

Supplementary Material

Table S1. Numerical distribution (%) of annexin- and annexin+ cells in the apoptosis assay.

	Cell Line	Annexin -	Annexin +		
			Total	PI-	PI+
Control	MG-63	89.58	10.42	33.32	66.68
	HT-29	94.70	5.30	22.55	77.45
	MCF-7	91.86	8.14	17.76	86.24
Podophyllic aldehyde (2)	MG-63	36.15	63.85	81.29	18.71
	HT-29	84.17	15.83	84.48	15.52
	MCF-7	83.50	16.50	89.04	10.96
7-cyclolignan 3	MG-63	34.98	65.02	86.62	13.38
	HT-29	25.36	74.64	83.63	16.38
	MCF-7	10.24	89.76	21.96	78.04
Hybrid 4	MG-63	5.32	94.68	82.33	17.77
	HT-29	74.60	25.40	74.60	25.40
	MCF-7	65.23	34.77	14.85	85.15

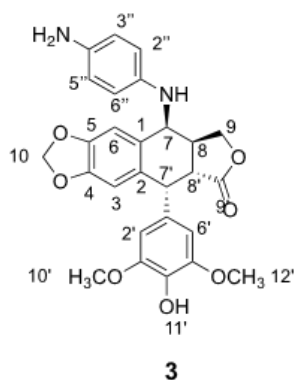


Table S2. ¹H NMR data for compound 3.

H	3	
3	6.45 <i>s</i>	
6	6.70 <i>s</i>	
7	4.53 <i>d</i> (4.8)	
8	2.85 <i>m</i>	
9	4.29 <i>m</i>	
10	3.09 <i>m</i>	
10	5.90 <i>s</i>	
2'6'	6.26 <i>s</i>	
7'	4.39 <i>sa</i>	
8'	2.79 <i>m</i>	
10' 12'	3.72 <i>s</i>	
linker	2'', 6''	6.58 <i>d</i> (8.0)
	3'', 5''	6.36 <i>d</i> (8.0)

Table S3. ¹³C NMR data for compound 3.

C	3
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1	132.1
2	131.8
3	110.5
4	146.4
5	147.4
6	108.9
7	66.7
8	38.1
9	67.6
10	101.5
1'	132.0
2'6'	107.8
3'5'	148.6
4'	134.0
7'	43.7
8'	40.6
9'	175.1
10' 12'	56.5
1''	147.4
linker 2'',6''	122.6
3'',5''	148.6
4''	148.6

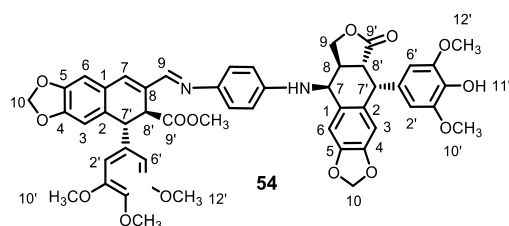


Table S4. ¹H NMR data for compound **4**.

H	4			H
	Podophyllin aldehyde rest	linker	4'-desmethyl- epipodophyllotoxin	
3	6.61s	6.46 <i>d</i> (8.8)	6.46 <i>s</i>	3
6	6.73 <i>s</i>	7.03 <i>d</i> (8.8)	6.70 <i>s</i>	6
7	6.91 <i>s</i>		4.53 <i>d</i> (5.2)	7
8			2.85 <i>m</i>	8
9	8.18 <i>s</i>		4.30 <i>m</i>	9
10	5.91 <i>s</i>		3.09 <i>m</i>	10
2'6'	6.28 <i>s</i>		5.90 <i>s</i>	10
7'	4.50 <i>d</i> (3.2)		6.26 <i>s</i>	2'6'
8'	4.36 <i>d</i> (3.2)		4.39 <i>br s</i>	7'
10' 12'	3.71 <i>s</i>		2.79 <i>m</i>	8'
11'	3.74 <i>s</i>		3.72 <i>s</i>	10'
9'- OCH₃	3.60 <i>s</i>			12'

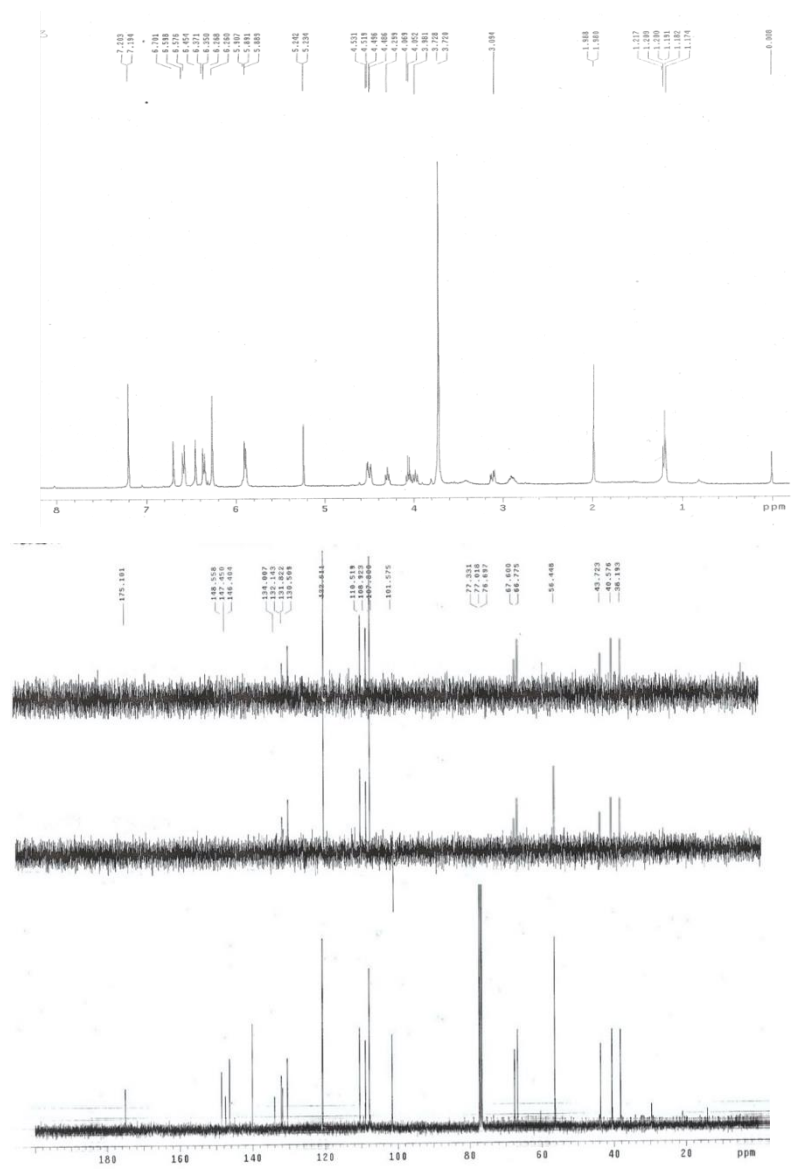
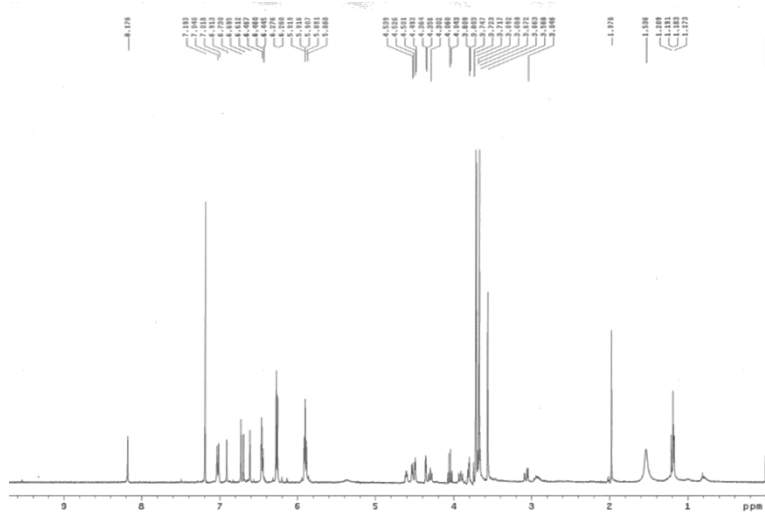


Figure S1. ¹H and ¹³C NMR spectra for compound 3 (CDCl₃).



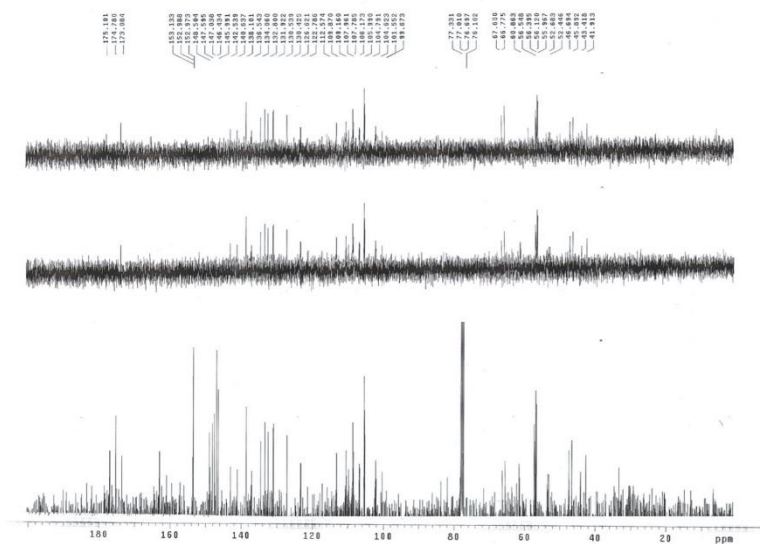


Figure S2. ^1H and ^{13}C NMR spectra for compound **4** (CDCl_3).