

LIMONOIDES ISOLADOS DOS FRUTOS DE *Carapa guianensis* Aublet (Meliaceae)

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Tabela 1S. Deslocamentos químicos de RMN ¹³C (CDCl₃) dos limonoides 1 – 3

C	1	2	3
1	156,0	156,3	77,0
2	126,7	126,8	39,6
3	204,2	203,4	213,0
4	45,2	45,4	48,3
5	38,6	54,8	43,1
6	69,8	36,9	32,9
7	72,8	208,3	174,1
8	43,8	53,6	146,0
9	47,9	47,8	50,1
10	40,8	39,8	44,2
11	15,2	17,6	24,0
12	26,1	32,4	29,5
13	38,9	37,9	41,7
14	48,0	65,8	80,4
15	56,4	53,8	34,0
16	167,3	167,0	170,2
17	78,3	78,2	79,8
18	18,1	20,8	14,0
19	21,6	20,0	21,8
20	120,4	120,5	121,0
21	141,2	141,0	141,0
22	110,0	109,9	110,1
23	143,3	143,3	143,0
28	31,6	27,2	26,1
29	20,5	21,2	21,7
30	18,3	17,4	111,7
6-OCOCH ₃	21,4	-	-
7-OCOCH ₃	21,1	-	-
6-O ₂ COCH ₃	170,3	-	-
7-O ₂ COCH ₃	170,2	-	-
OCH ₃	-	-	52,3

Tabela 2S. Deslocamentos químicos de RMN ¹H (CDCl₃) dos limonoides 1 – 3

No.	1	2	3
1	7,07(d, 10,0)	7,09(d, 10,0)	3,52(dd, 6,0; 4,0)
2	5,93(d, 10,0)	5,94(d, 10,0)	α 2,50(dd, 14,5; 4,0) β 2,88(dd, 14,5; 6,0)
5	2,52(d, 13,0)	2,17(dd, 14,0; 3,0)	2,86(d, 10,0)
6	5,27(dd, 13,0; 2,5)	α 2,41(dd, 14,0; 3,0) β 2,92(t, 14,0)	α 2,61(dd, 16,5; 10,0) β 2,24(d, 16,5)
7	4,89(d, 2,5)	-	-
9	2,53(d, 13,0)	2,21(dd, 10,5; 1,5)	2,17(dd, 5,0; 2,0)
11	1,88(m) 1,99(m)	1,80(m) 1,99(m)	1,56(ddd, 14,0; 9,0; 5,0) 2,20(dd, 15,0; 5,0)
12	1,59(m) 1,74(m)	1,48(m) 1,84(m)	1,12(dd, 14,0; 5,0) 1,89(ddd, 14,0; 14,0; 5,0)
15	3,61(s)	3,86(s)	2,57(d, 18,0) 2,91(d 18,0)
17	5,61(s)	5,46(s)	5,66(s)
18	1,24(s)	1,13(s)	0,86(s)
19	1,20(s)	1,35(s)	0,94(s)
21	7,41(dl, 1,0)	7,41(dl, 1,0)	7,43(sl)
22	6,33(t, 1,5)	6,36(dl, 1,5)	6,38(dl, 1,0)
23	7,41(dl, 1,0)	7,39(t, 1,5)	7,38(t, 1,0)
28	1,25(s)	1,15(s)	1,04(s)
29	1,16(s)	1,12(s)	1,19(s)
30	1,27(s)	1,21(s)	4,89(s); 5,19(s)
6-OCOCH ₃	2,03(s)	-	-
7-OCOCH ₃	2,15(s)	-	-
OCH ₃	-	-	3,71(s)

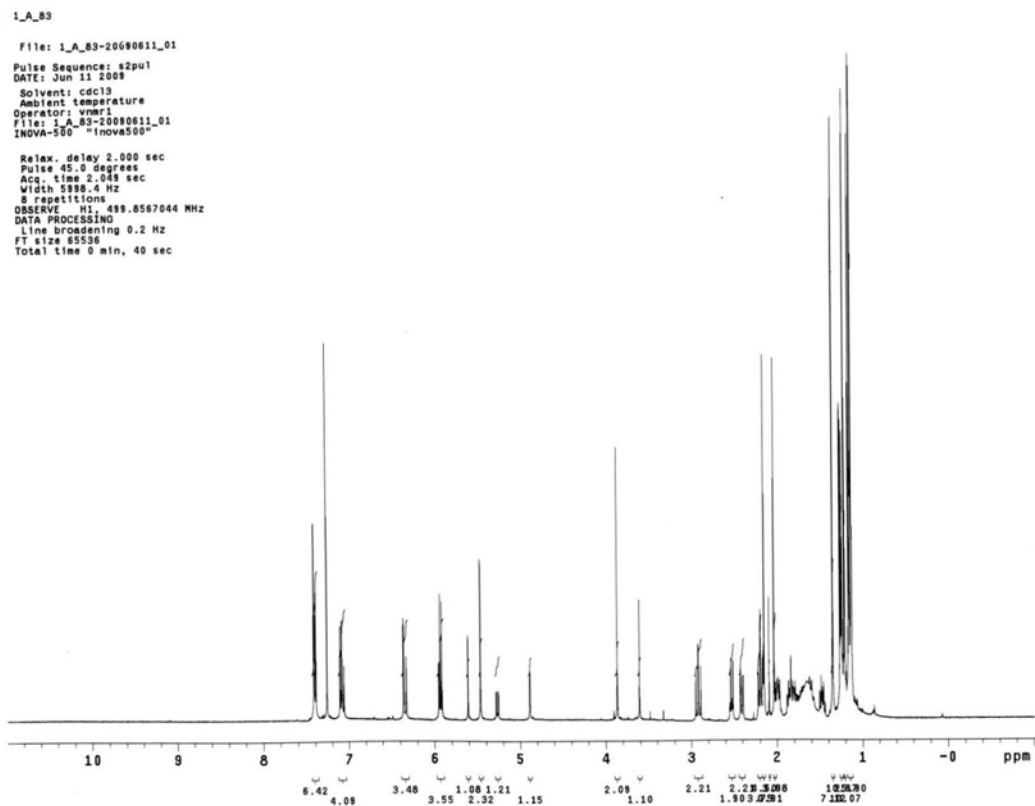


Figura 1S. Espectro de RMN ¹H da mistura dos limonoides 6 α -acetoxigedunina e 7-desacetil-7oxogedunina (1 e 2)

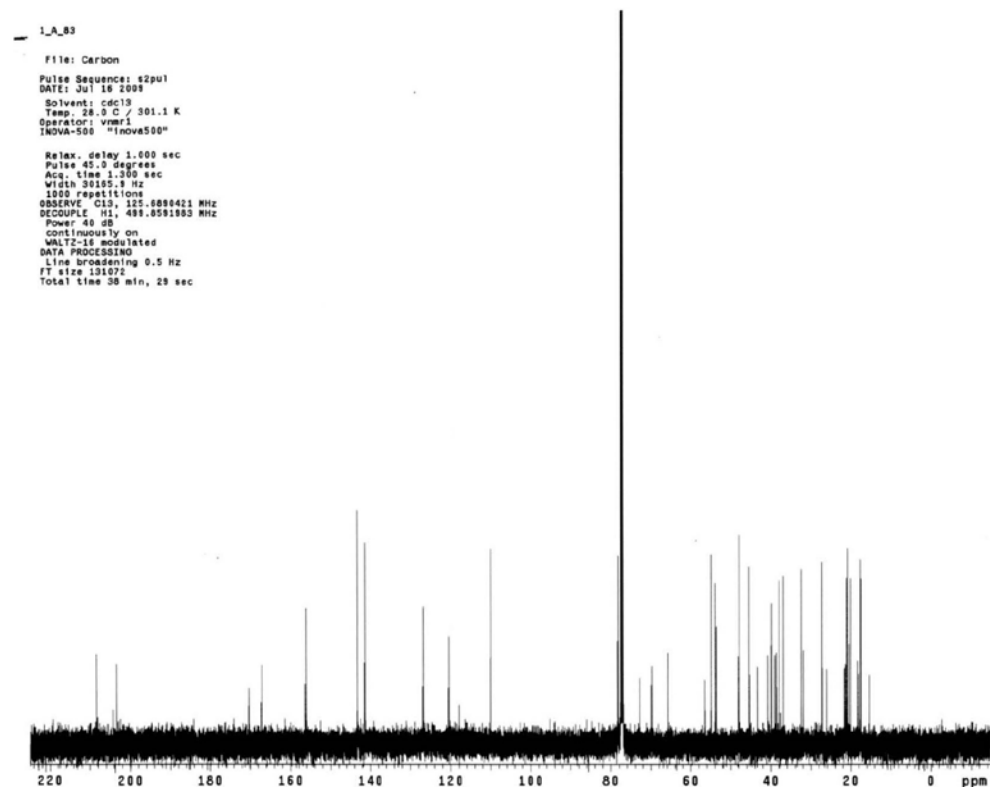


Figura 2S. Espectro de RMN ¹³C da mistura dos limonoides 6 α -acetoxigedunina e 7-desacetil-7oxogedunina (1 e 2)

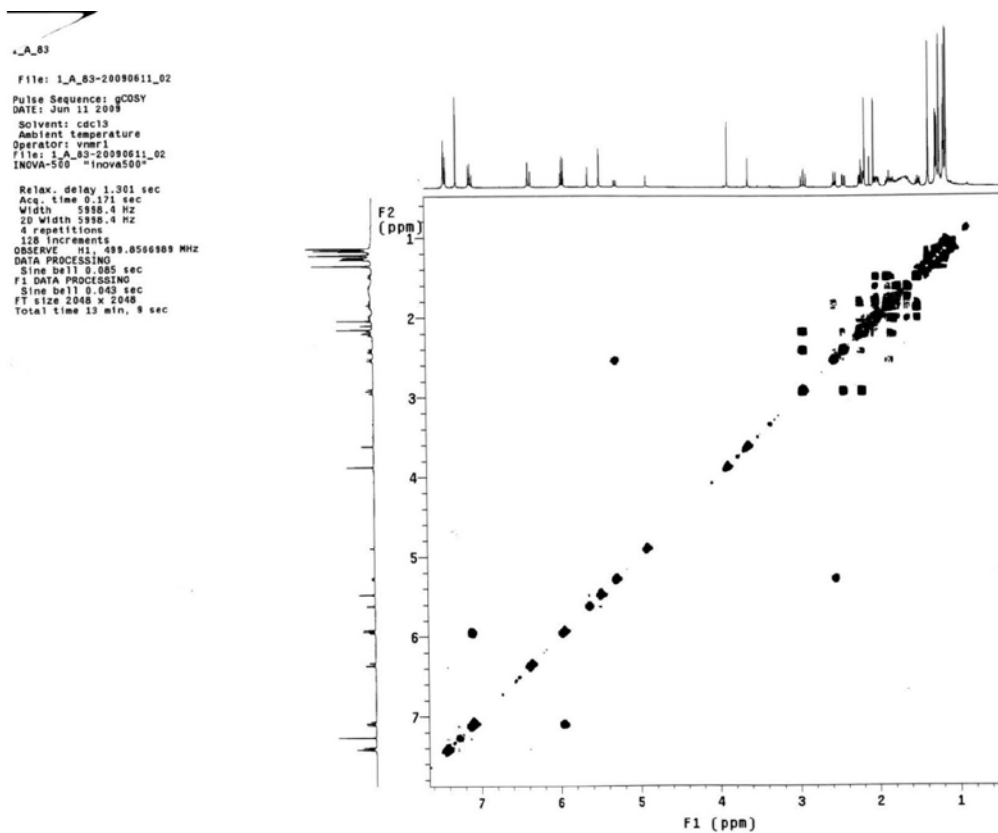


Figura 3S. Espectro de COSY da mistura dos limonoides 6 α -acetoxigedunina e 7-desacetil-7oxogedunina (1 e 2)

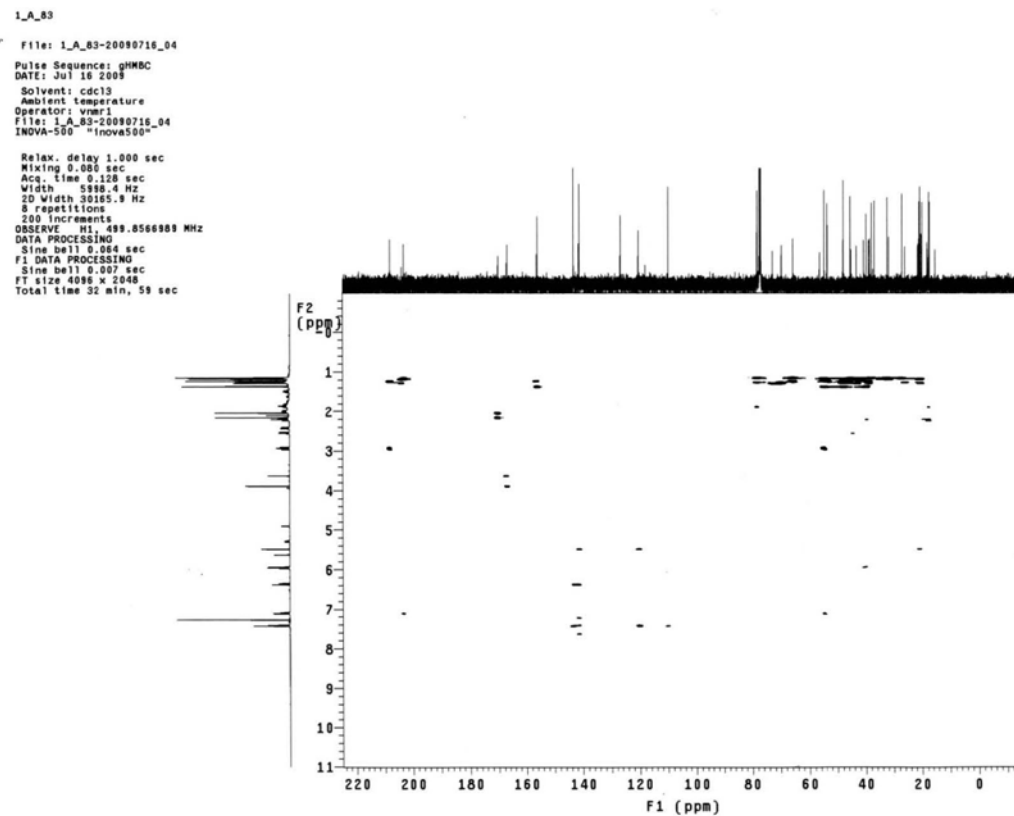


Figura 4S. Espectro de HMBC da mistura dos limonoides 6 α -acetoxigedunina e 7-desacetil-7oxogedunina (1 e 2)

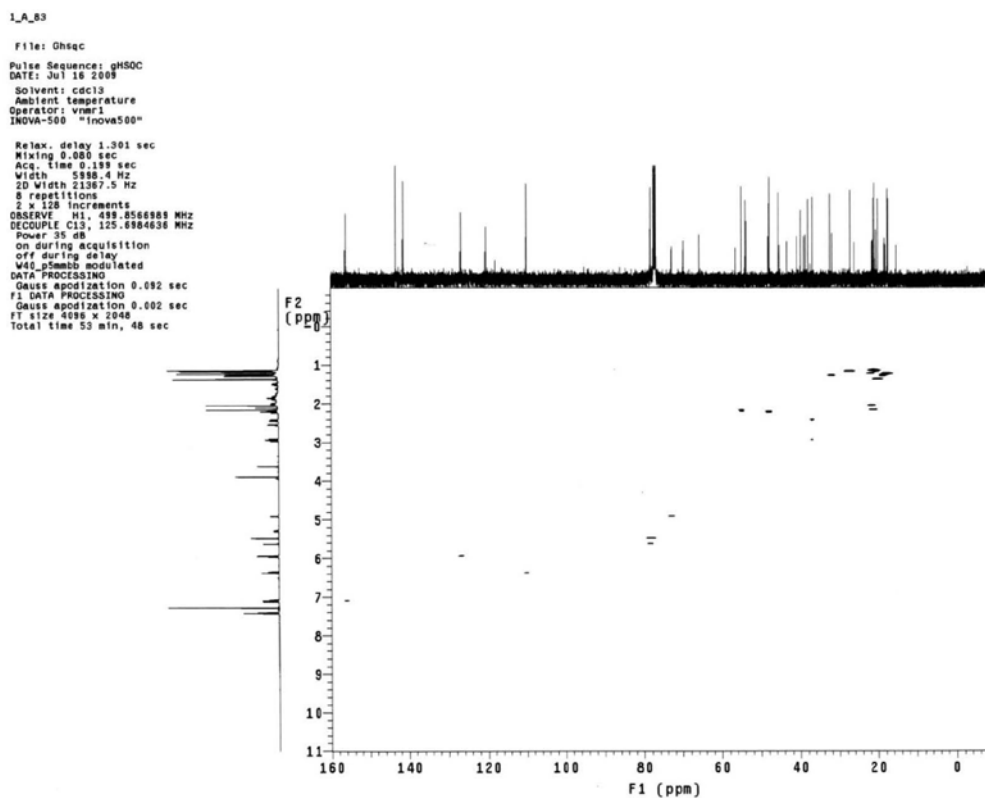


Figura 5S. Espectro de HSQC da mistura dos limonoides 6 α -acetoxigedunina e 7-desacetil-7oxogedunina (1 e 2)

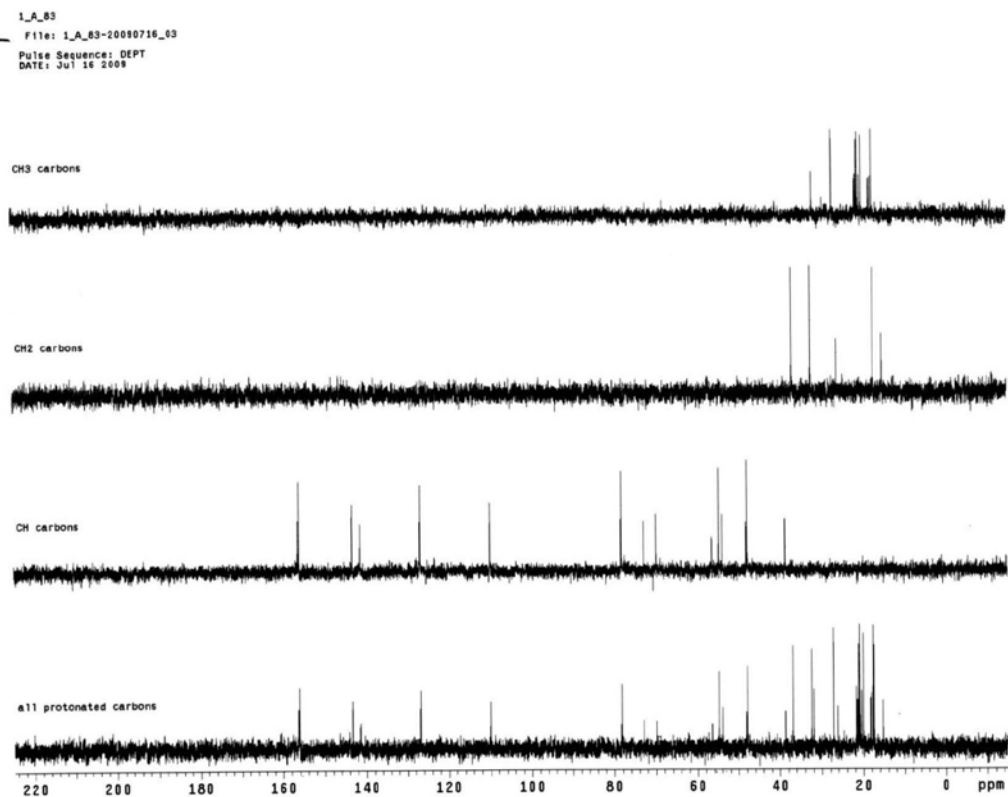


Figura 6S. Espectro de DEPT da mistura dos limonoides 6 α -acetoxigedunina e 7-desacetil-7oxogedunina (1 e 2)

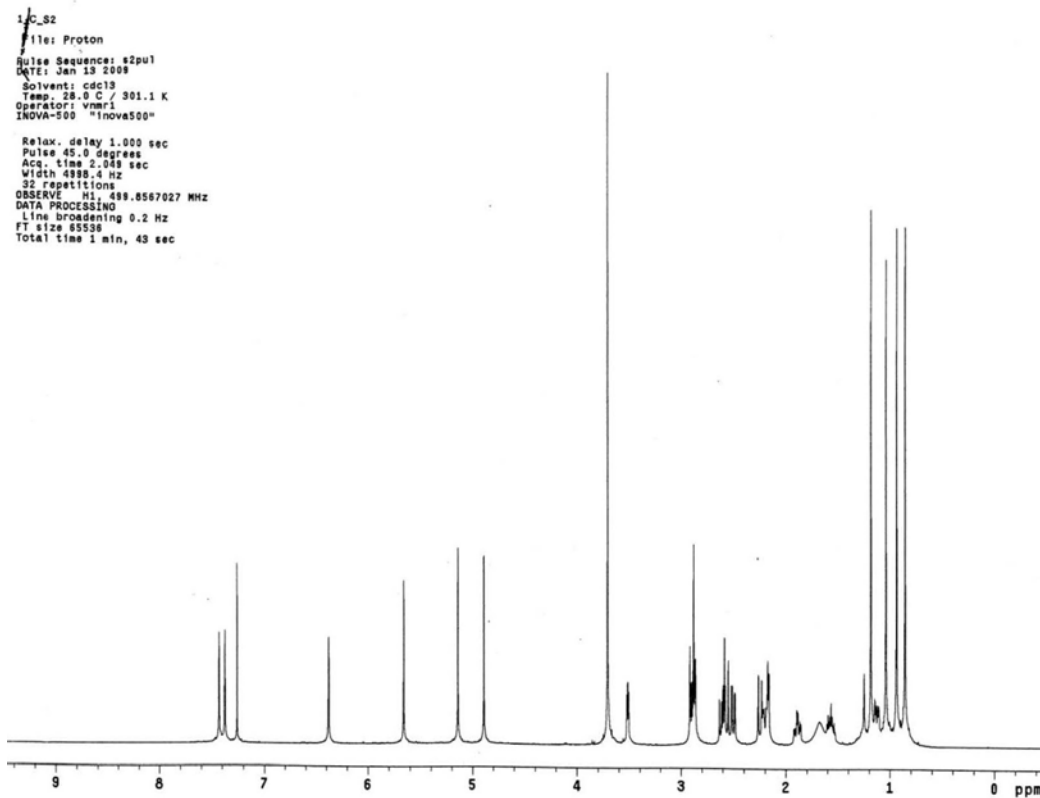


Figura 7S. Espectro de RMN ^1H do limonoide angolensato de metila (3)

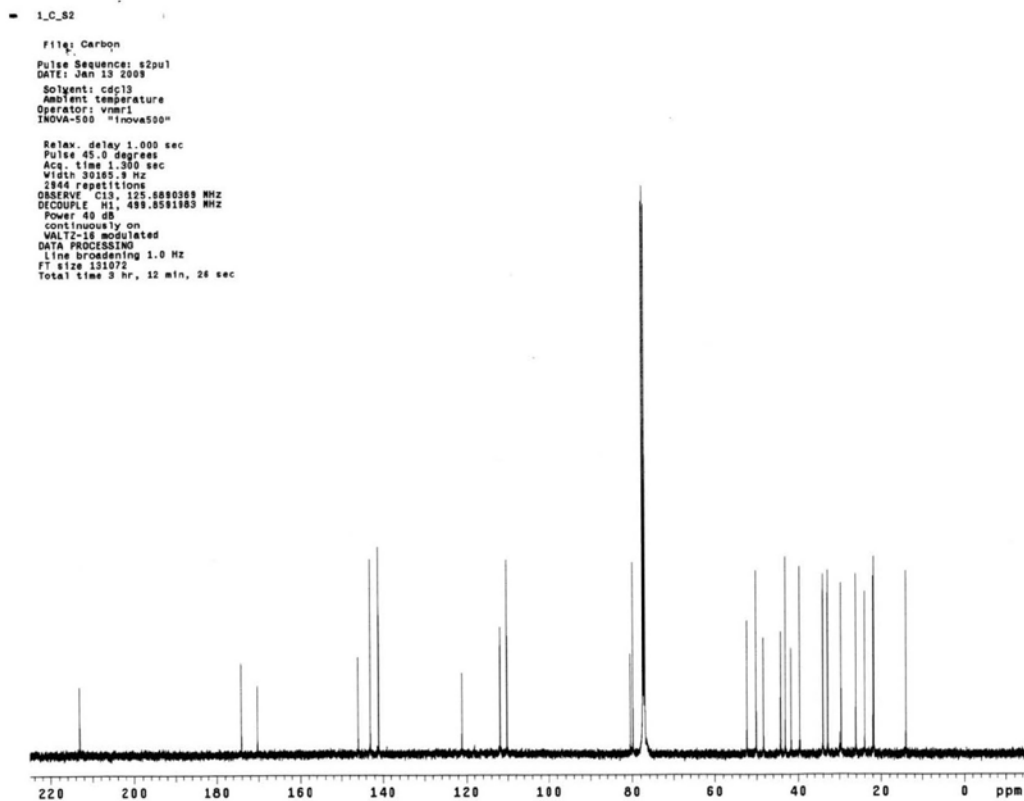


Figura 8S. Espectro de RMN ^{13}C do limonoide angolensato de metila (3)

1_AICI_52
 File: 1_AICI_52-20080926_02
 Pulse Sequence: gCOSY
 DATE: Sep 26 2008
 Solvent: cdcl3
 Temp: 24.0 C / 301.1 K
 Operator: vnmr1
 File: 1_AICI_52-20080926_02
 INOVA-500 "inova500"
 Relax. delay 1.301 sec
 Acq. time 0.205 sec
 Width 4938.4 Hz
 2D Width 4938.4 Hz
 Single Scan
 128 increments
 OBSERVE: H1, 499.856888 MHz
 DATA PROCESSING
 Sine bell 0.102 sec
 F1 DATA PROCESSING
 Sine bell 0.051 sec
 FT size 2048 x 2048
 Total time 3 min, 40 sec

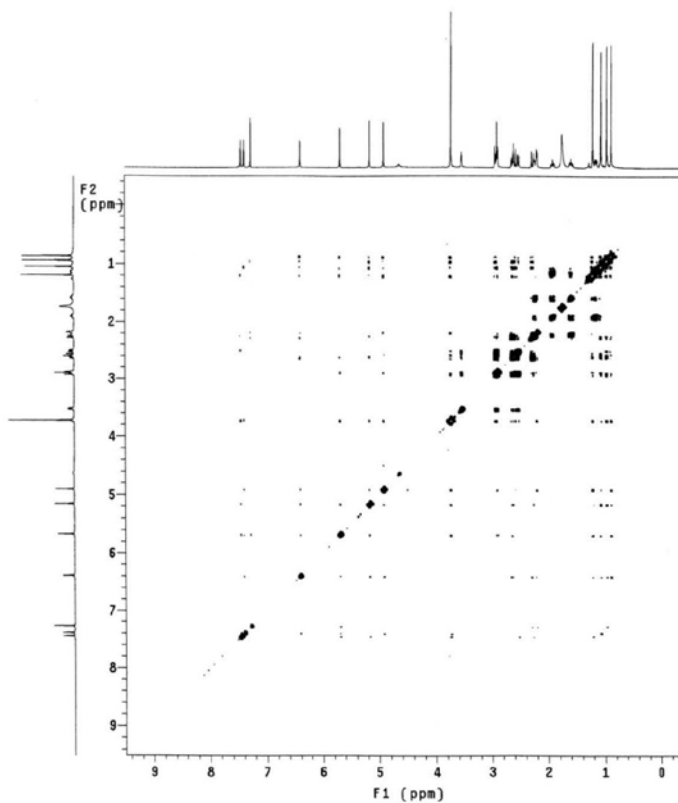


Figura 9S. Espectro de COSY do limonoide angolensato de metila (3)

1_C_82
 File: 1_C_82-20080114_01
 Pulse Sequence: gHMBC
 DATE: Jan 14 2009
 Solvent: cdcl3
 Temp: 28.0 C / 301.1 K
 Operator: vnmr1
 File: 1_C_82-20080114_01
 INOVA-500 "inova500"
 Relax. delay 1.000 sec
 Mixing 0.080 sec
 Acq. time 0.128 sec
 Width 4938.4 Hz
 2D Width 36365.4 Hz
 8 repetitions
 200 increments
 OBSERVE: H1, 499.856888 MHz
 DATA PROCESSING
 Sine bell 0.084 sec
 F1 DATA PROCESSING
 Sine bell 0.007 sec
 FT size 2048 x 2048
 Total time 32 min, 59 sec

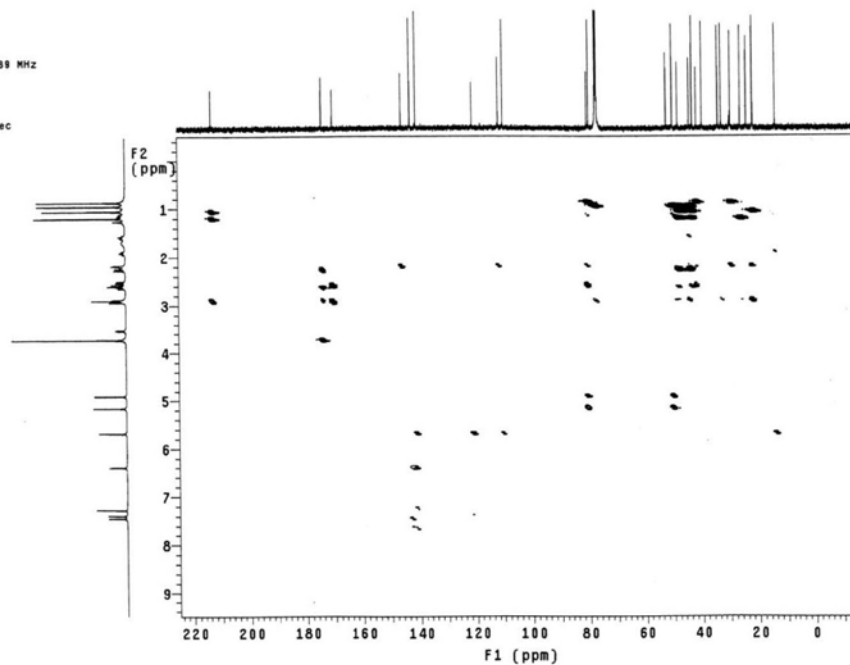


Figura 10S. Espectro de HMBC do limonoide angolensato de metila (3)

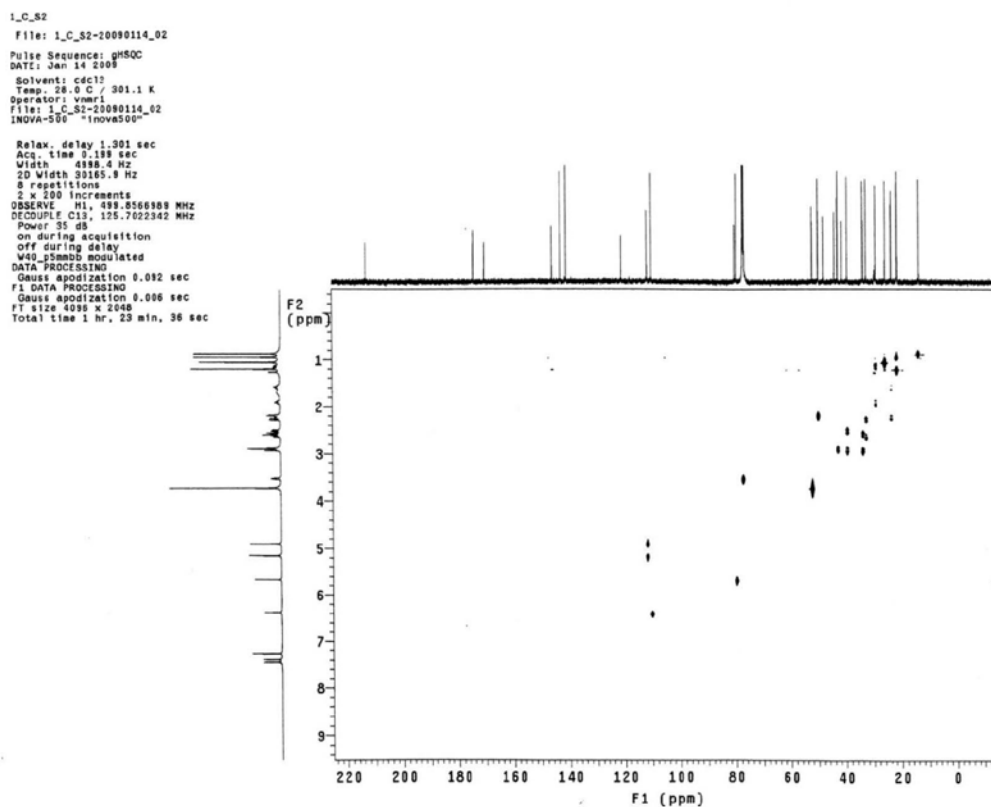


Figura 11S. Espectro de HSQC do limonoide angolensato de metila (3)

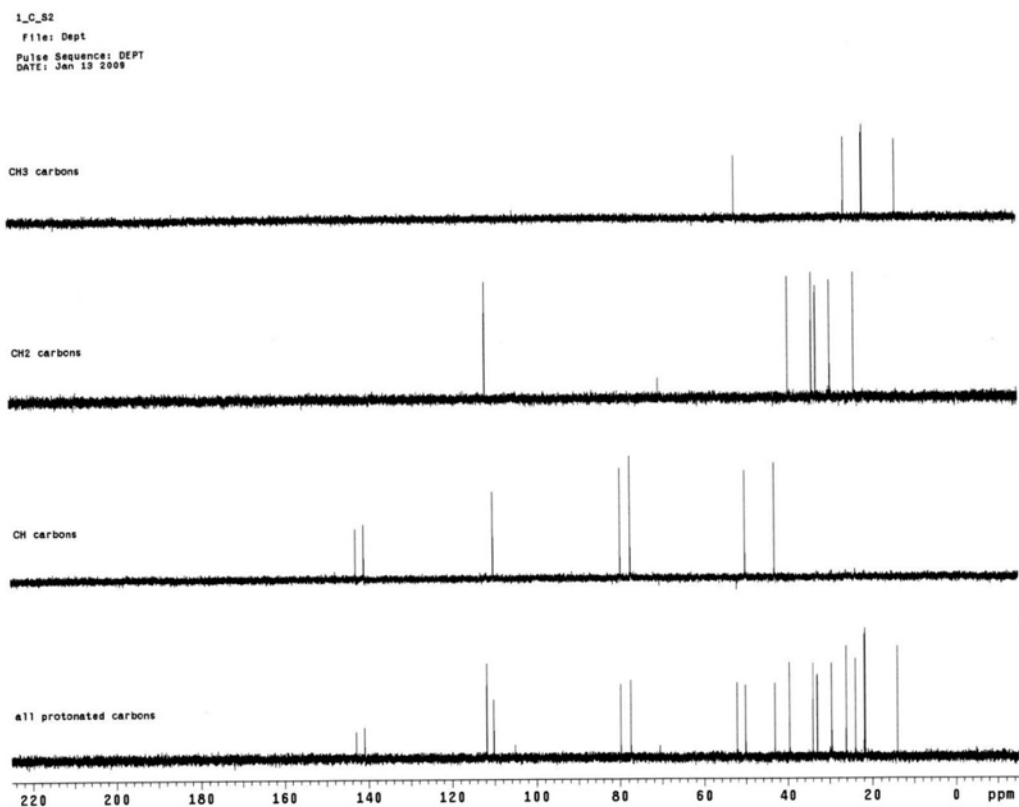


Figura 12S. Espectro de DEPT do limonoide angolensato de metila (3)

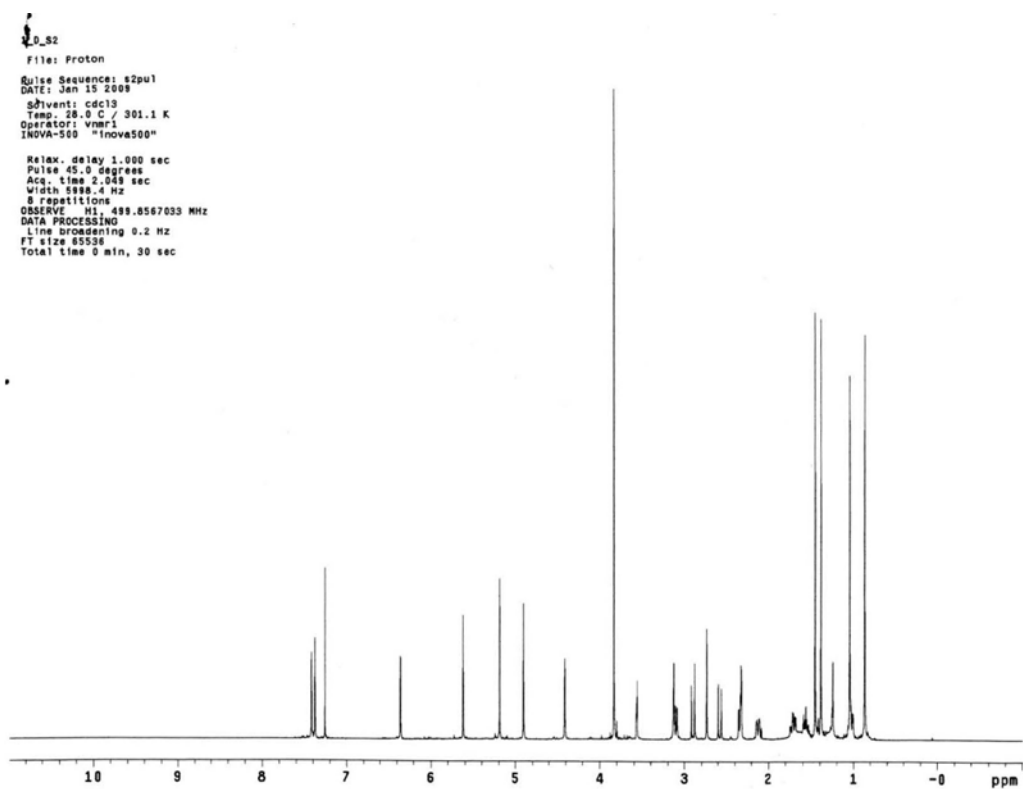


Figura 13S. Espectro de RMN ^1H do limonoide 6hidroxi-angolensato de metila (4)

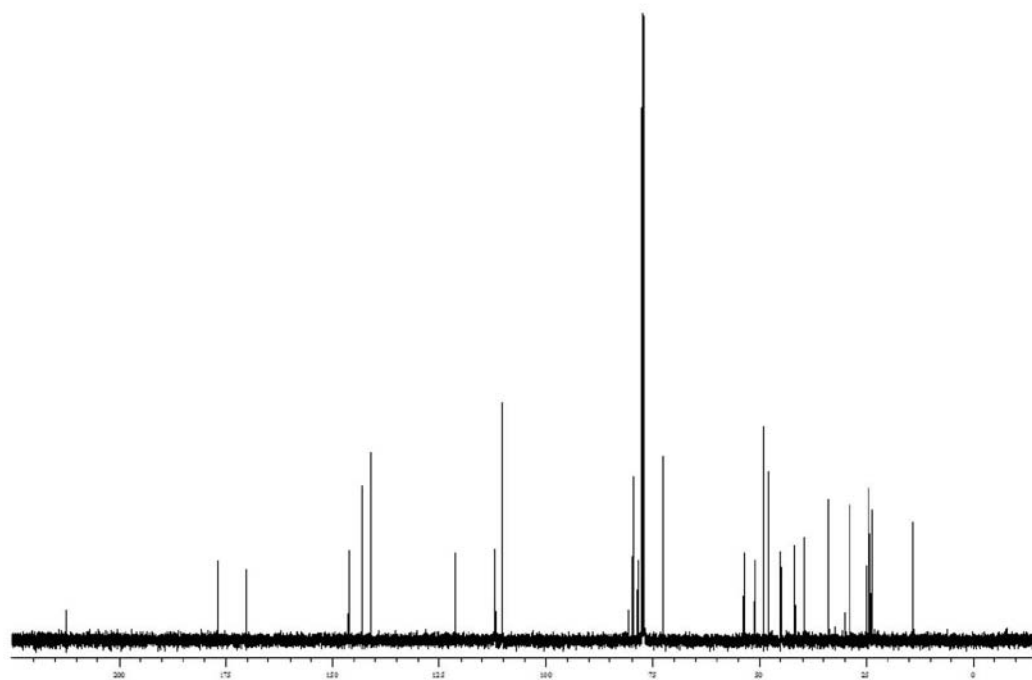


Figura 14S. Espectro de RMN ^{13}C do limonoide 6hidroxi-angolensato de metila (4)

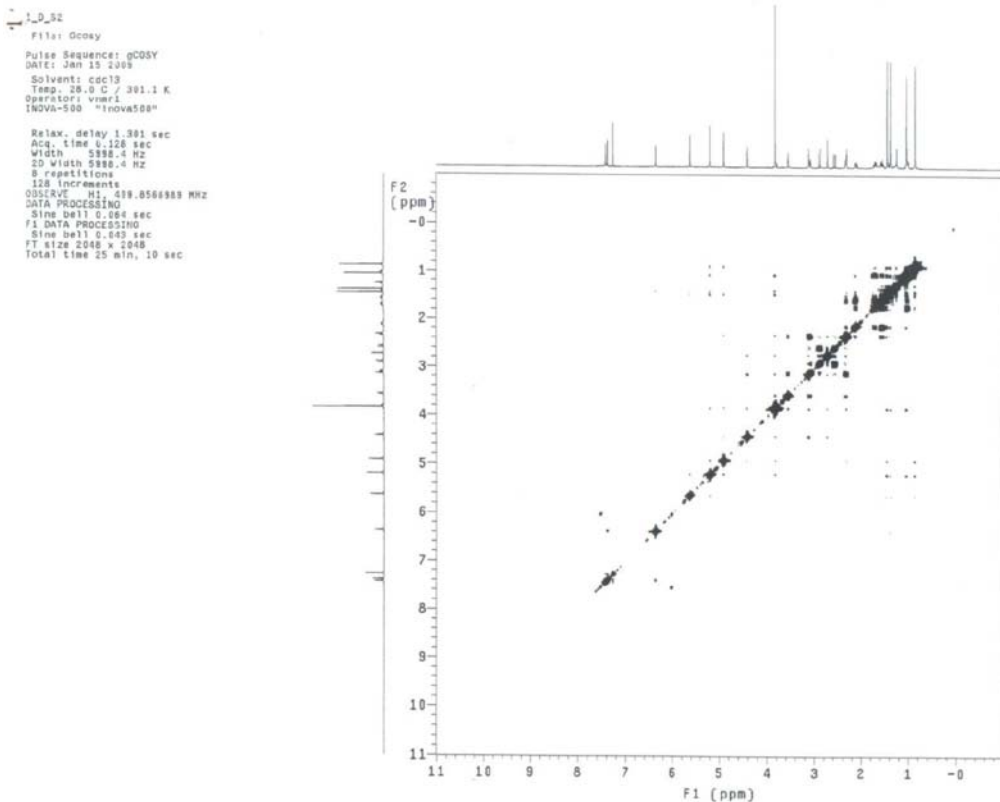


Figura 15S. Espectro de COSY do limonoide 6hidroxi-angolensato de metila (4)

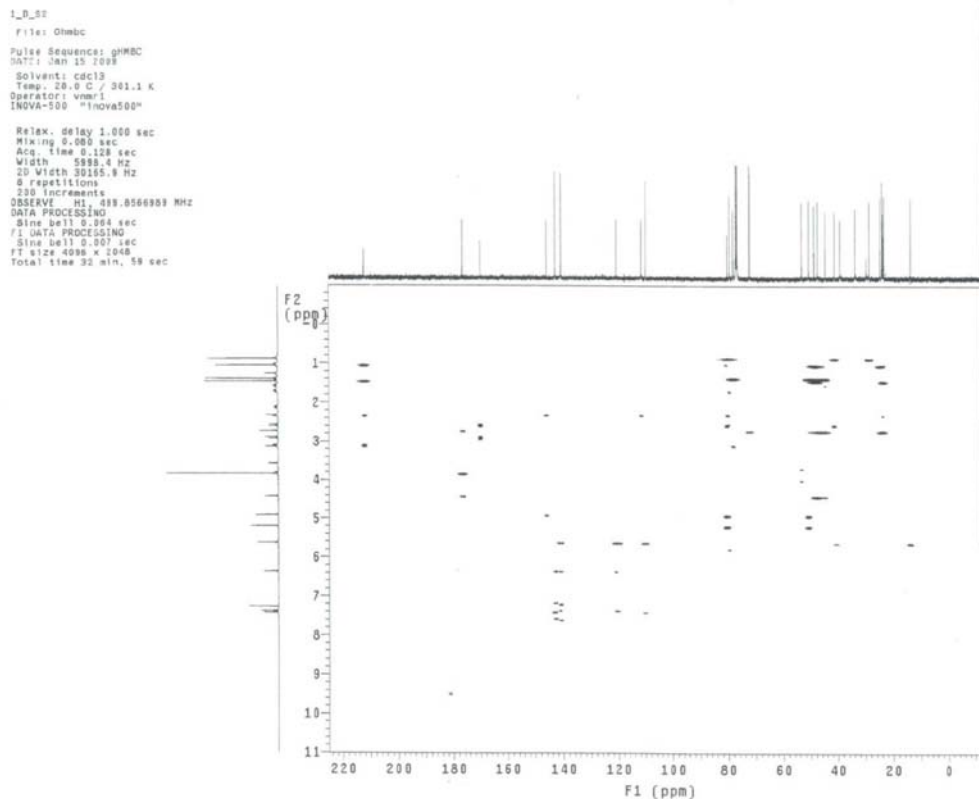


Figura 16S. Espectro de HMBC do limonoide 6hidroxi-angolensato de metila (4)

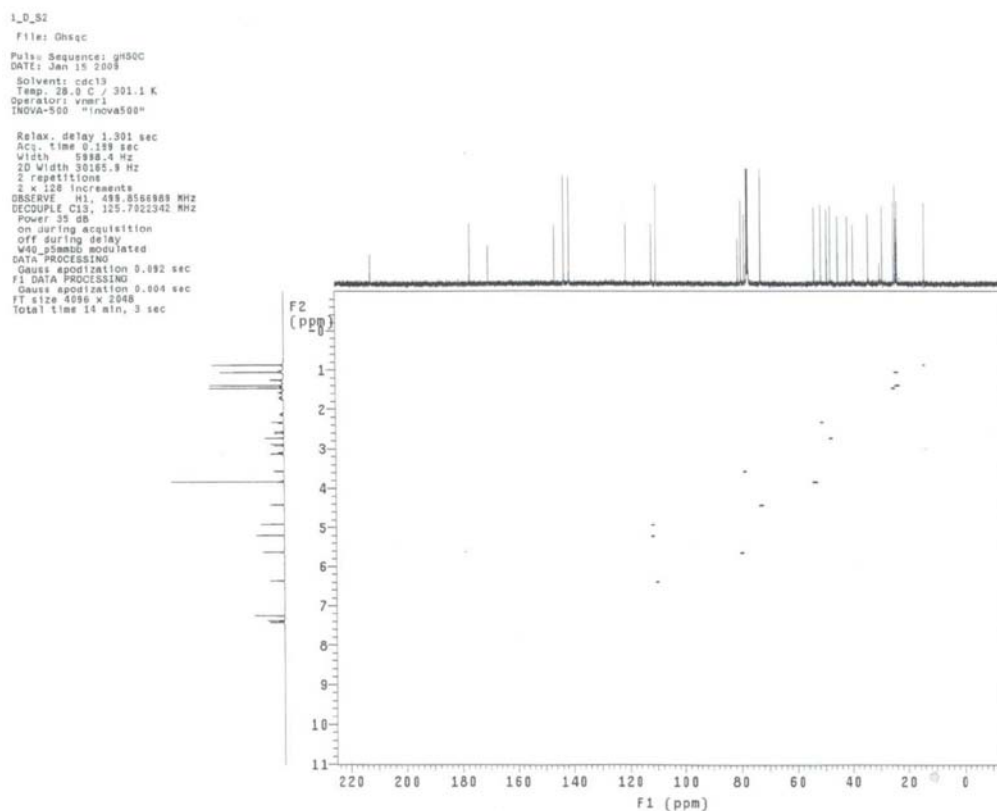


Figura 17S. Espectro de HSQC do limonoide 6hidroxi-angolensato de metila (4)

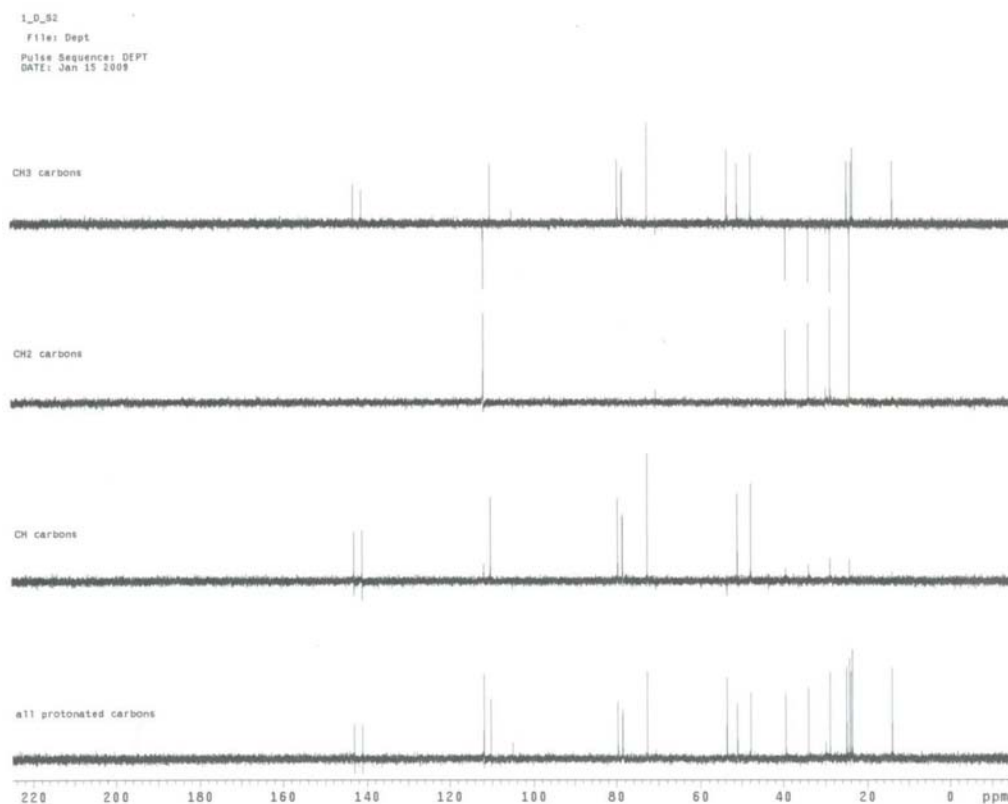


Figura 18S. Espectro de DEPT do limonoide 6hidroxi-angolensato de metila (4)

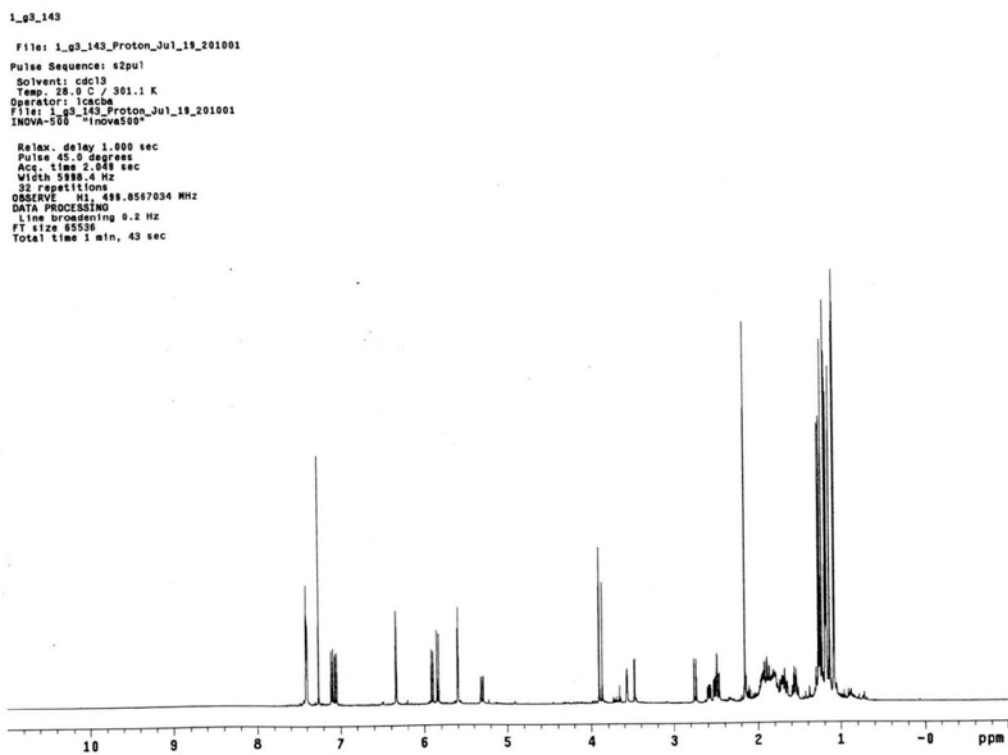


Figura 19S. Espectro de RMN ^1H da mistura dos limonoides 7-desacetilgedunina e 6 α -acetoxi-7-desacetilgedunina (5 e 6)

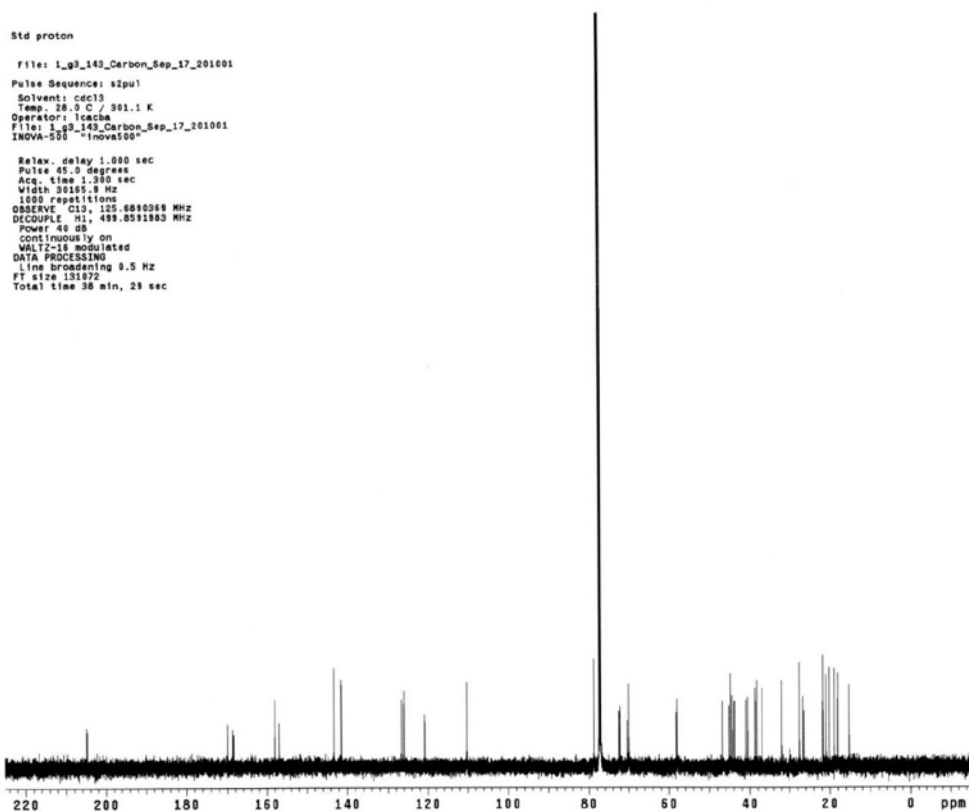


Figura 20S. Espectro de RMN ^{13}C da mistura dos limonoides 7-desacetilgedunina e 6 α -acetoxi-7-desacetilgedunina (5 e 6)

1_g3_143
 File: 1_g3_143_Gcosy_Jul_19_201001
 Pulse Sequence: gCOSY
 Solvent: cdcl3
 Temp: 28.0 C / 301.1 K
 Operator: Iacoba
 File: 1_g3_143_Gcosy_Jul_19_201001
 INOVA-500 "inova500"
 Relax. delay 1.301 sec
 Acq. time 9.171 sec
 Width 5988.4 Hz
 2D Width 5988.4 Hz
 4 repetitions
 128 increments
 OBSERVE F1: 499.8566889 MHz
 DATA PROCESSING
 Sine bell 0.085 sec
 F1 DATA PROCESSING
 Sine bell 0.049 sec
 FT size 2048 x 2048
 Total time 13 min, 9 sec

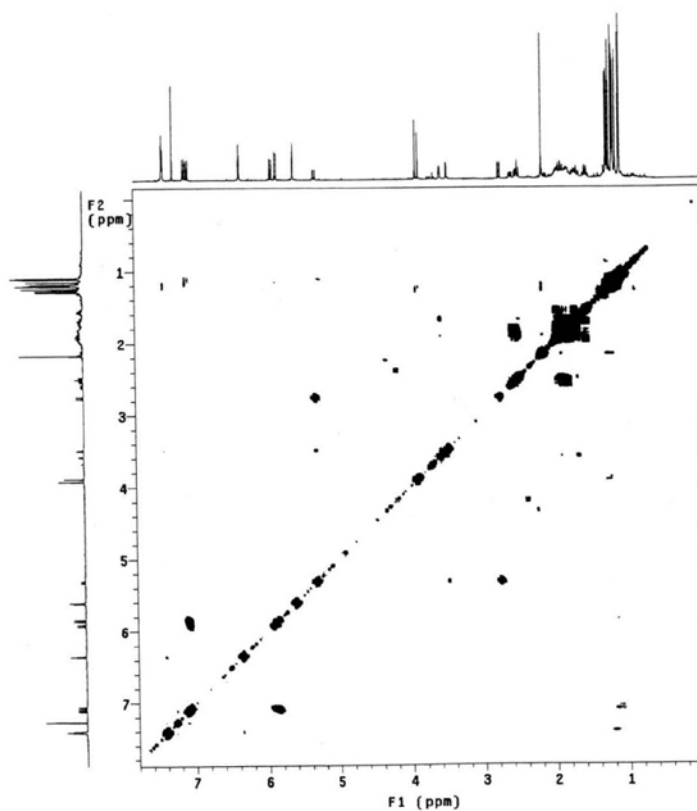


Figura 21S. Espectro de COSY da mistura dos limonoides 7-desacetilgedunina e 6-acetoxi-7-desacetilgedunina (5 e 6)

1_g3_143
 File: 1_g3_143_Ghmbc_Sep_17_201001
 Pulse Sequence: ghMBC
 Solvent: cdcl3
 Temp: 28.0 C / 301.1 K
 Operator: Iacoba
 File: 1_g3_143_Ghmbc_Sep_17_201001
 INOVA-500 "inova500"
 Relax. delay 1.000 sec
 Mixing 0.080 sec
 Acq. time 9.129 sec
 Width 5988.4 Hz
 2D Width 30195.9 Hz
 8 repetitions
 256 increments
 OBSERVE F1: 499.8566889 MHz
 DATA PROCESSING
 Sine bell 0.084 sec
 F1 DATA PROCESSING
 Sine bell 0.008 sec
 FT size 4096 x 2048
 Total time 42 min, 4 sec

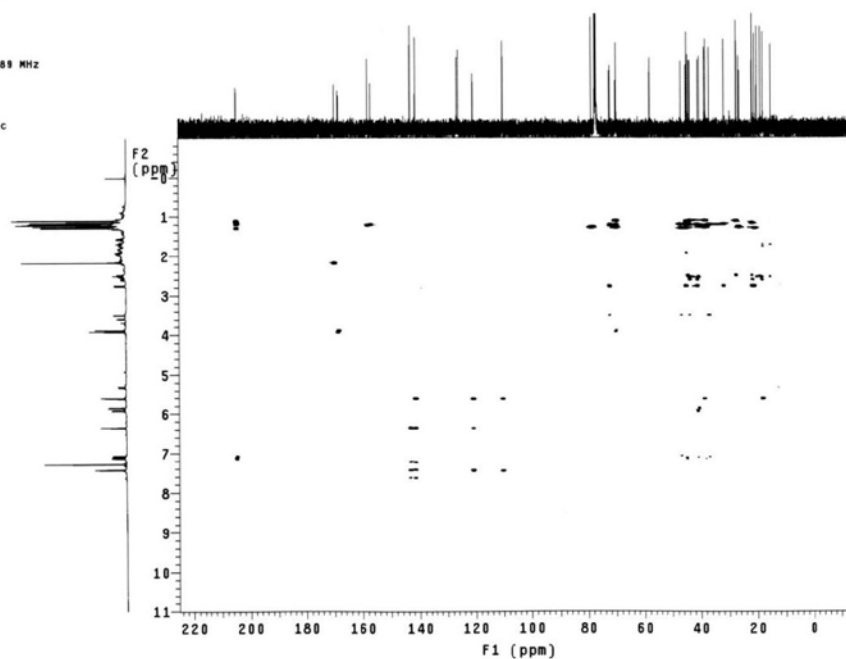


Figura 22S. Espectro de HMBC da mistura dos limonoides 7-desacetilgedunina e 6-acetoxi-7-desacetilgedunina (5 e 6)

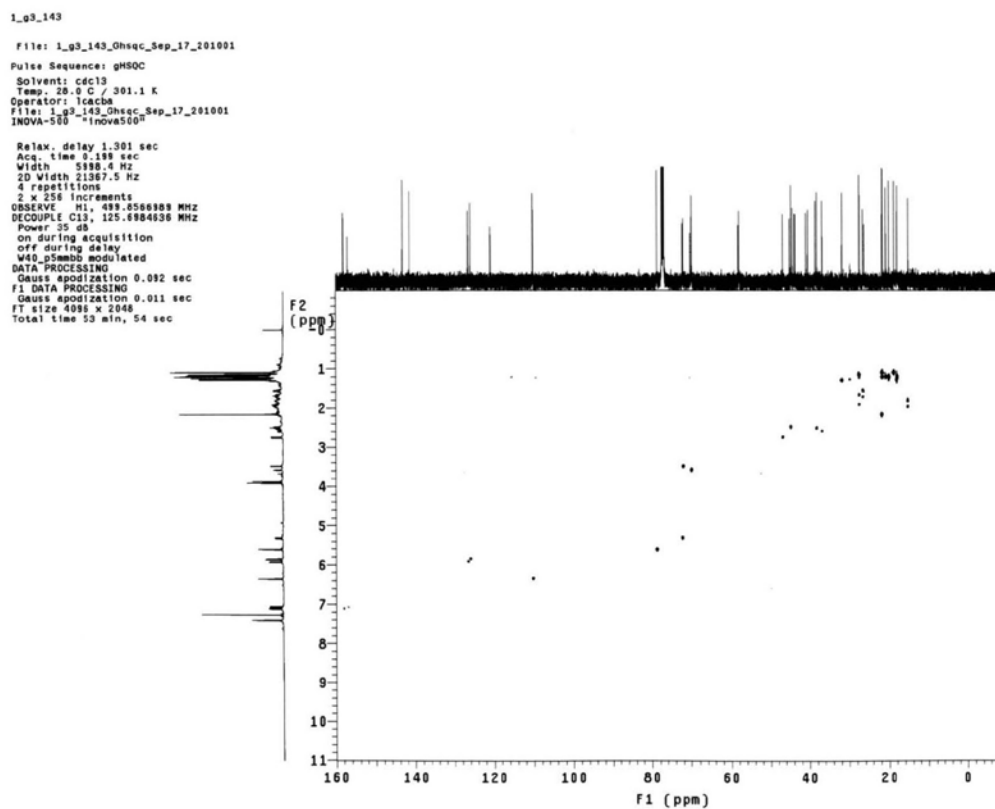


Figura 23S. Espectro de HSQC da mistura dos limonoides 7-desacetilgedunina e 6-acetoxi-7-desacetilgedunina (5 e 6)

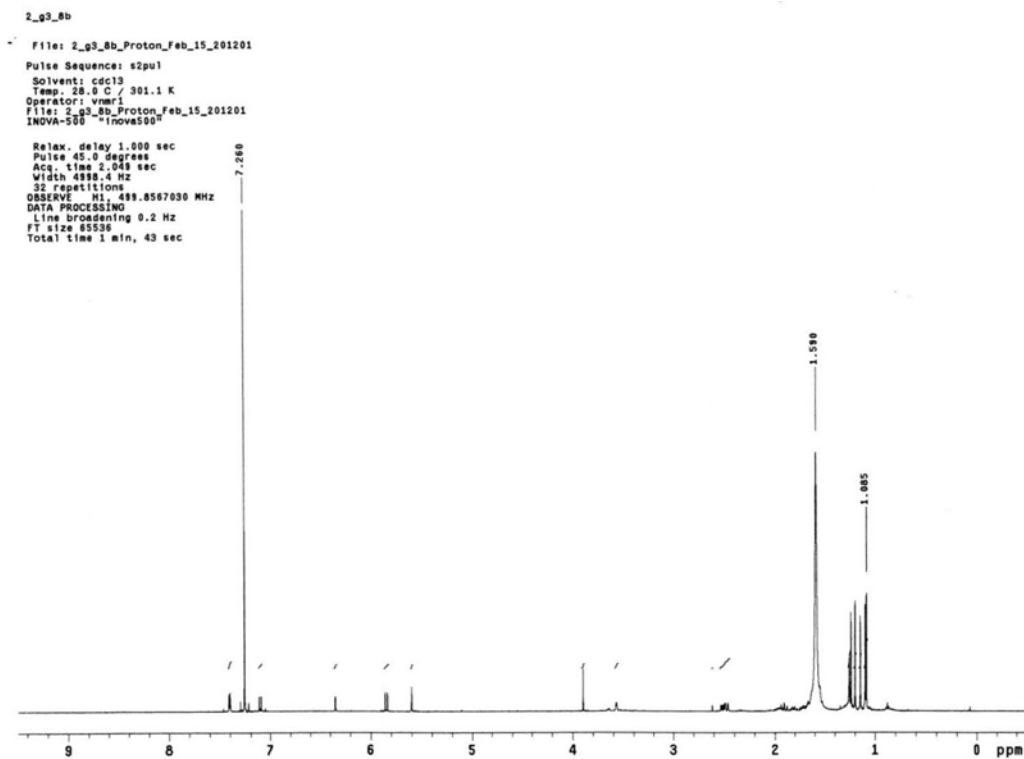


Figura 24S. Espectro de RMN ^1H do limonoide 7-desacetilgedunina (5)

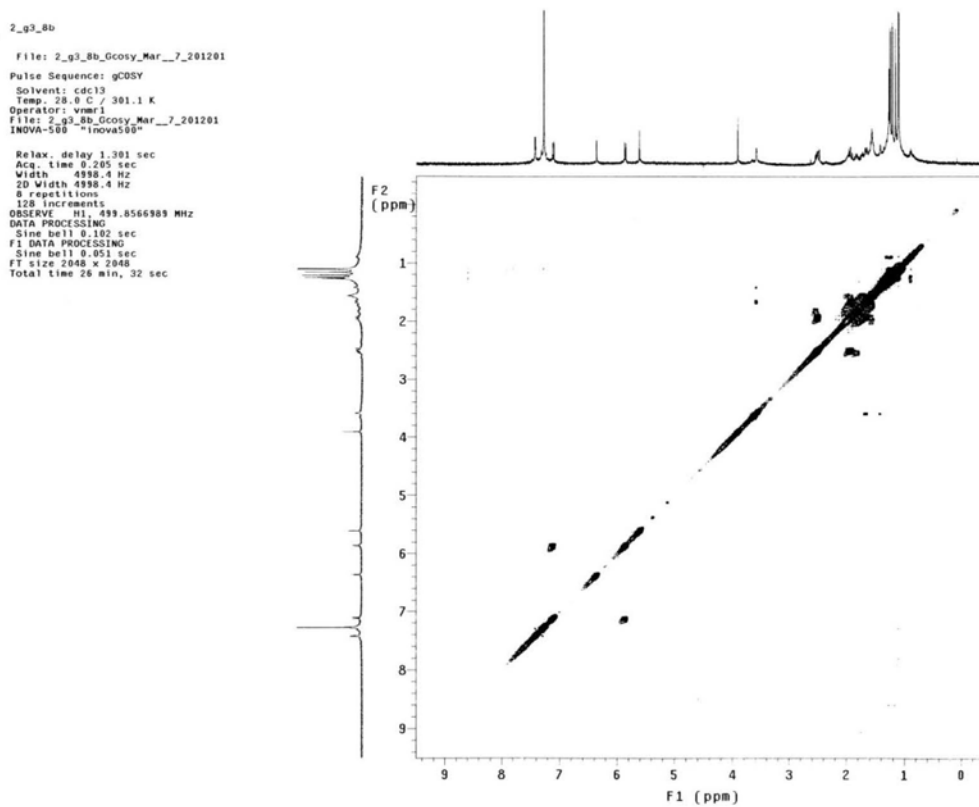


Figura 25S. Espectro de COSY do limonoide 7-desacetylgedunina (5)

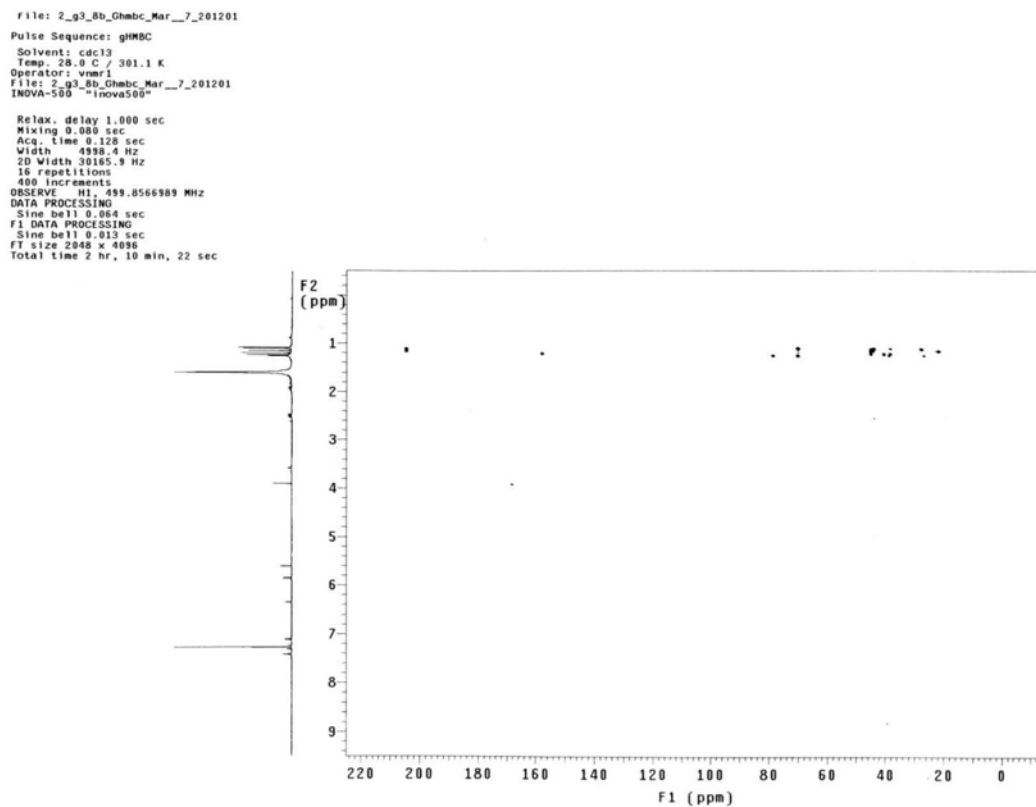


Figura 26S. Espectro de HMBC do limonoide 7-desacetylgedunina (5)

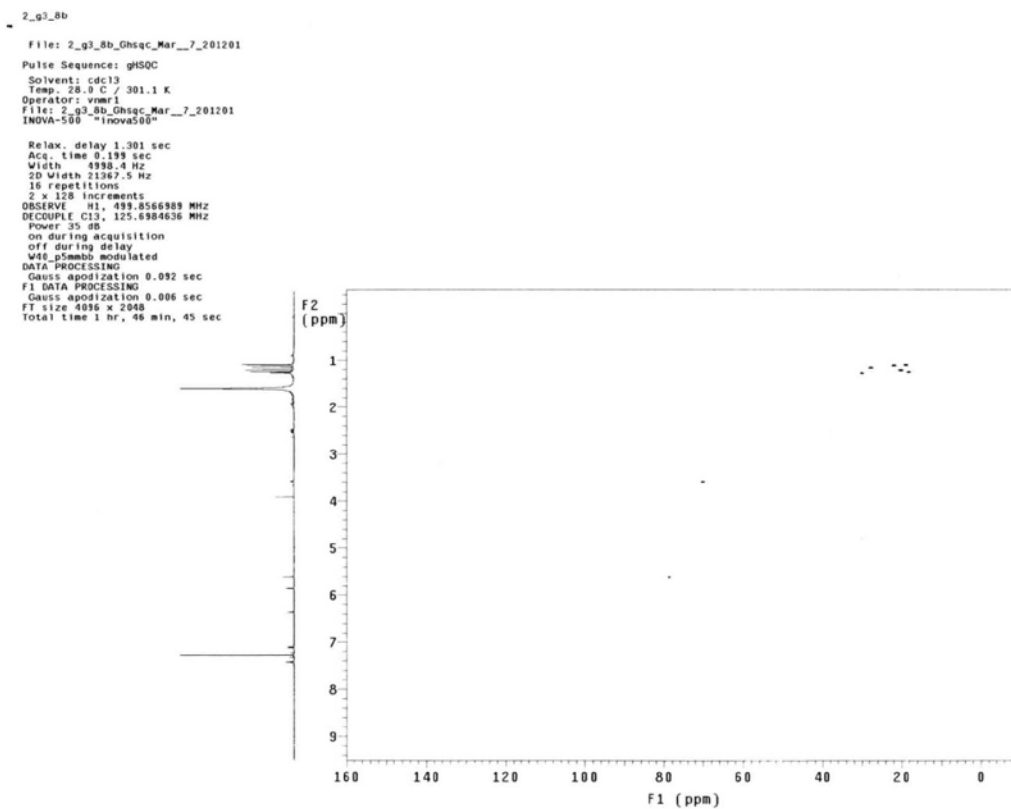


Figura 27S. Espectro de HSQC do limonoide 7-desacetilgedunina (5)

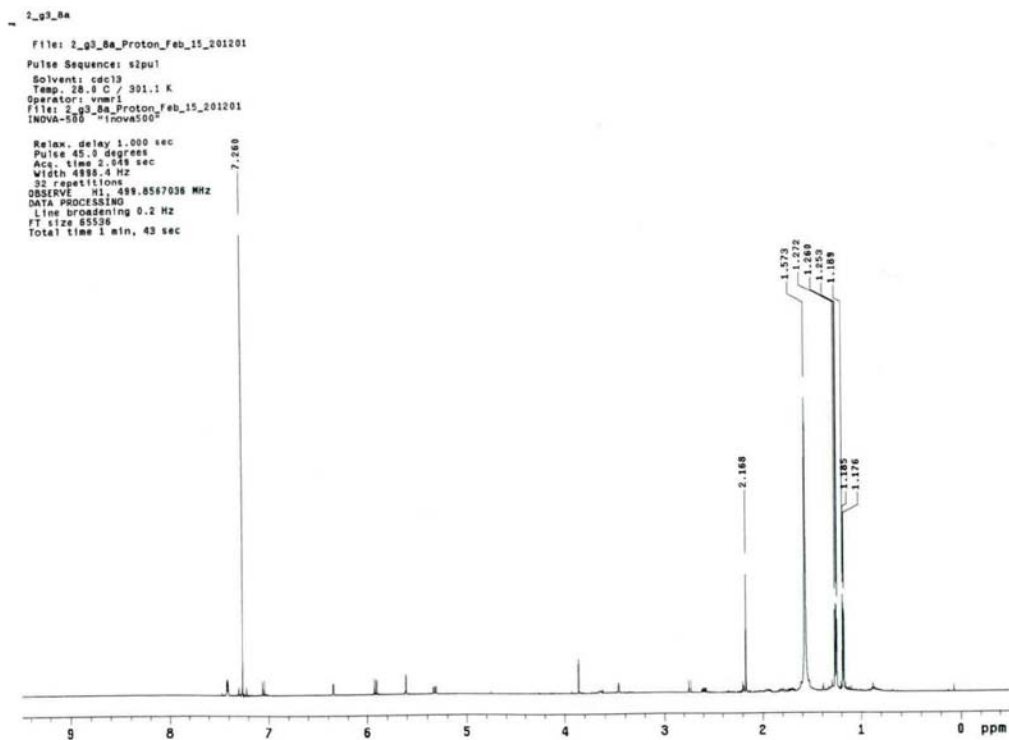


Figura 28S. Espectro de RMN ^1H do limonoide 6 α -acetoxi-7-desacetilgedunina (6)

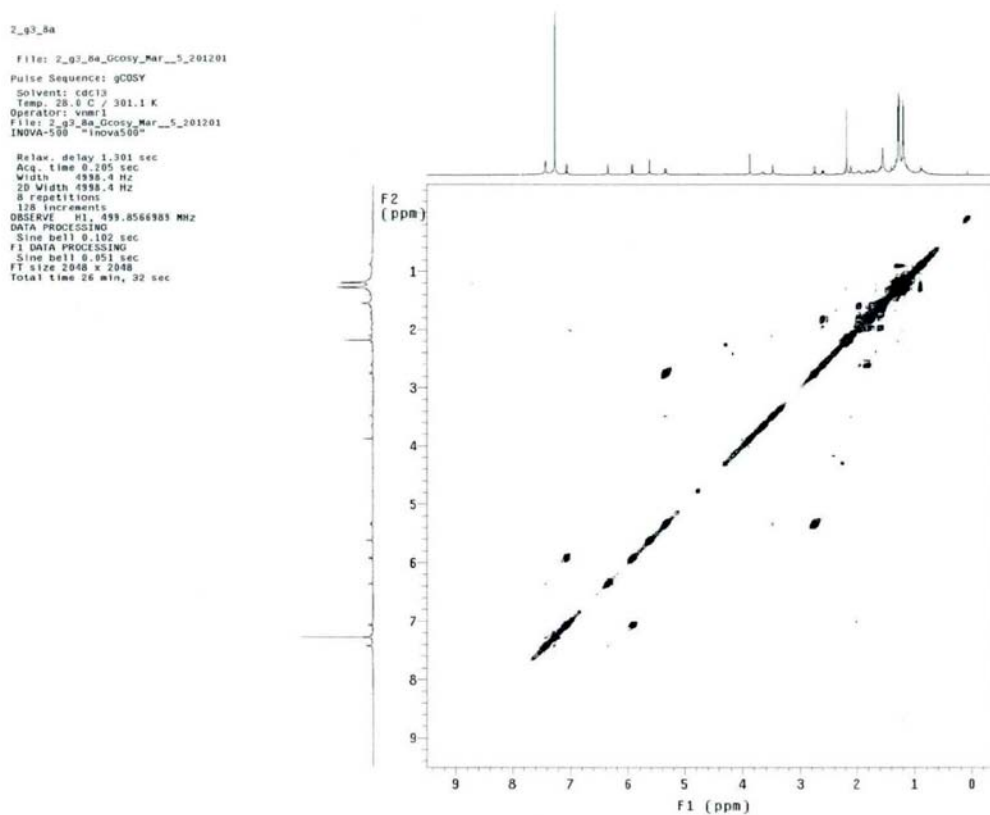


Figura 29S. Espectro de COSY do limonoide 6 α -acetoxi-7-desacetilgedunina (6)

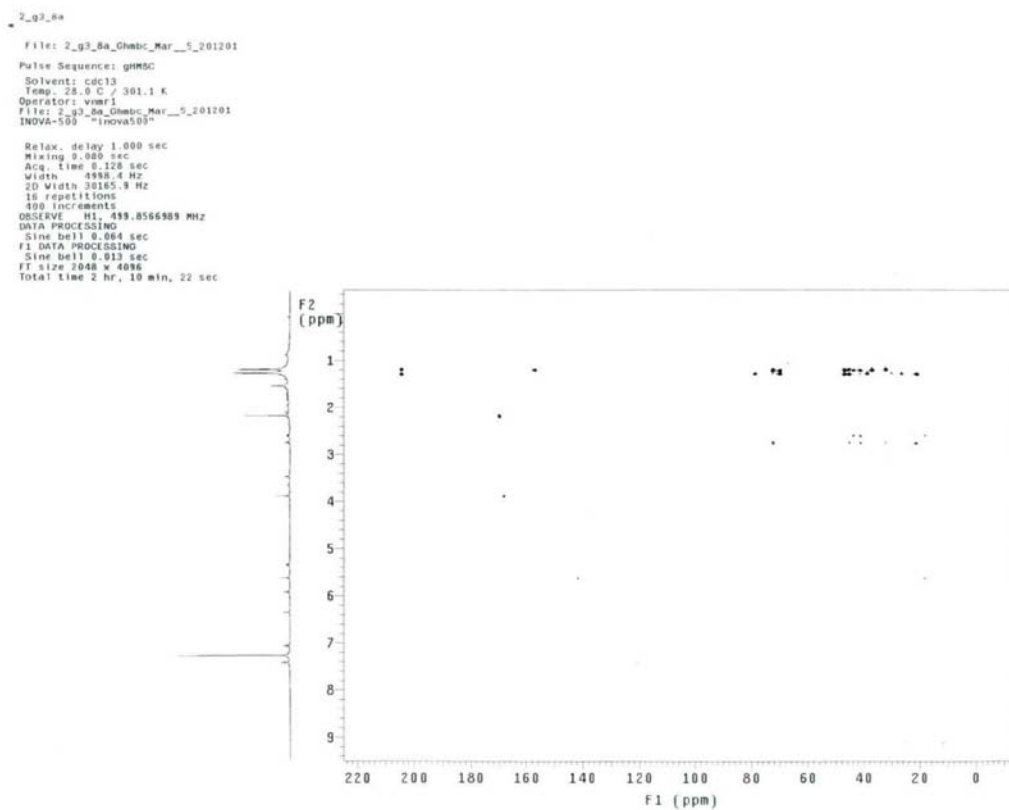


Figura 30S. Espectro de HMBC do limonoide 6 α -acetoxi-7-desacetilgedunina (6)

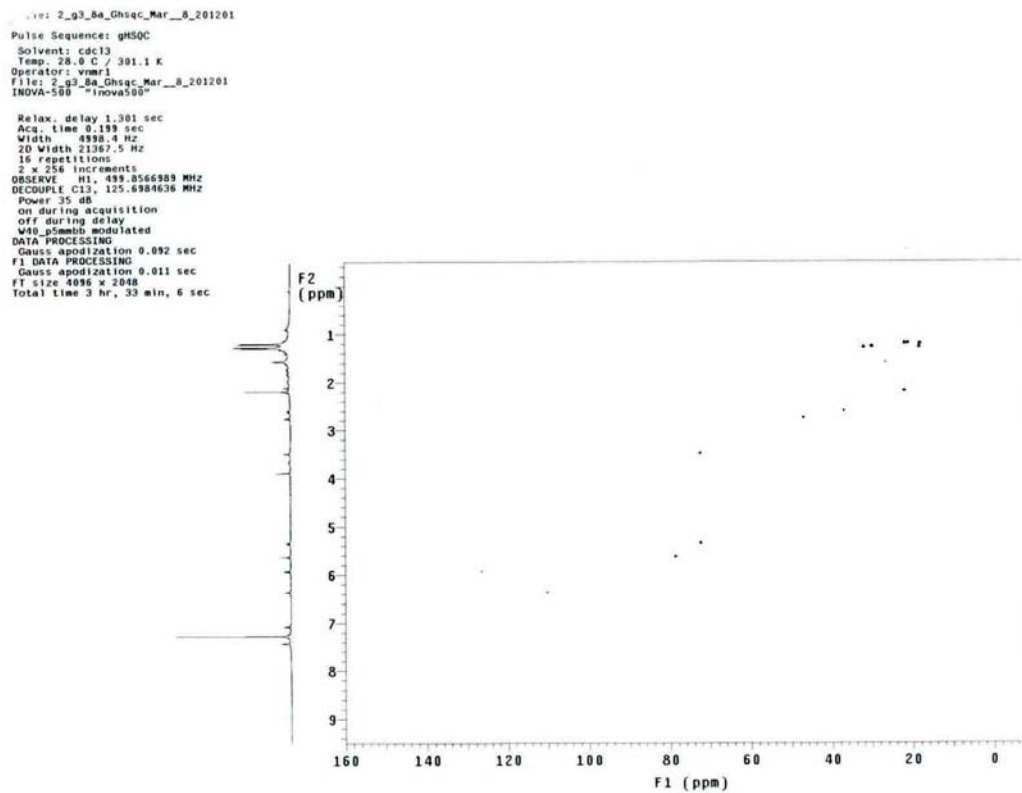


Figura 31S. Espectro de HSQC do limonoide 6 α -acetoxi-7-desacetilgedumina (6)



Figura 32S. Frutos de *Carapa guianensis* coletados na reserva Adolpho Ducke, Manaus, AM

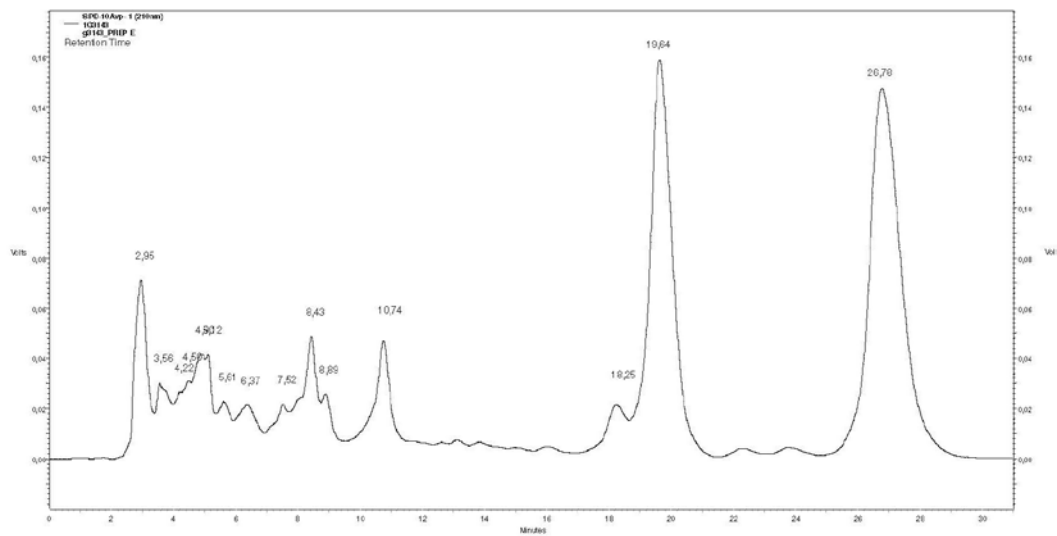


Figura 33S. Cromatograma obtido para o isolamento dos limonoides 5 e 6