

Supplementary Information for

Bioactive pyridone alkaloids from a deep-sea derived fungus *Arthrinium* sp. UJNMF0008

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Table S1. ¹H NMR data for compounds **1-3** (DMSO-*d*₆) and **10r** (CD₃OD)

pos.	1	2	3	10r
	δ_{H} , mult. (<i>J</i> in Hz)	δ_{H} , mult. (<i>J</i> in Hz)	δ_{H} , mult. (<i>J</i> in Hz)	δ_{H} , mult. (<i>J</i> in Hz)
1a	2.06, m	2.08, m	1.77, m	2.11, m
1b	0.95, m	0.94, m	0.82, m	1.08, m
2a	1.71, m	1.70, m	1.66, m	1.71-1.86, ^a m
2b	0.95, m	0.95, m	0.96, m	1.01, m
3	1.48, m	1.47, m	1.46, m	1.52, m
4a	1.71, m	1.71, m	1.72, m	1.71-1.86, m
4b	0.73, q (12.6)	0.73, q (12.4)	0.74, m	0.78, q (12.0)
5	1.78, m	1.77, m	1.72, m	1.71-1.86, ^a m
6	5.38, brd (9.9)	5.38, brd (9.9)	5.38, brd (9.8)	5.41, brd (9.9)
7	5.60, ddd (9.9, 4.3, 2.8)	5.59, ddd, (9.9, 4.2, 2.8)	5.58, ddd (9.8, 4.1, 2.6)	5.61, ddd (9.9, 4.5, 2.8)
8	2.62, m	2.63, m	2.74, m	2.76, m
9	2.69, dd (11.6, 5.9)	2.68, dd, (11.5, 6.0)	4.34, dd (11.3, 5.7)	2.91, dd (11.6, 5.9)
10	1.29, m	1.29, m	1.46, m	1.39, m
11	0.88, d (6.5)	0.88, d (6.5)	0.87, d (6.5)	0.93, d (6.6)
12	1.04, d (7.0)	1.03, d (7.0)	0.74, d (7.1)	1.11, d (7.1)
17	7.08, s	7.05, s	7.57, d (6.0)	7.37, s
21	3.57, dd (3.1, 2.7)	3.44, d (8.6)	4.90, d (10.0)	3.73, d (2.0)
22	4.39, br s	3.19, dd (8.6, 7.4)	3.68, ddd (10.0, 7.3, 2.9)	4.60, brs
23	3.71, m	3.40, m	3.87, brs	3.83, ddd (11.6, 4.9, 2.3)
24a	1.61, m	1.82, m	1.86, m	1.71-1.86, ^a m
24b	1.11, m	1.25, m	1.52, m	1.35, m
25a	1.66, m	2.18, m	2.67, m	1.71-1.86, ^a m
25b	1.51, m	1.53, m	1.36, m	1.71-1.86, ^a m
NH	11.36, s	11.15, s	11.54, d (5.1)	
20-OH	5.21, s		5.27, s	
21-OH	5.33, d (3.1)			
22-OH			4.90, d, (7.3)	
23-OH			4.58, s	

^a Overlapped signals.

Table S2. ^{13}C NMR data for compounds **1-3** in $\text{DMSO-}d_6$

pos.	1	2	3
	δ_{C} , type	δ_{C} , type	δ_{C} , type
1	29.1, CH_2	29.2, CH_2	29.4, CH_2
2	34.9, CH_2	34.9, CH_2	35.0, CH_2
3	32.5, CH	32.5, CH	32.5, CH
4	41.1, CH_2	41.1, CH_2	41.3, CH_2
5	41.2, CH	41.2, CH	41.3, CH
6	130.2, CH	130.3, CH	130.4, CH
7	131.2, CH	131.2, CH	131.6, CH
8	32.1, CH	32.1, CH	30.6, CH
9	48.4, CH	48.5, CH	51.6, CH
10	36.0, CH	36.0, CH	35.8, CH
11	22.4, CH_3	22.4, CH_3	22.4, CH_3
12	17.5, CH_3	17.5, CH_3	17.7, CH_3
13	170.1, C	170.4, C	210.0, C
14	121.6, C	124.5, C	106.4, C
15	155.5, C	157.6, C	161.6, C
17	127.8, CH	130.4, CH	140.8, CH
18	112.8, C	112.4, C	115.7, C
19	157.8, C	158.5, C	176.1, C
20	69.0, C	76.3, C	75.0, C
21	68.3, CH	77.7, CH	67.6, CH
22	83.6, CH	74.5, CH	72.0, CH
23	69.4, CH	71.6, CH	69.4, CH
24	26.5, CH_2	28.2, CH_2	26.2, CH_2
25	36.6, CH_2	32.5, CH_2	30.0, CH_2

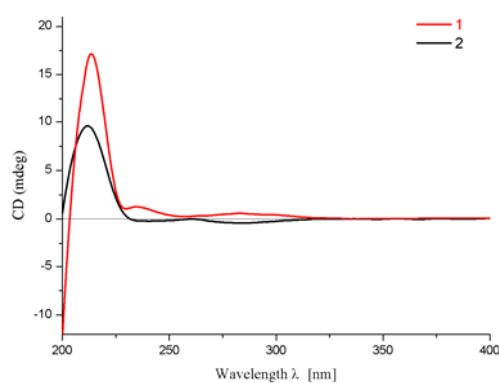
**Figure S0.** The ECD spectra of compounds **1-2**

Figure S1. The ^1H -NMR spectrum of arthpyrone D (**1**) in CD_3OD

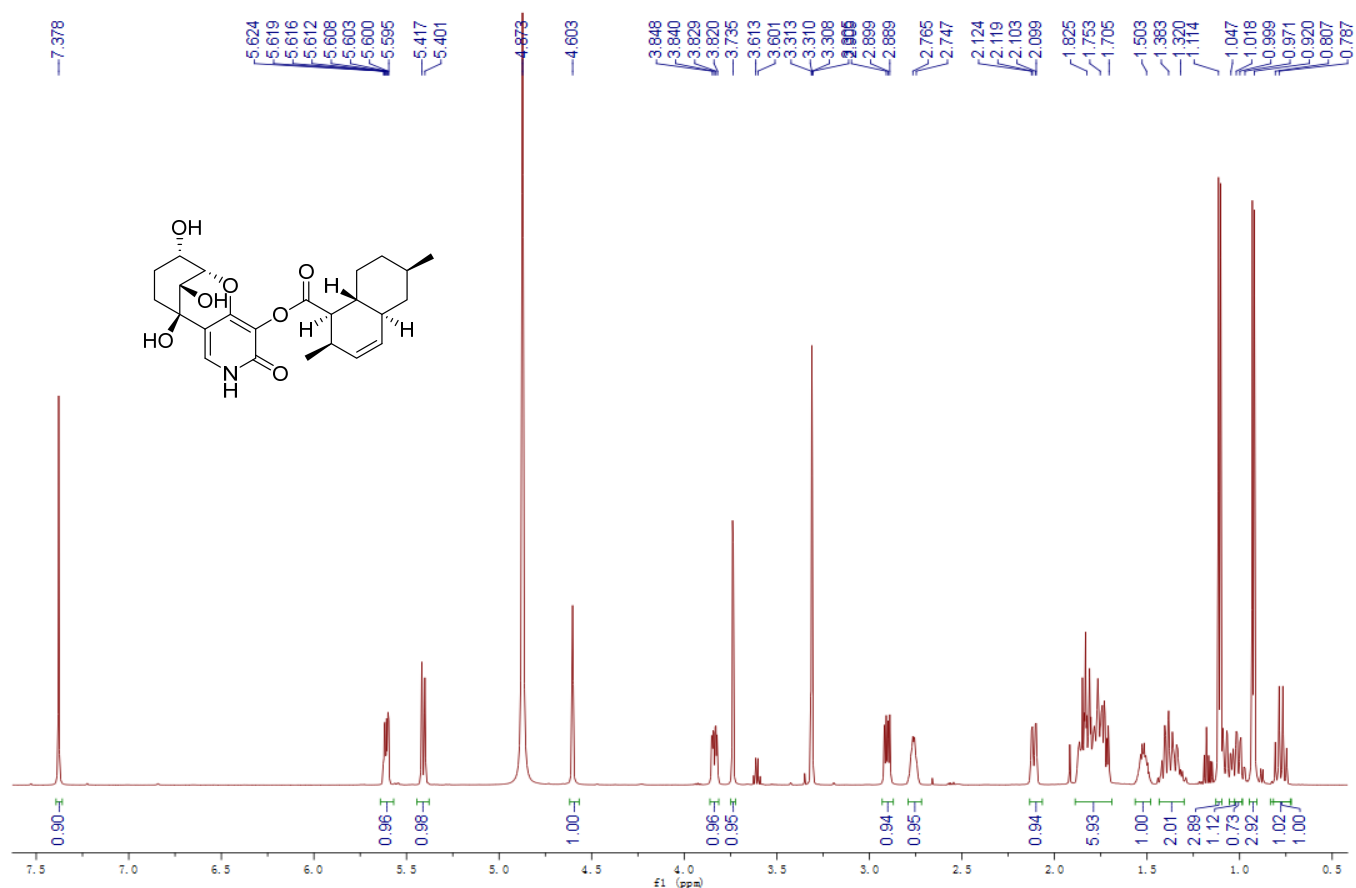


Figure S2. The ^{13}C -NMR spectrum of arthpyrone D (**1**) in CD_3OD

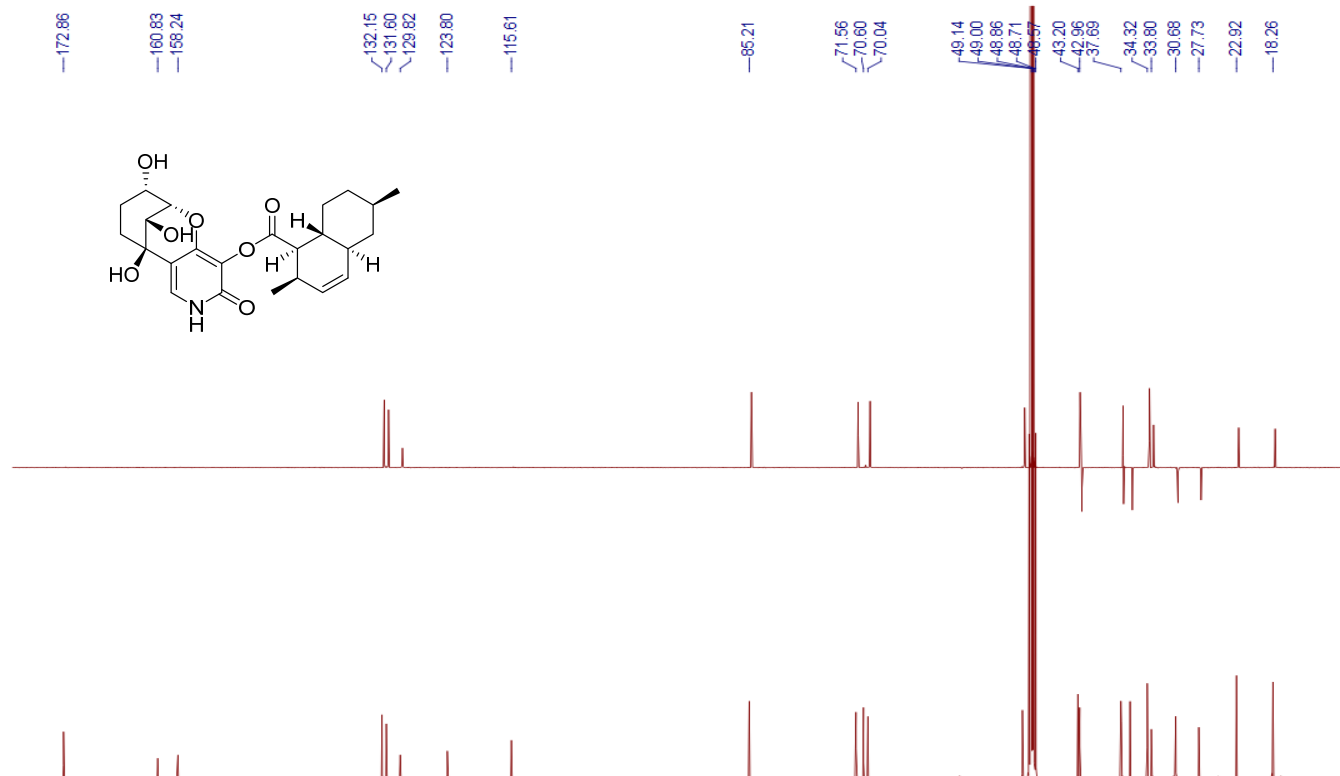


Figure S3. The HSQC spectrum of arthpyrone D (**1**) in CD₃OD

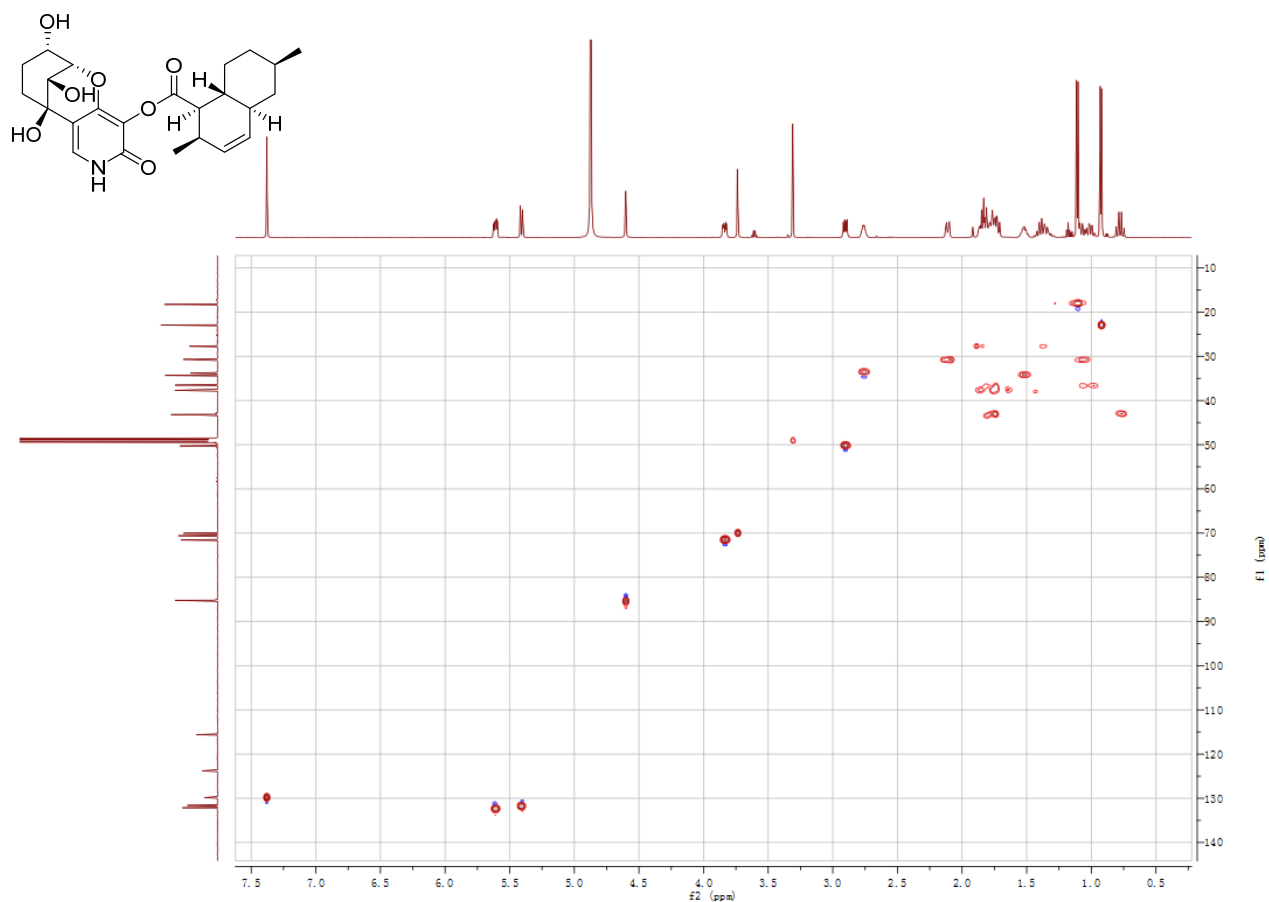


Figure S4. The ¹H-¹H COSY spectrum of arthpyrone D in (**1**) CD₃OD

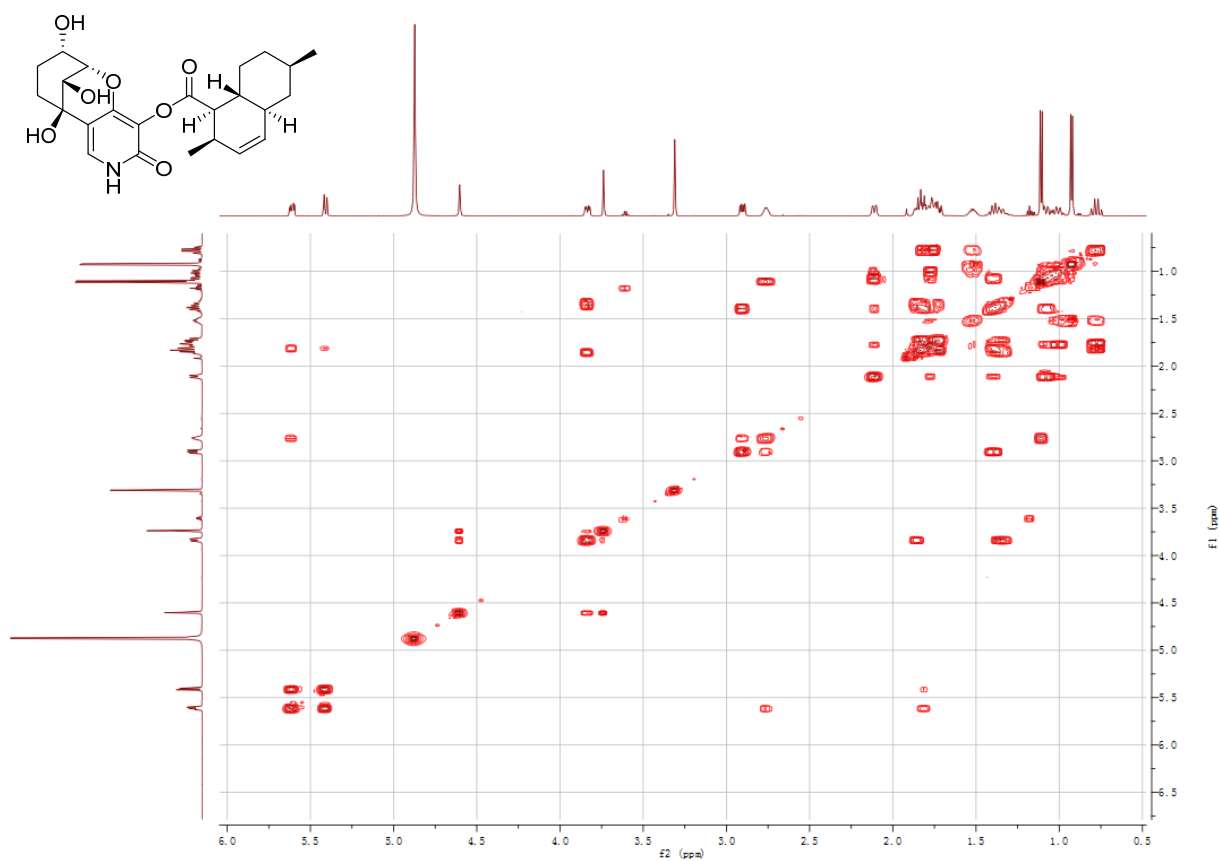


Figure S5. The HMBC spectrum of arthpyrone D (**1**) in CD₃OD

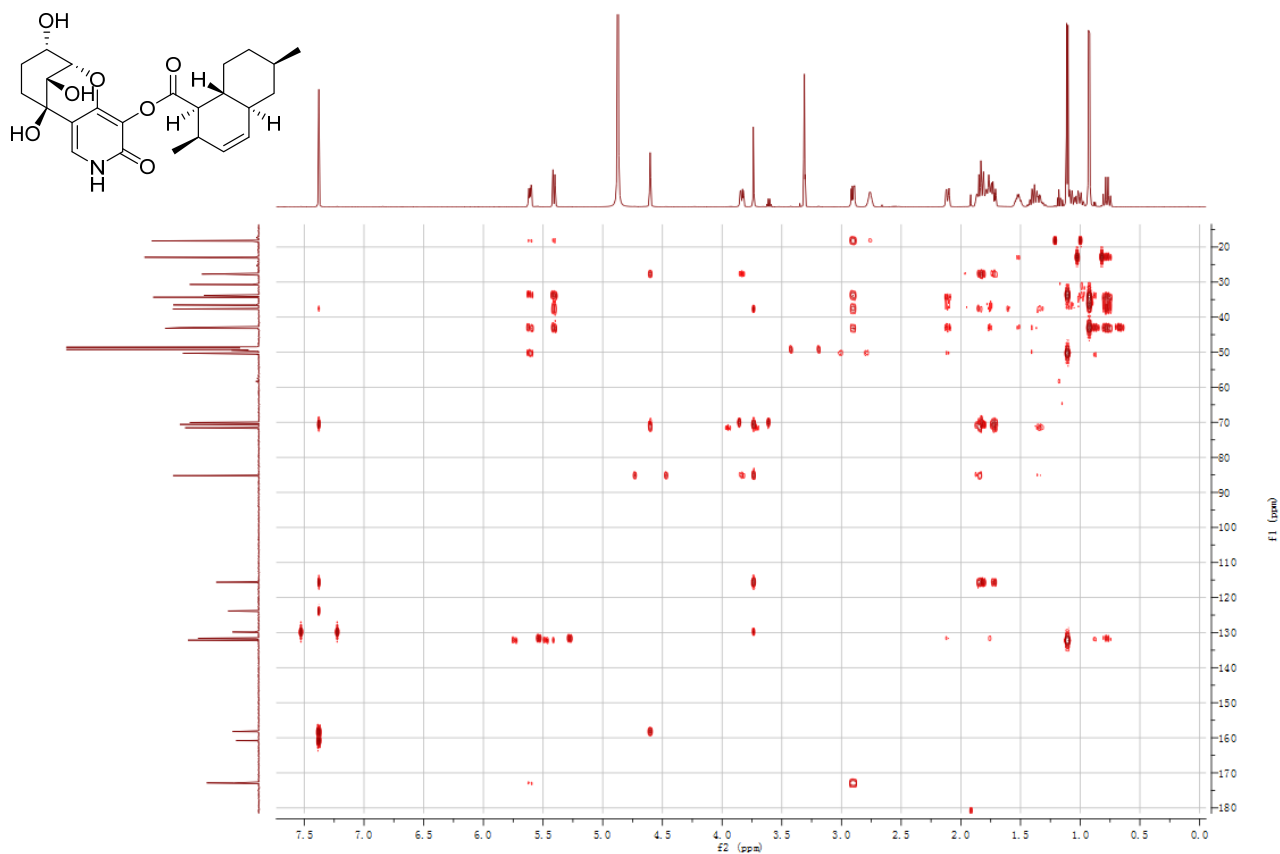


Figure S6. The NOESY spectrum of arthpyrone D (**1**) in CD₃OD

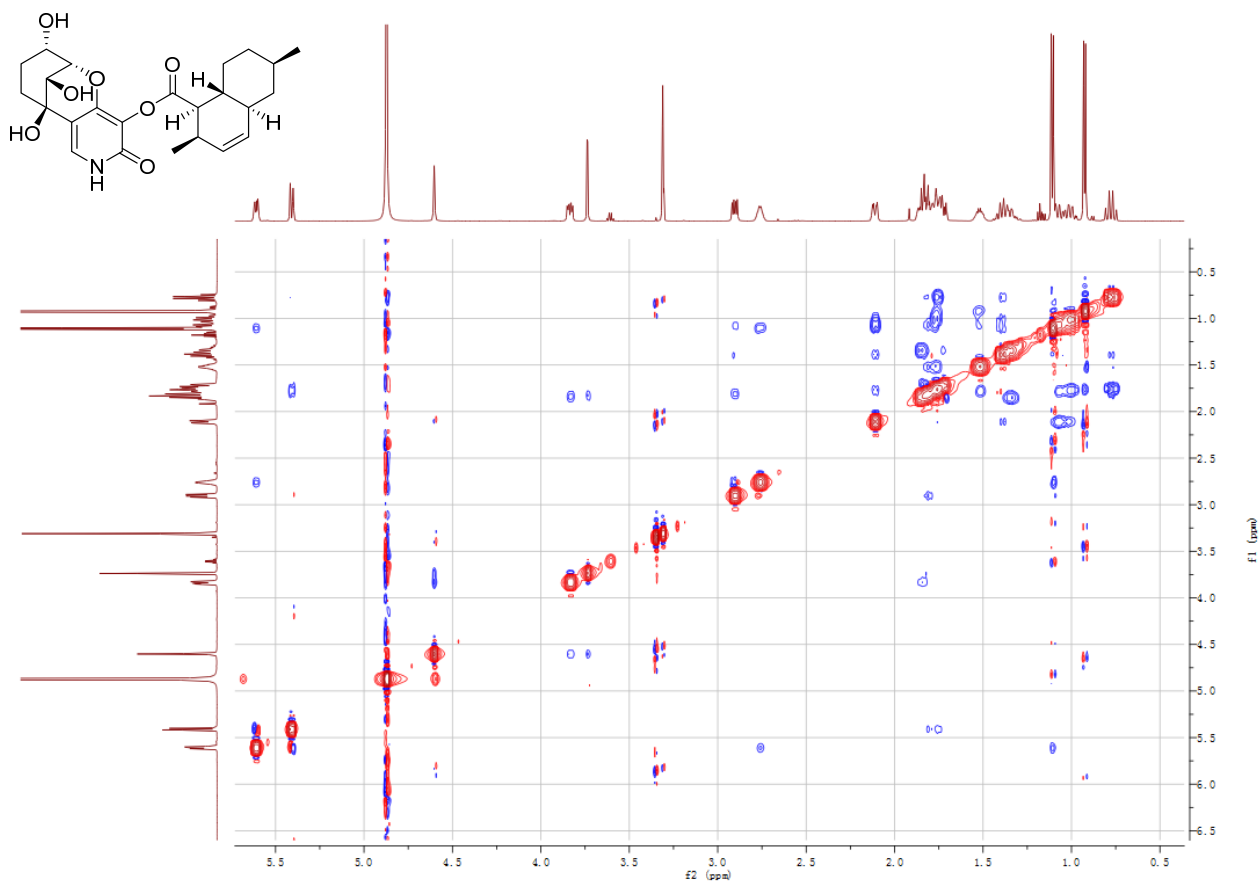


Figure S7. The ^1H -NMR spectrum of arthpyrone D (**1**) in $\text{DMSO}-d_6$

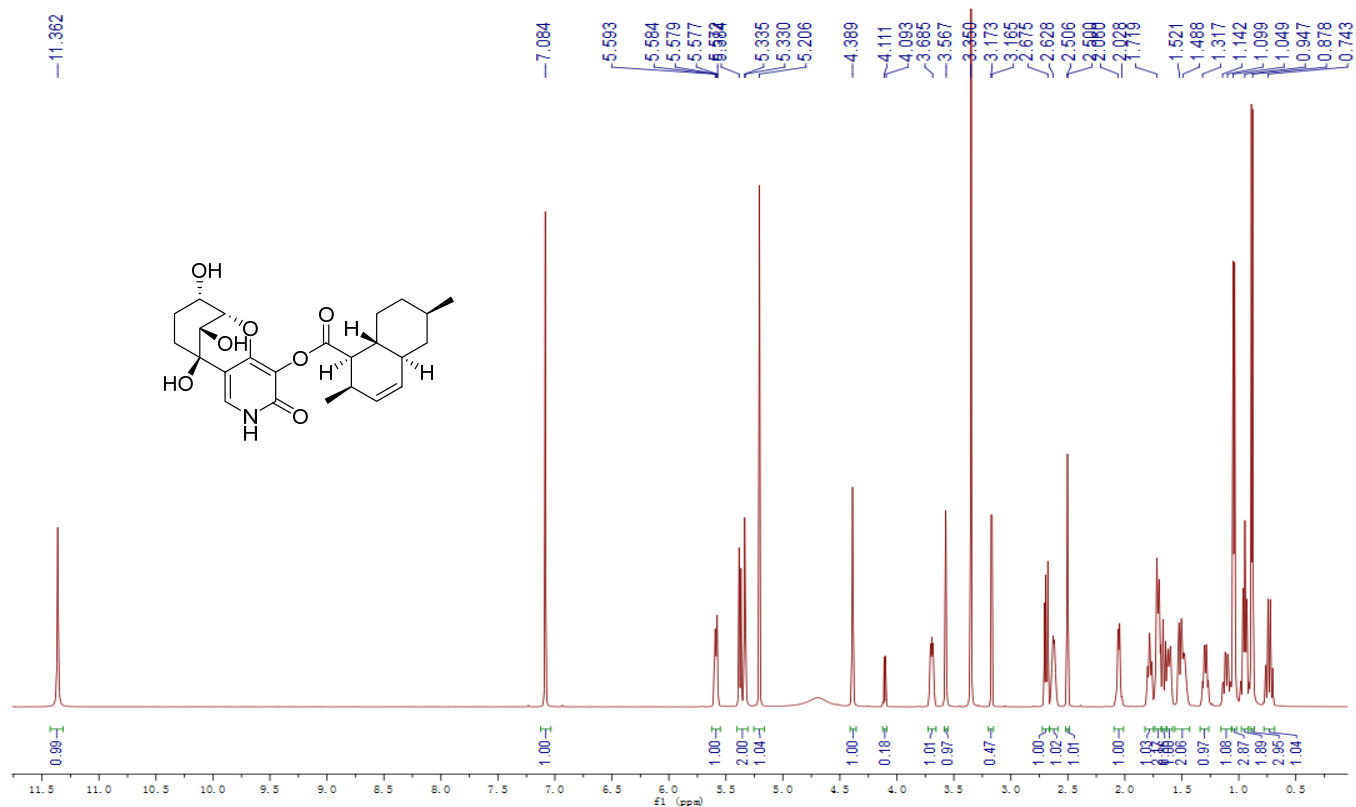


Figure S8. The ^{13}C -NMR spectrum of arthpyrone D (**1**) in $\text{DMSO}-d_6$

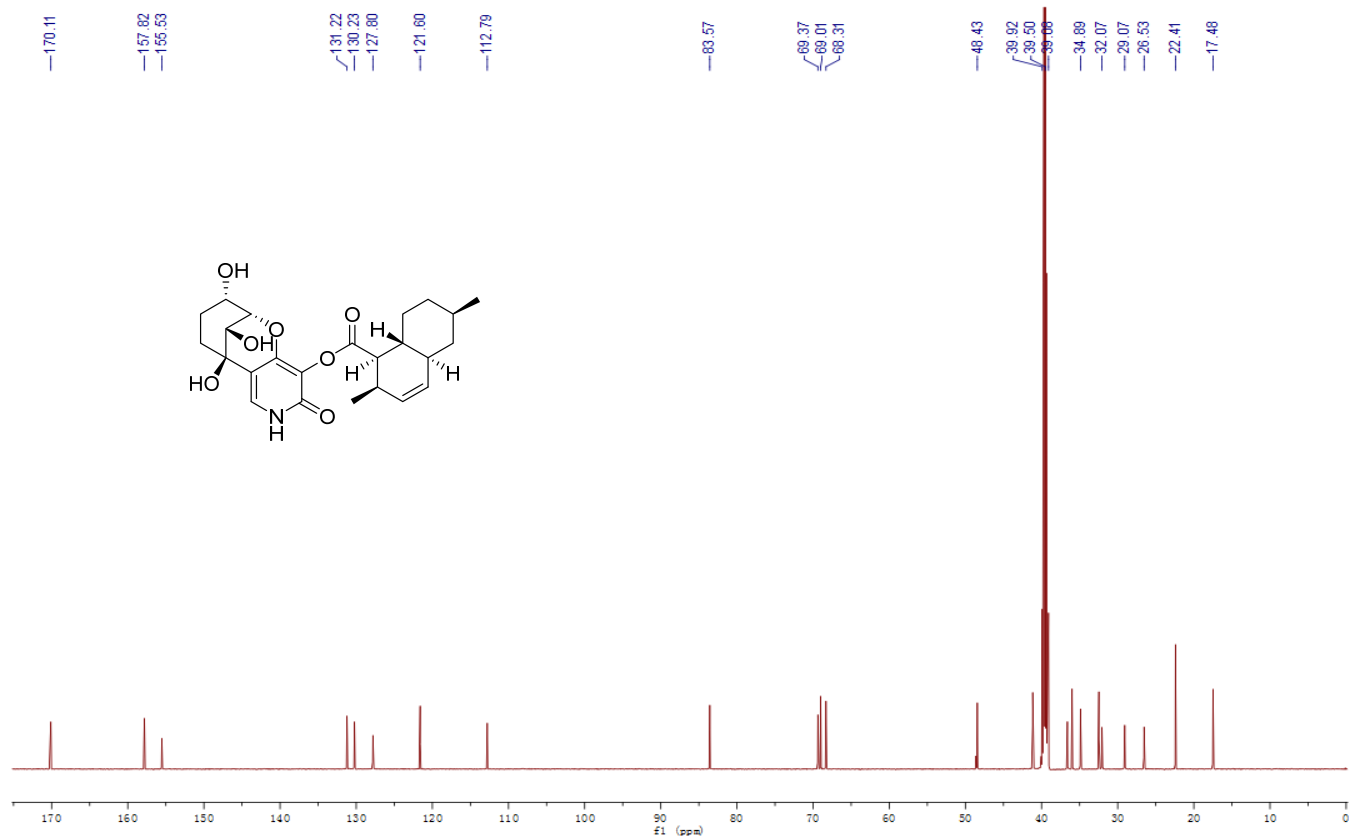


Figure S9. The HSQC spectrum of arthpyrone D (**1**) in DMSO- d_6

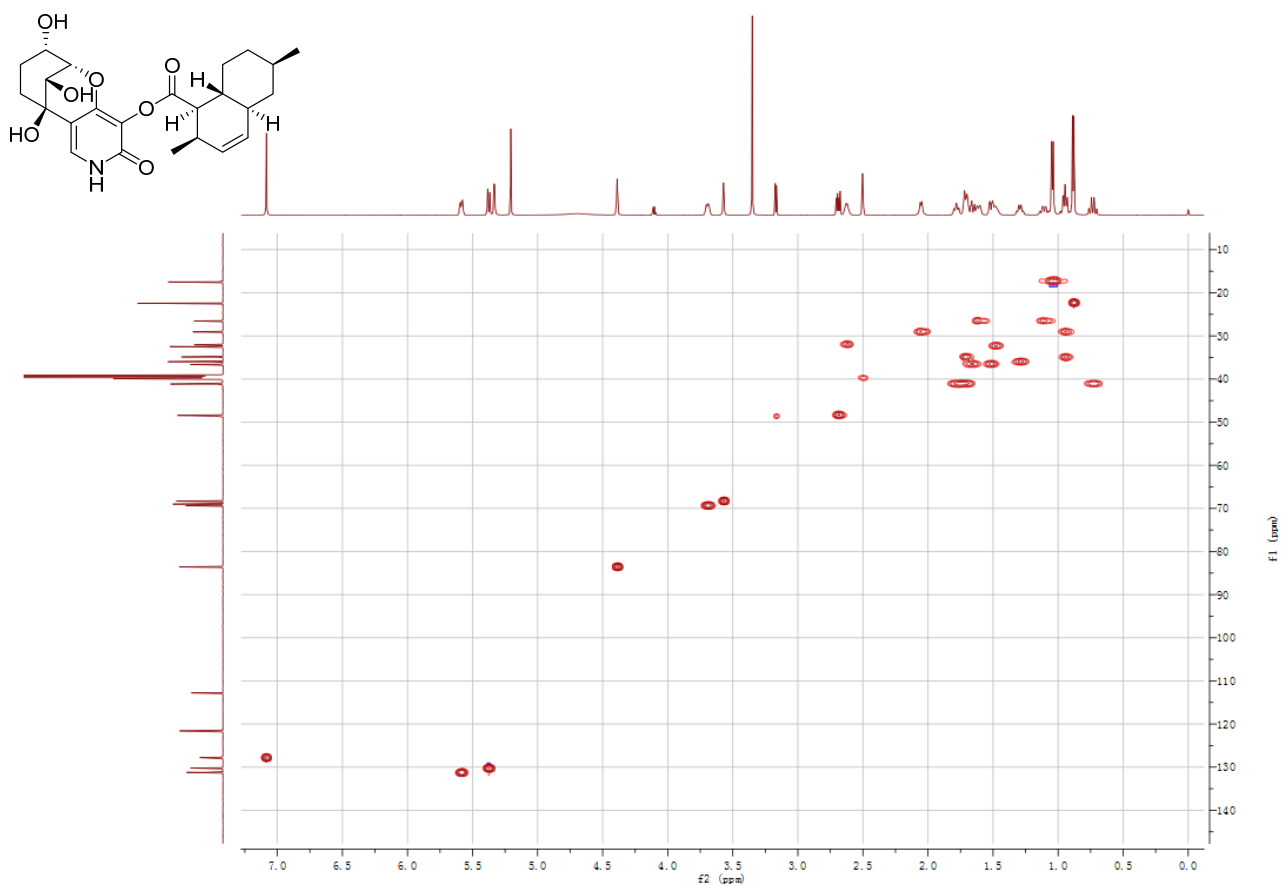


Figure S10. The ^1H - ^1H COSY spectrum of arthpyrone D (**1**) in DMSO- d_6

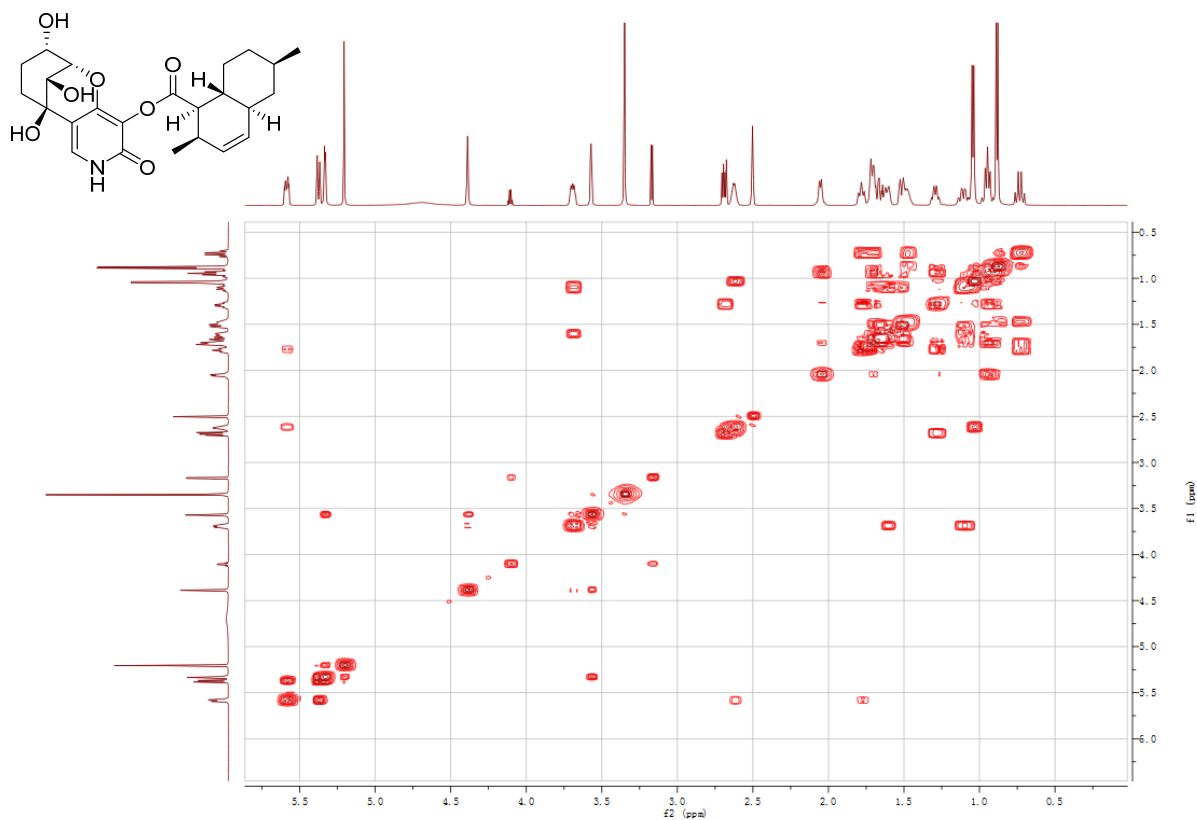


Figure S11. The HMBC spectrum of arthpyrone D (**1**) in DMSO- d_6

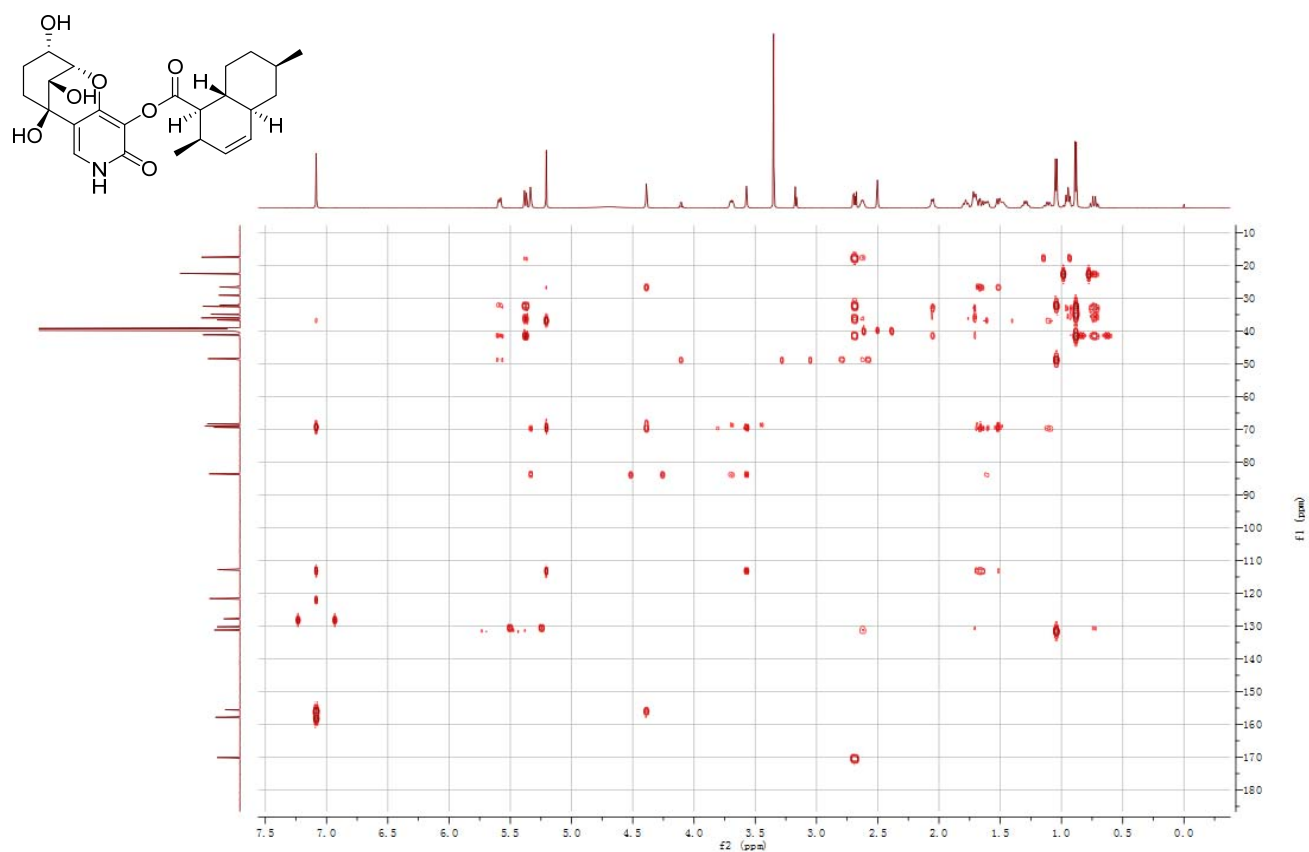


Figure S12. The NOESY spectrum of arthpyrone D (**1**) DMSO- d_6

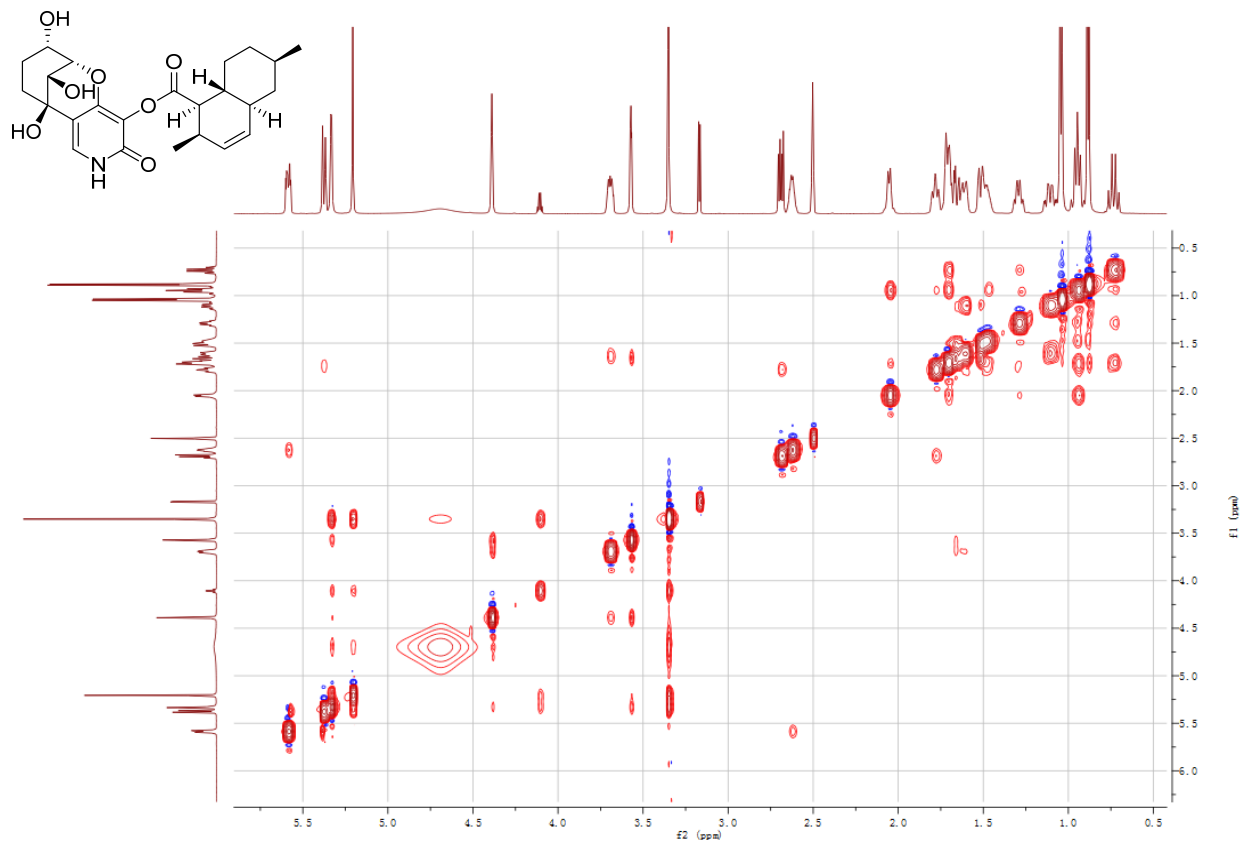


Figure S13. The (+)-HRESIMS spectrum of arthpyrone D (**1**)

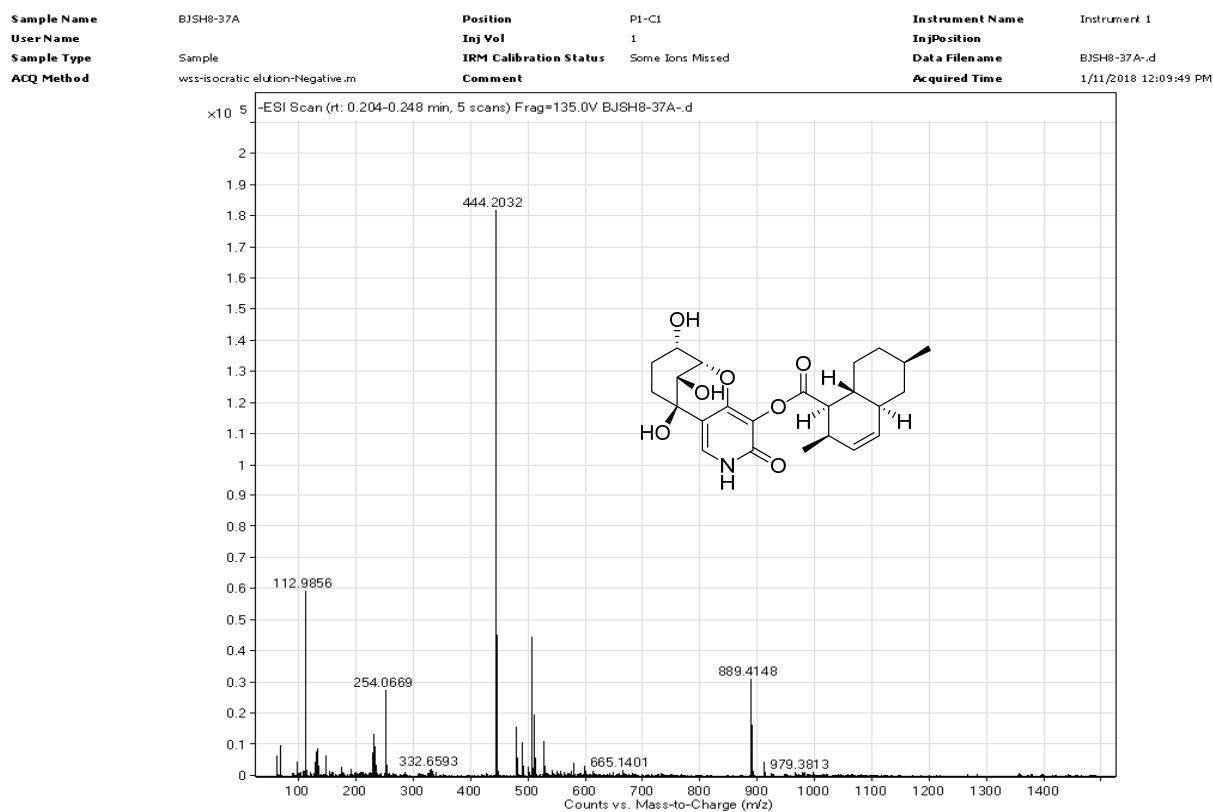


Figure S14. The ^1H -NMR spectrum of arthpyrone E (**2**) in CD_3OD

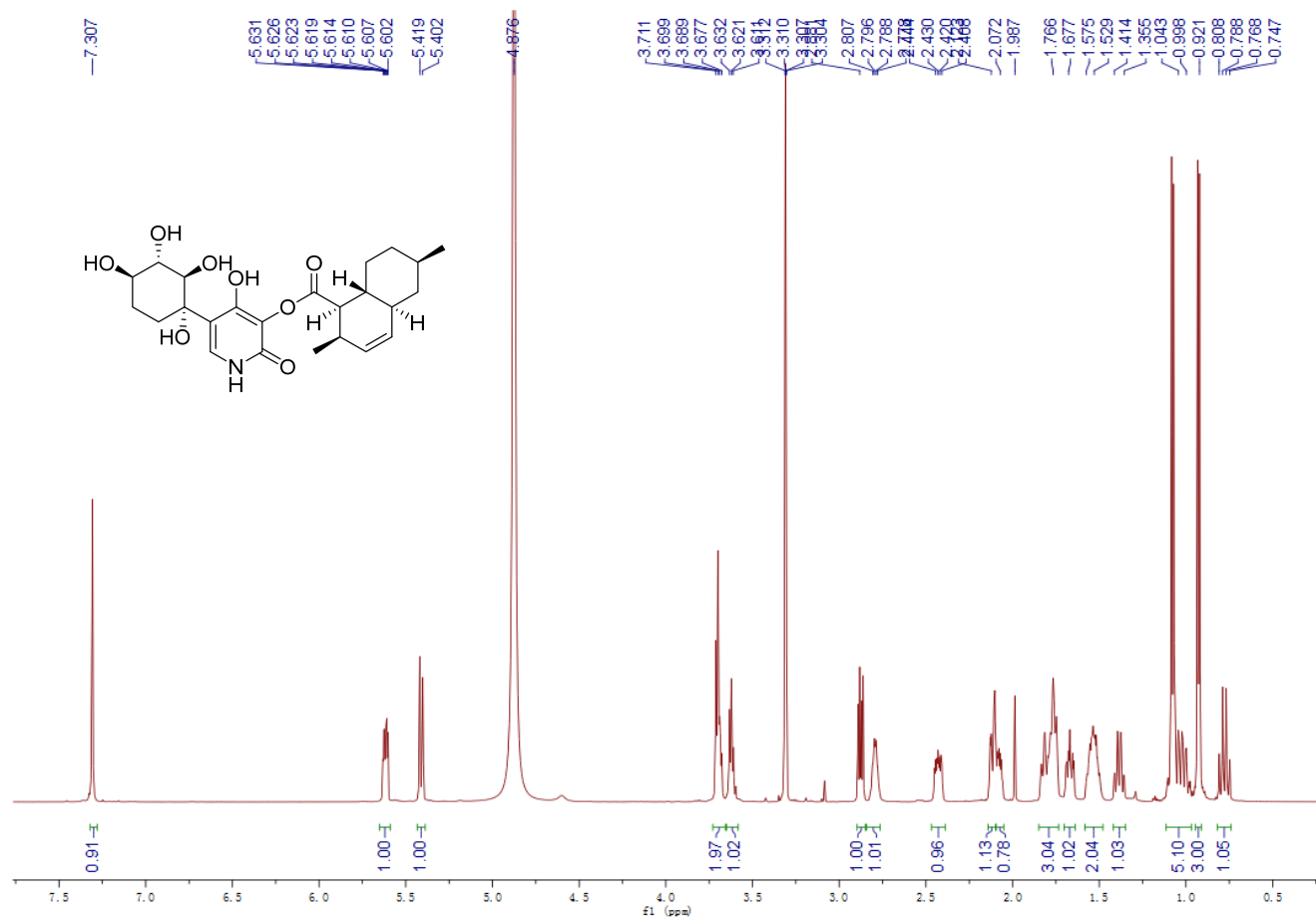


Figure S15. The ^{13}C -NMR and DEPT 135 spectrum of arthpyrone E (**2**) in CD_3OD

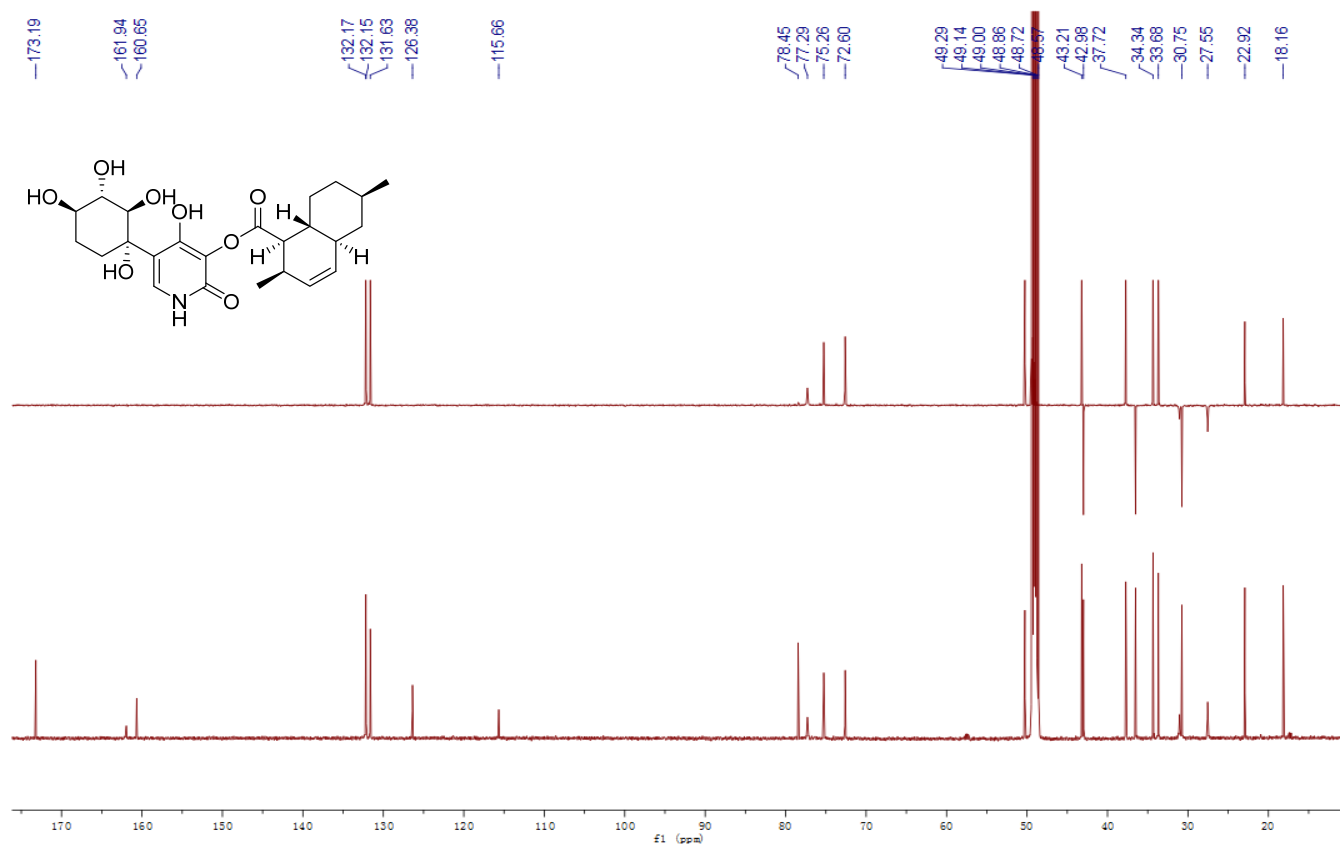


Figure S16. The HSQC spectrum of arthpyrone E (**2**) in CD_3OD

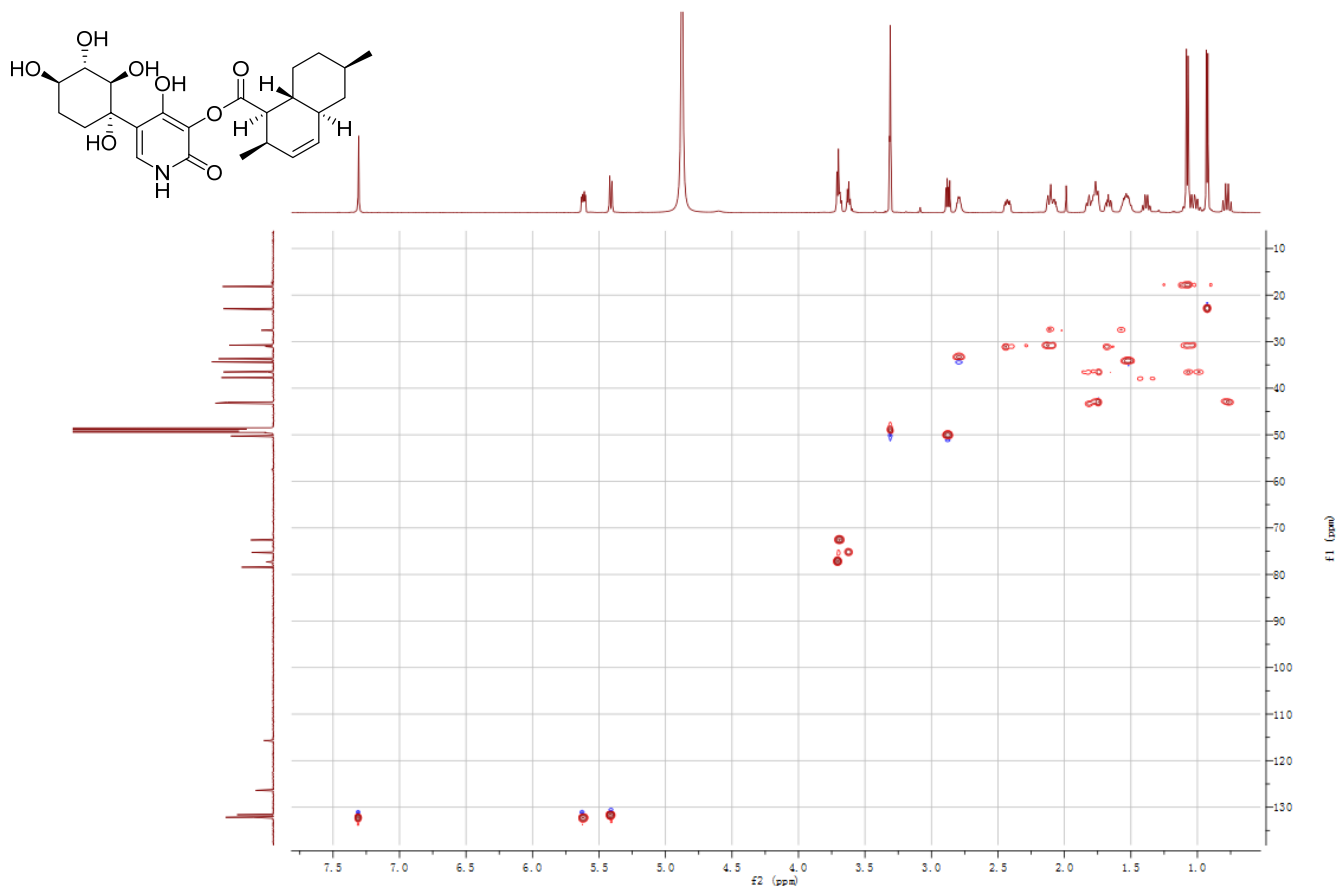


Figure S17. The ^1H - ^1H COSY spectrum of arthpyrone E in (2) CD_3OD

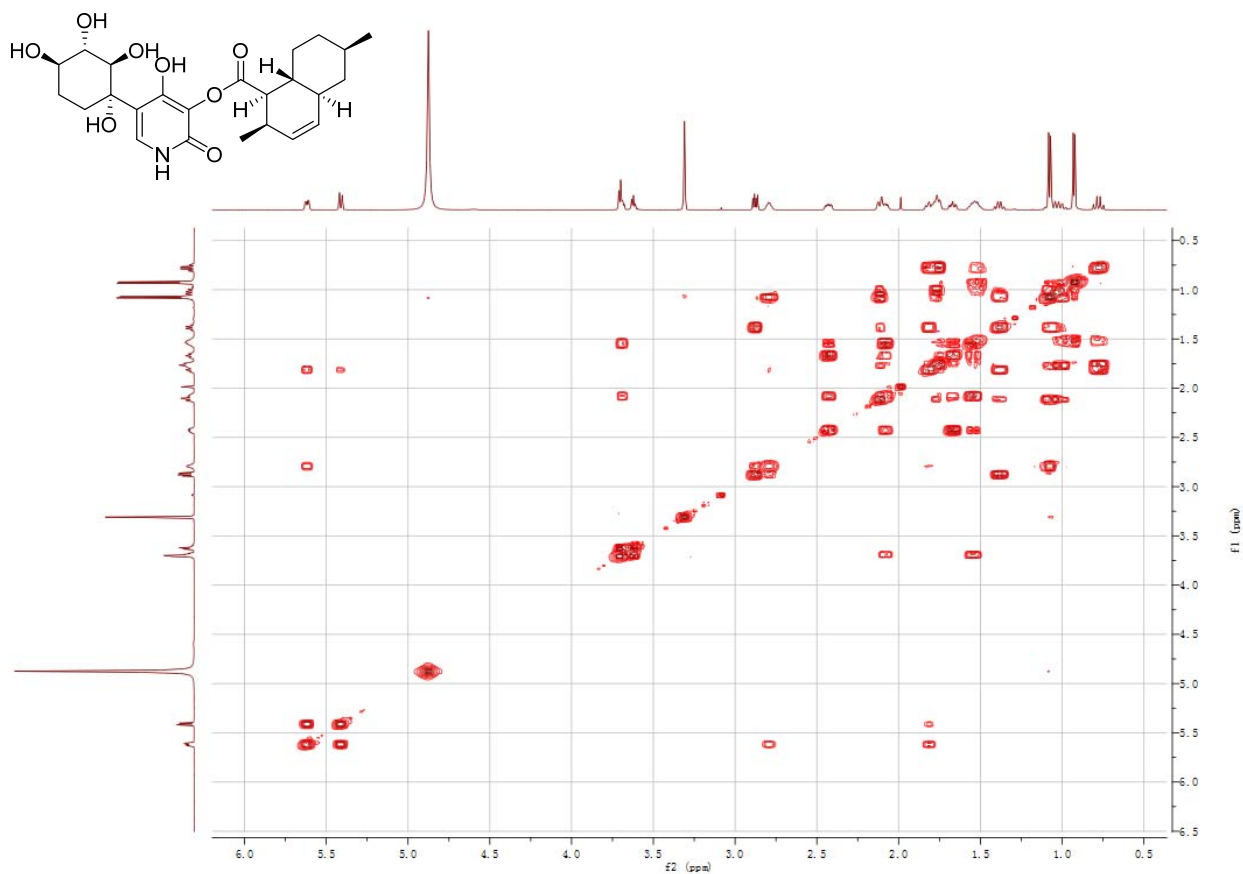


Figure S18. The HMBC spectrum of arthpyrone E (2) in CD_3OD

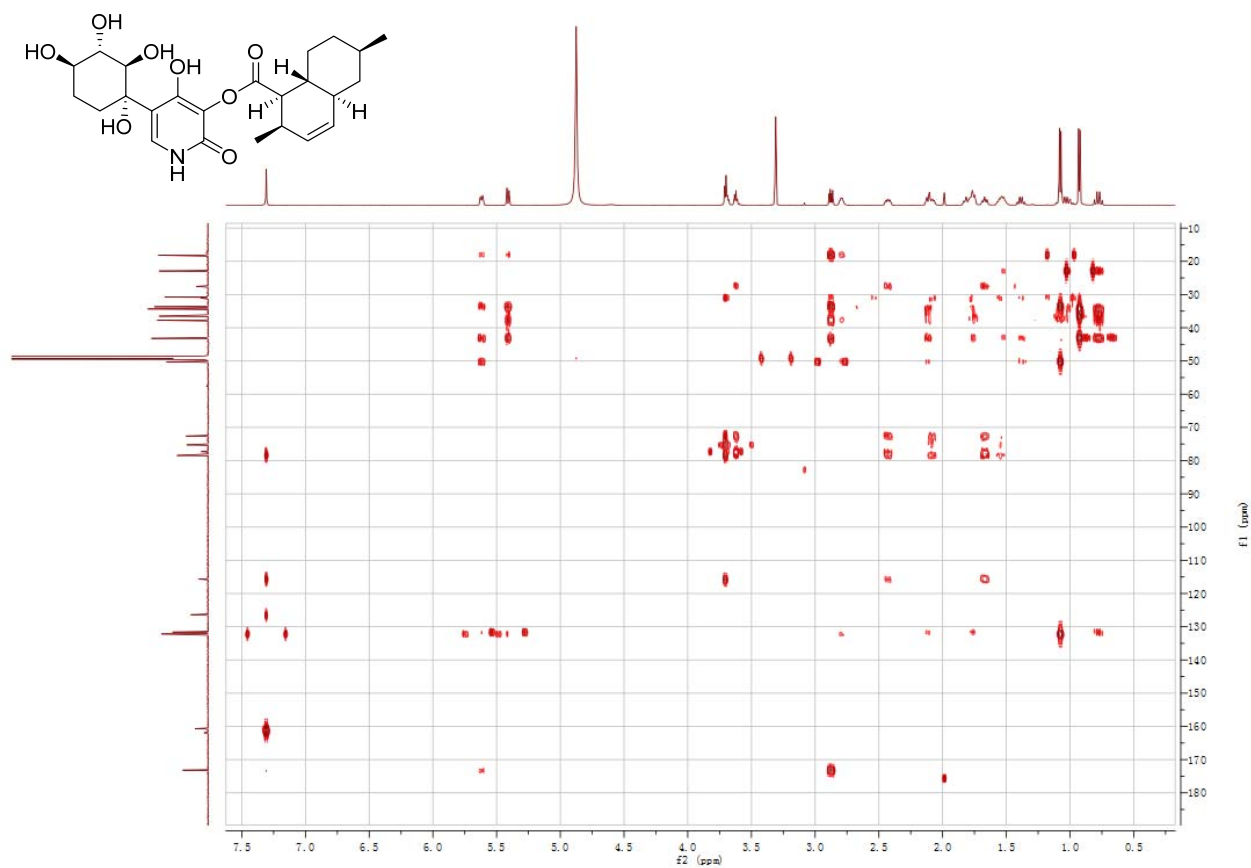


Figure S19. The NOESY spectrum of arthpyrone E (**2**) in CD₃OD

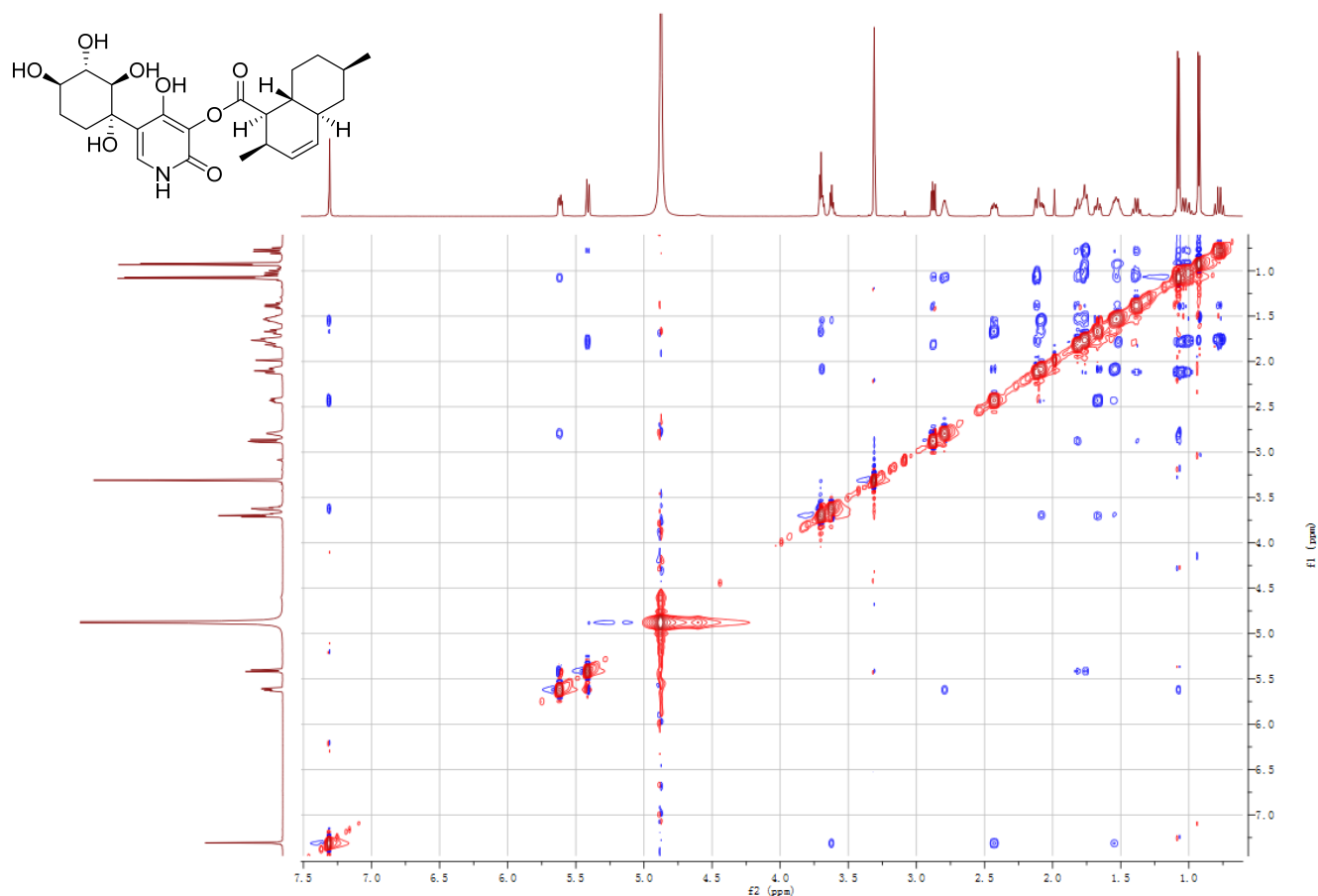


Figure S20. The ¹H-NMR spectrum of arthpyrone E (**2**) in DMSO-*d*₆

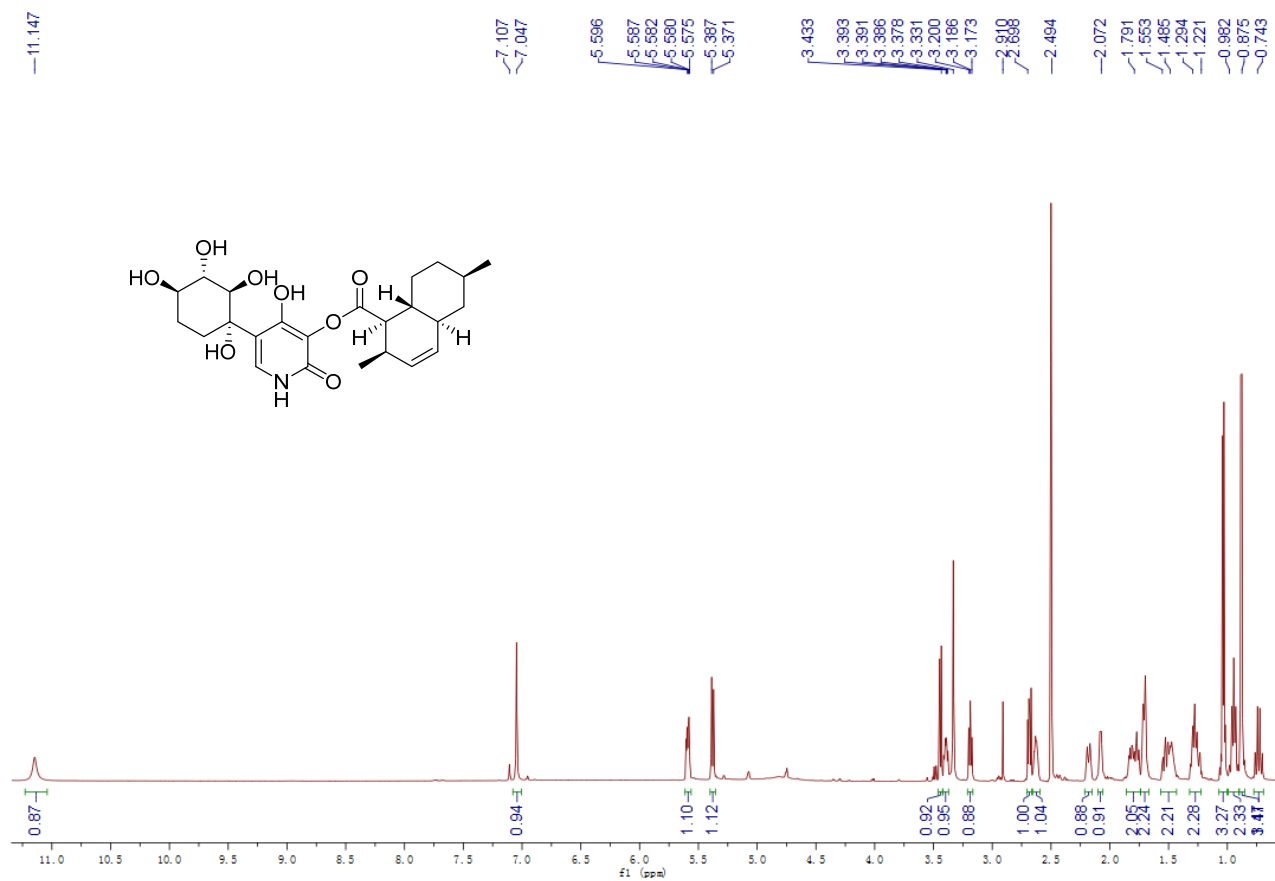


Figure S21. The ^{13}C -NMR spectrum of arthpyrone E (**2**) in $\text{DMSO-}d_6$

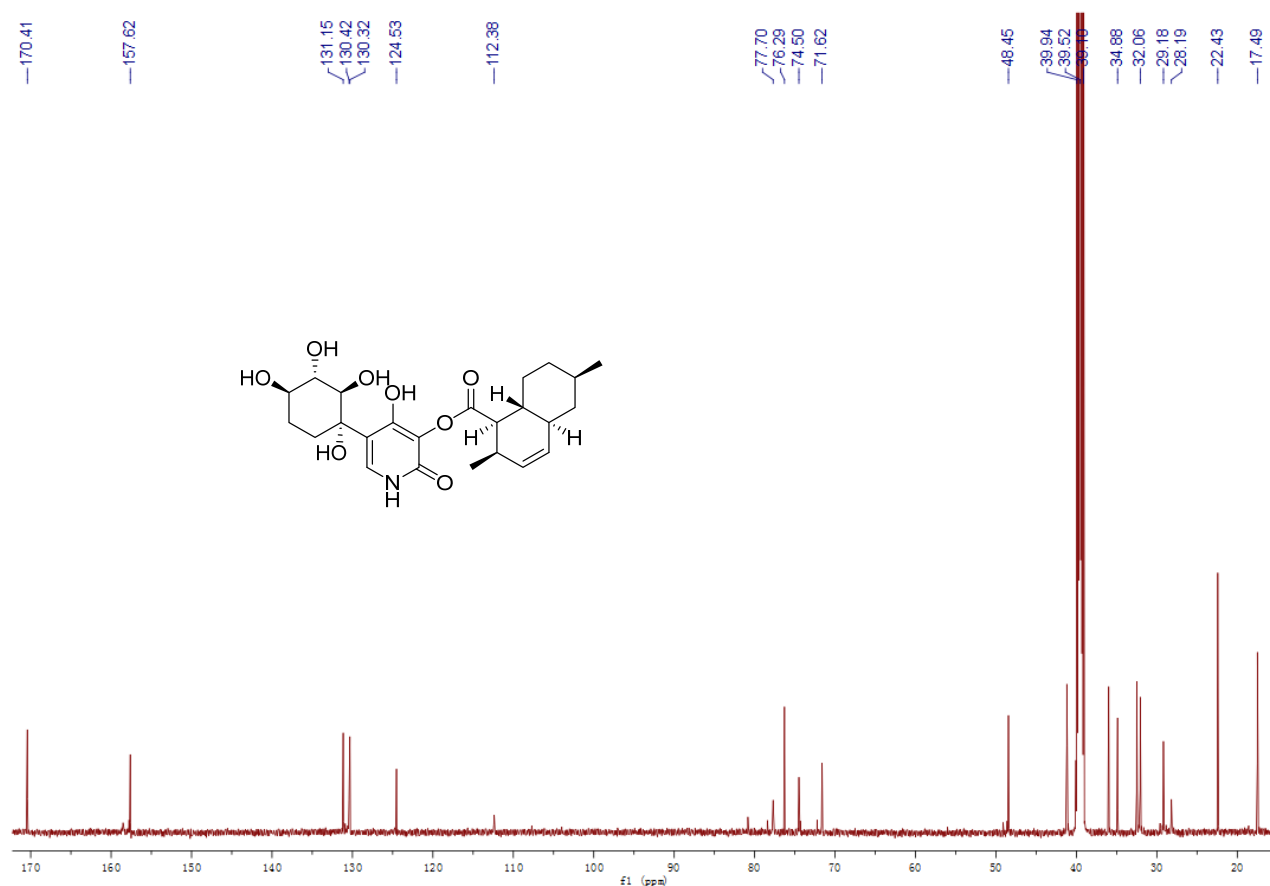


Figure S22. The HSQC spectrum of arthpyrone E (**2**) in $\text{DMSO-}d_6$

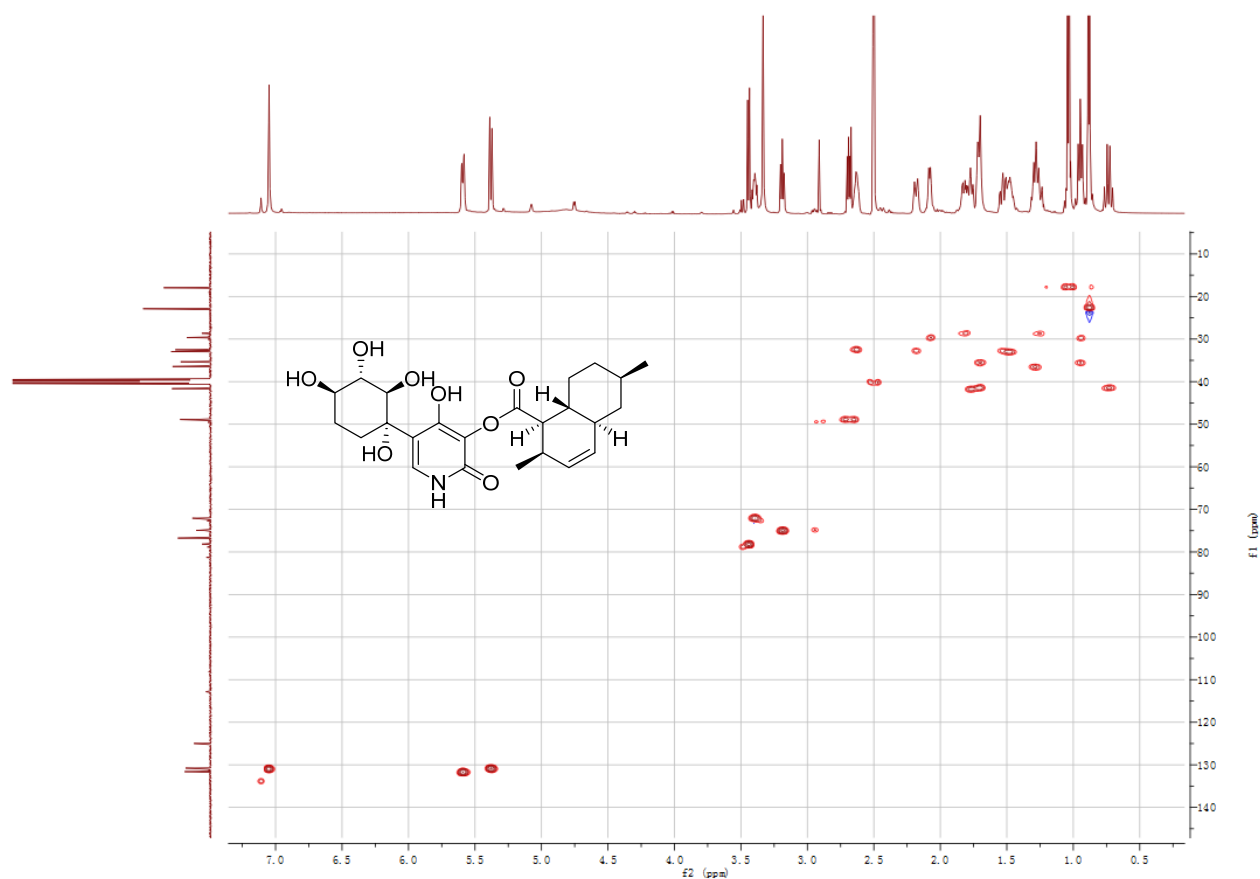


Figure S23. The ^1H - ^1H COSY spectrum of arthpyrone E (**2**) in $\text{DMSO}-d_6$

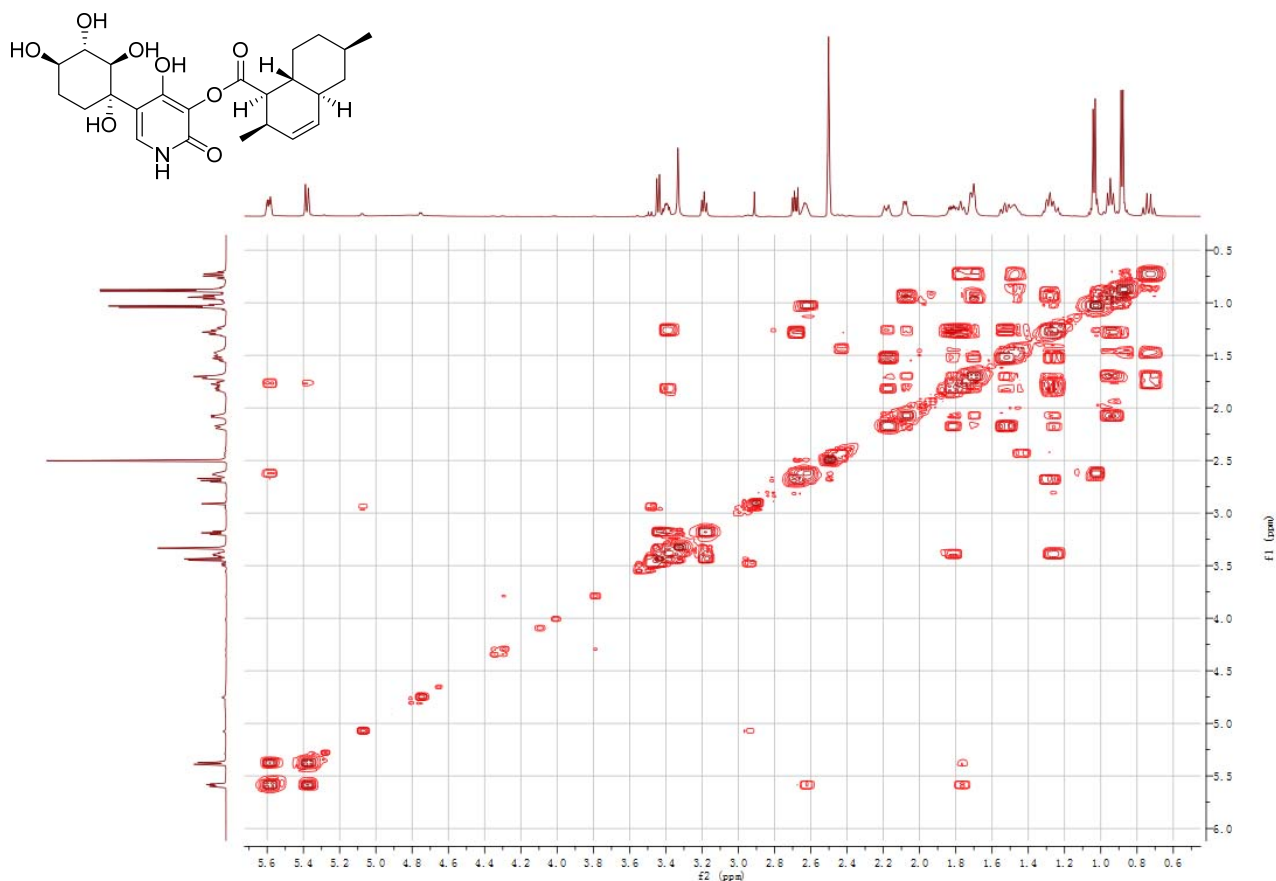


Figure S24. The NOESY spectrum of arthpyrone E (**2**) in $\text{DMSO}-d_6$

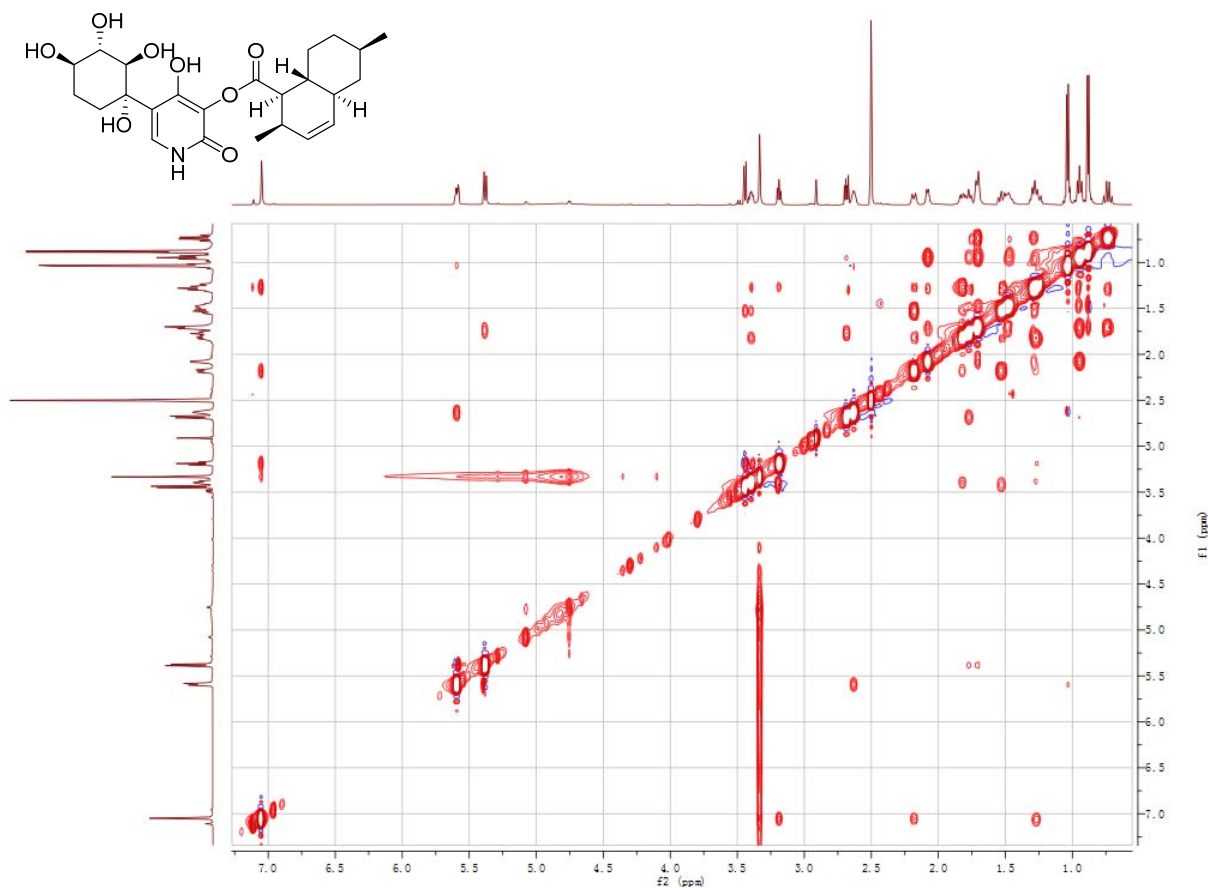


Figure S25. The (-)-HRESIMS spectrum of arthpyrone E (**2**)

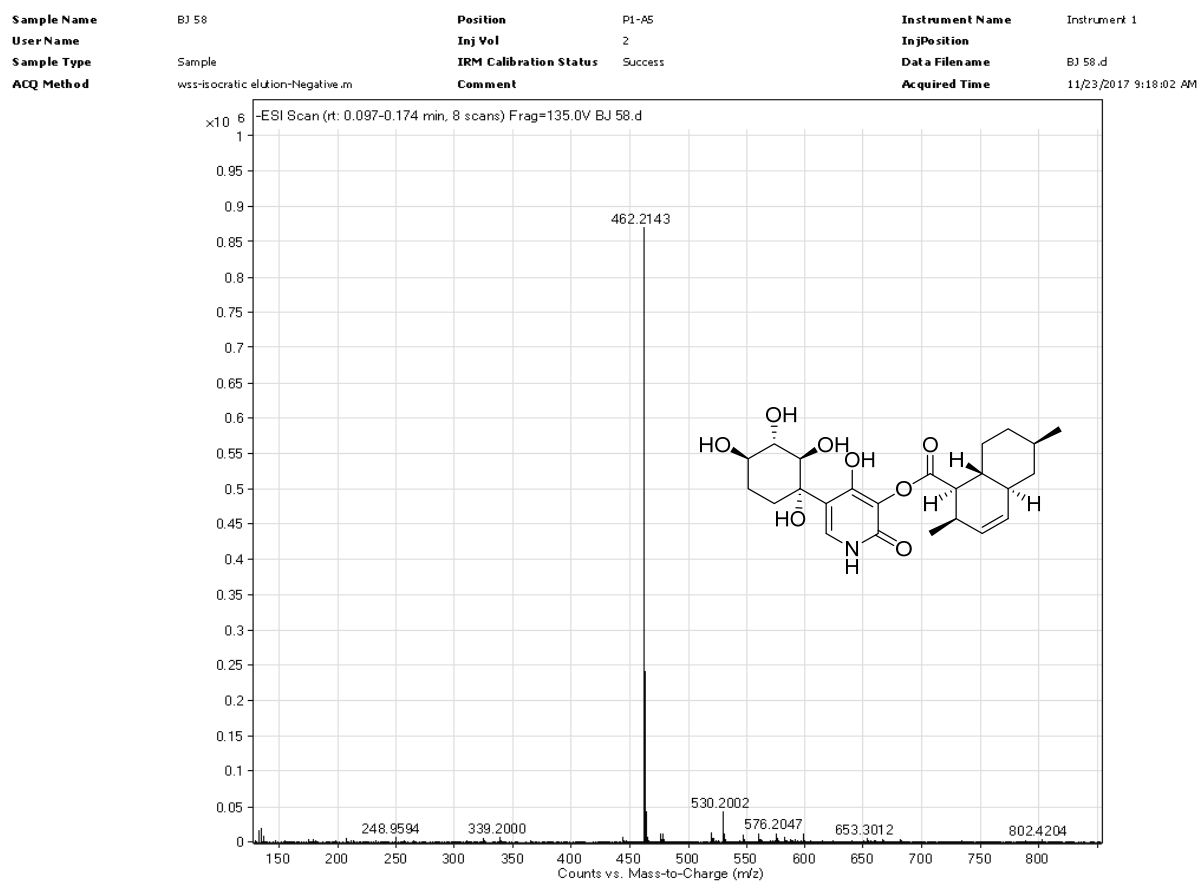


Figure S26. The ^1H -NMR spectrum of arthpyrone F (**3**) in CD_3OD

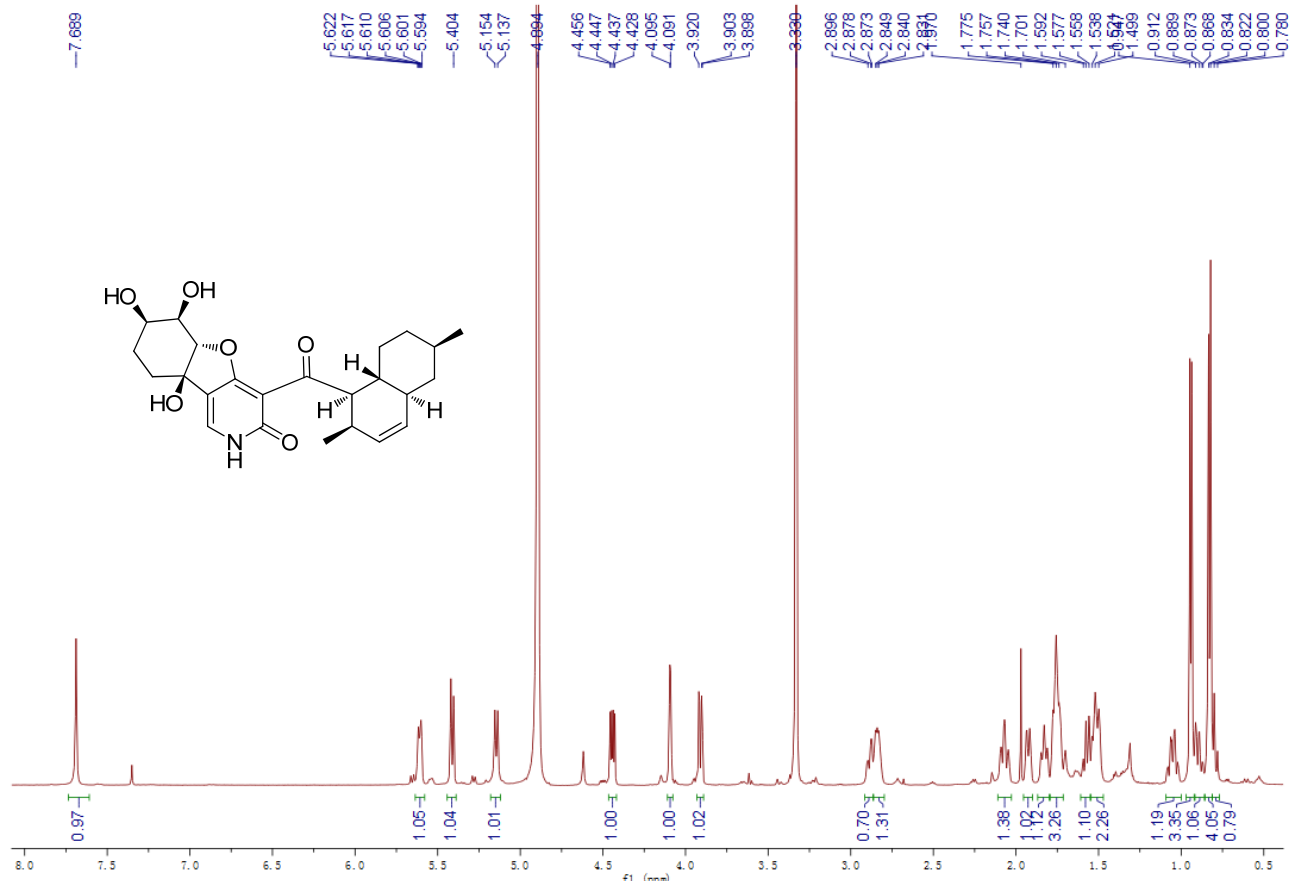


Figure S27. The ^{13}C -NMR spectrum of arthpyrone F (**3**) in CD_3OD

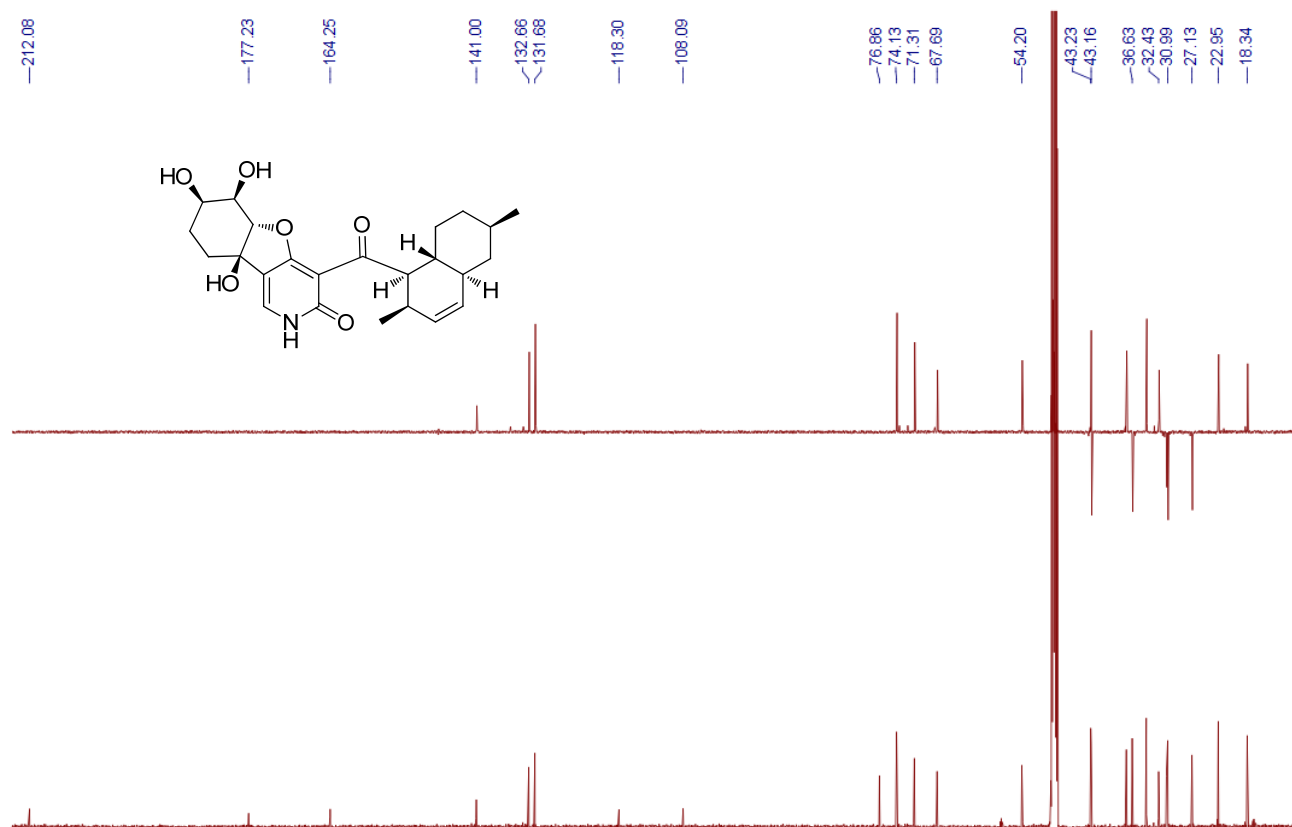


Figure S28. The HSQC spectrum of arthpyrone F (**3**) in CD_3OD

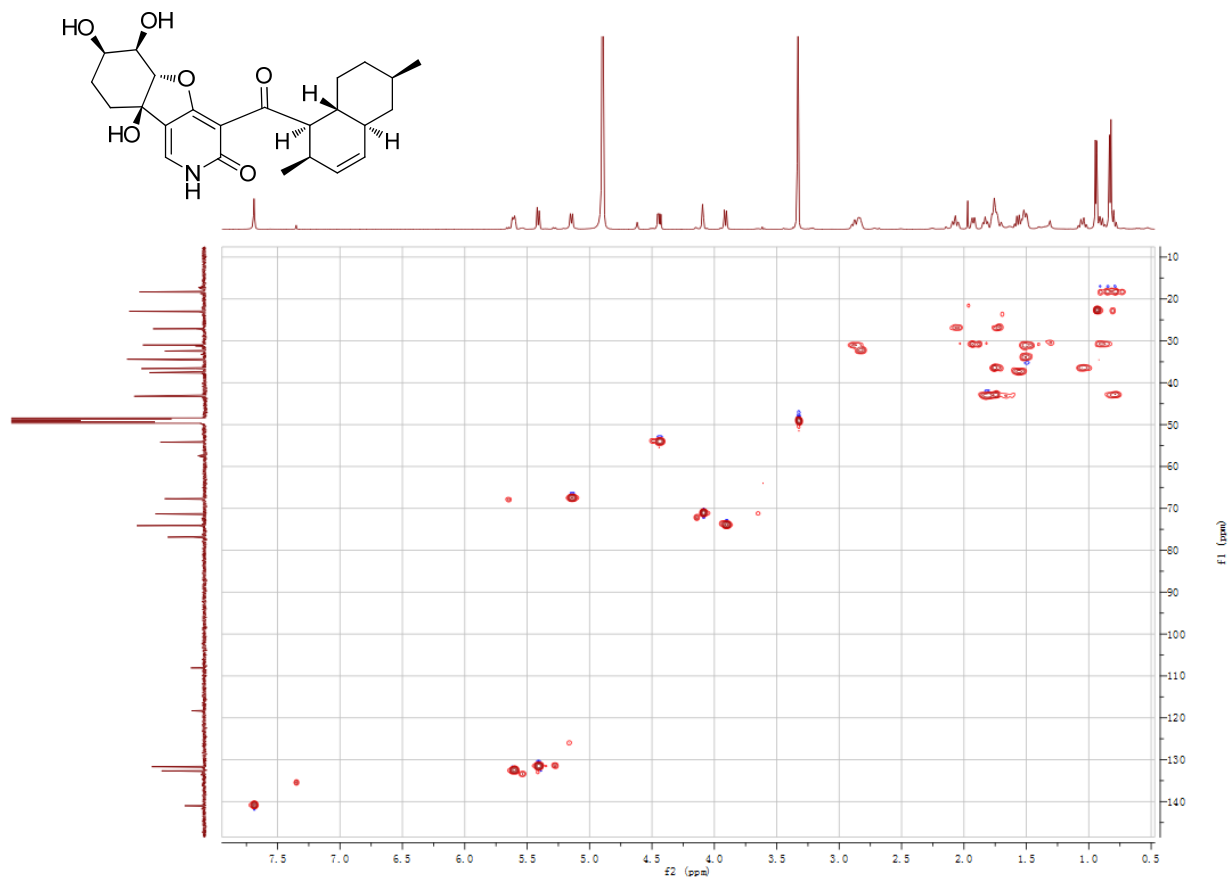


Figure S29. The ^1H - ^1H COSY spectrum of arthpyrone F (**3**) in CD_3OD

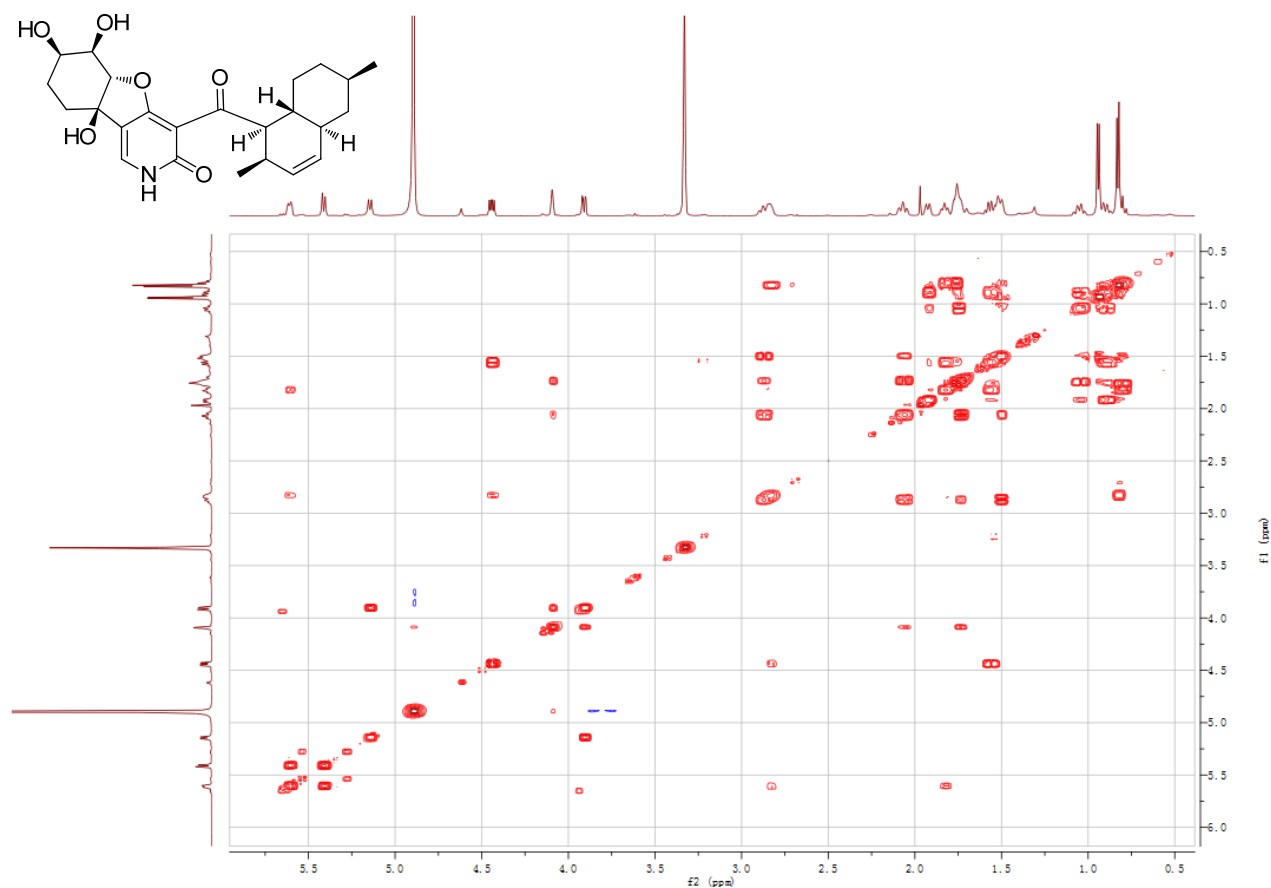


Figure S30. The HMBC spectrum of arthpyrone F (**3**) in CD_3OD

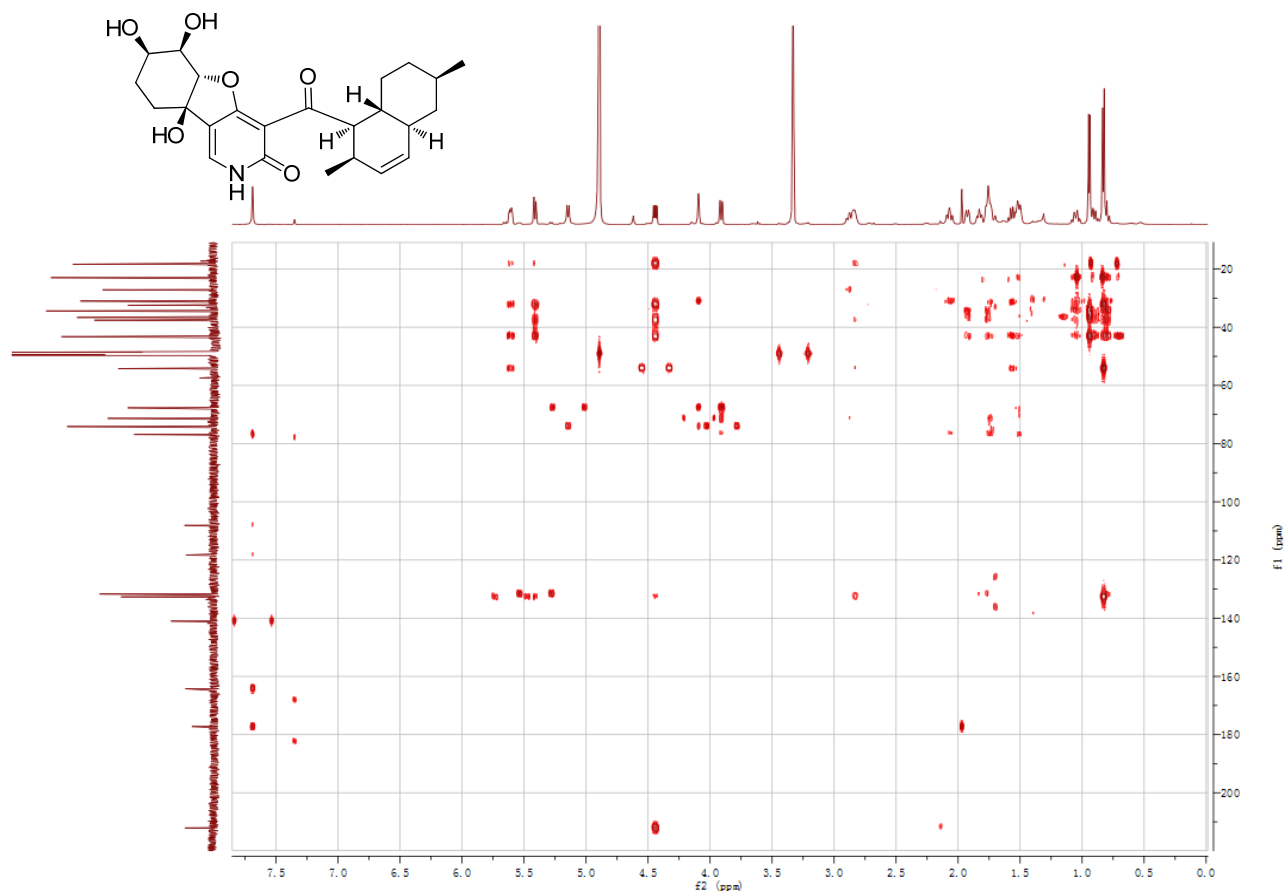


Figure S31. The NOESY spectrum of arthpyrone F (**3**) in CD₃OD

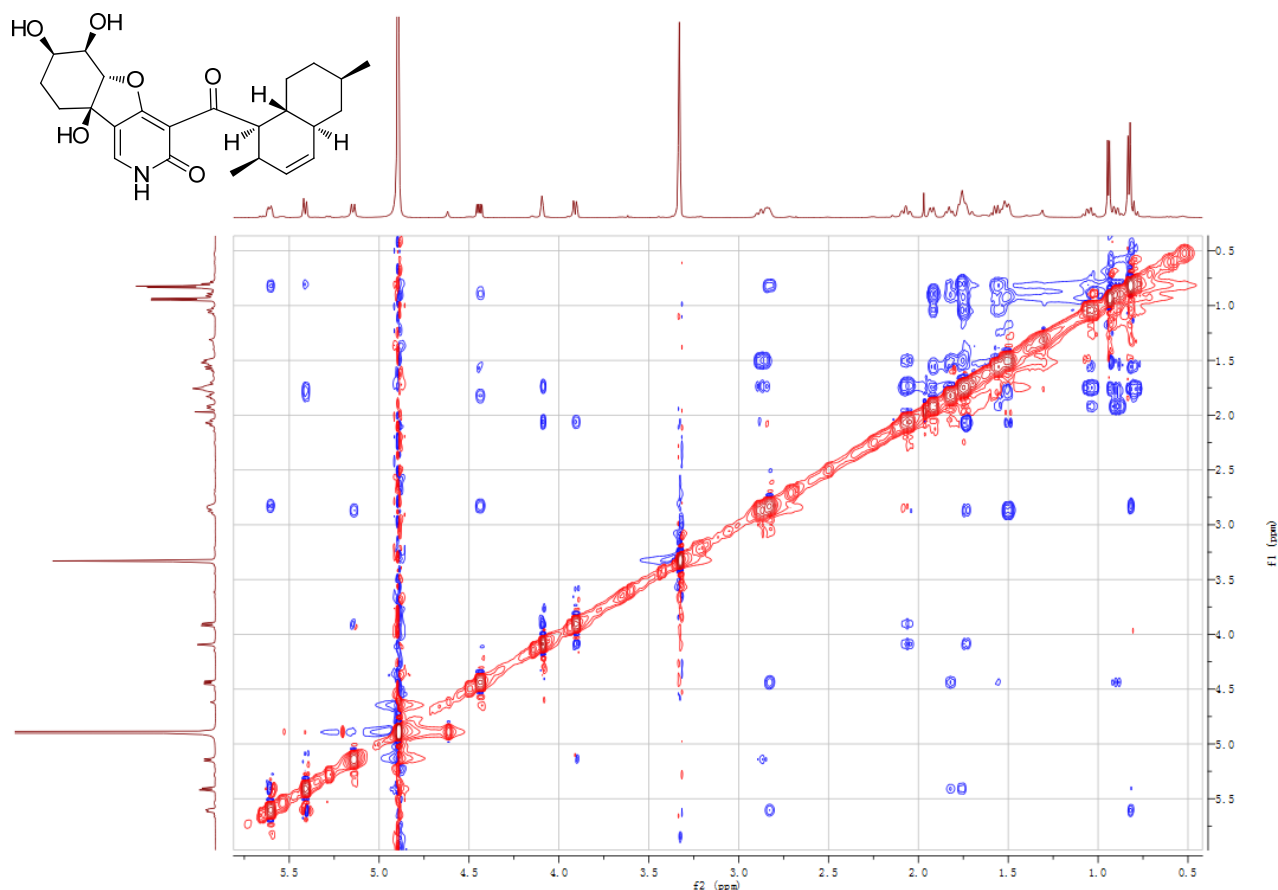


Figure S32. The ¹H-NMR spectrum of arthpyrone F (**3**) in DMSO-*d*₆

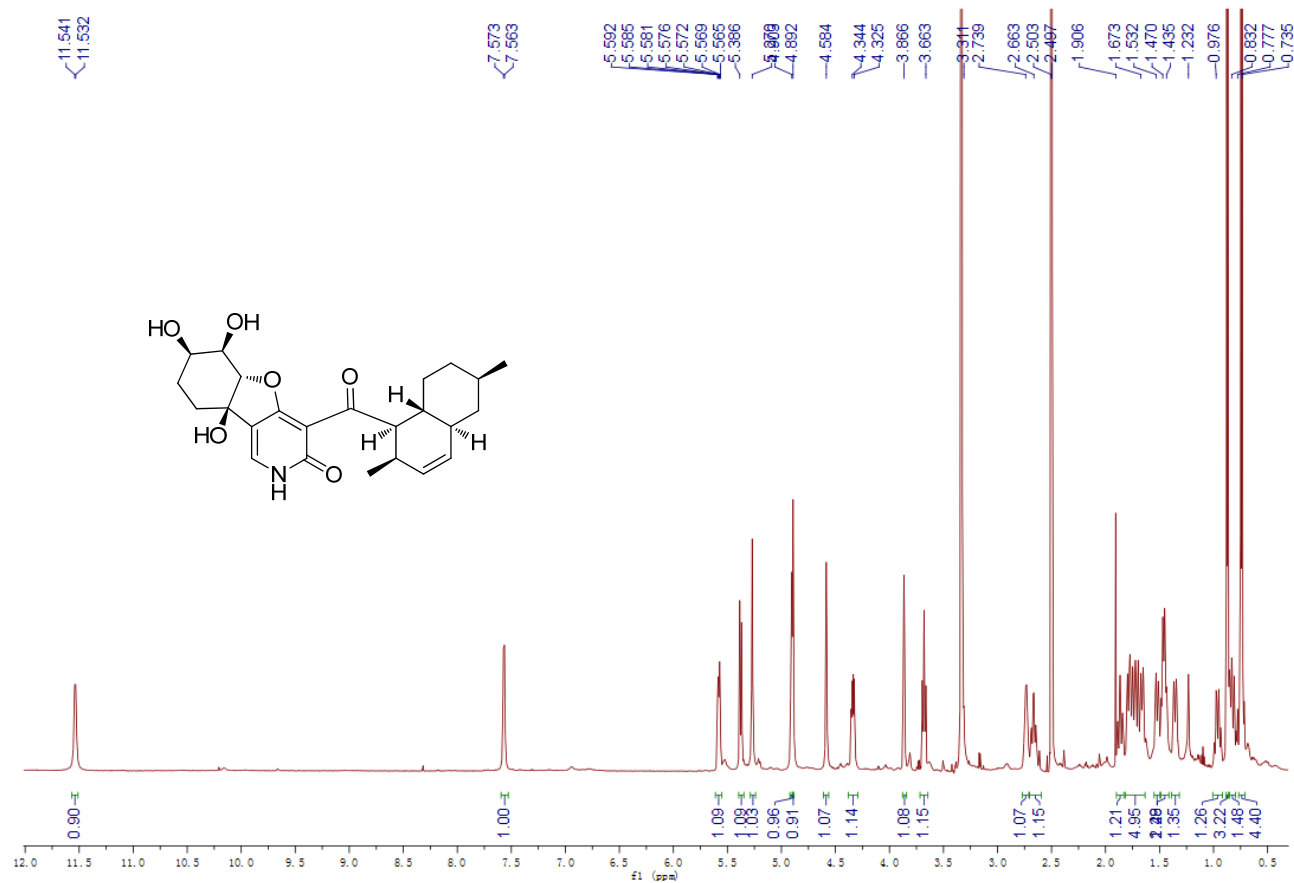


Figure S33. The ^{13}C -NMR spectrum of arthpyrone F (**3**) in $\text{DMSO-}d_6$

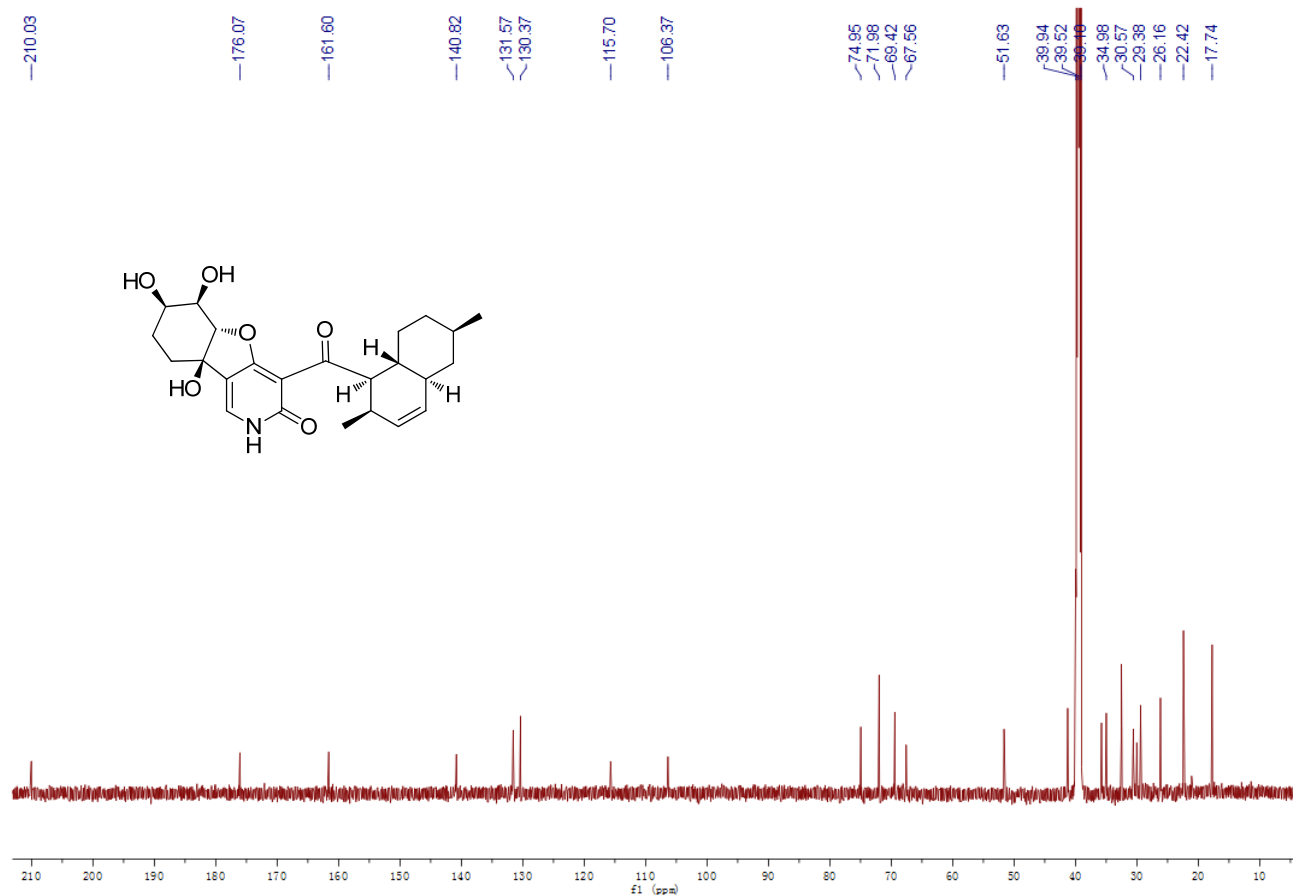


Figure S34. The HSQC spectrum of arthpyrone F (**3**) in $\text{DMSO-}d_6$

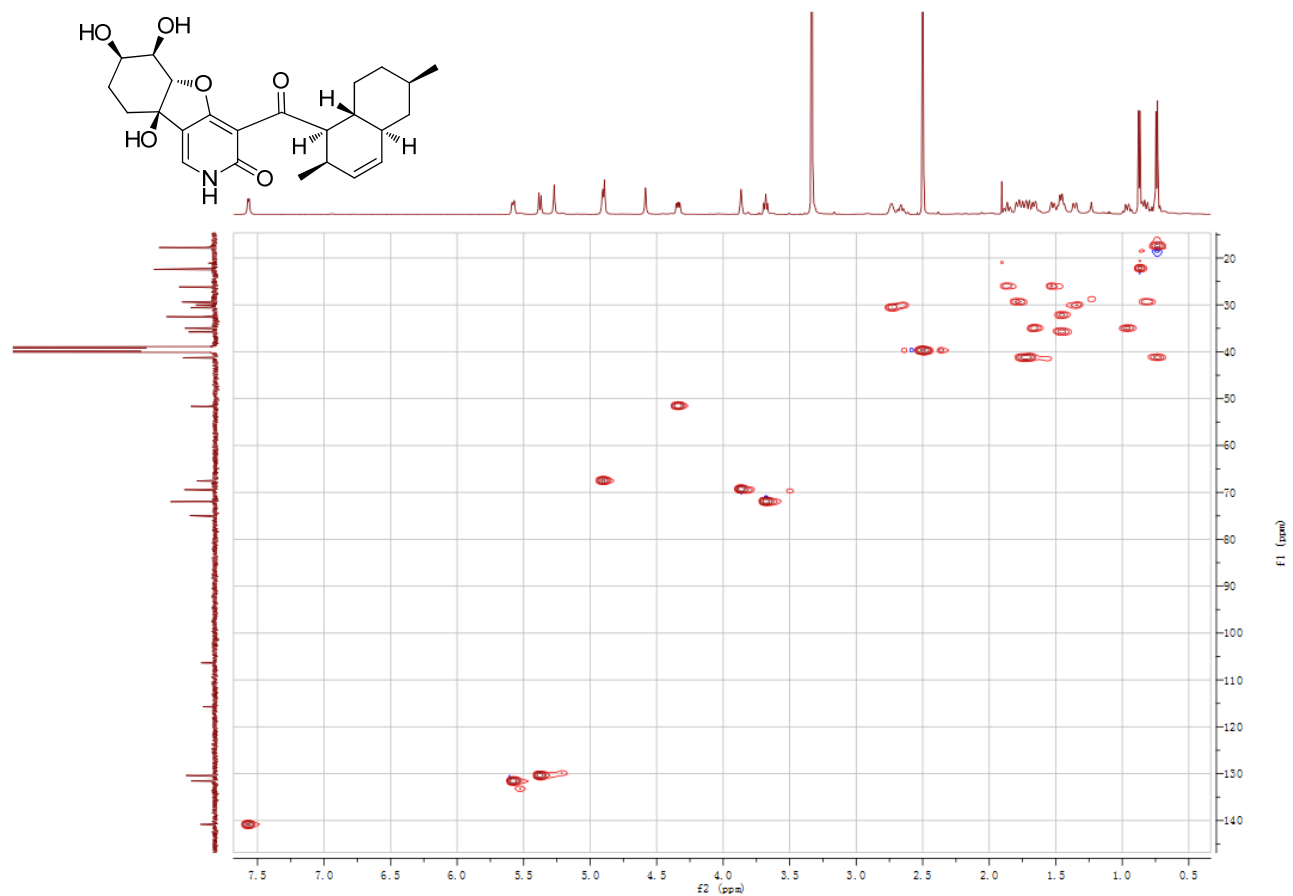


Figure S35. The ^1H - ^1H COSY spectrum of arthpyrone F (**3**) in $\text{DMSO}-d_6$

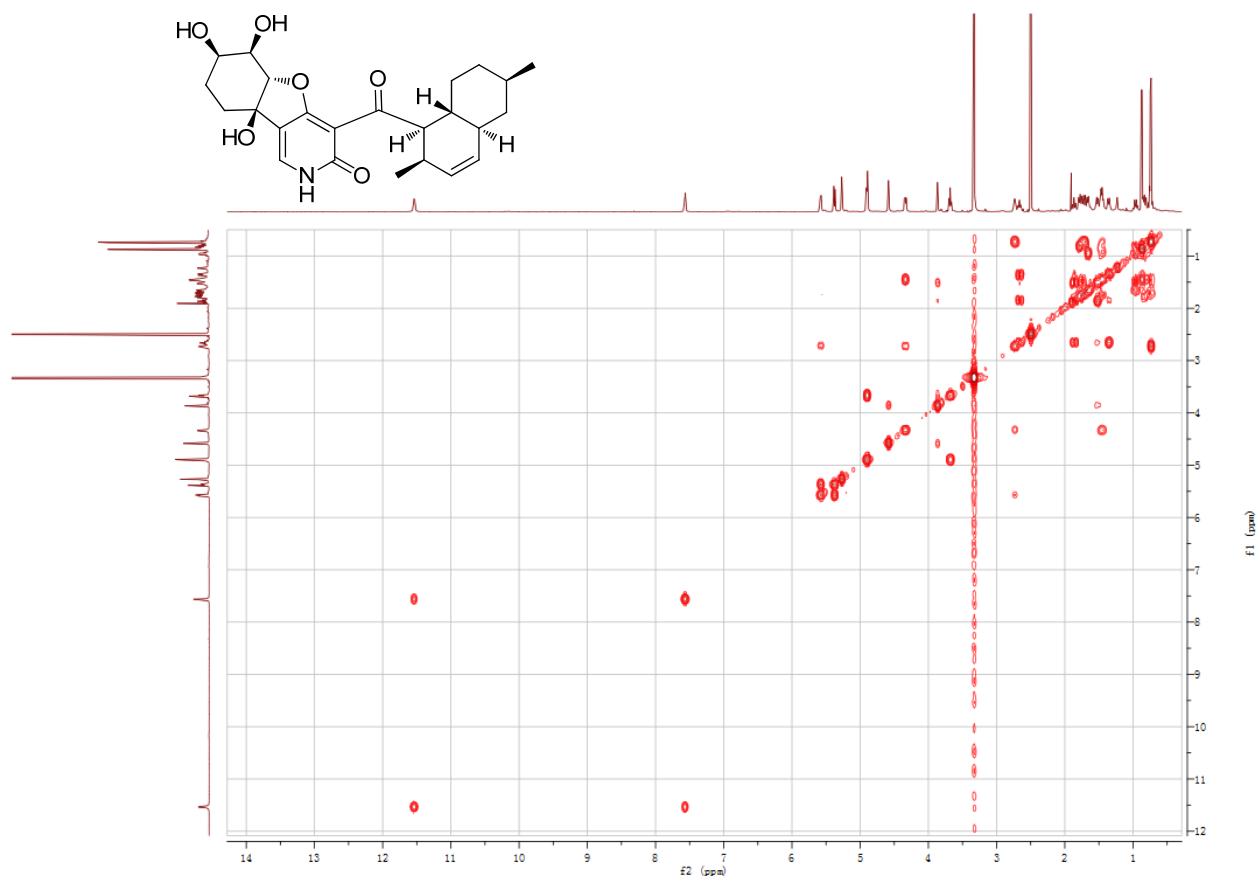


Figure S36. The HMBC spectrum of arthpyrone F (**3**) in $\text{DMSO}-d_6$

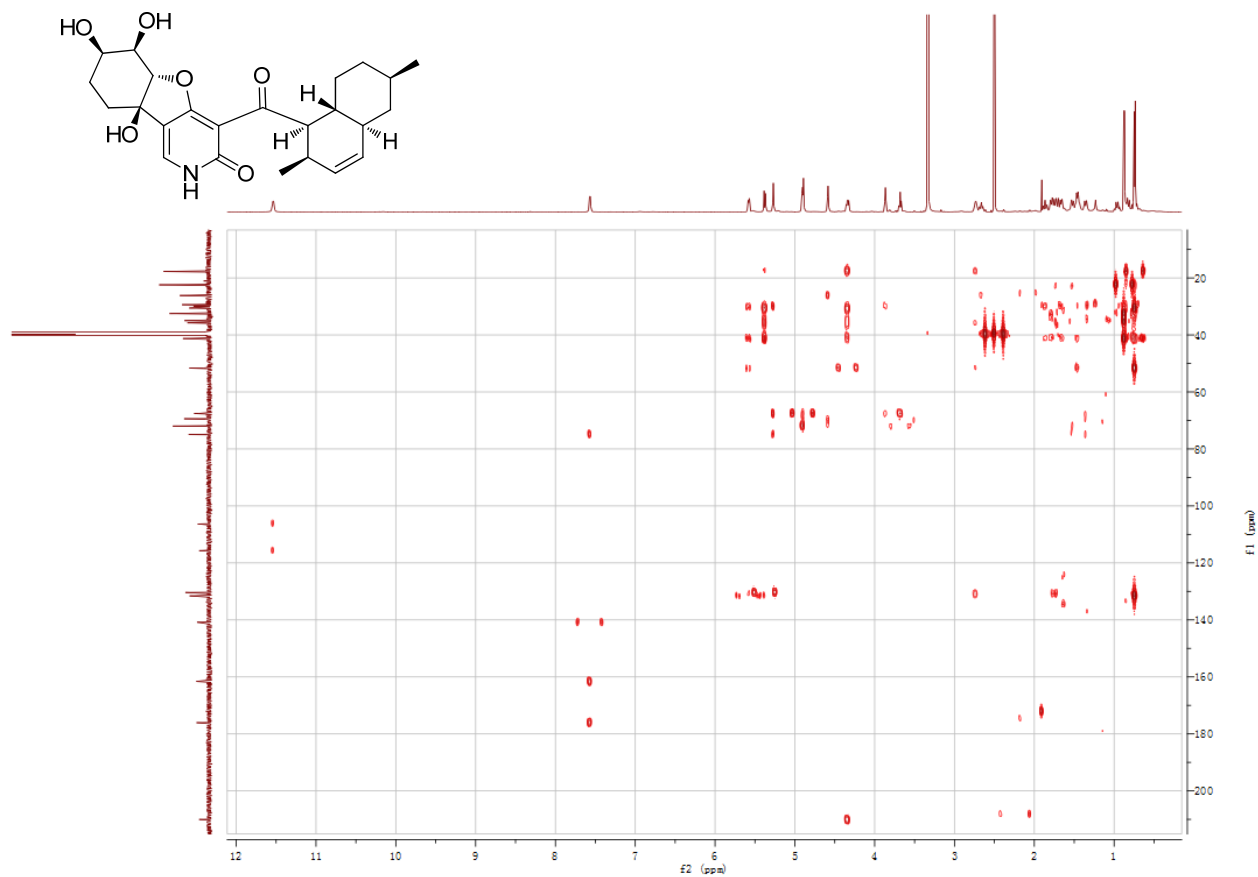


Figure S37. The NOESY spectrum of arthpyrone F (**3**) in DMSO- d_6

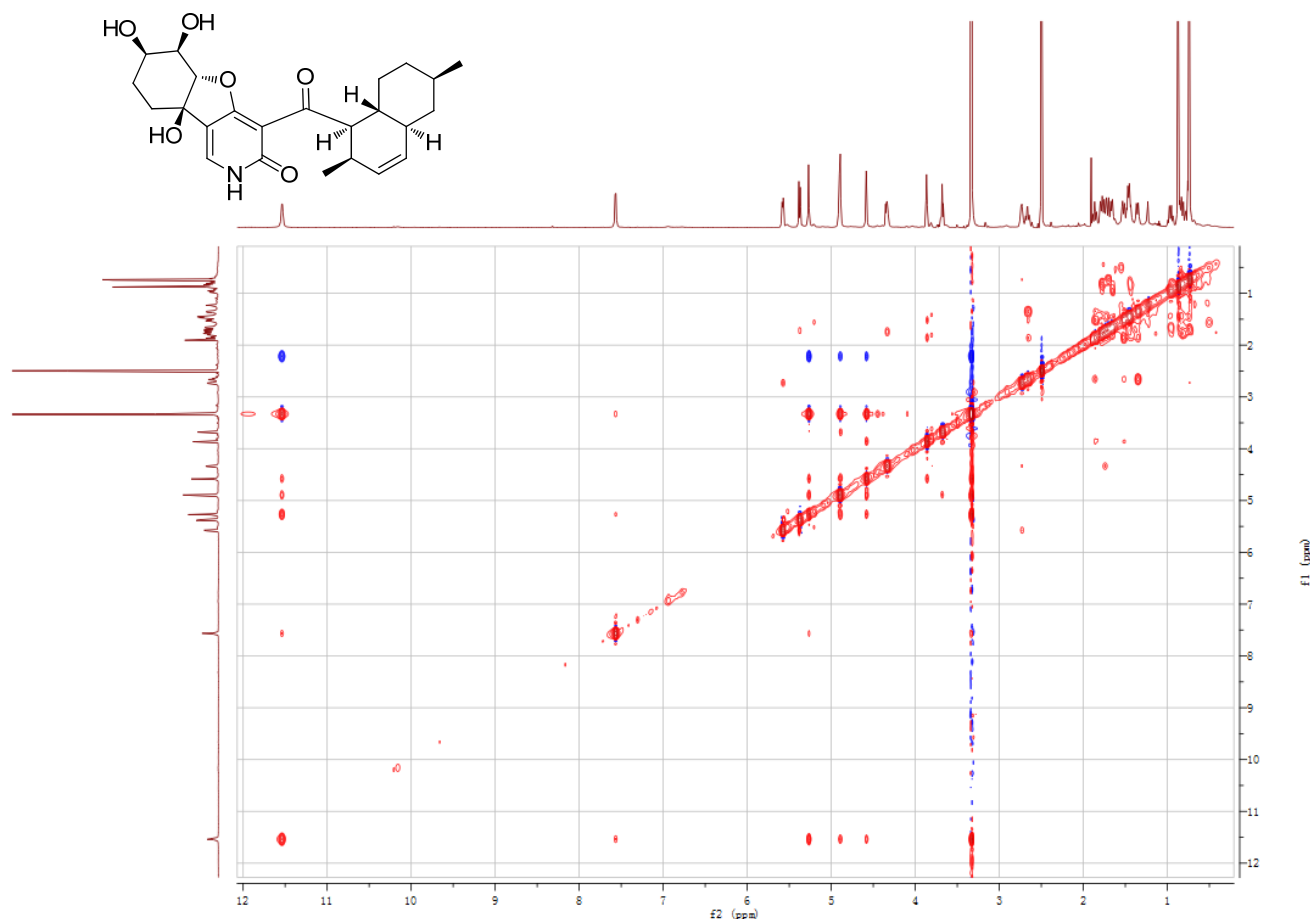


Figure S38. The (-)-HRESIMS spectrum of arthpyrone F (**3**)

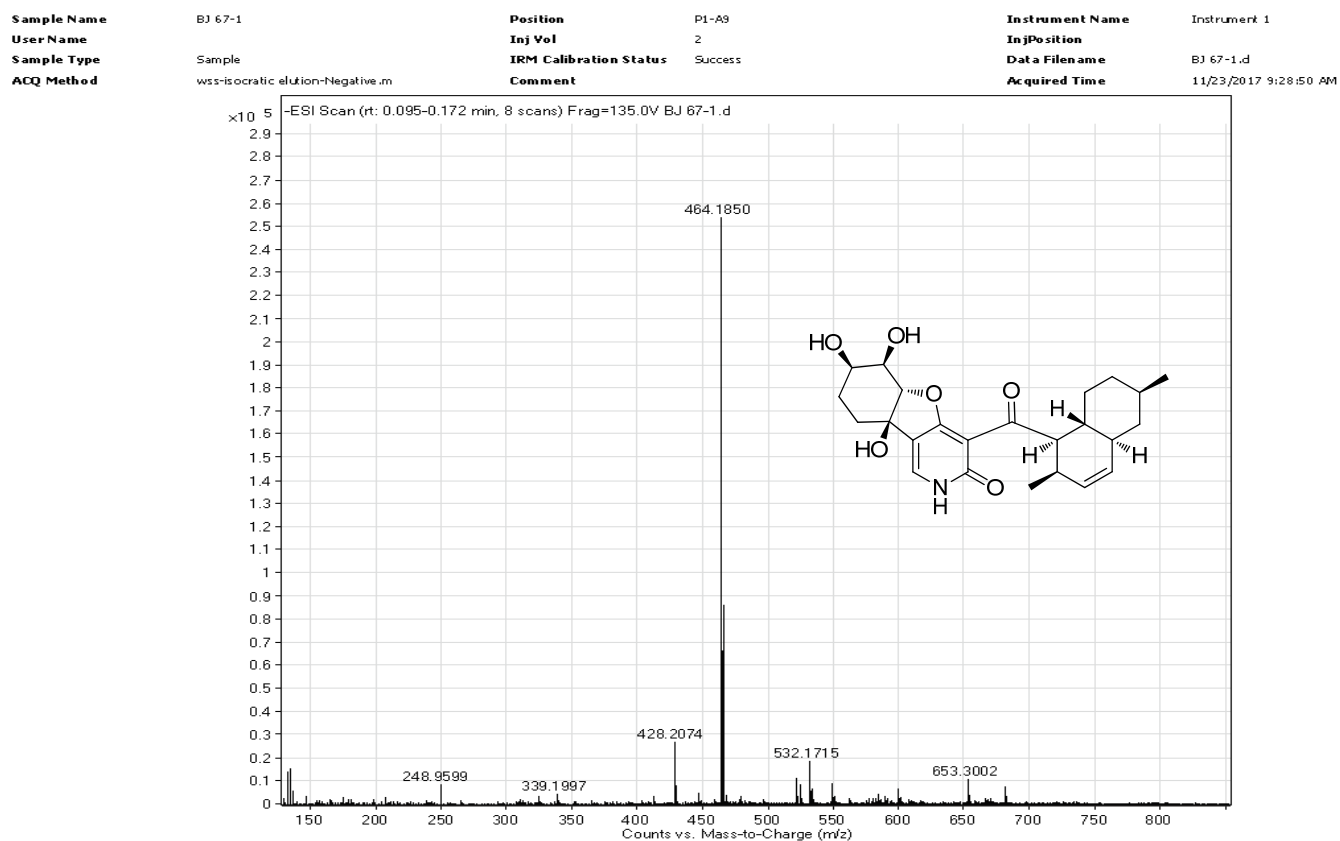


Figure S39. The ^1H -NMR spectrum of arthpyrone G (**4**) in CD_3OD

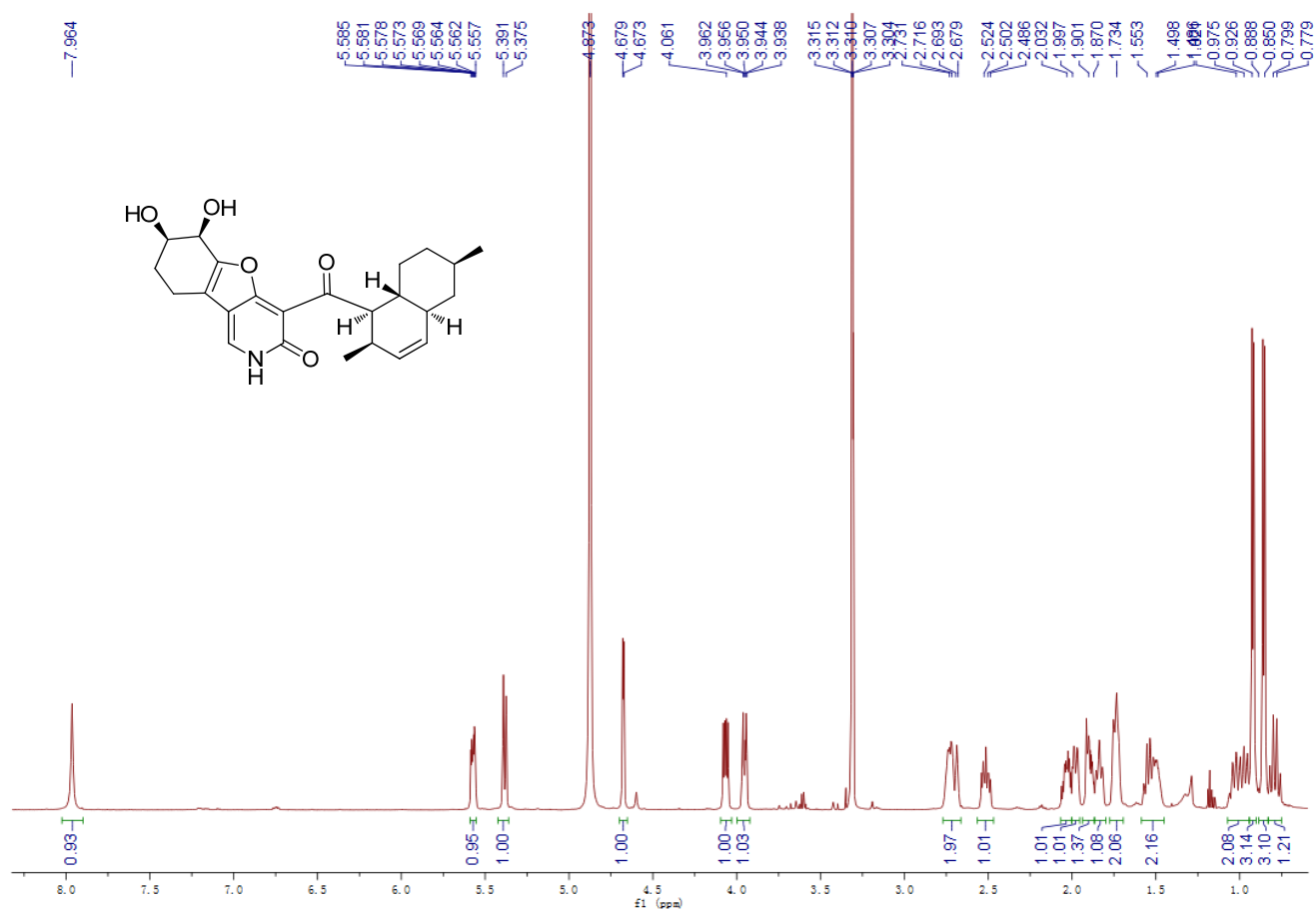


Figure S40. The ^{13}C -NMR spectrum of arthpyrone G (**4**) in CD_3OD

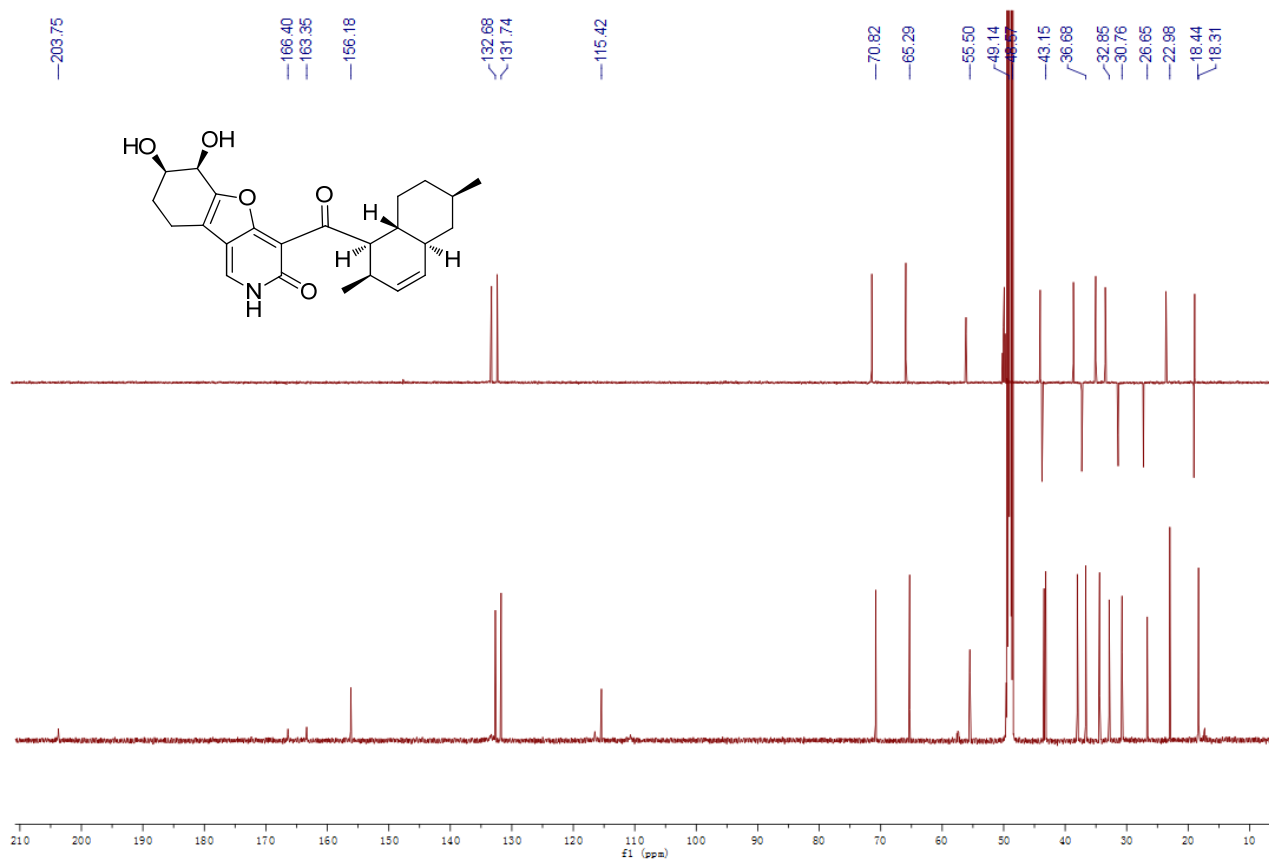


Figure S41. The HSQC spectrum of arthpyrone G (**4**) in CD₃OD

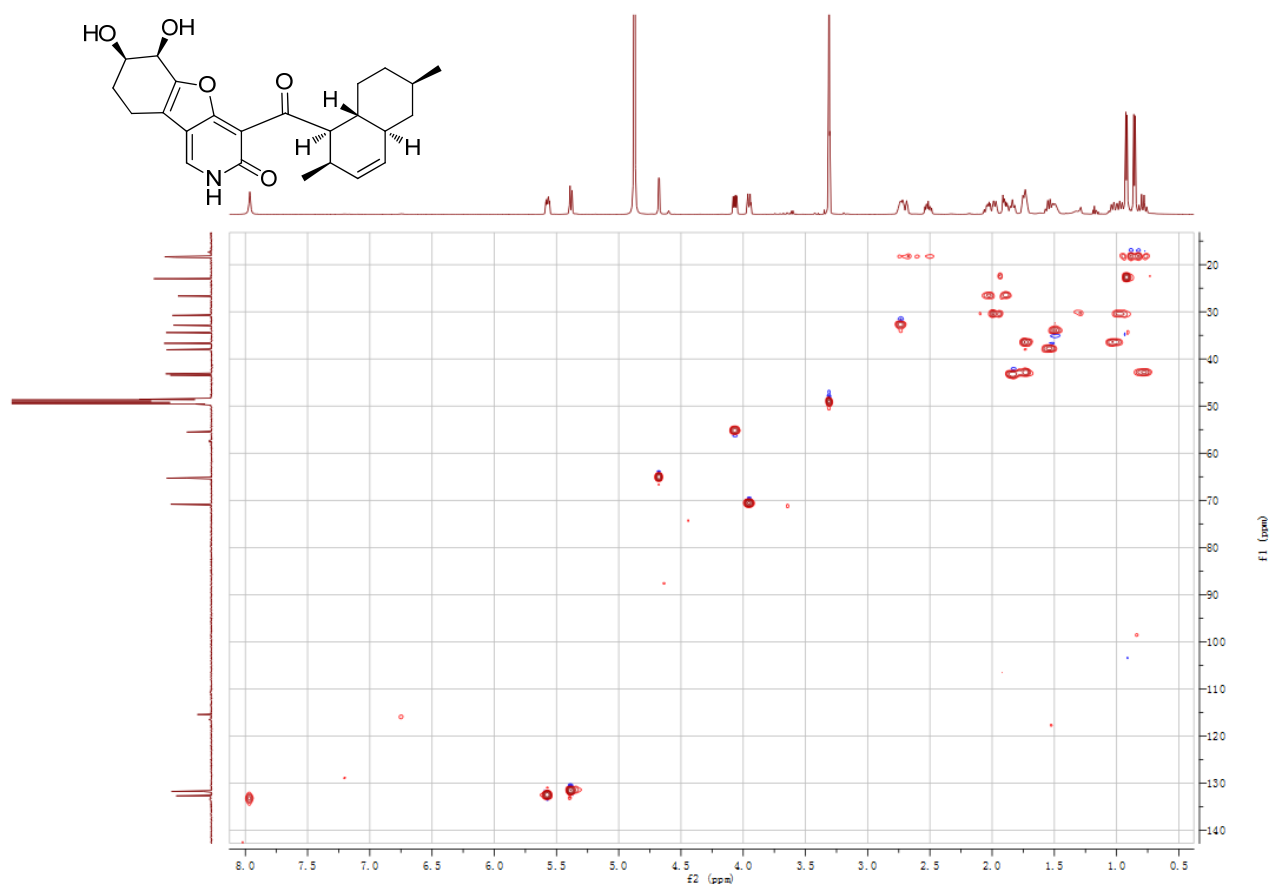


Figure S42. The ¹H-¹H COSY spectrum of arthpyrone G (**4**) in CD₃OD

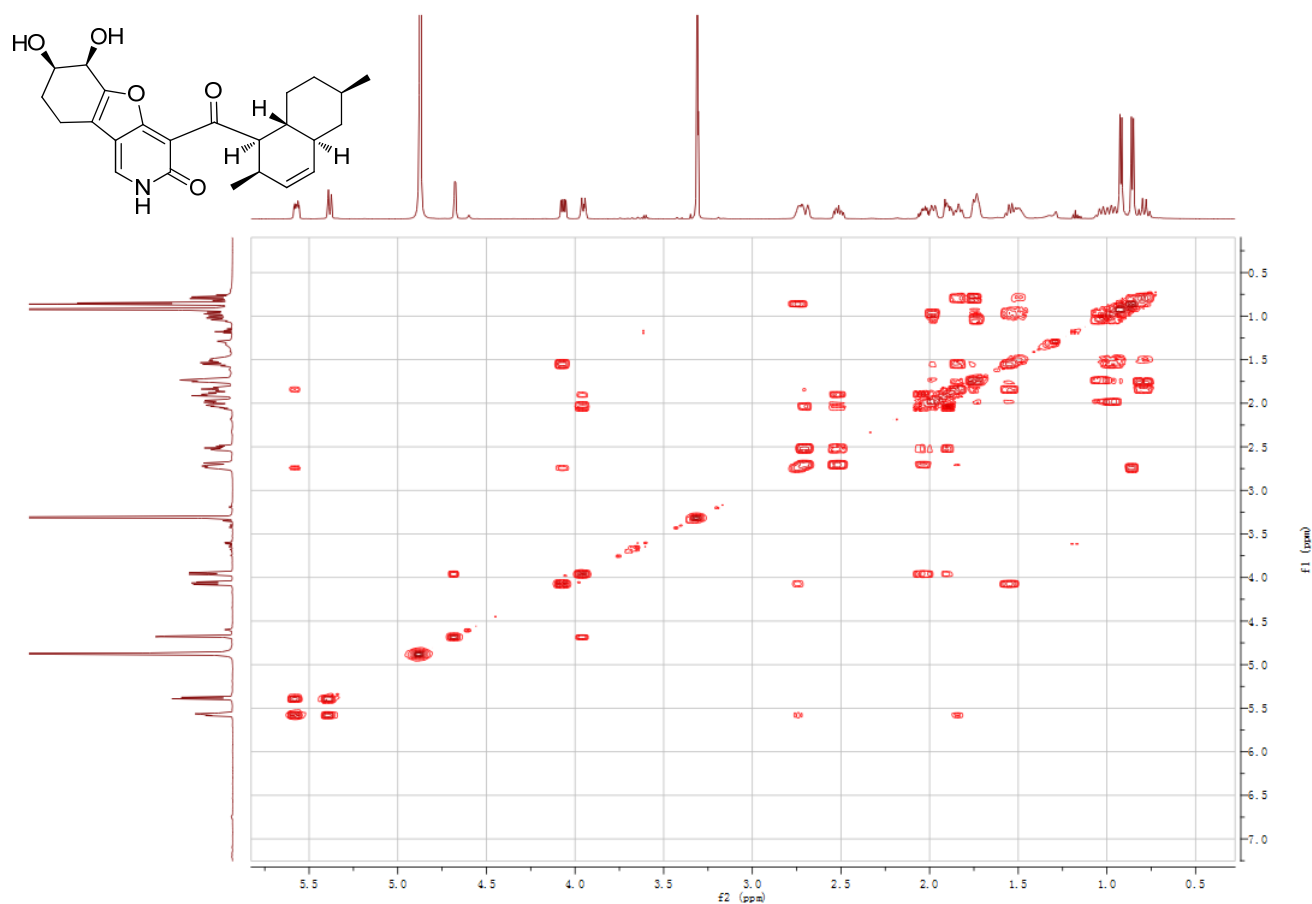


Figure S43. The HMBC spectrum of arthpyrone G (**4**) in CD₃OD

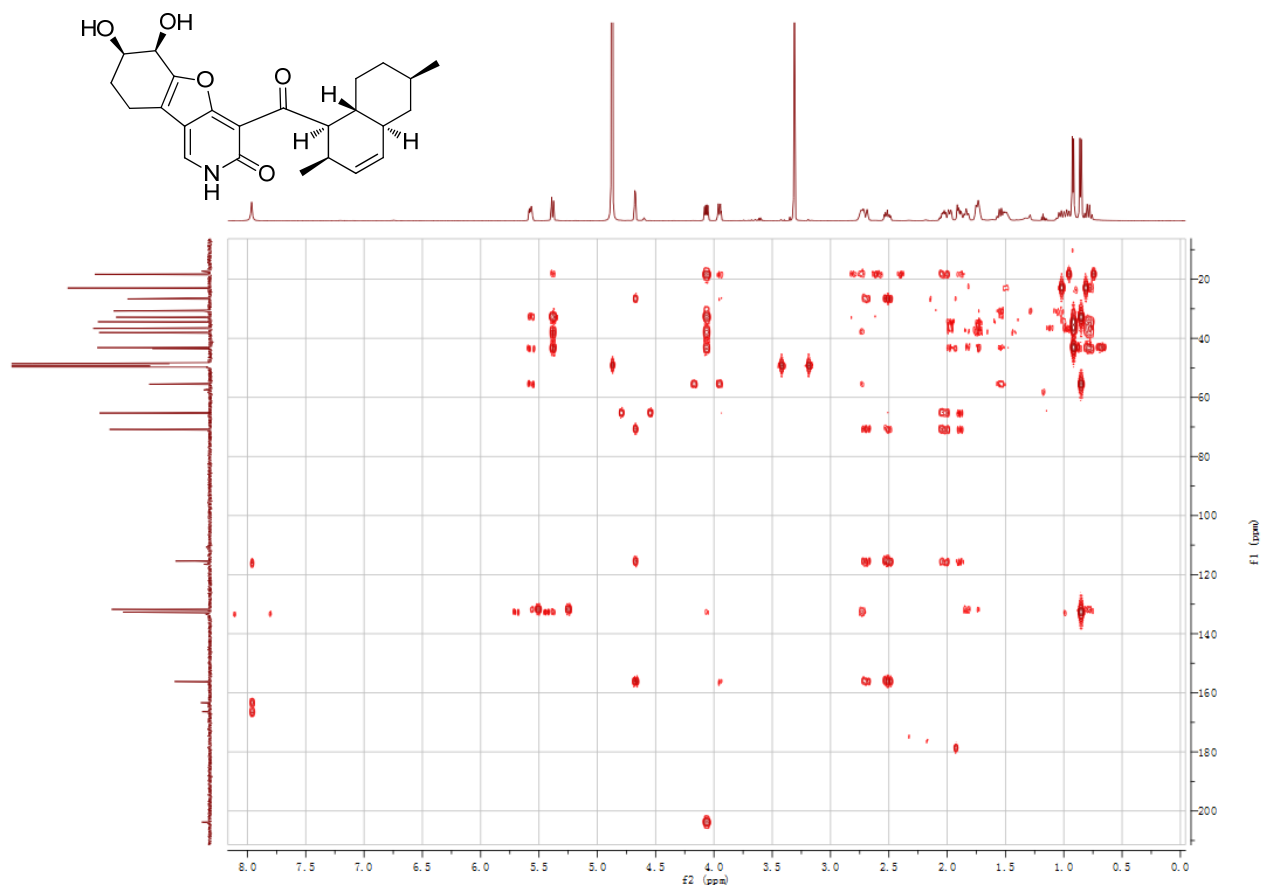


Figure S44. The NOESY spectrum of arthpyrone G (**4**) in CD₃OD

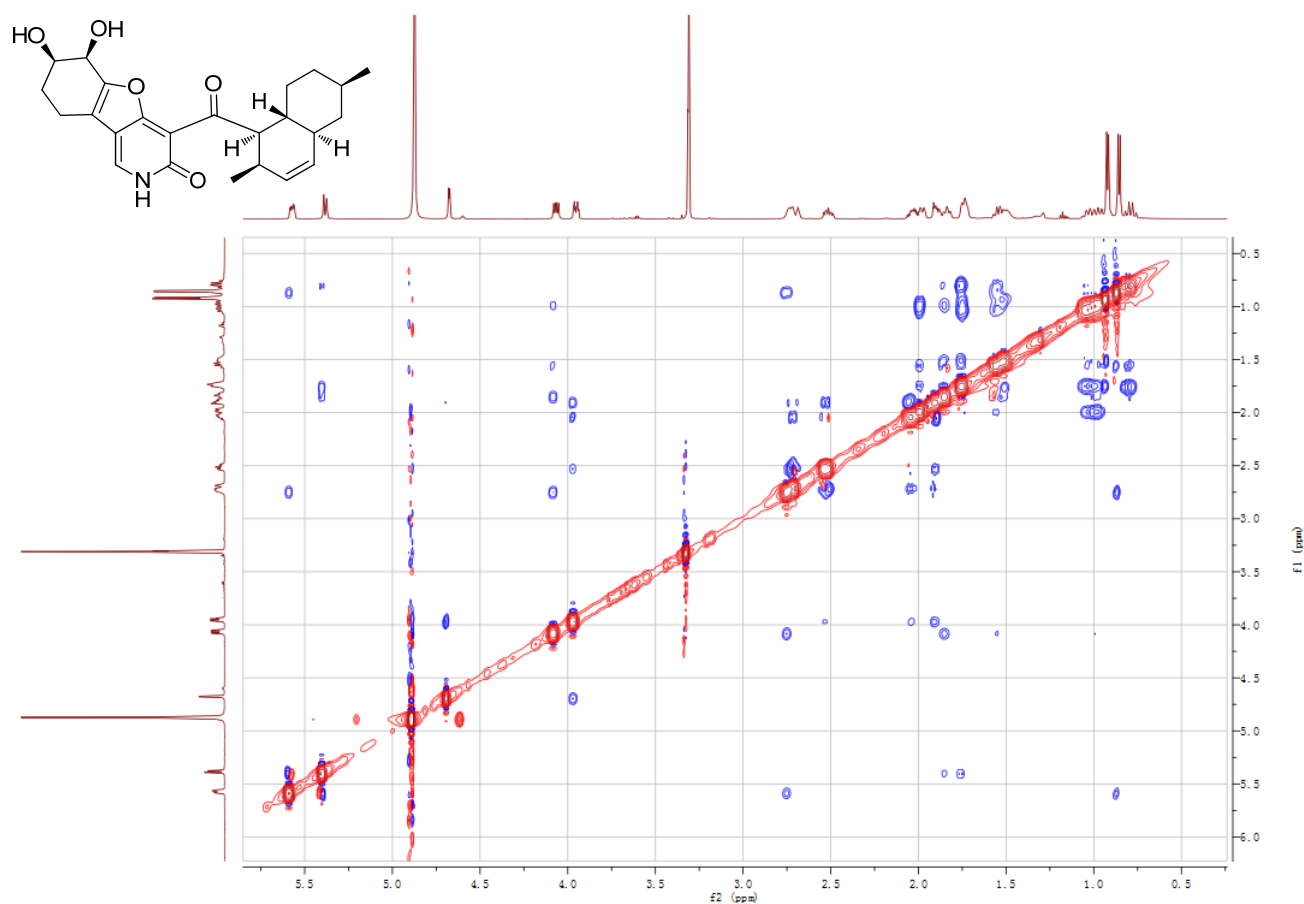


Figure S45. The (-)-HRESIMS spectrum of arthpyrone G (**4**)

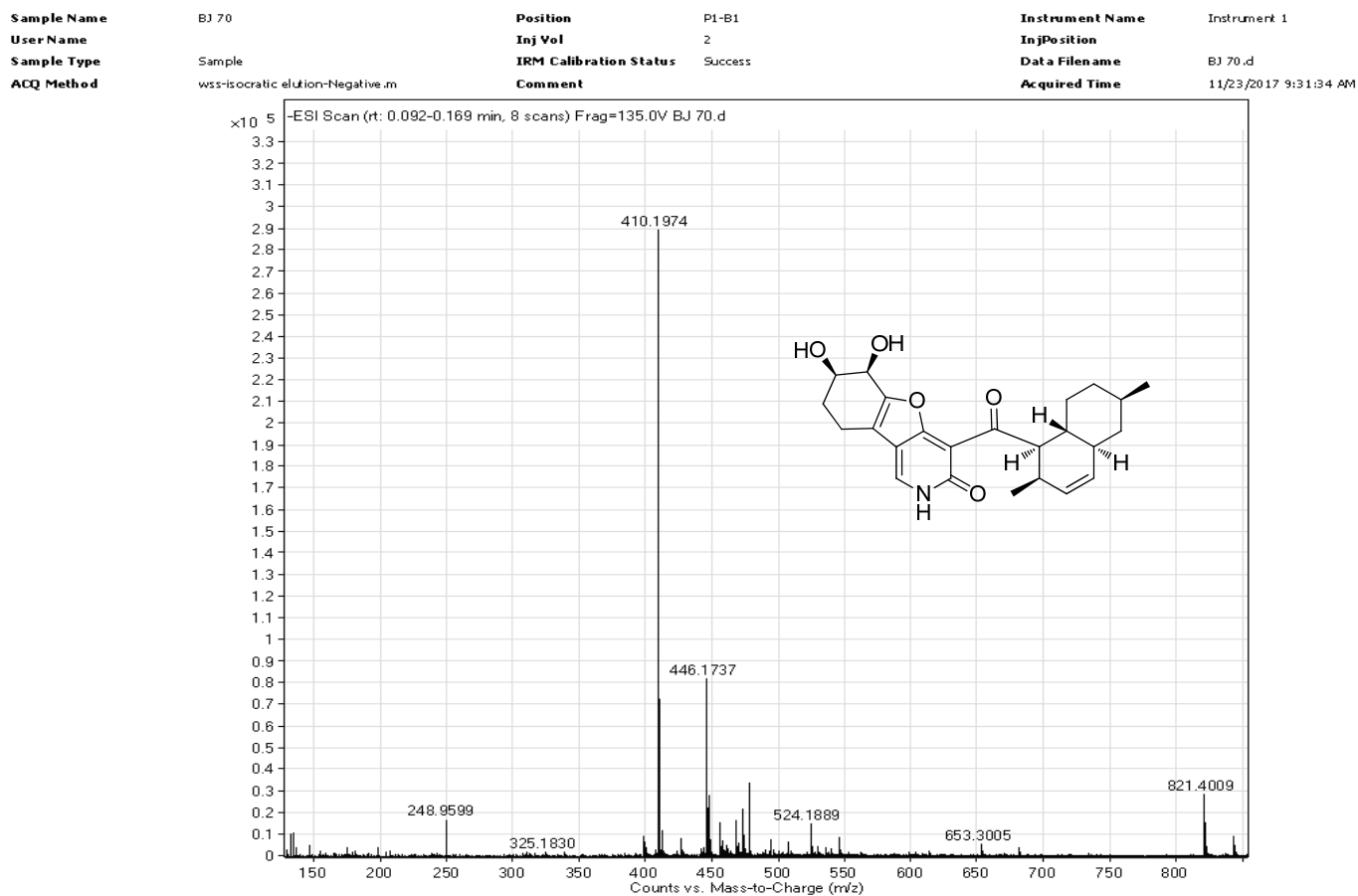


Figure S46. The ^1H -NMR spectrum of arthpyrone H (**5**) in CD_3OD

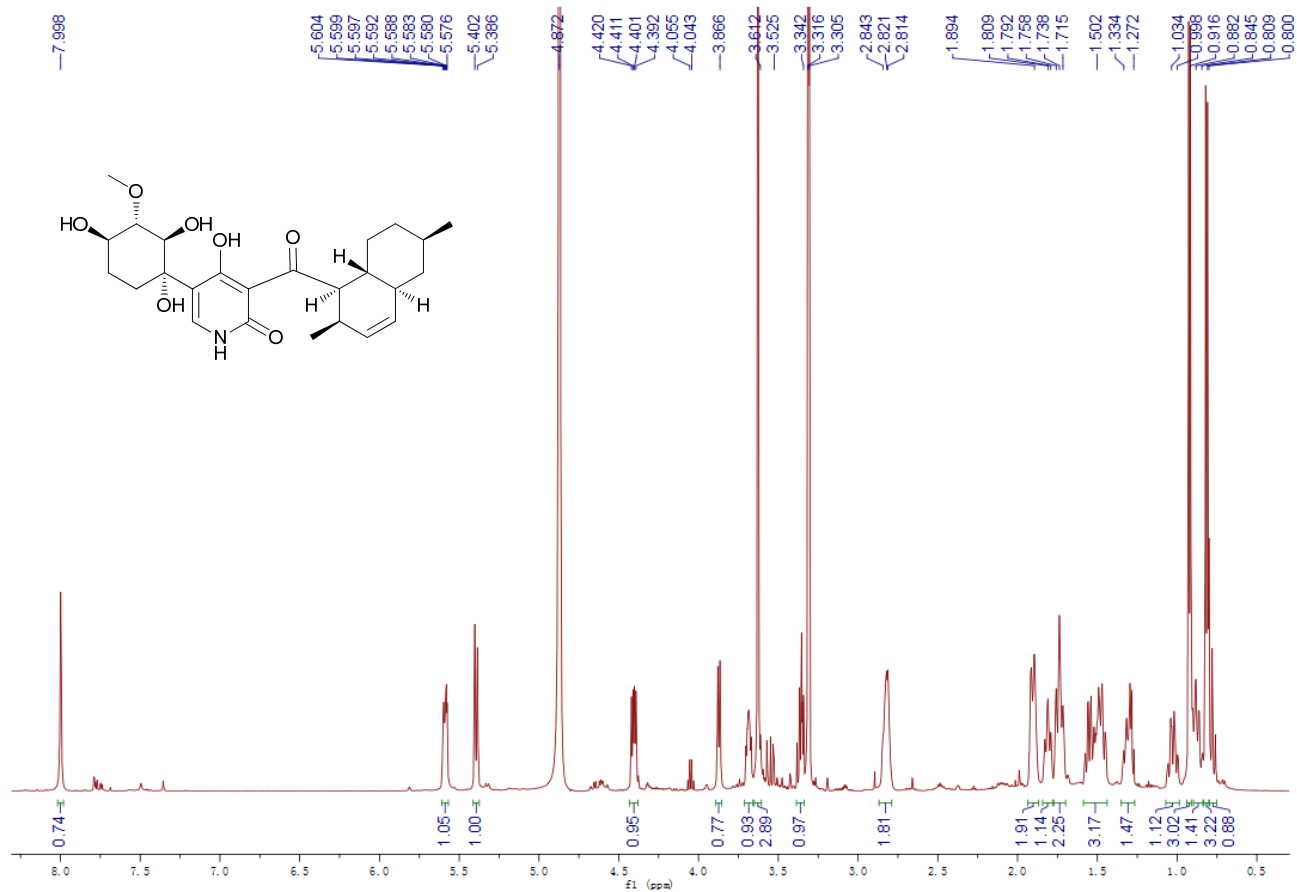


Figure S47. The ^{13}C -NMR spectrum of arthpyrone H (**5**) in CD_3OD

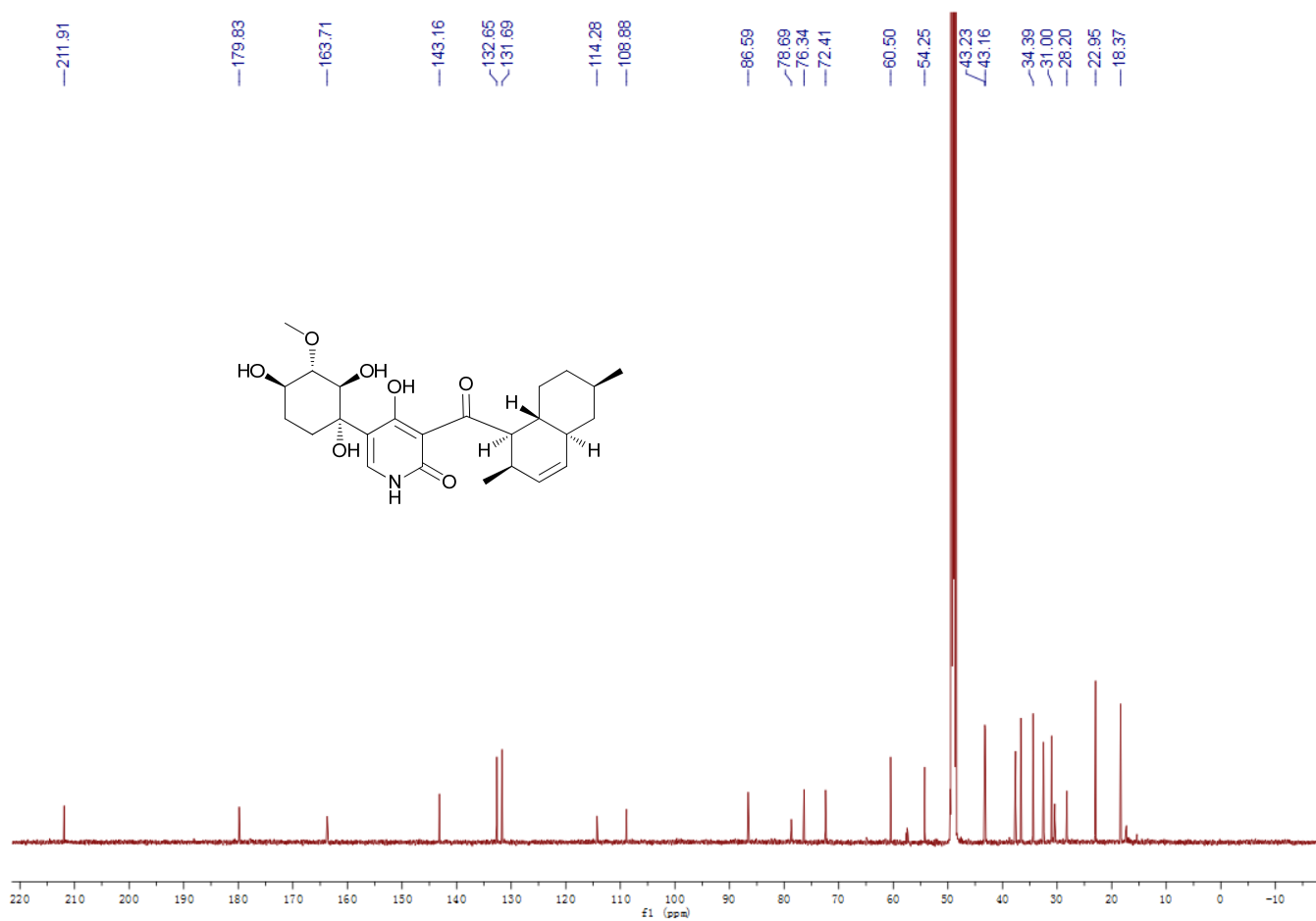


Figure S48. The DEPT 135 spectrum of arthpyrone H (**5**) in CD₃OD

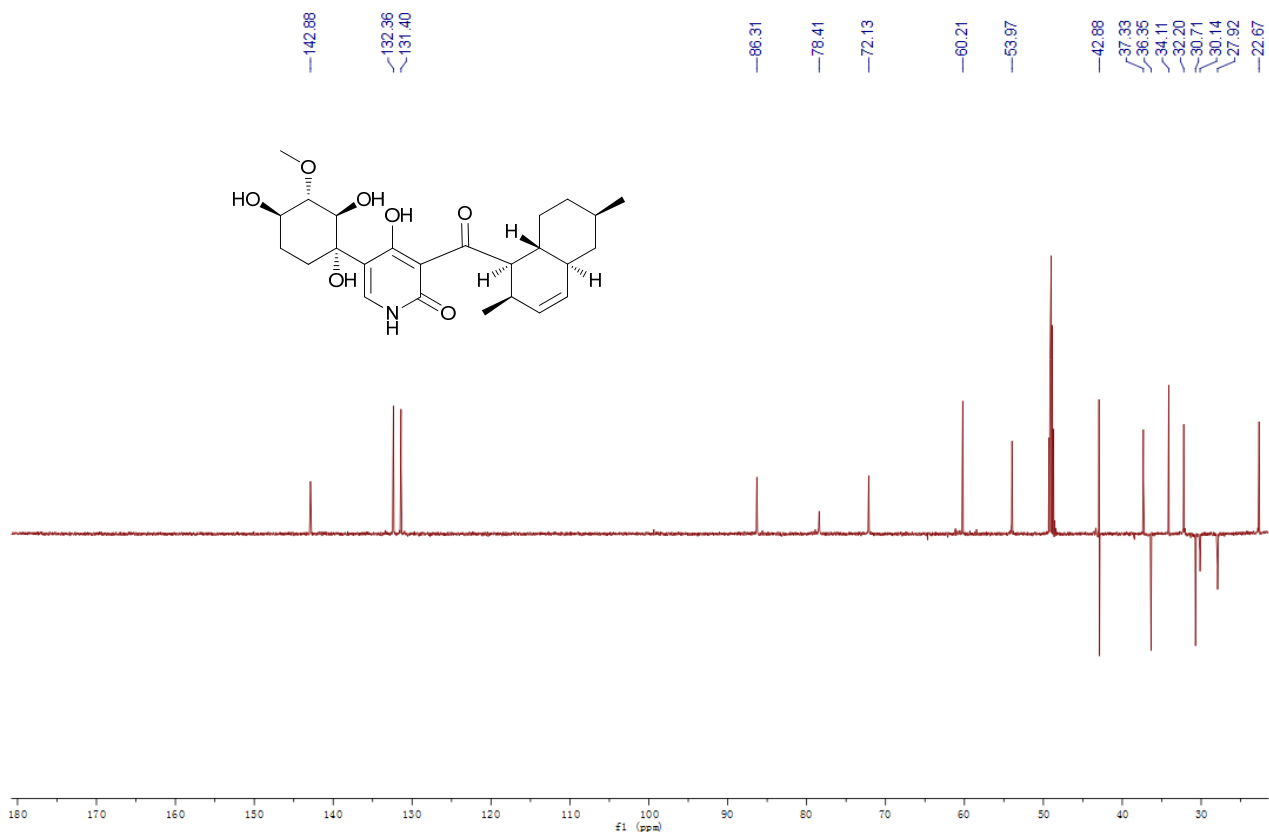


Figure S49. The HSQC spectrum of arthpyrone H (**5**) in CD₃OD

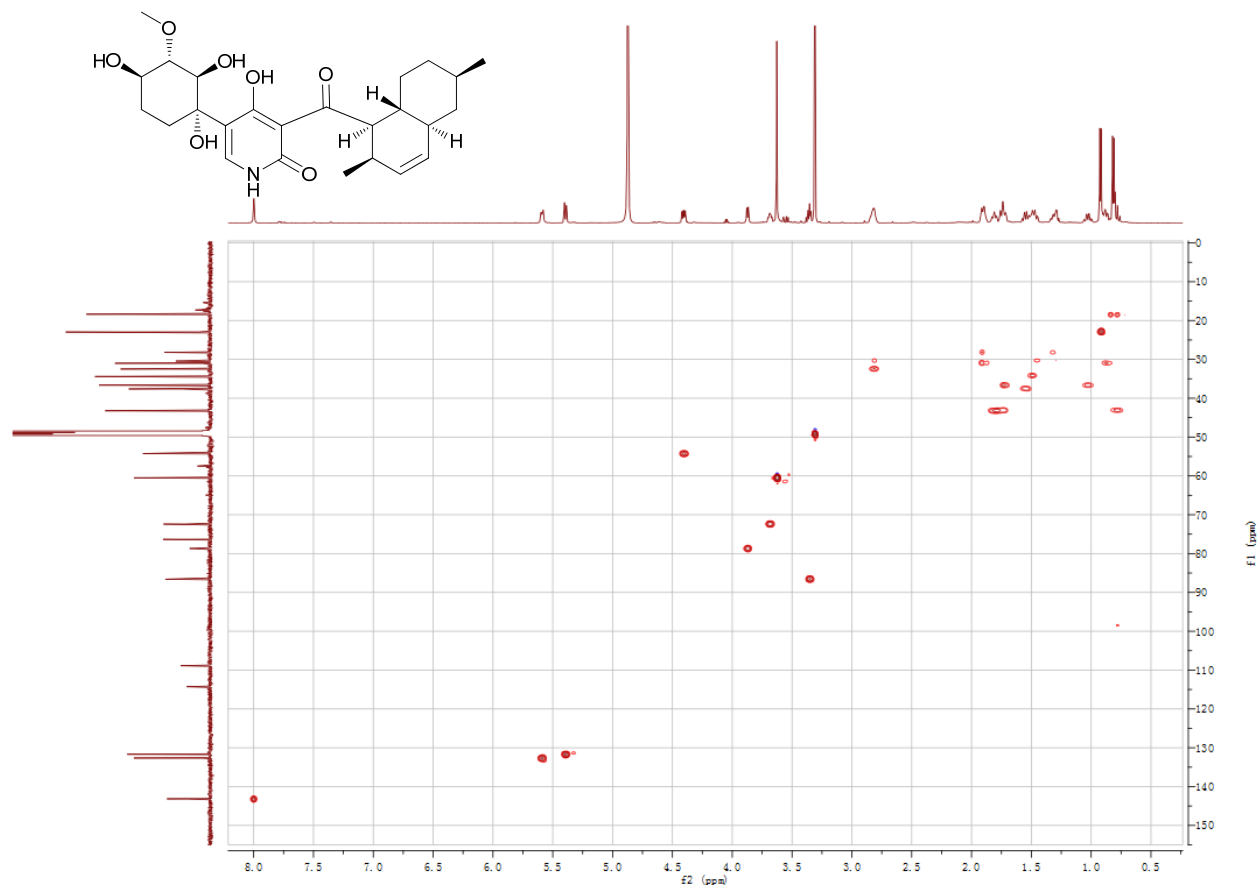


Figure S50. The ¹H-¹H COSY spectrum of arthpyrone H (**5**) in CD₃OD

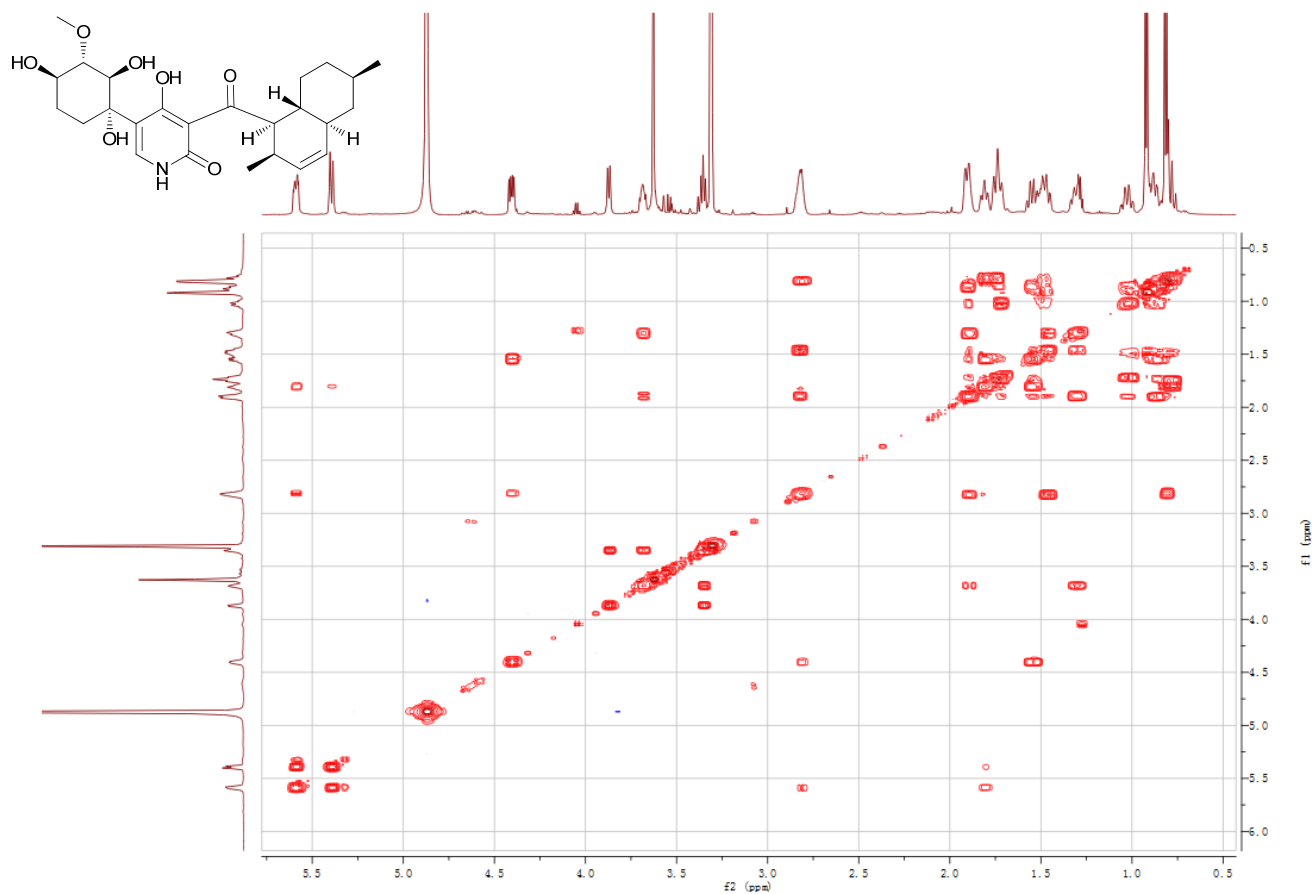


Figure S51. The HMBC spectrum of arthpyrone H (**5**) in CD₃OD

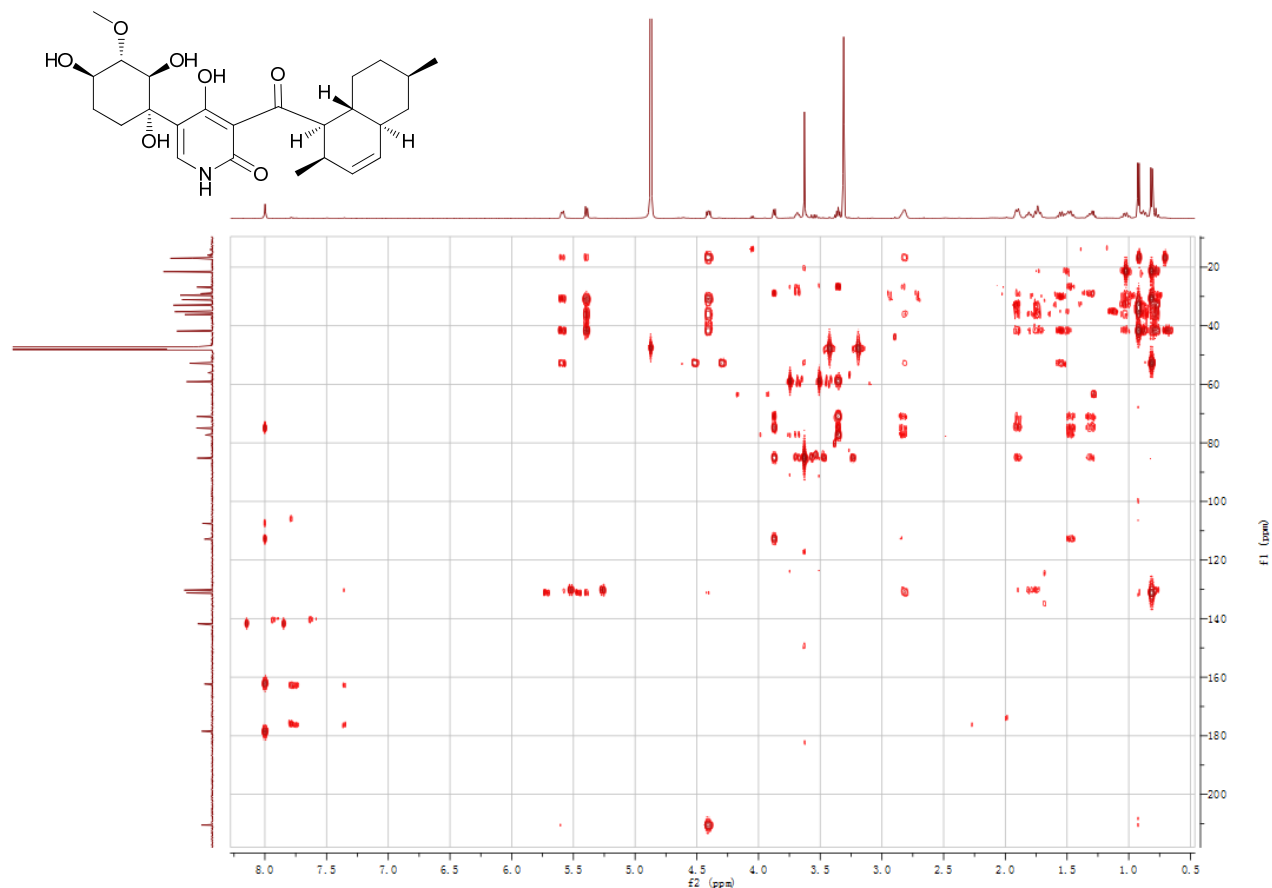


Figure S52. The NOESY spectrum of arthpyrone H (**5**) in CD₃OD

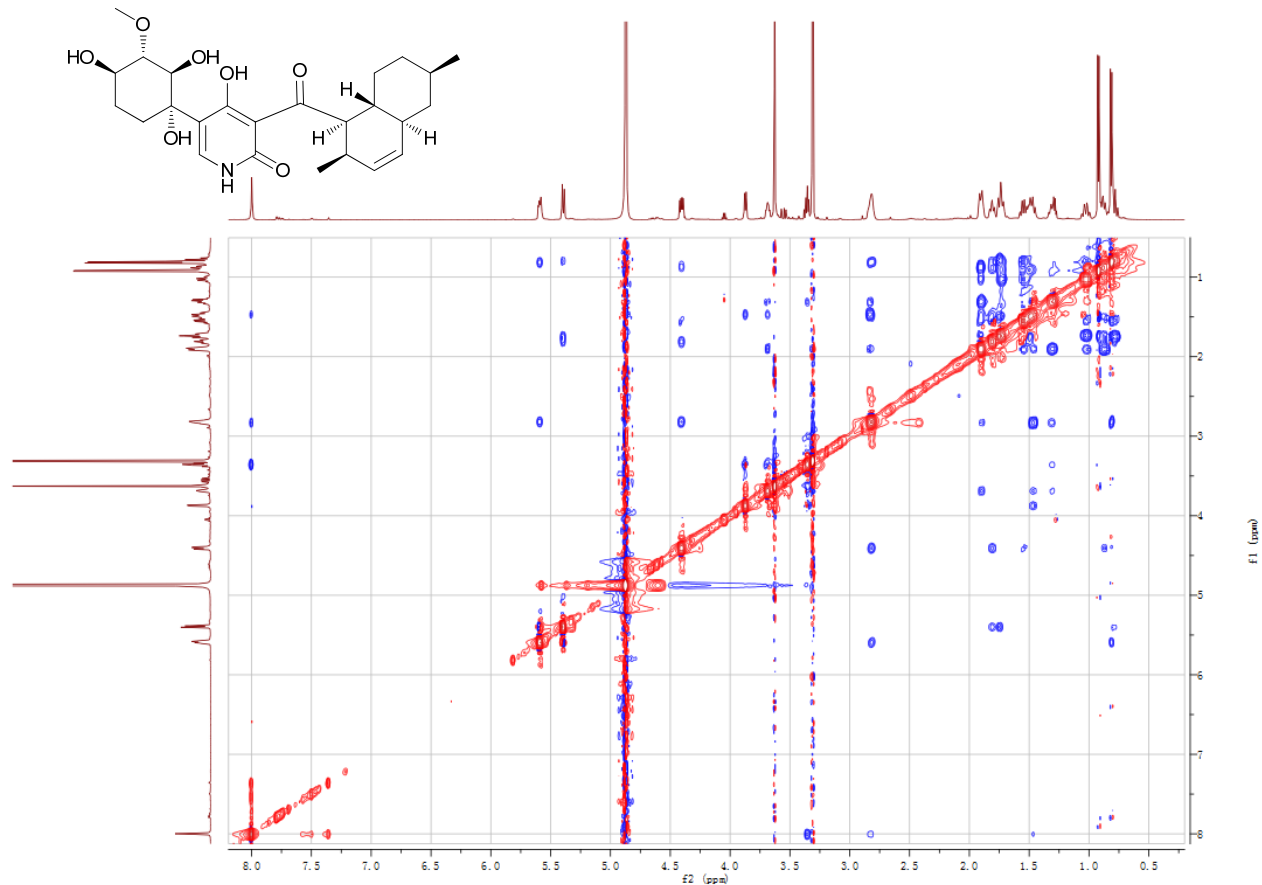


Figure S53. The (-)-HRESIMS spectrum of arthpyrone H (5)

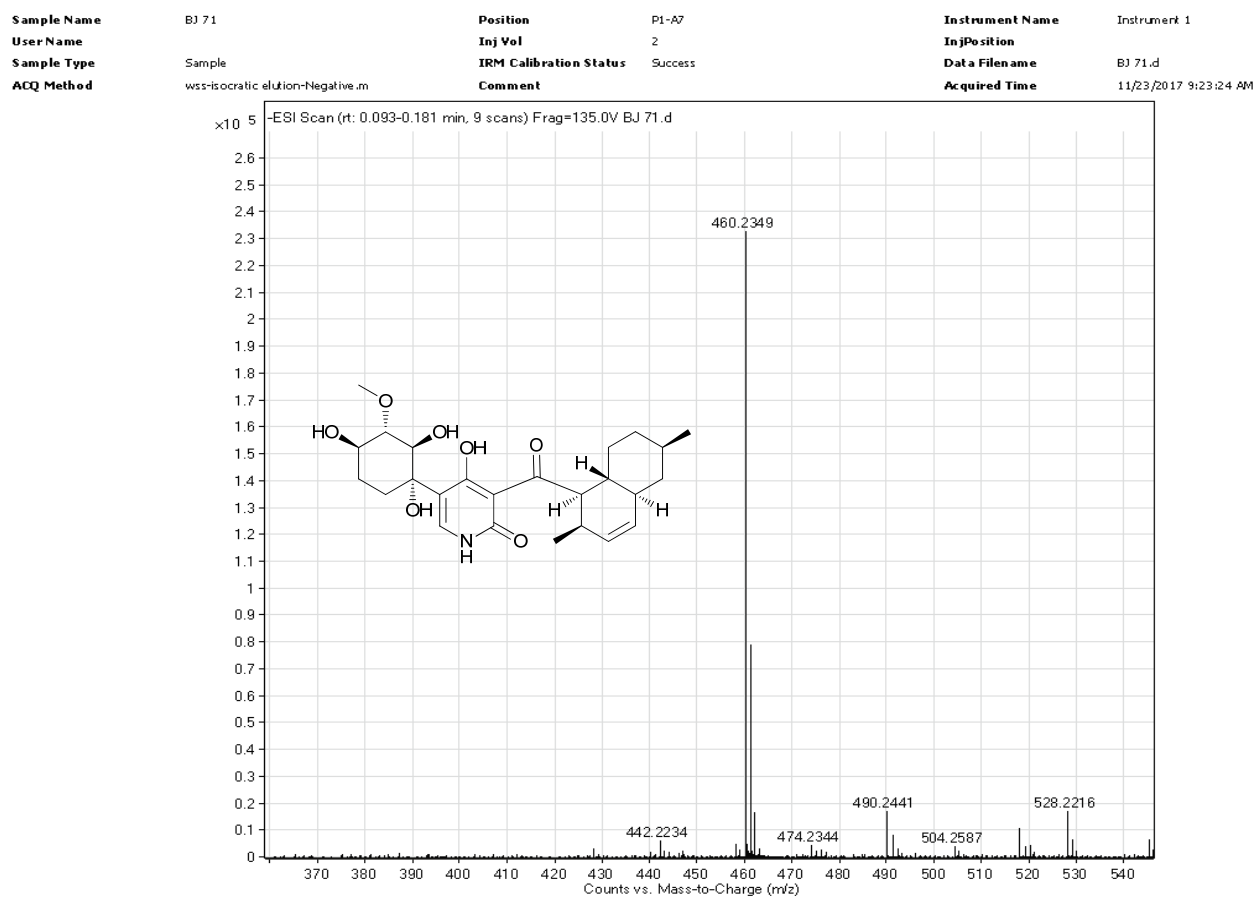


Figure S54. The ^1H -NMR spectrum of arthpyrone I (6) in CD_3OD

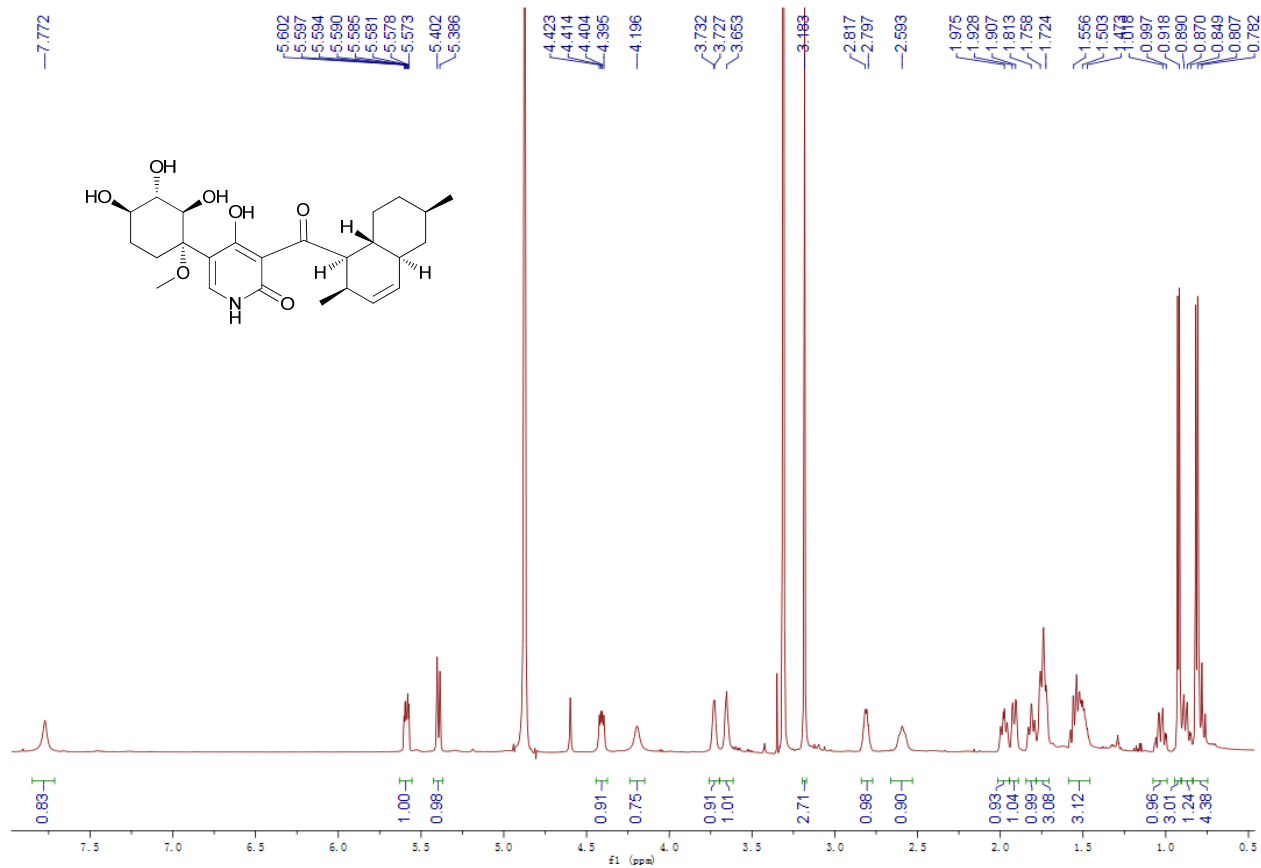


Figure S55. The ^{13}C -NMR spectrum of arthpyrone I (**6**) in CD_3OD

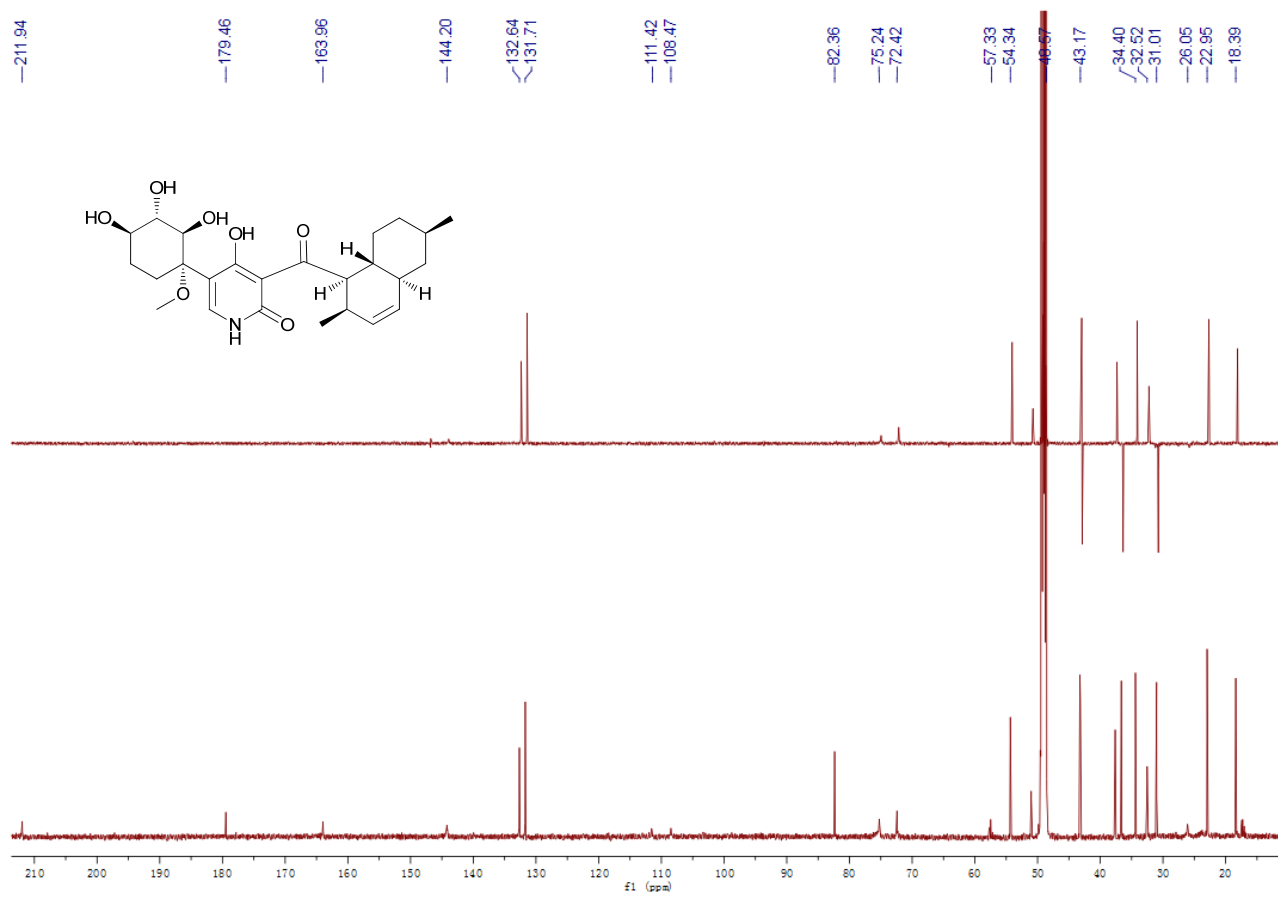


Figure S56. The HSQC spectrum of arthpyrone I (**6**) in CD₃OD

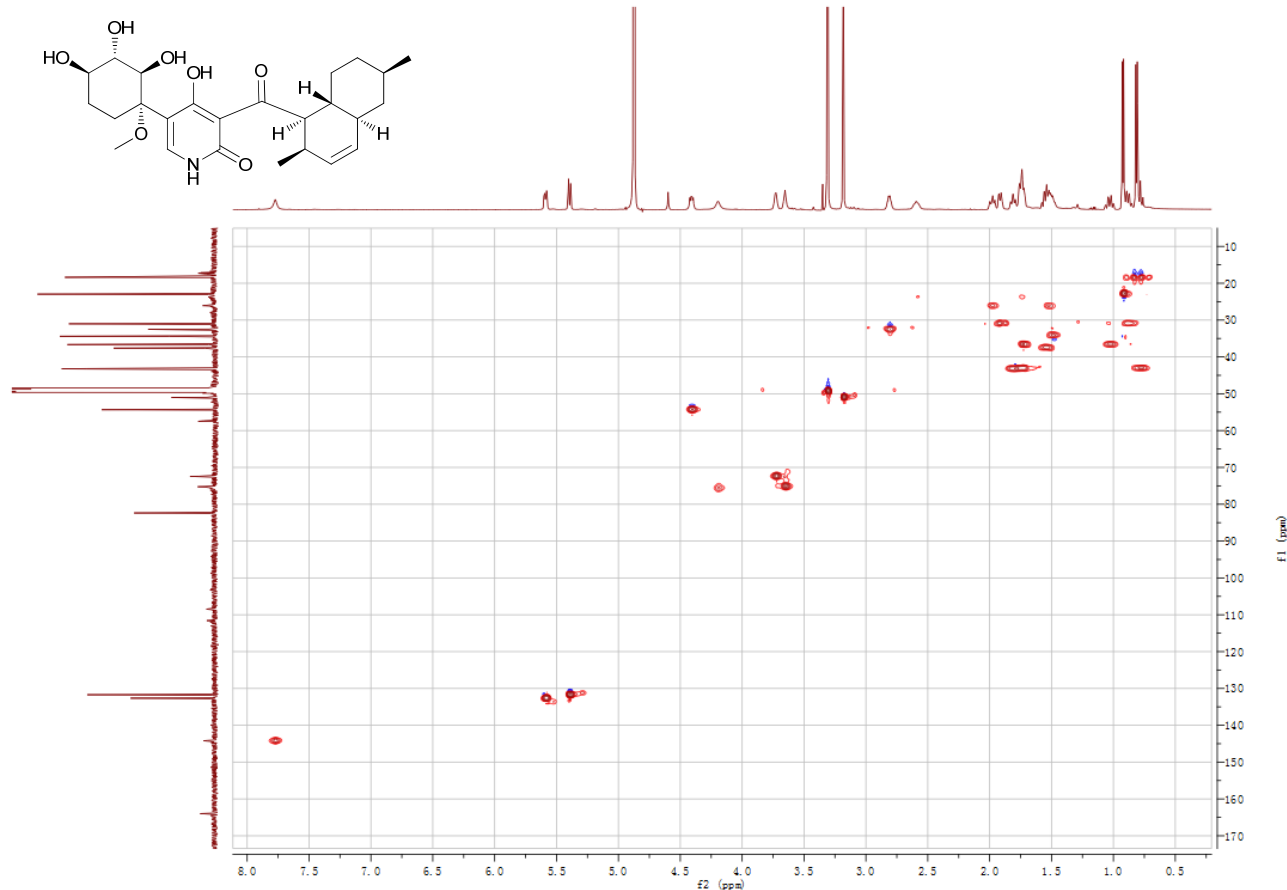


Figure S57. The ^1H - ^1H COSY spectrum of arthpyrone I (**6**) in CD_3OD

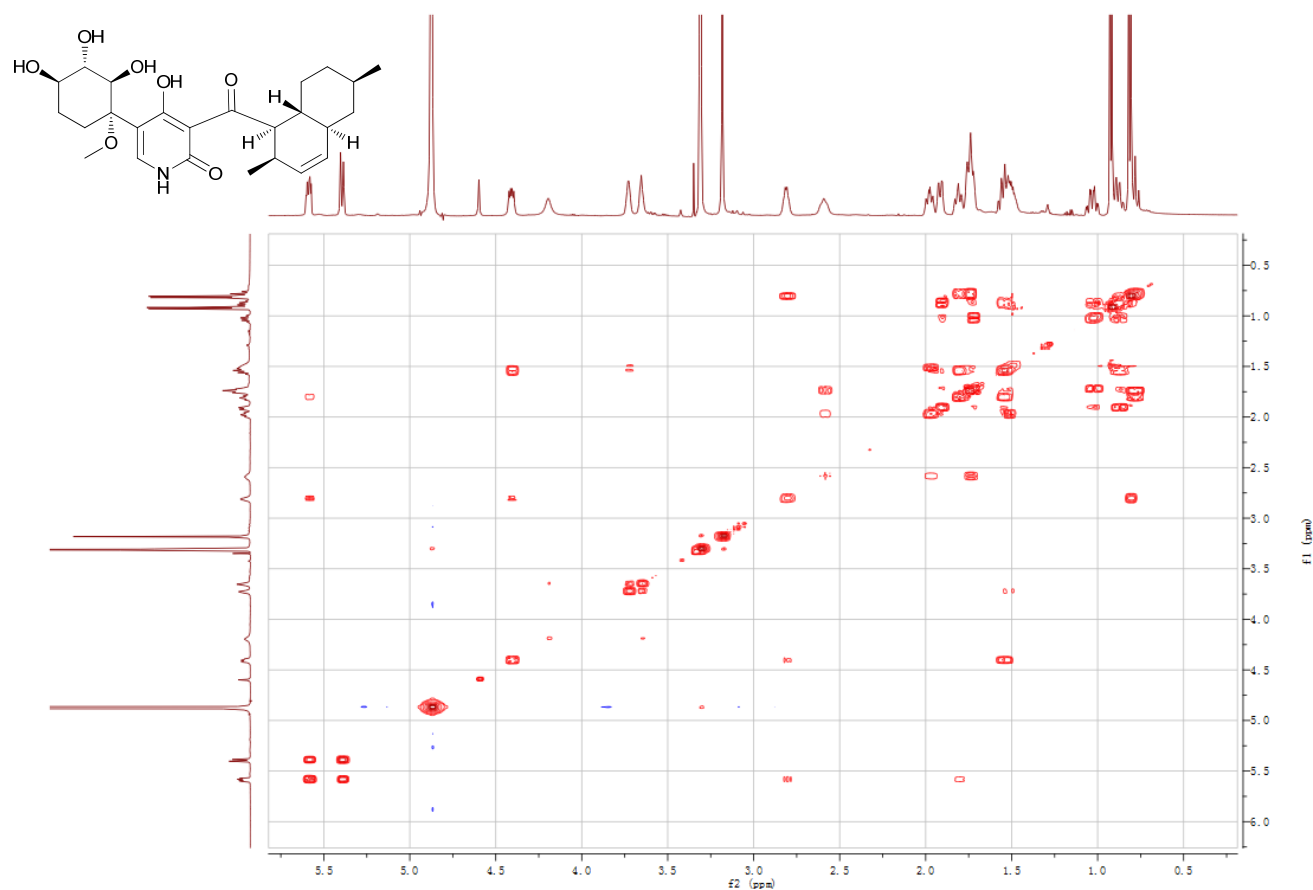


Figure S58. The HMBC spectrum of arthpyrone I (**6**) in CD_3OD

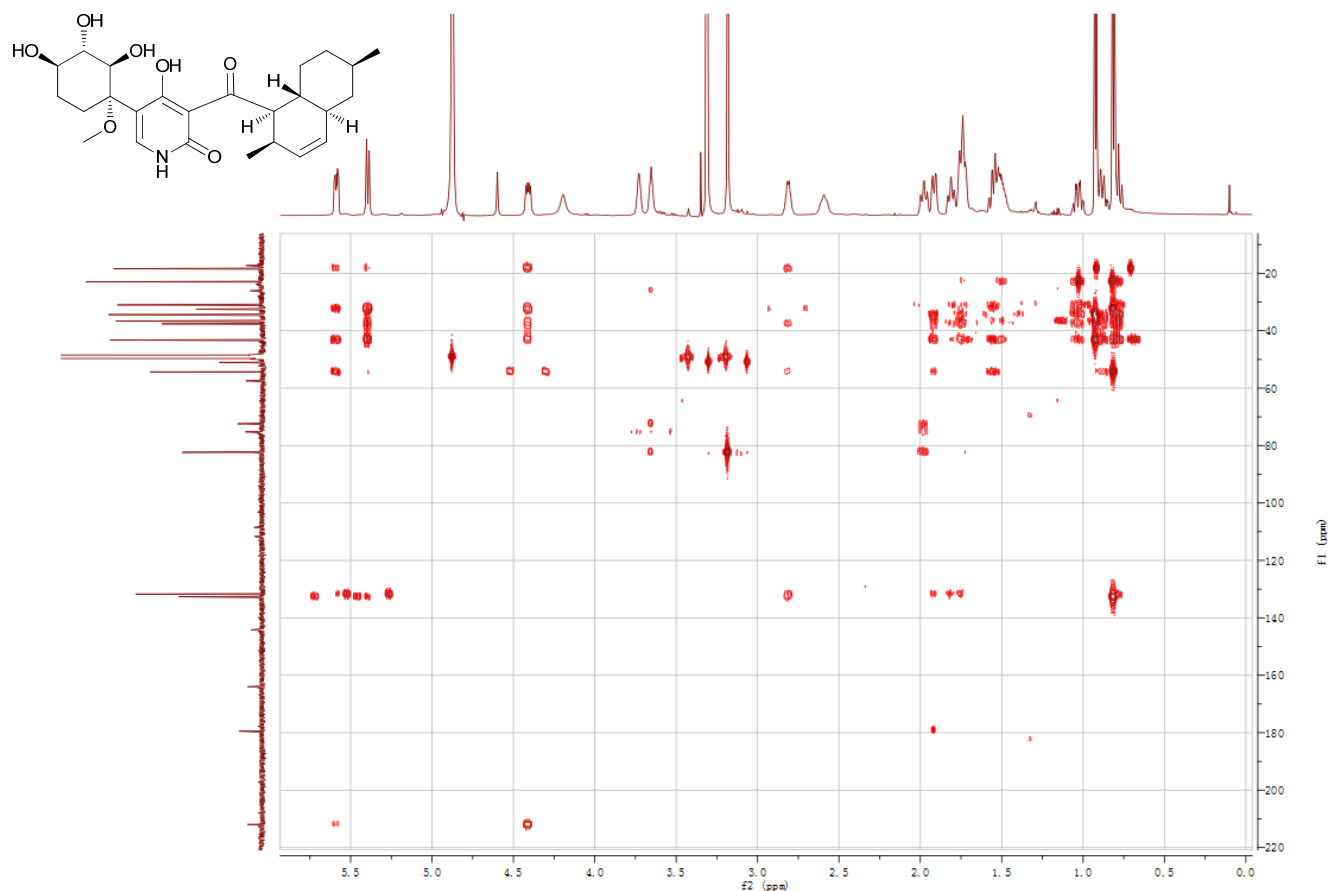


Figure S59. The NOESY spectrum of arthpyrone I (**6**) in CD₃OD

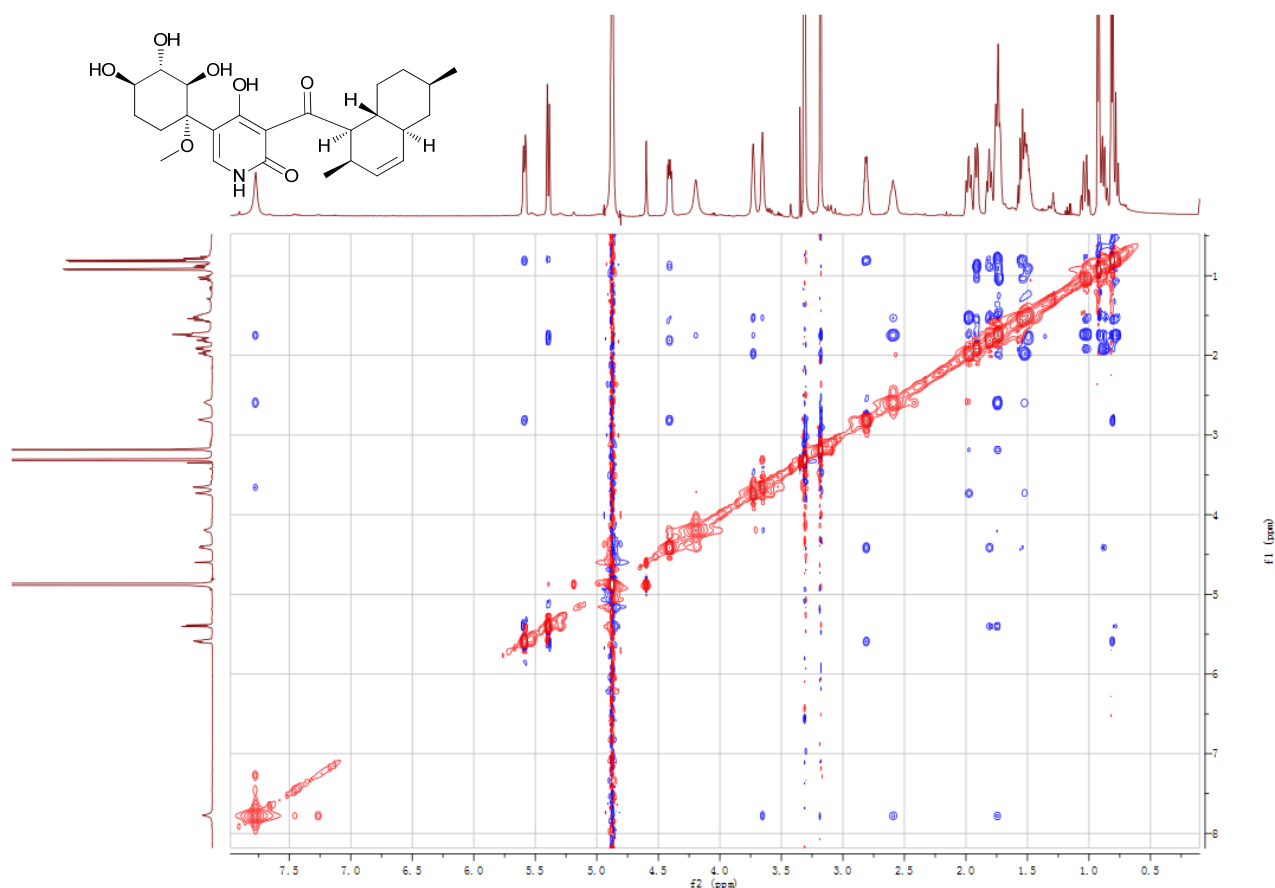


Figure S60. The (-)-HRESIMS spectrum of arthpyrone I (**6**)

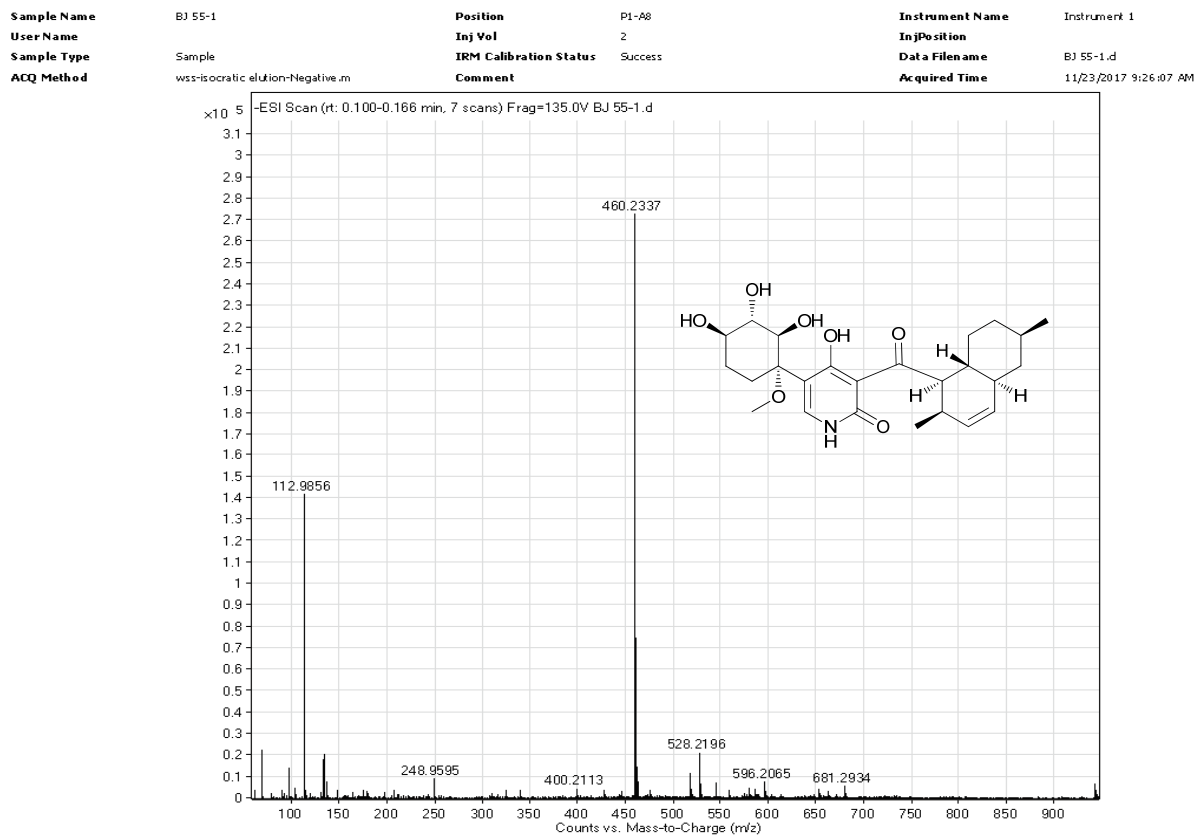


Figure S61. The ^1H -NMR spectrum of arthpyrone J (**7**) in CD_3OD

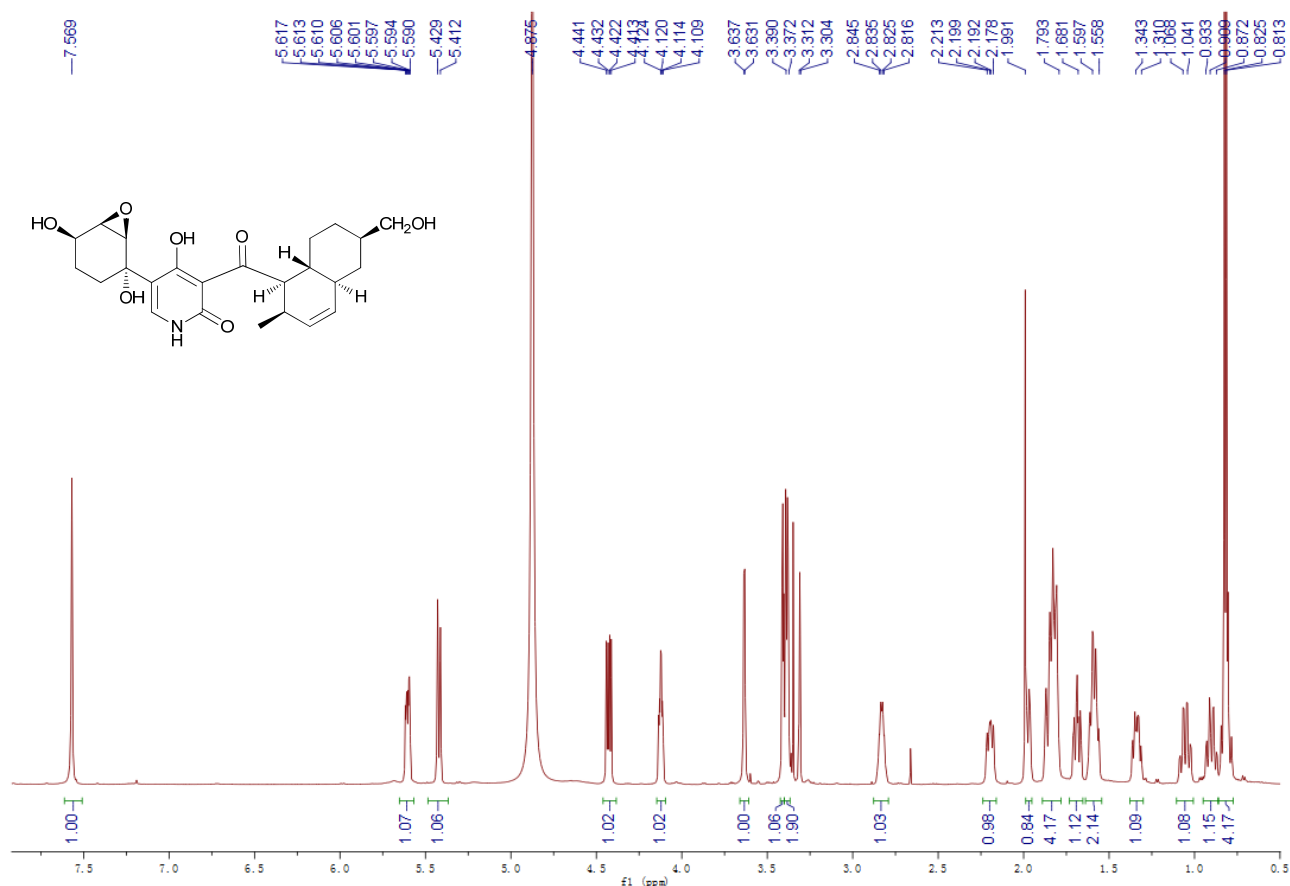


Figure S62. The ^{13}C -NMR spectrum of arthpyrone J (**7**) in CD_3OD

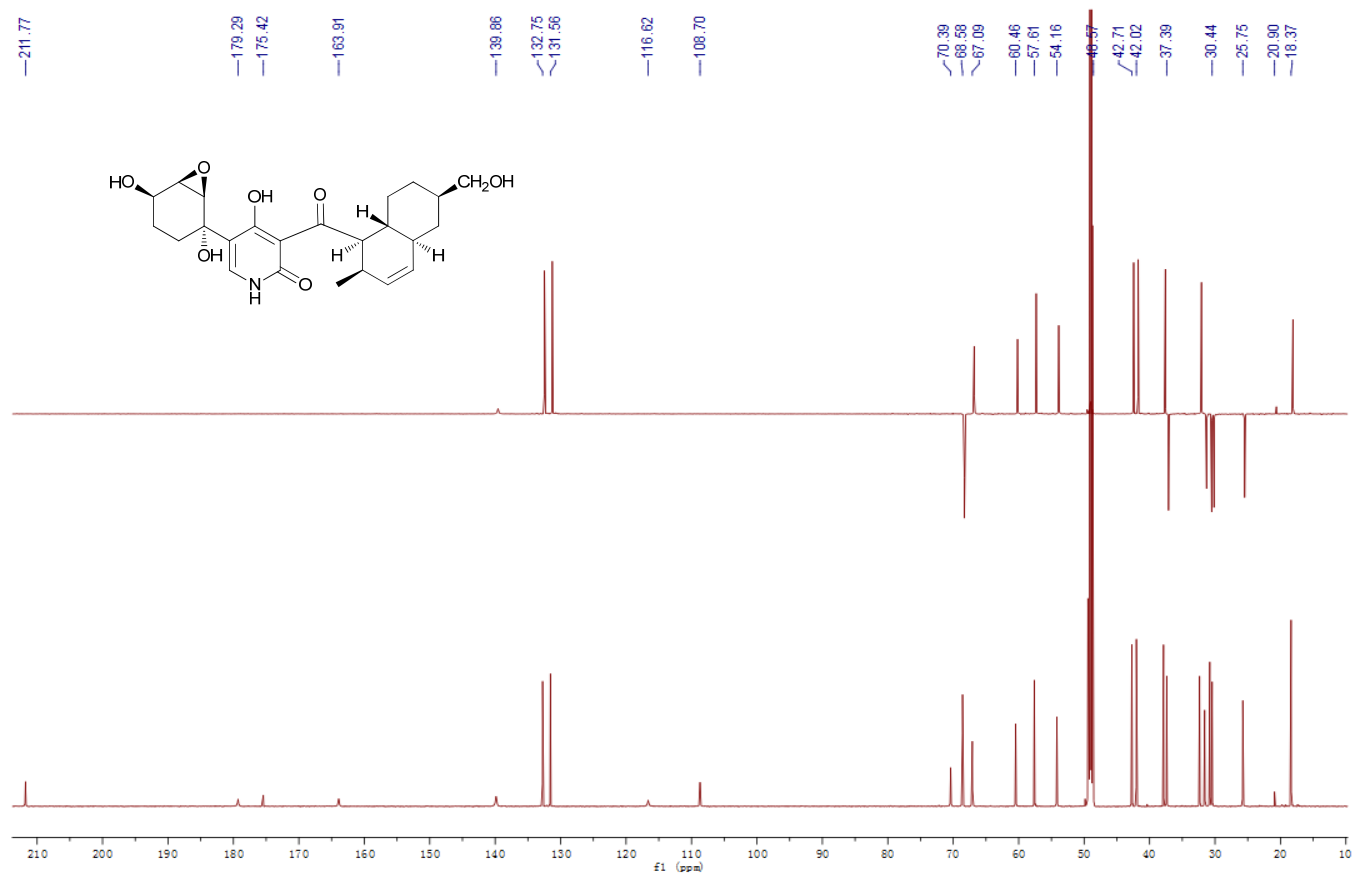


Figure S63. The HSQC spectrum of arthpyrone J (**7**) in CD₃OD

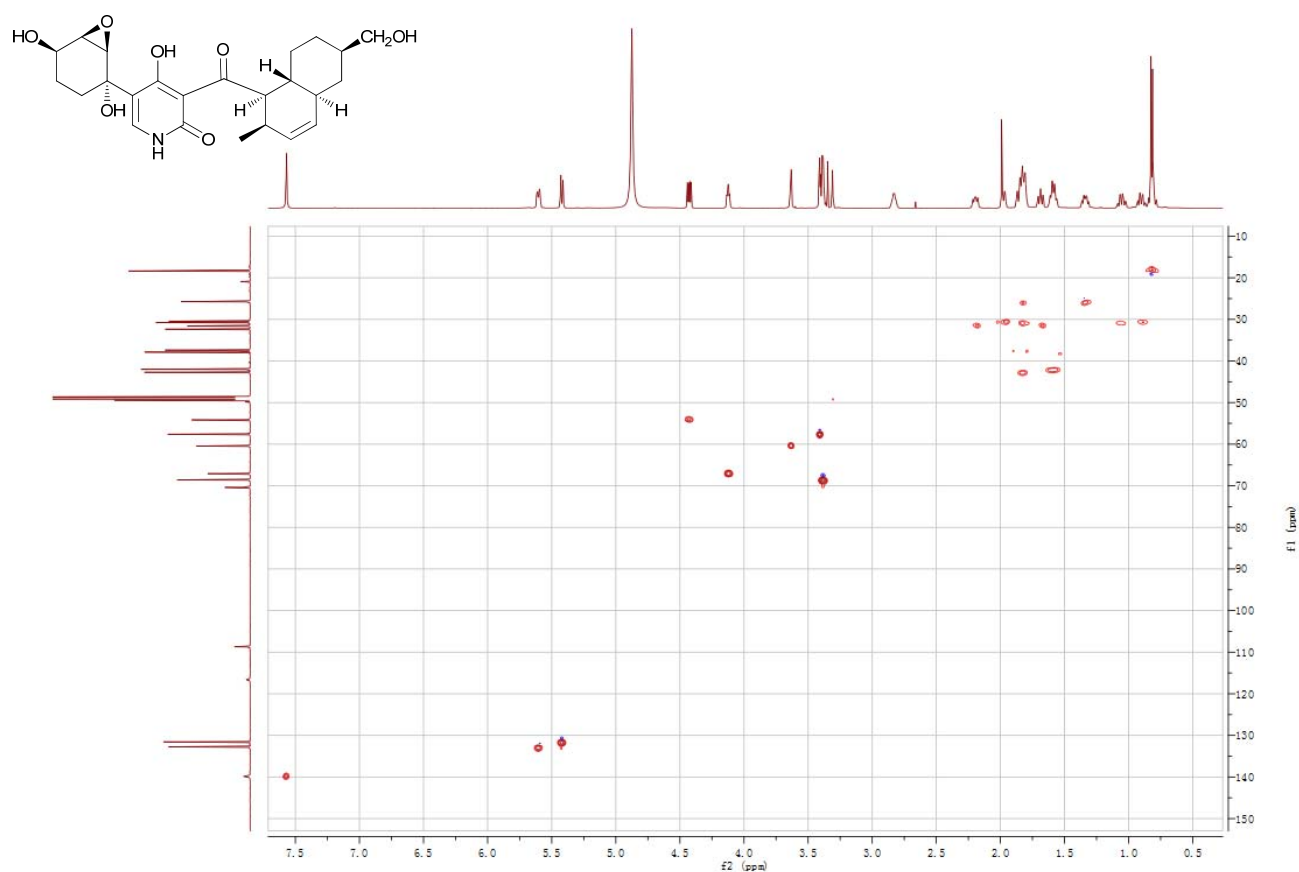


Figure S64. The ¹H-¹H COSY spectrum of arthpyrone J (**7**) in CD₃OD

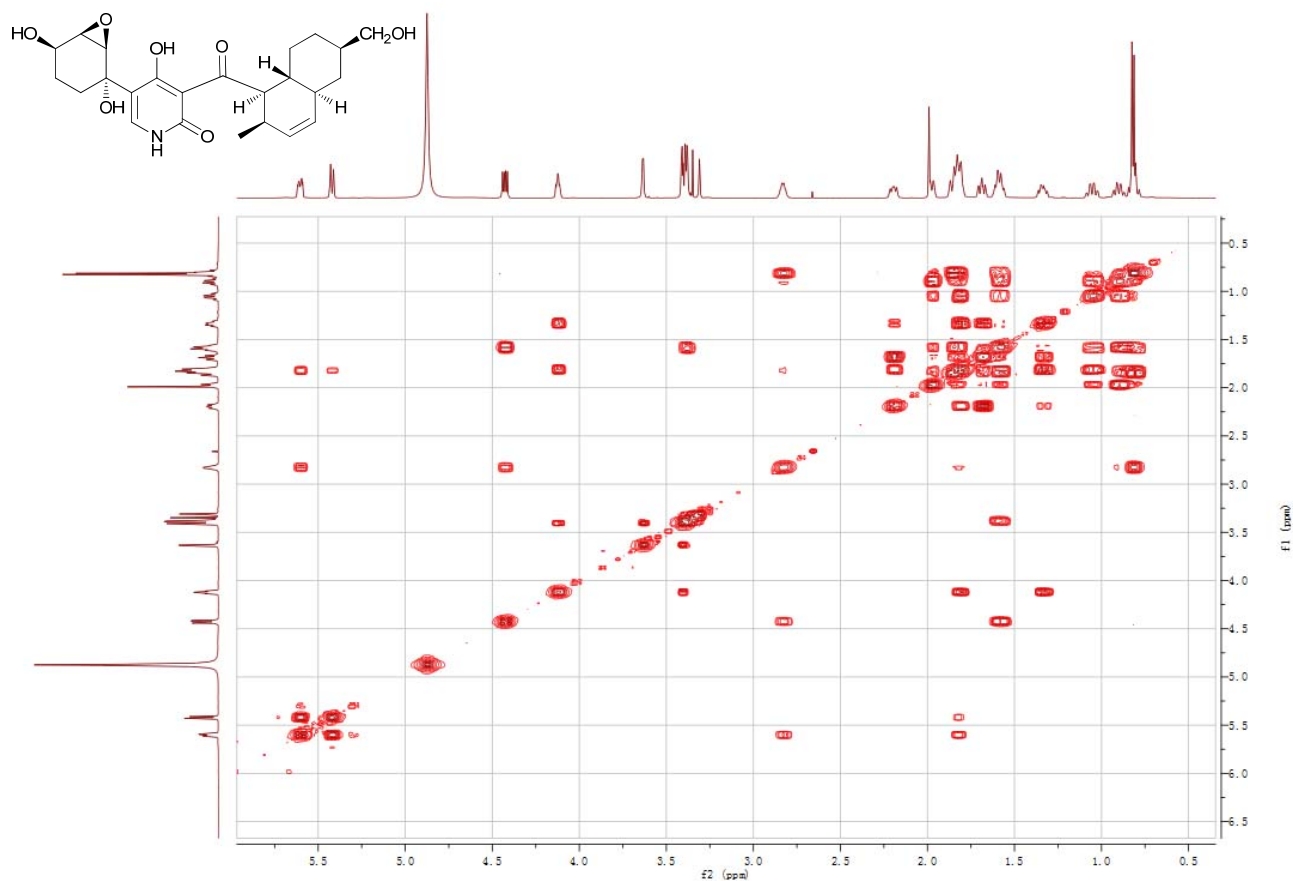


Figure S65. The HMBC spectrum of arthpyrone J (**7**) in CD₃OD

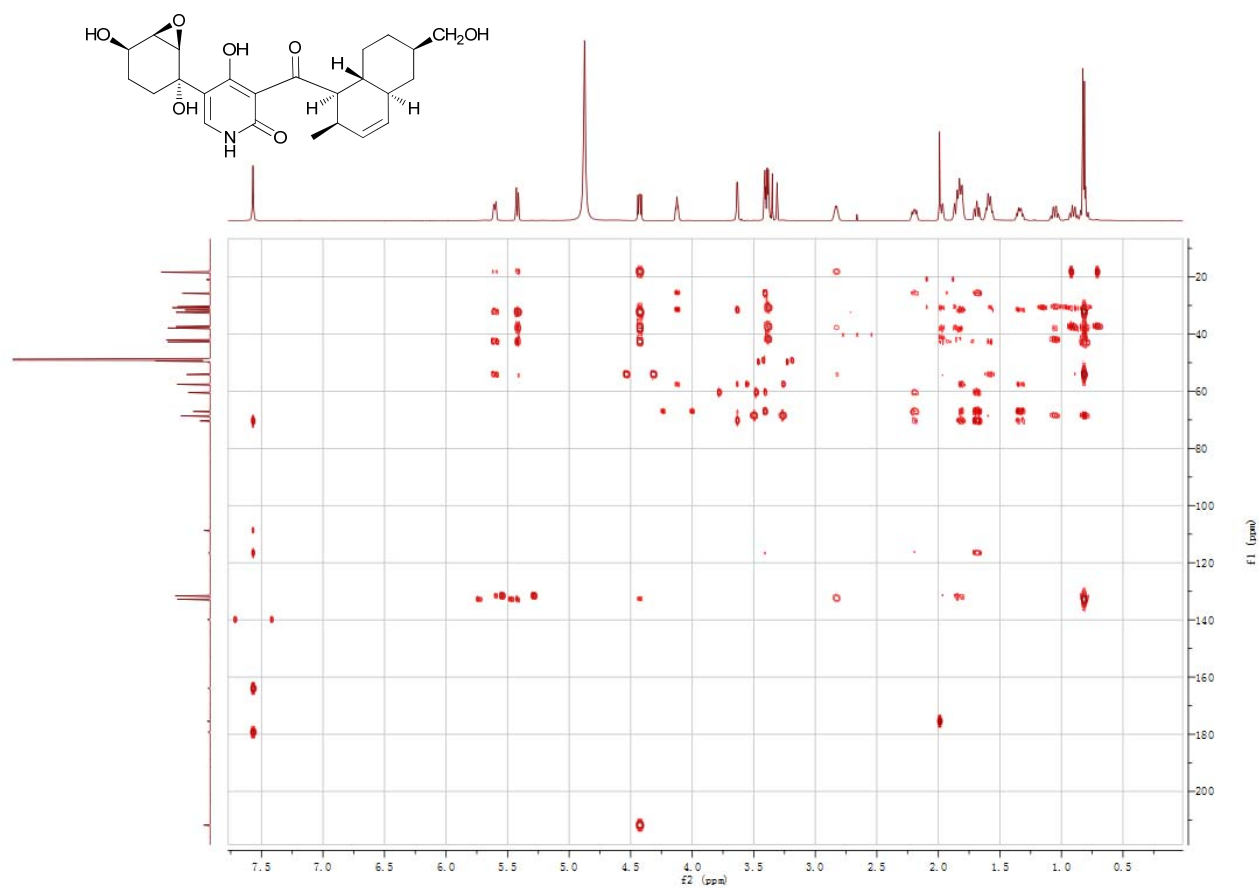


Figure S66. The NOESY spectrum of arthpyrone J (**7**) in CD₃OD

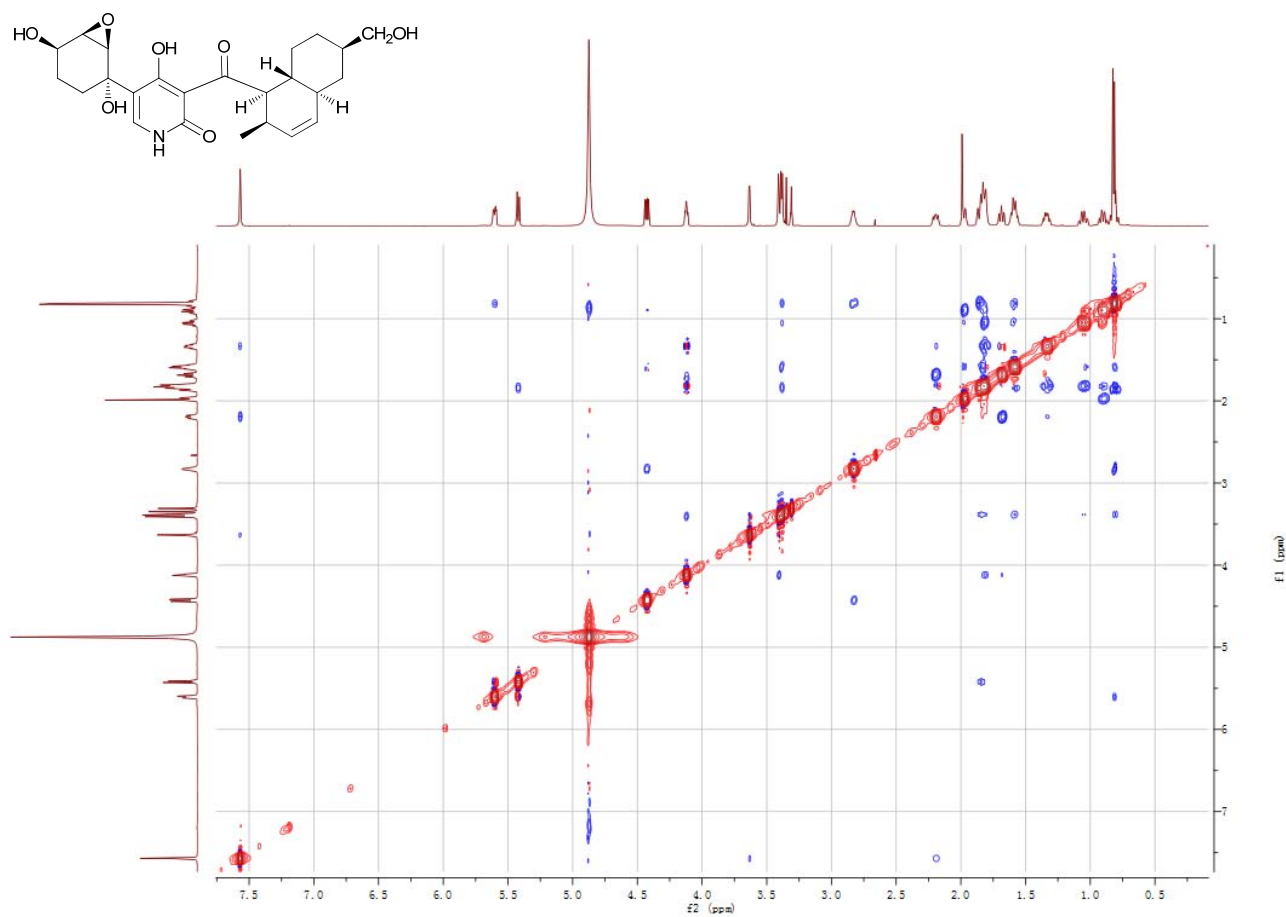


Figure S67. The (-)-HRESIMS spectrum of arthpyrone J (**7**)

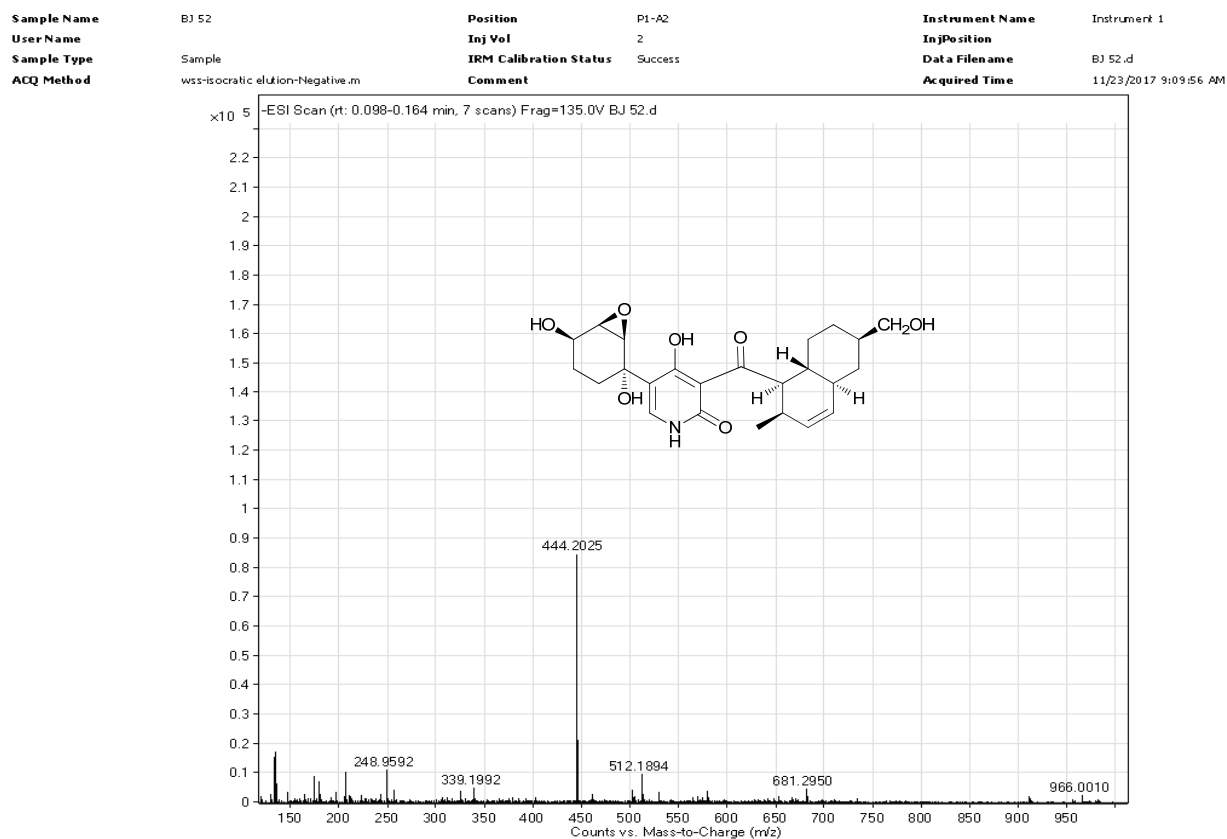


Figure S68. The ¹H-NMR spectrum of arthpyrone K (**8**) in CD₃OD

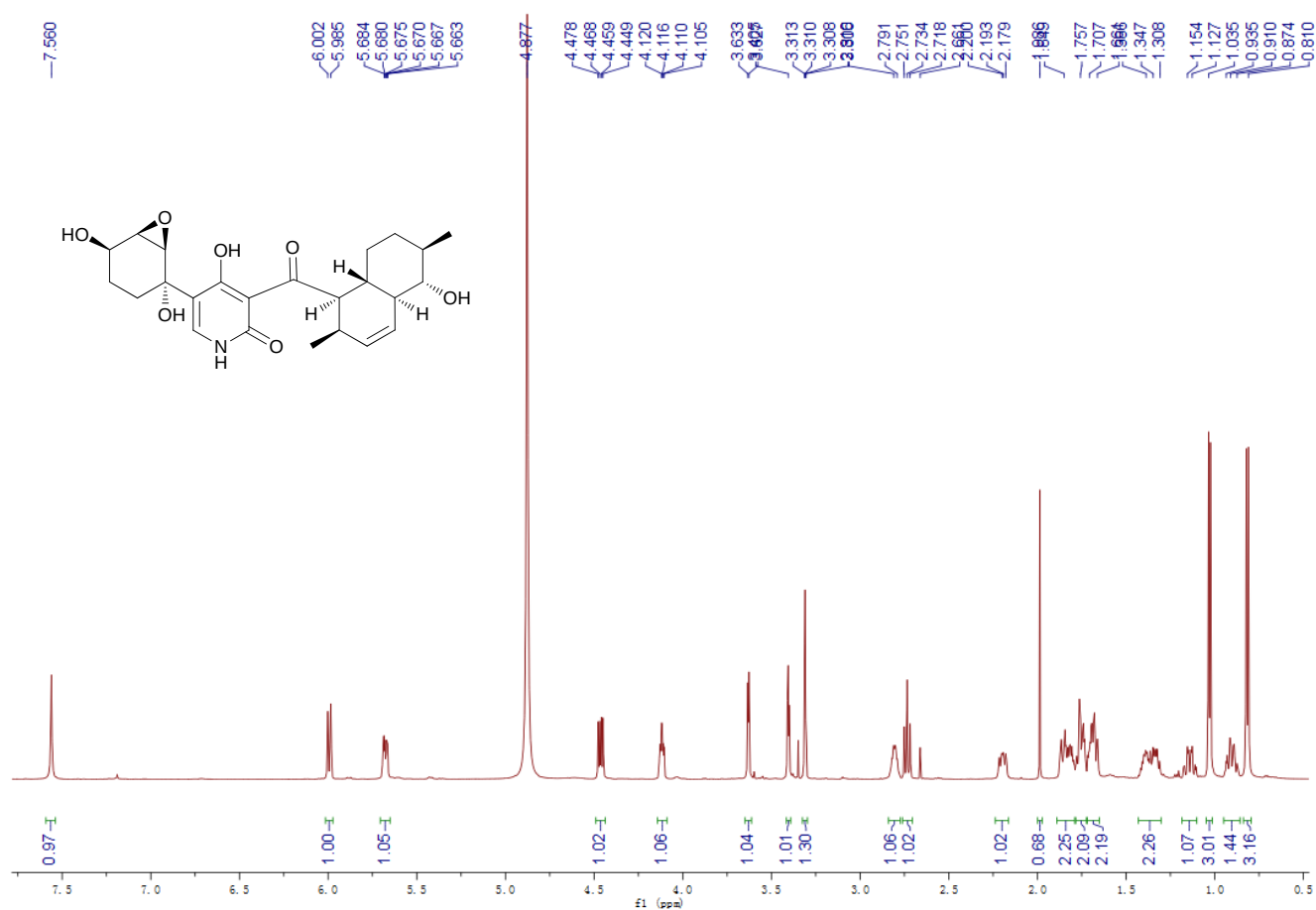


Figure S69. The ^{13}C -NMR spectrum of arthpyrone K (**8**) in CD_3OD

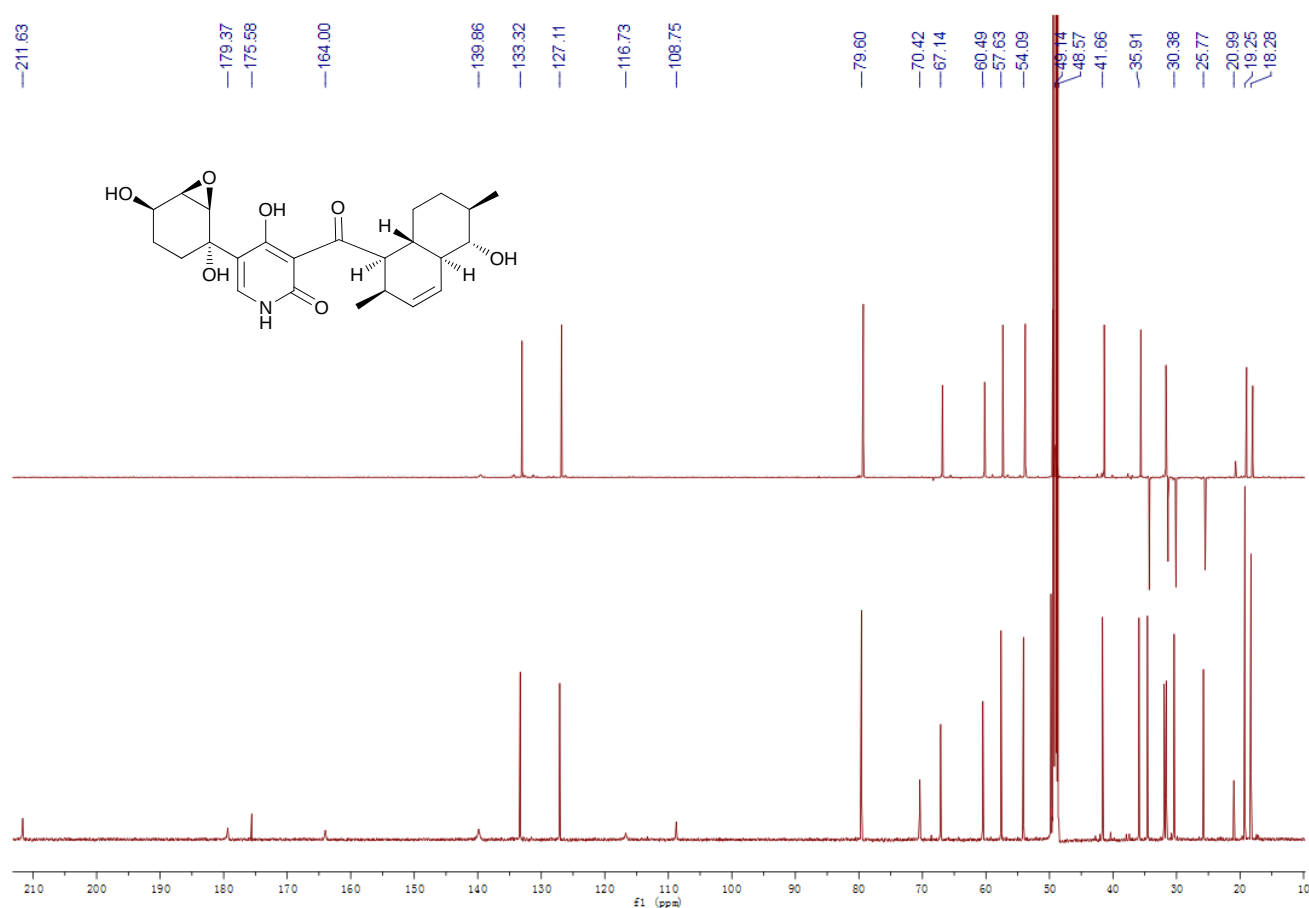


Figure S70. The HSQC spectrum of arthpyrone K (**8**) in CD_3OD

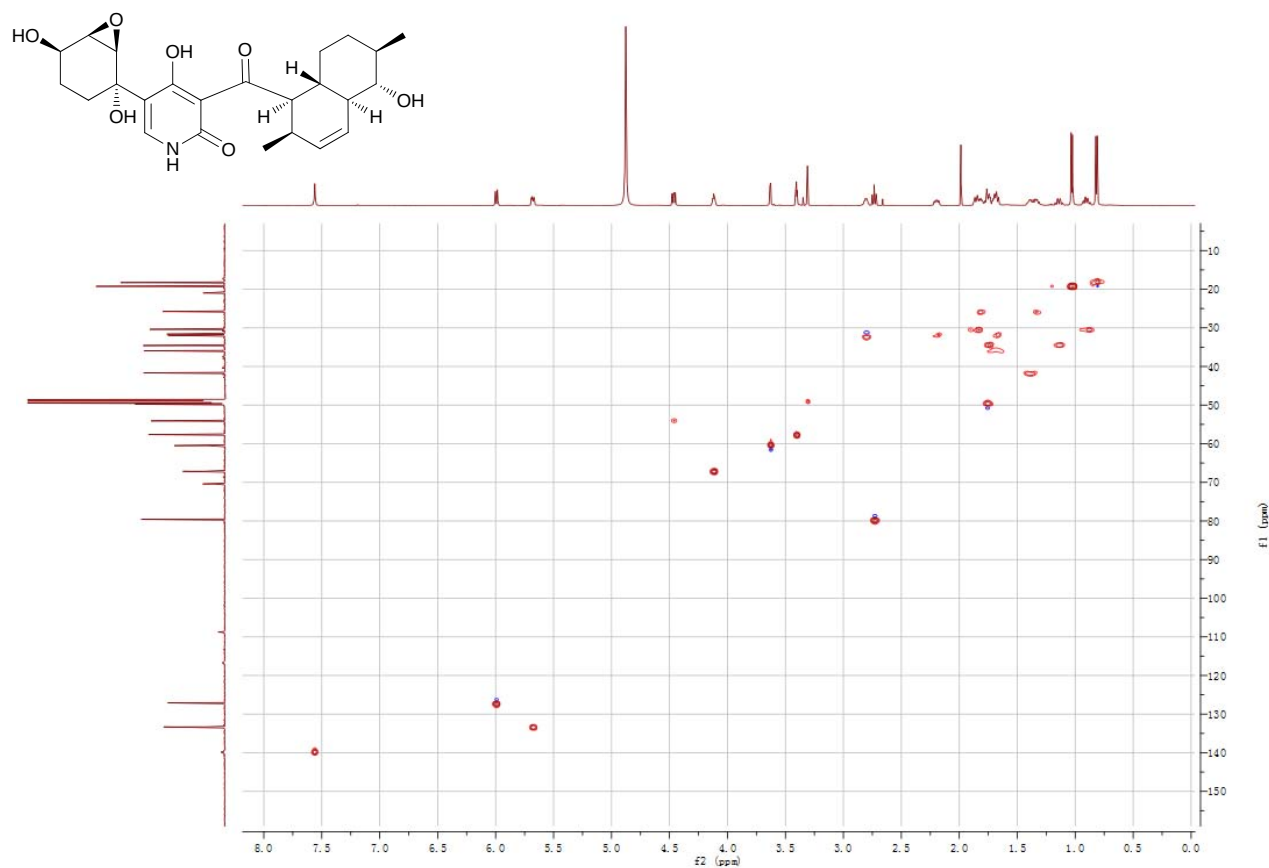


Figure S71. The ^1H - ^1H COSY spectrum of arthpyrone K (**8**) in CD_3OD

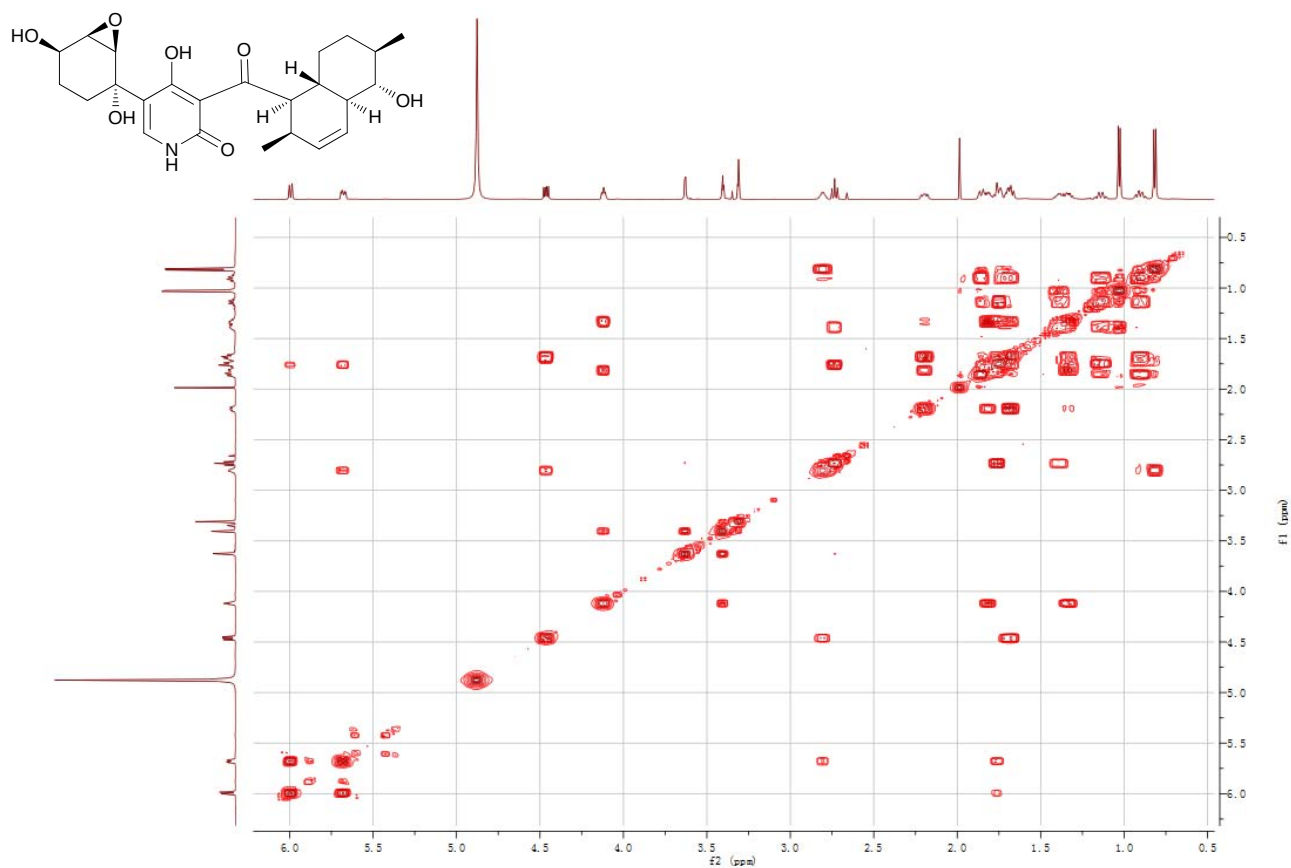


Figure S72. The HMBC spectrum of arthpyrone K (**8**) in CD_3OD

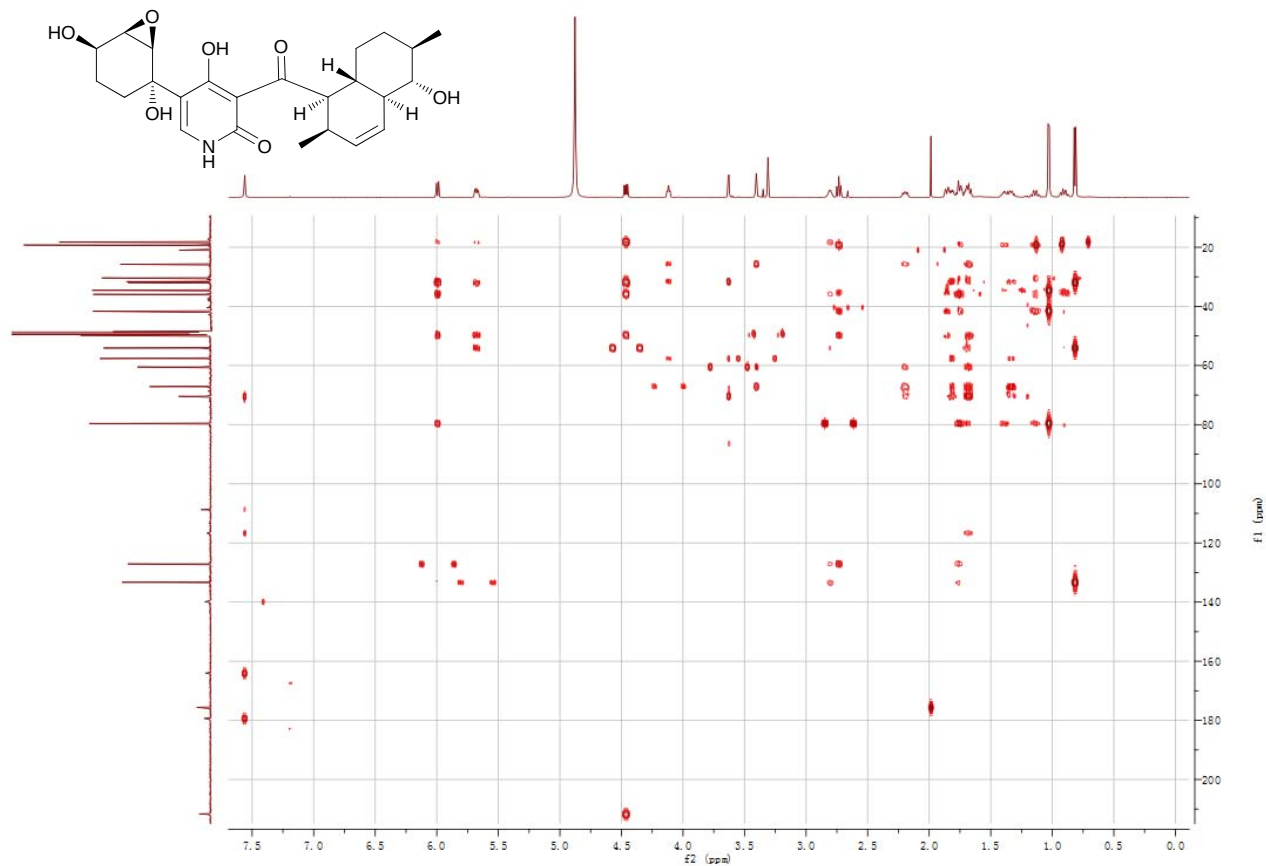


Figure S73. The NOESY spectrum of arthpyrone K (**8**) in CD₃OD

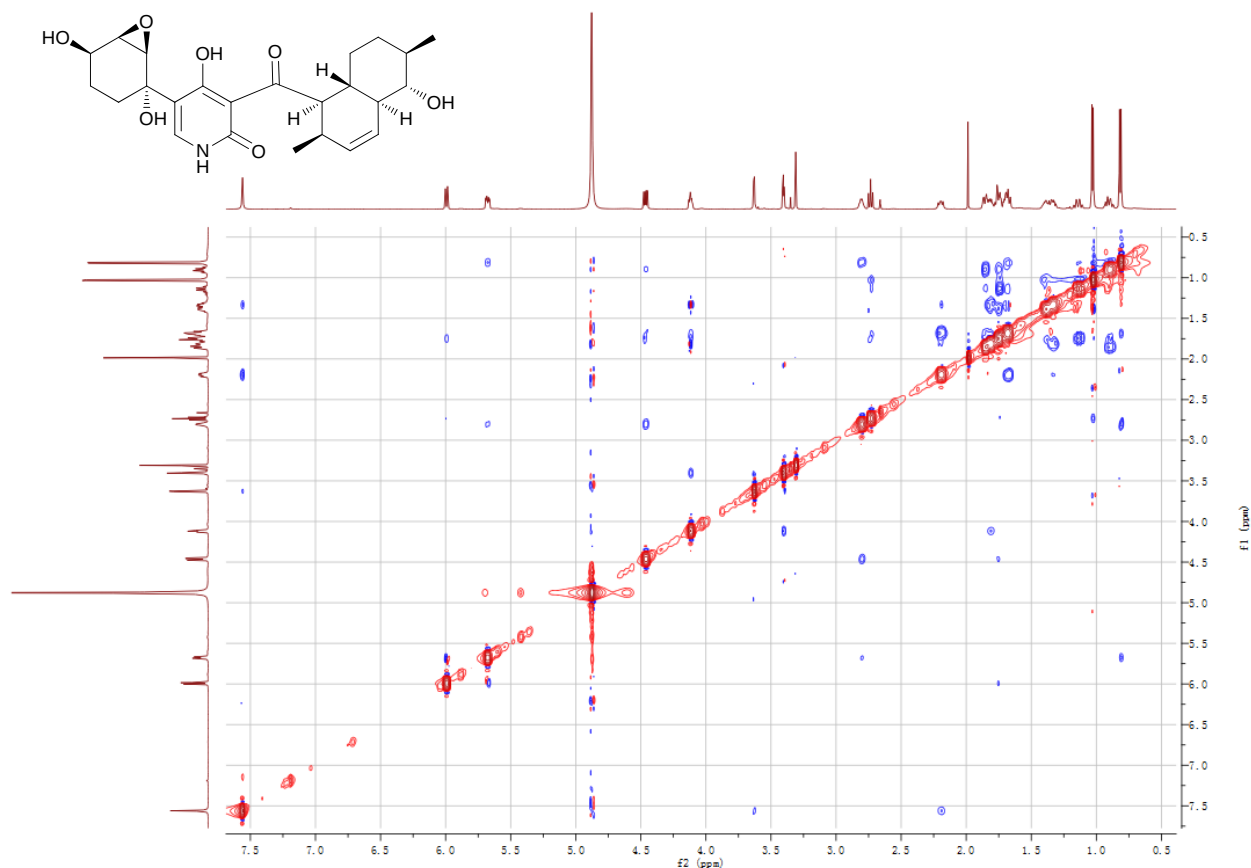


Figure S74. The (-)-HRESIMS spectrum of arthpyrone K (**8**)

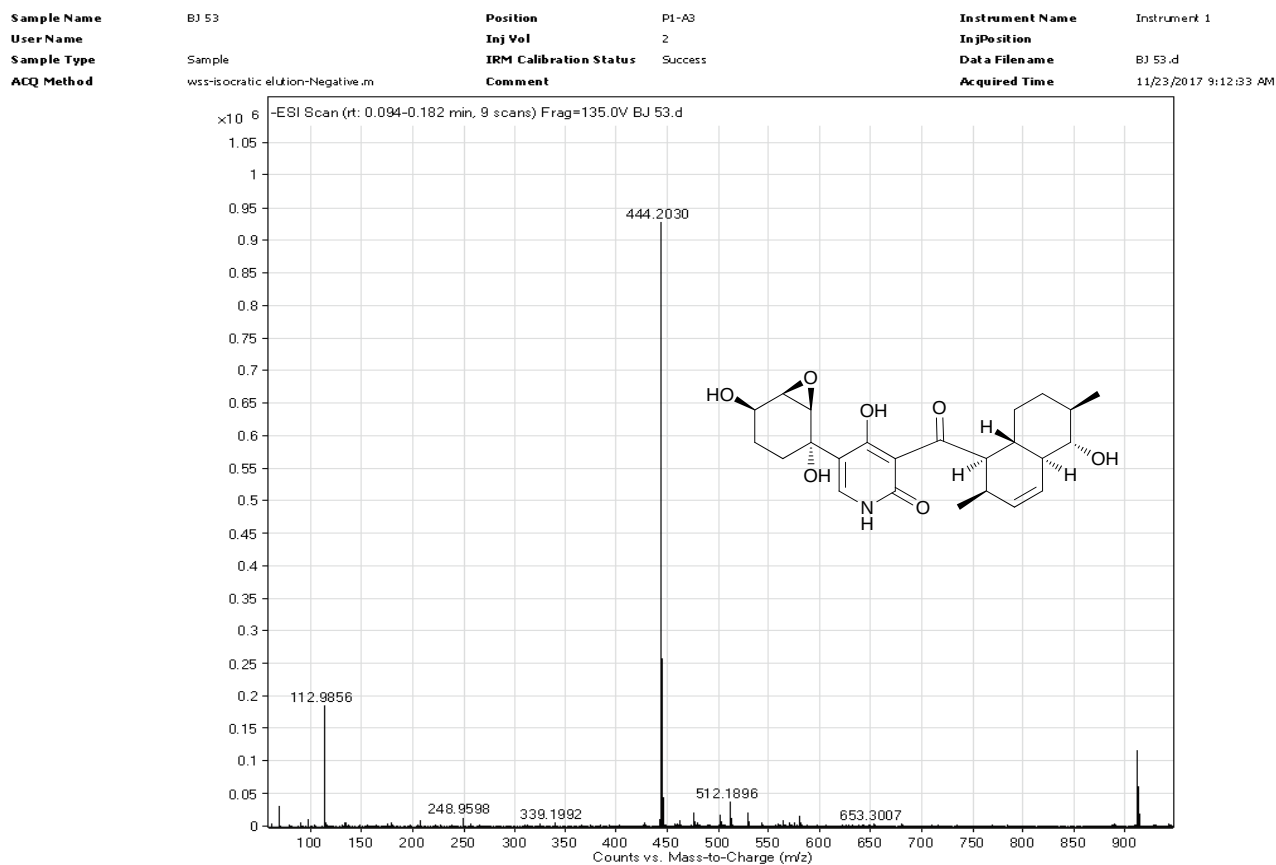


Figure S75. The ^1H -NMR spectrum of **10r** and arthpyrone D (**1**) in CD_3OD

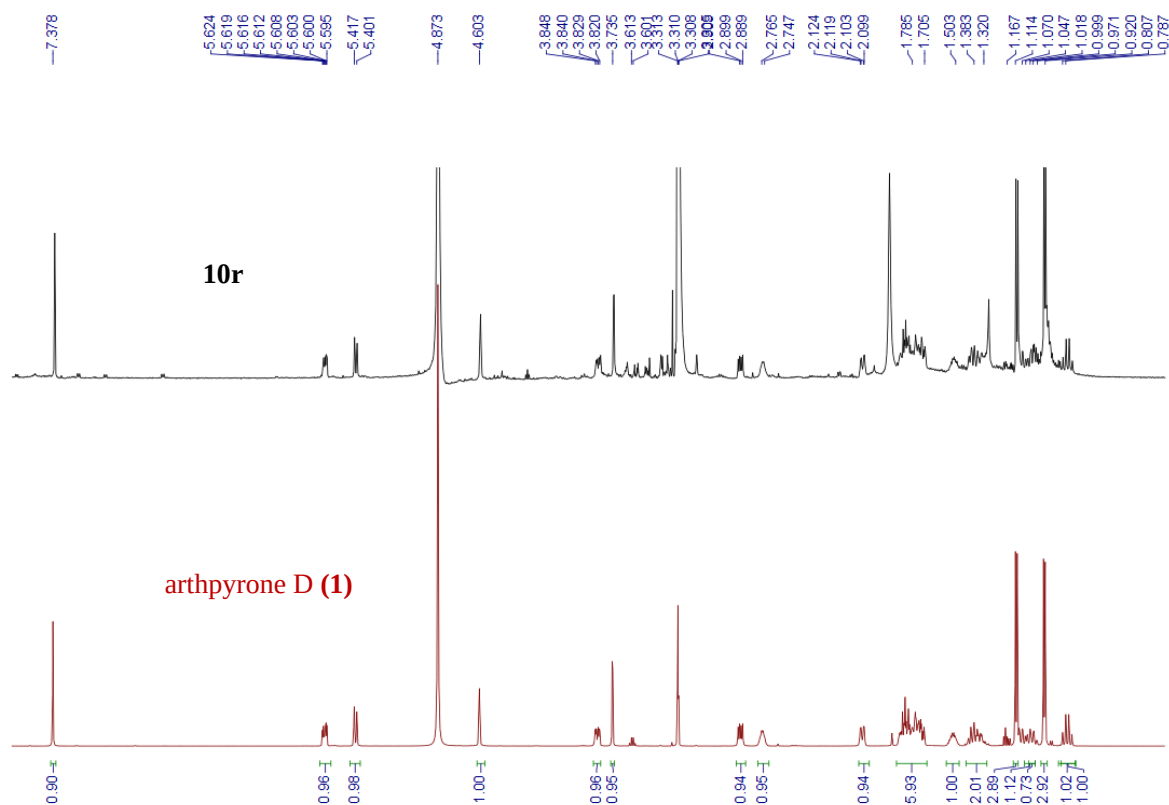


Figure S76. The (-)-ESIMS spectrum of **10r**

