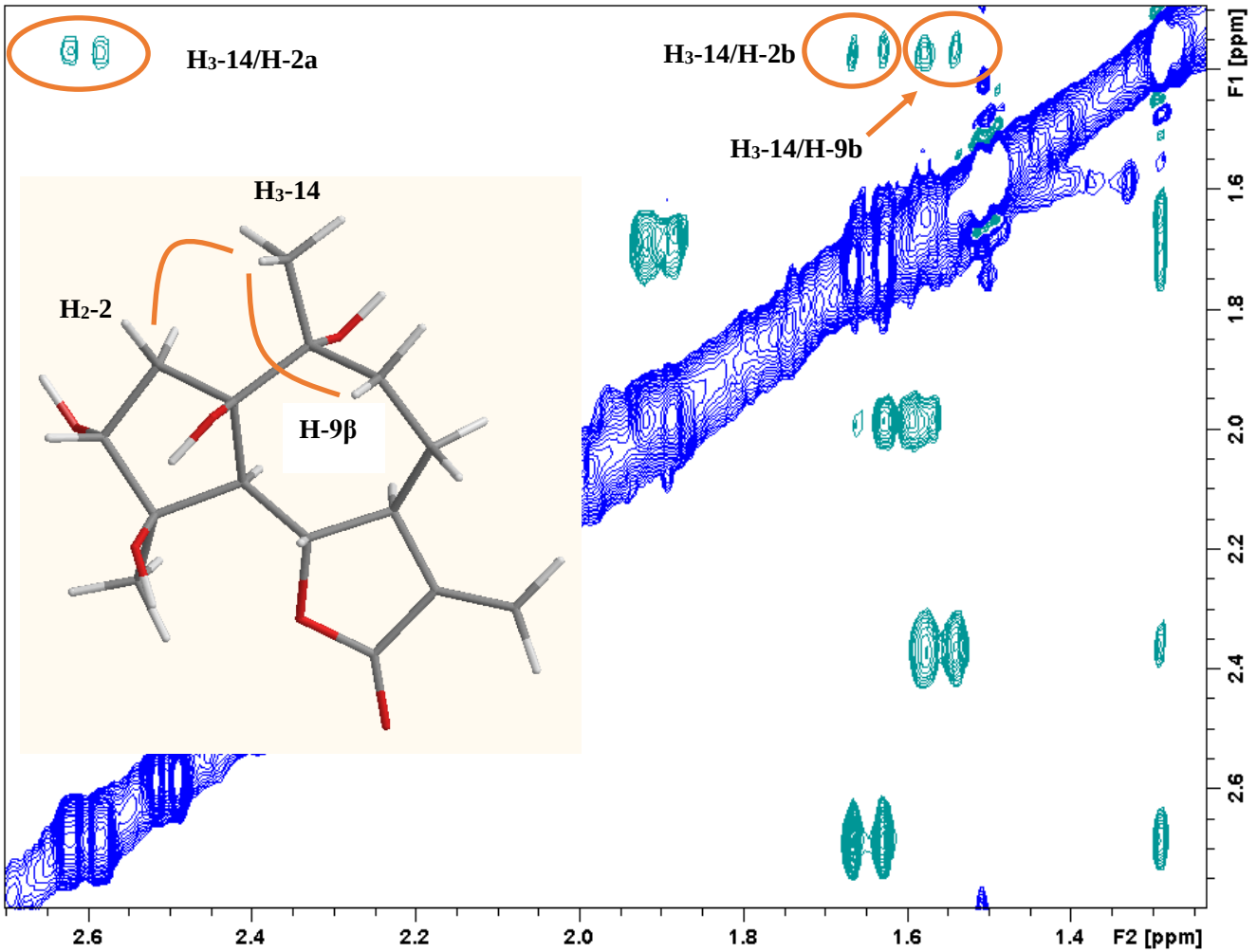

Figure 13S. Expanded NOESY correlation spectrum of compound **6** (region 2.70–1.25 ppm), ($CDCl_3$, 400.13 MHz)

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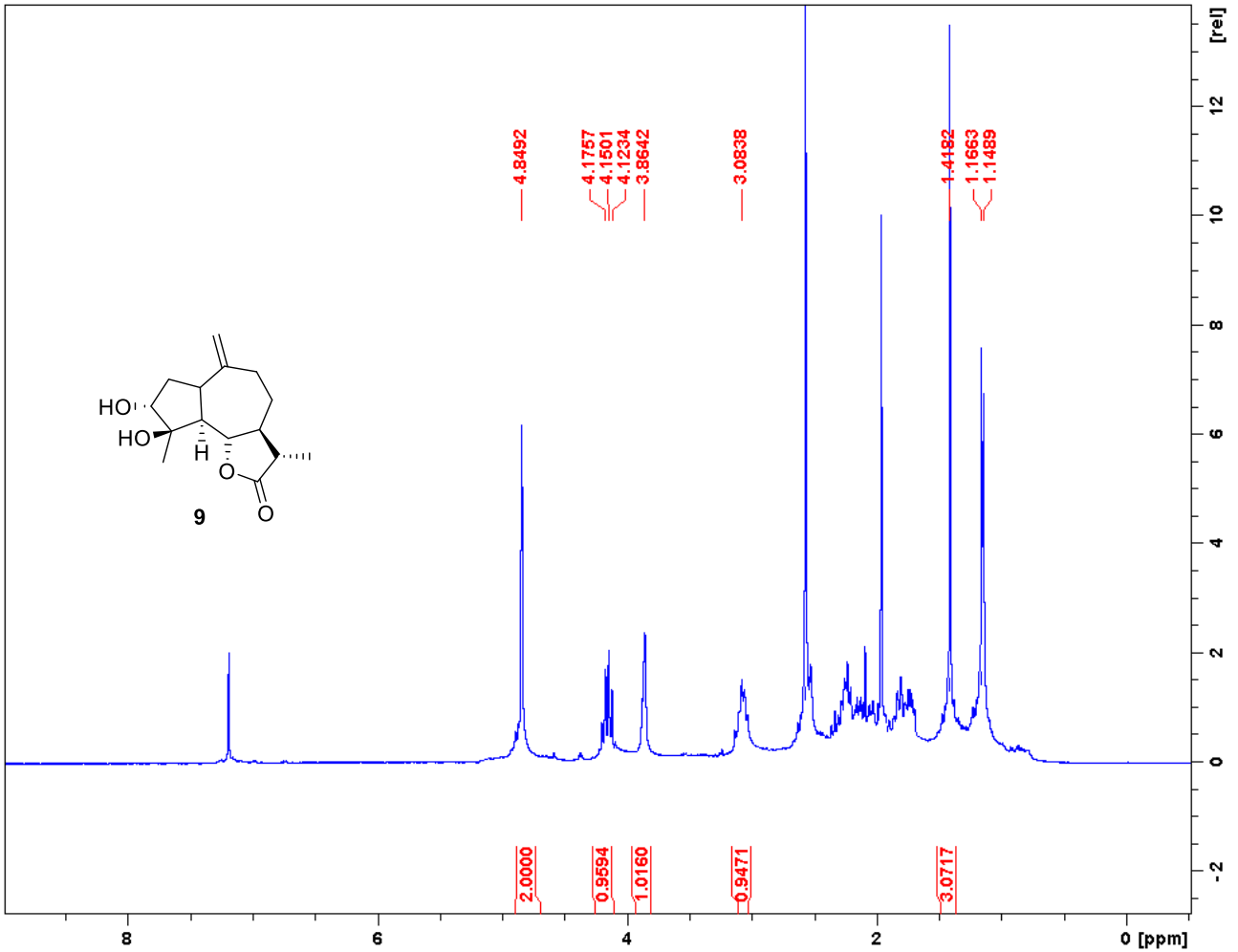

Figure 14S. ^{1}H NMR spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

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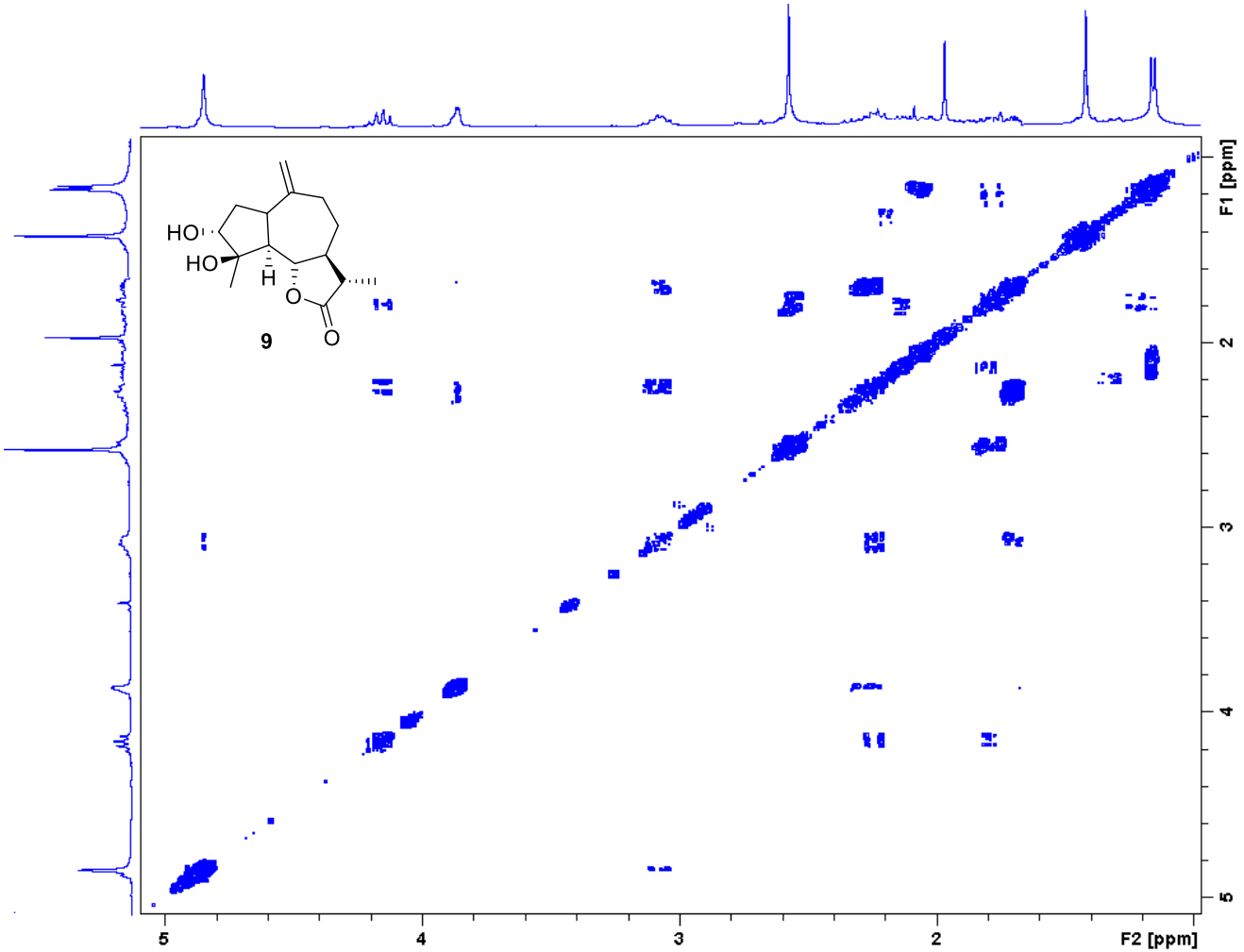

Figure 15S. COSY spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

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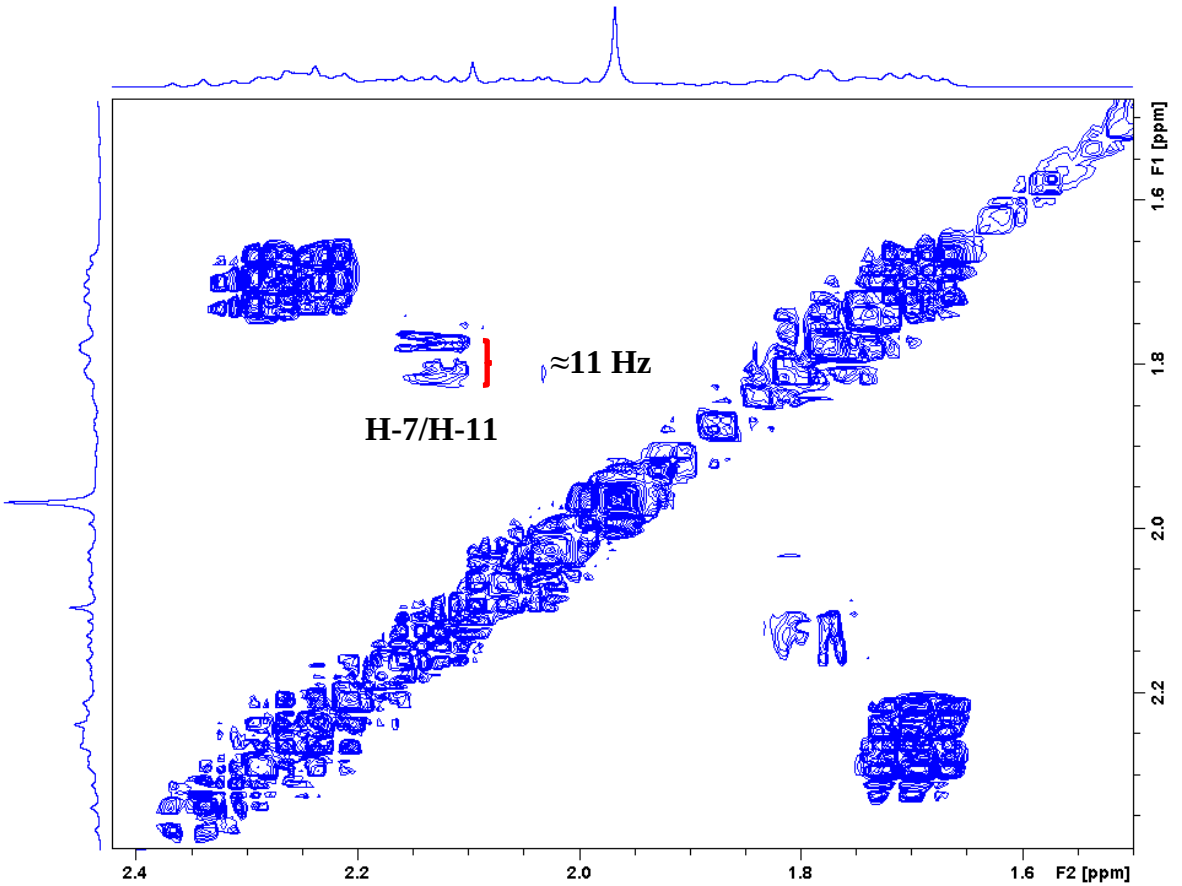

Figure 16S. Expanded COSY correlation spectrum of compound **9** (region 2.42–1.50 ppm), ($CDCl_3$, 400.13 MHz)

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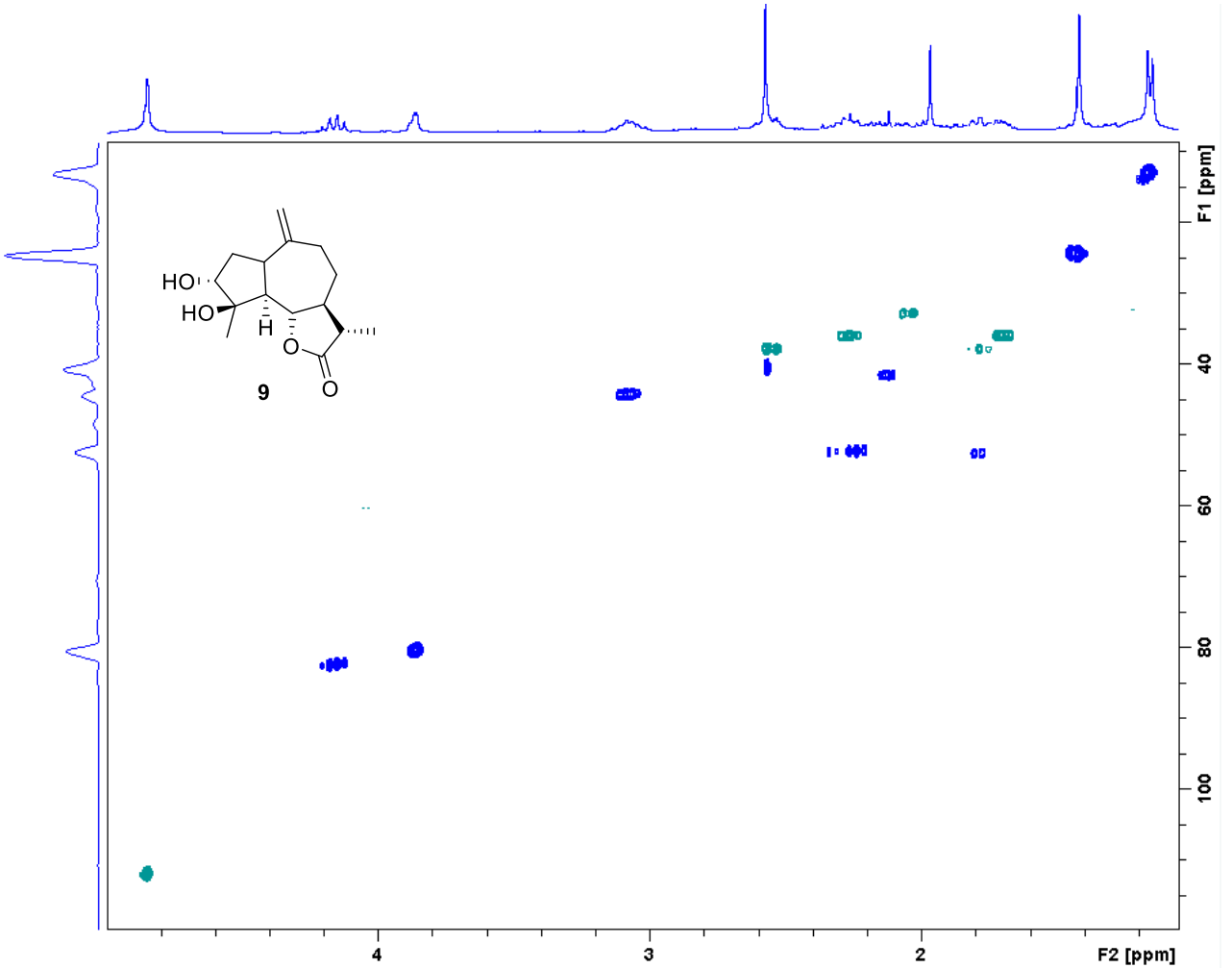

Figure 17S. HSQC spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

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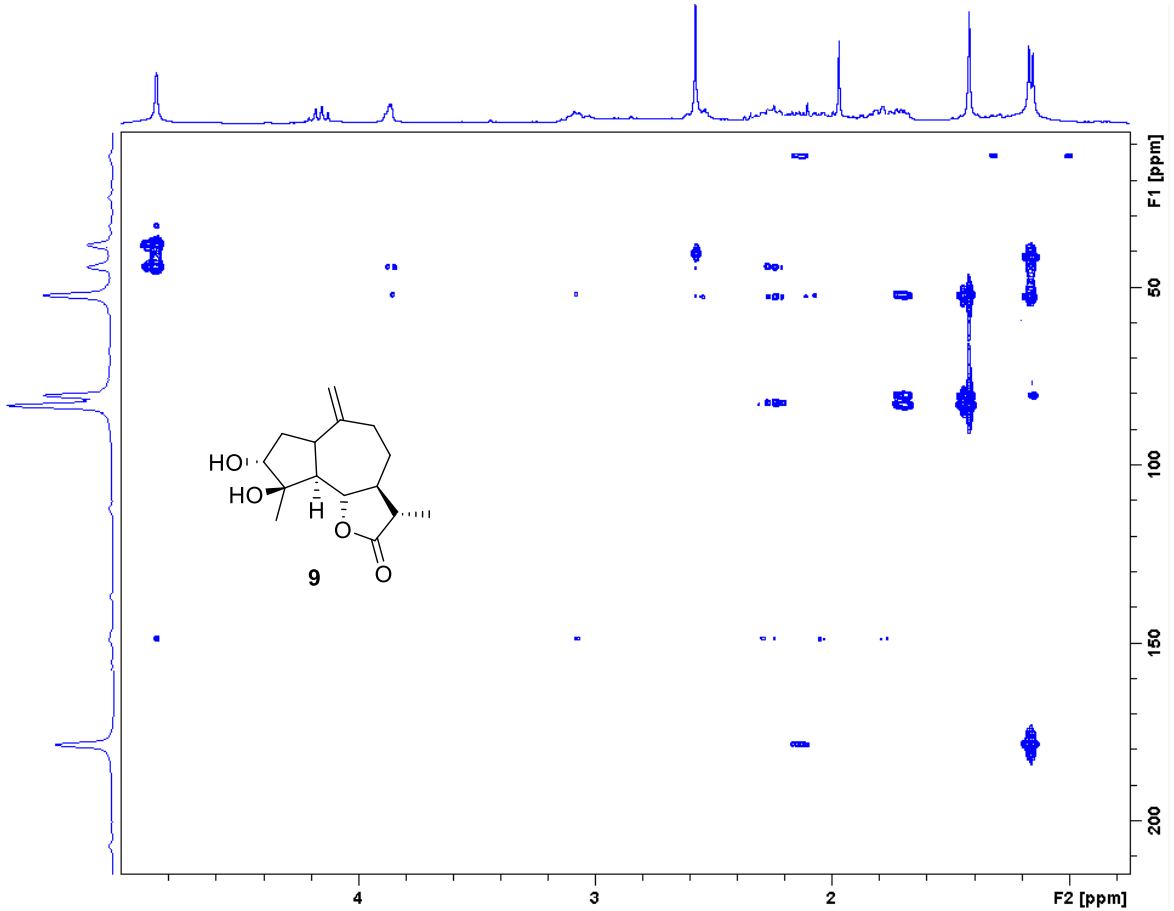

Figure 18S. HMBC spectrum of compound **9** ($CDCl_3$, 400.13 MHz)

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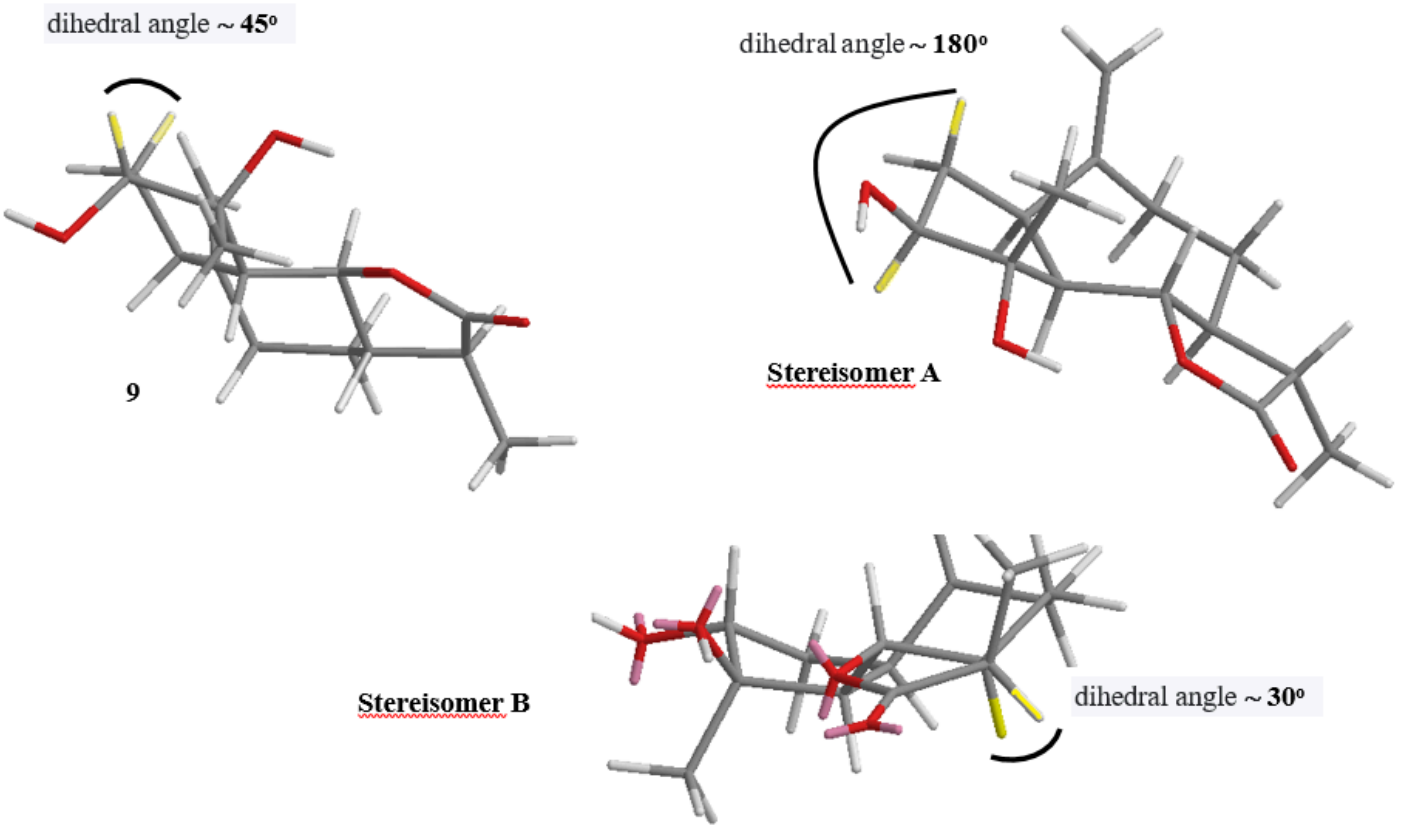

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