Supplementary data

SSTAT3 Inhibitory Activities of Lignans Isolated from the Stems of *Lindera obtusiloba* Blume

Eun-Jae Park [1,2], Hee Ju Lim [1,2], Hyung Jin Lim [1], Bong-Sik Yun [2], Soyoung Lee [1], Seung-Jae Lee [1] and Seung Woong Lee [1,*]

[1] Functionality Biomaterial Research Center, Korea Research Institute of Bioscience and Biotechnology, Jeonbuk 56212, Republic of Korea; pej911029@kribb.re.kr (E.-J.P.); limhj09@kribb.re.kr (H.J.L.); lhjin@kribb.re.kr (H.J.L.); sylee@kribb.re.kr (S.L.); seung99@kribb.re.kr (S.-J.L.)

[2] Division of Biotechnology and Advanced Institute of Environment and Bioscience, College of Environmental and Bioresource Sciences, Jeonbuk National University, Iksan-si 54596, Republic of Korea; bsyun@jbnu.ac.kr

* Correspondence: lswdoc@kribb.re.kr

Figure legends

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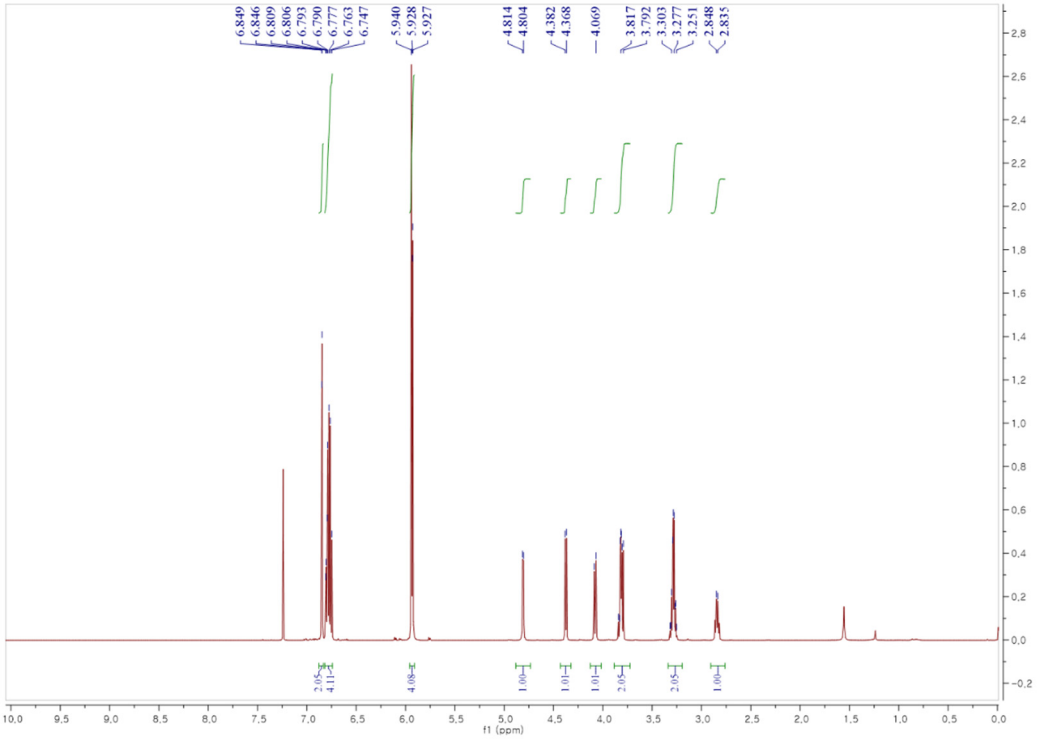

Figure S1. ^{1}H NMR spectrum of compound **1**

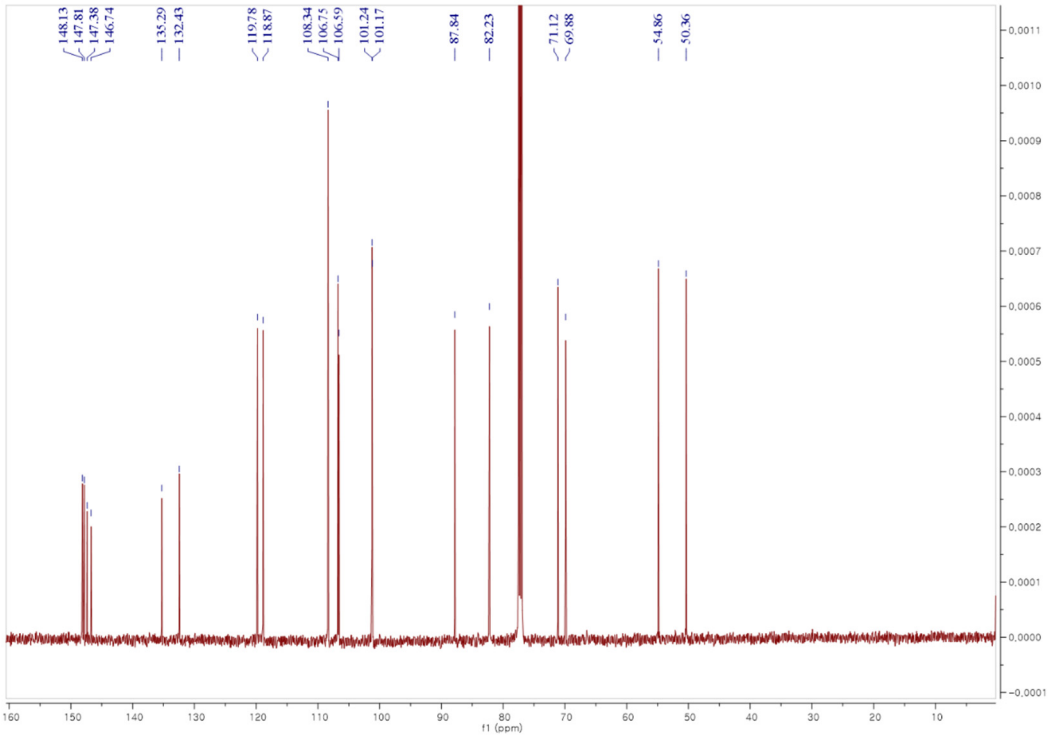

Figure S2. ^{13}C NMR spectrum of compound **1**

Table S1. ^{13}C NMR spectrum data of compound **1**

Positions	Paper Citation (150 MHz, chloroform-*d*)	Reference[a] (100 MHz, pyridine-d_5)
	δ_C	δ_c
C-1	54.86	55.31
C-2	87.84	87.89
C-4	71.72	71.13
C-5	50.36	50.54
C-6	82.83	82.15
C-8	69.88	69.93
C-1′	135.29	135.1
C-2′	106.75	106.4
C-3′	148.13	147.4
C-4′	147.81	148.2
C-5′	108.34	108.2
C-6′	119.79	119.6
C-1″	132.43	132.3
C-2″	106.59	106.4
C-3″	146.74	147.4
C-4″	147.38	147.9
C-5″	108.34	108.2
-OCH_2O-	101.17	101.0
-OCH_2O-	101.24	101.1

[a]Seo, K.H.; Baek, M.Y.; Lee, D.Y.; Cho, J.G. Isolation of Flavonoids and Lignans from the Stem Wood of *Lindera Obtusioba* Blume. *J Appl Biol Chem*. **2011**, *54.3*, 178-183.

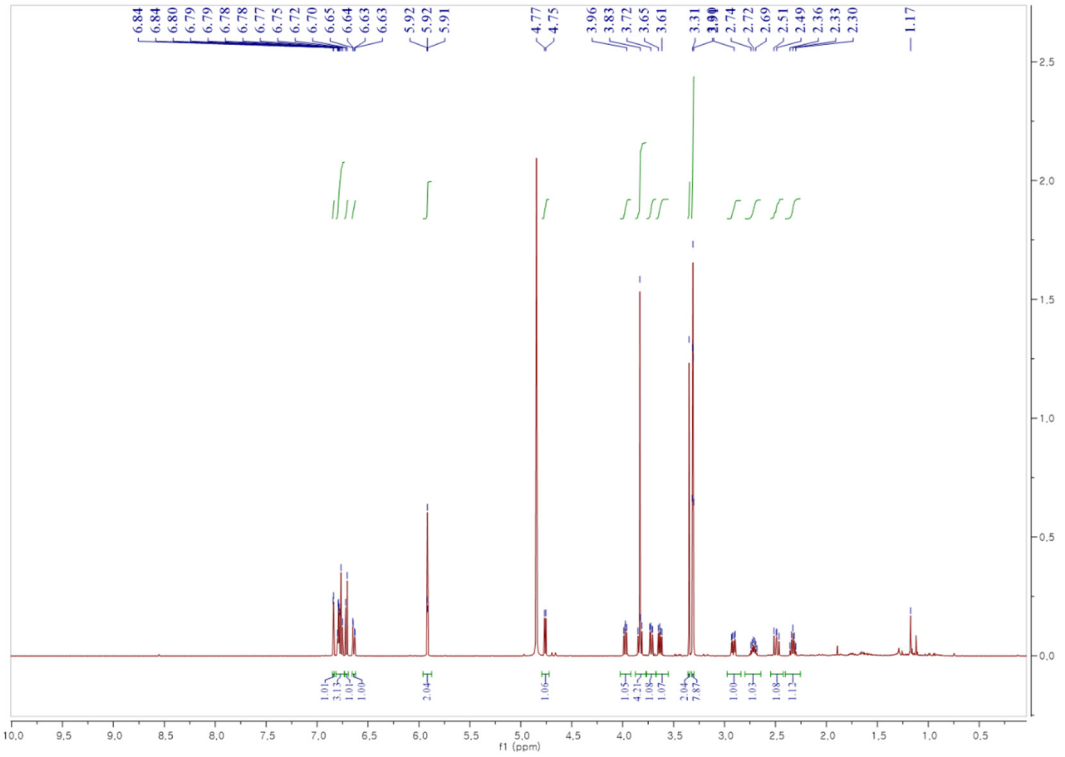

Figure S3. ^{1}H NMR spectrum of compound **2**

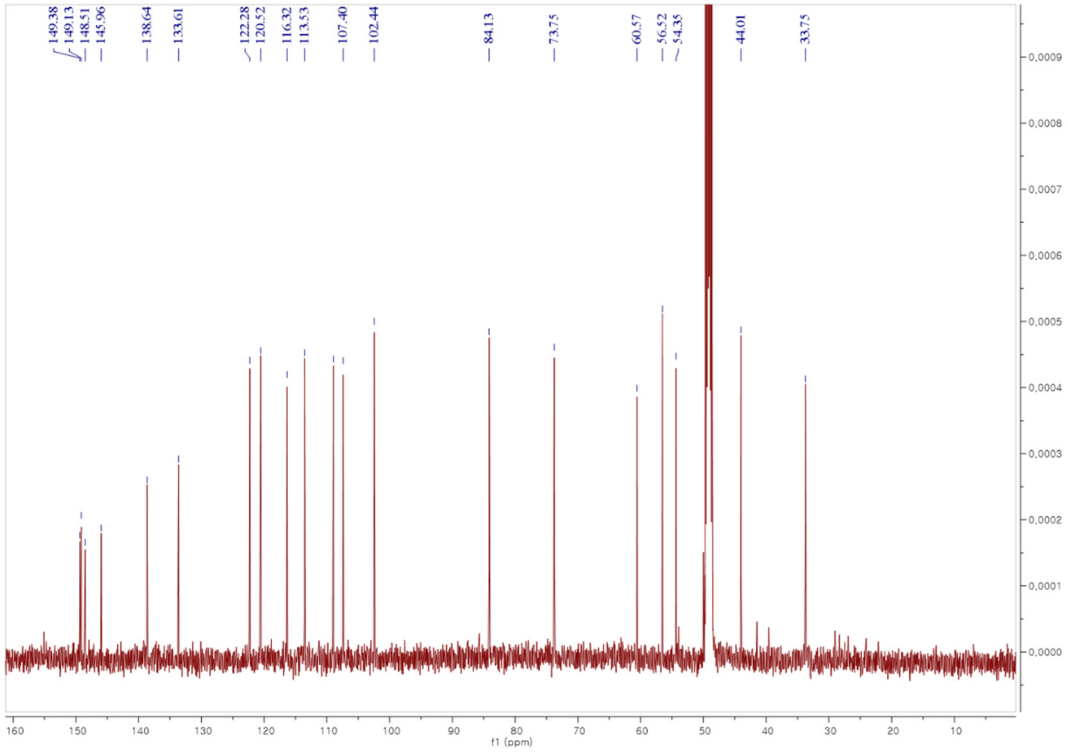

Figure S4. ^{13}C NMR spectrum of compound **2**

Table S2. ^{13}C NMR spectrum data of compound **2**

Positions	Paper Citation (150 MHz, chloroform-*d*)	Reference[a] (75 MHz, chloroform-*d*)
	δ_C	δ_c
C-1	133.61	132.2
C-2	122.28	121.2
C-3	116.63	114.3
C-4	145.96	143.9
C-5	149.13	146.8
C-6	113.53	111.1
C-7	33.75	33.2
C-8	44.01	42.4
C-9	73.75	72.9
C-1′	138.64	137.0
C-2′	120.52	119.0
C-3′	108.97	108.0
C-4′	148.51	146.5
C-5′	149.38	147.8
C-6′	107.4	106.3
C-7′	84.13	82.8
C-8′	54.35	52.7
C-9′	60.57	60.9
-O-CH_2-O-	102.44	100.9
-O-CH_3-5	56.52	55.9

[a]Jang, H.J.; Lim, H.J.; Park, E.J.; Lee, S.J.; Lee, S.; Lee, S.W.; Rho, M.C. STAT3-inhibitory activity of sesquiterpenoids and diterpenoids from *Curcuma phaeocaulis*. *Bioorganic Chemistry*. **2019**, *93*, 103267; Liu, Z.; Saarinen, N.M.; Thompson, L.U. Sesamin is one of the major precursors of mammalian lignans in sesame seed (Sesamum indicum) as observed in vitro and in rats. *The Journal of Nutrition*. **2006**, *136.4*, 906–912

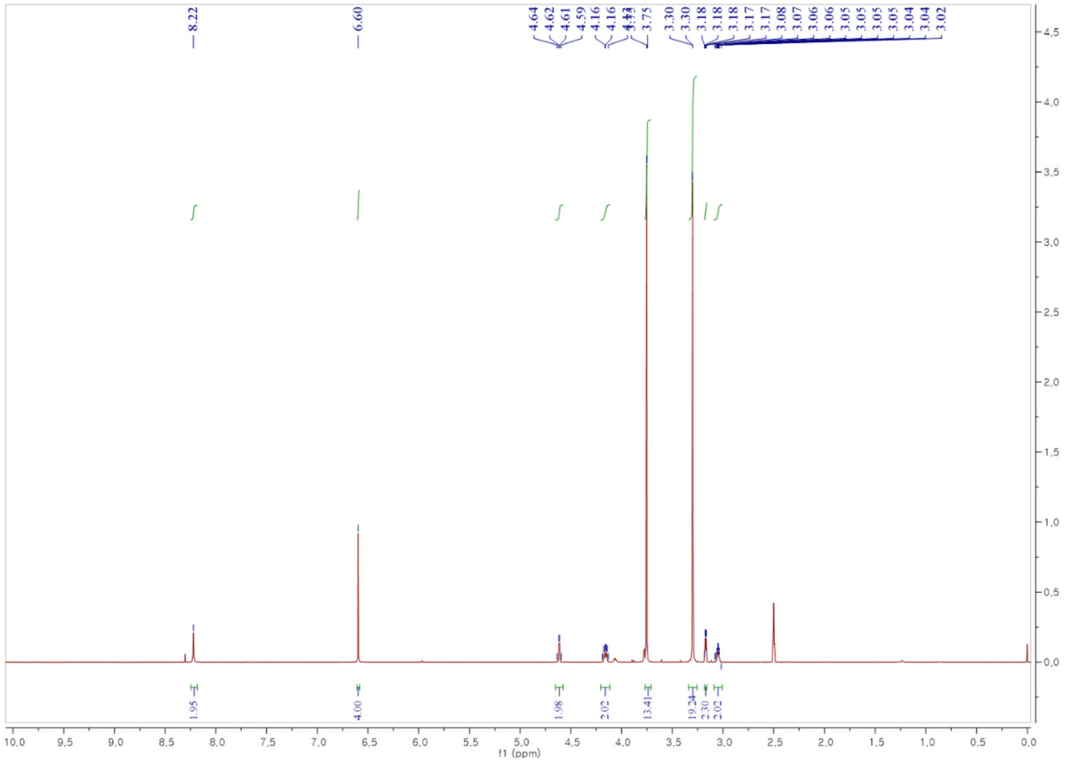

Figure S5. ^{1}H NMR spectrum of compound **3**

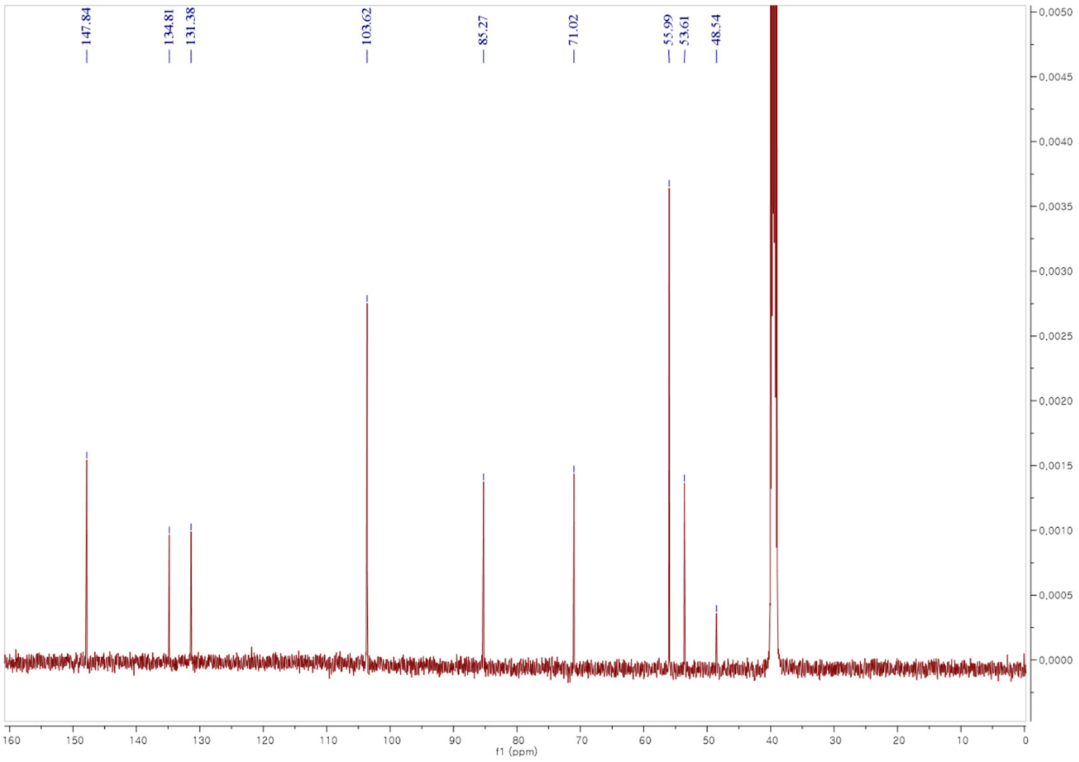

Figure S6. ^{13}C NMR spectrum of compound 3

Table S3. ^{13}C NMR spectrum data of compound **3**

Positions	Paper Citation (150 MHz, DMSO-d_6)	Reference[a] (125 MHz, chloroform-*d*)
	δ_C	δ_c
C-1	53.61	54.29
C-2	85.27	86.01
C-4	71.02	71.75
C-5	53.61	54.29
C-6	85.27	86.01
C-8	71.02	71.75
C-1′	131.38	132.04
C-2′	103.62	102.69
C-3′	147.84	147.13
C-4′	134.81	134.29
C-5′	147.84	147.13
C-6′	103.62	102.69
C-1″	131.38	132.04
C-2″	103.62	102.69
C-3″	147.84	147.13
C-4″	134.81	134.29
C-5″	147.84	147.13
C-6″	103.62	102.69
3′, 5′, 3″, 5″-OCH_3	55.99	54.29

[a]Kwon, H.C.; Choi, S.U.; Lee, J.O.; Kwon, H.C.; Choi, S.U.; Lee, J.O.; Bae, K.H.; Zee, O.P. Lee, K.R. Two New Lignan from *Lindera obtusiloba* blume. Arch Pharm Res. **1999**, *22*, 417-422.

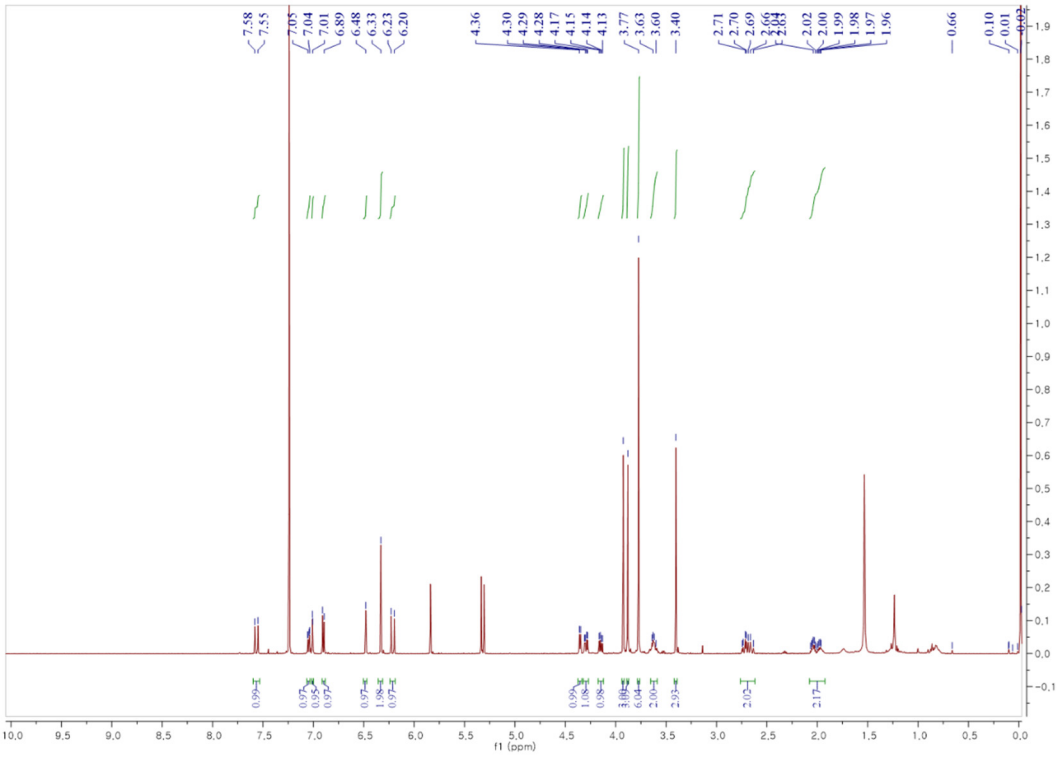

Figure S7. ^{1}H NMR spectrum of compound **4**

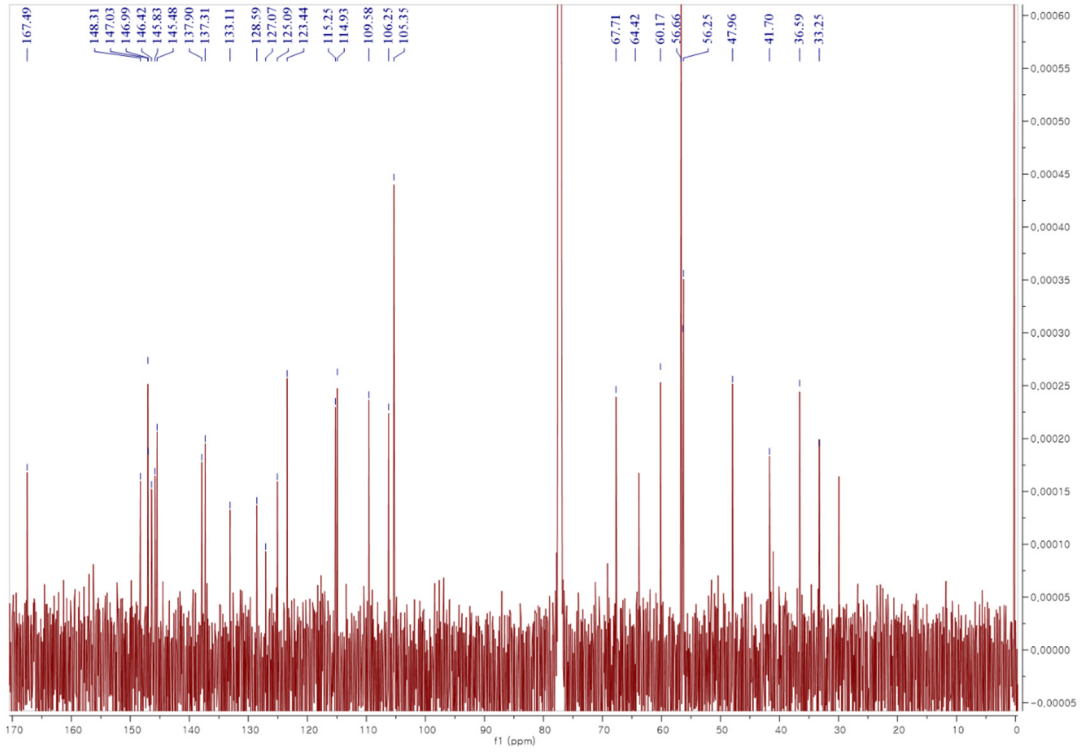

Figure S8. ^{13}C NMR spectrum of compound **4**

Table S4. ^{13}C NMR spectrum data of compound **4**

Positions	Paper Citation (150 MHz, chloroform-*d*)	Reference[a] (150 MHz, chloroform-*d*)
	δ_C	δ_c
C-1	125.12	124.7
C-2	105.35	105.0
	106.25	106.1
C-4	137.31	137.0
	146.42	145.5
C-5	145.86	145.3
C-6	105.35	105.5
	128.62	128.4
C-8	47.83	47.83
C-9	67.71	67.4
C-1′	137.94	137.6
C-3′	146.99	146.2
	147.03	146.8
C-4′	133.11	132.7
C-5′	146.99	146.8
	147.03	
C-7′	41.7	41.3
C-8′	47.83	47.6
C-9′	63.82	63.4
C-1″	127.04	126.7
C-2″	109.58	109.3
C-4″	148.38	148.1
C-5″	114.93	114.7
C-6″	123.44	123.2
C-7″	145.52	145.0

Table S4. continued

Positions	Paper Citation (150 MHz, chloroform-*d*)	Reference (150 MHz, chloroform-*d*)
	δ_C	δ_c
C-8″	115.25	114.9
C=O	167.55	167.4
3-OCH_3	56.25	56.1
5-OCH_3	60.17	59.9
3′, 5′-OCH_3	56.66	56.6
3″-OCH_3	56.35	56.3

[a]Chen, T.H.; Huang, Y.H.; Lin, J.J. Cytotoxic lignan ester from *cinnamomum osmophloeum*. *Planta Med*. **2009**, *76.6*, 613-619.

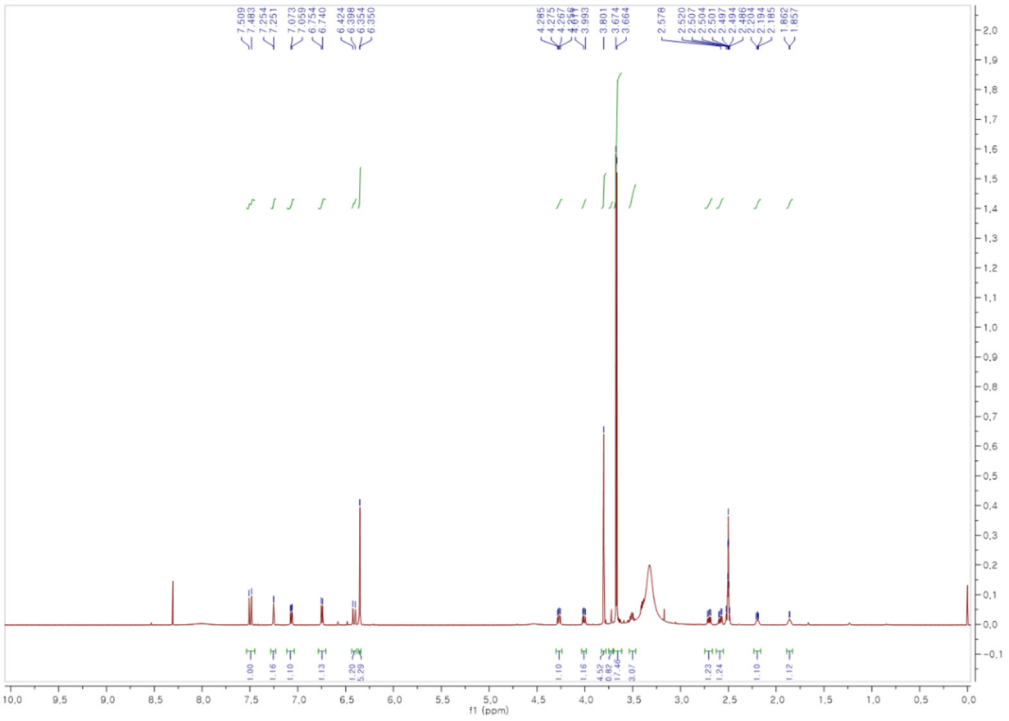

Figure S9. ^{1}H NMR spectrum of compound **5**

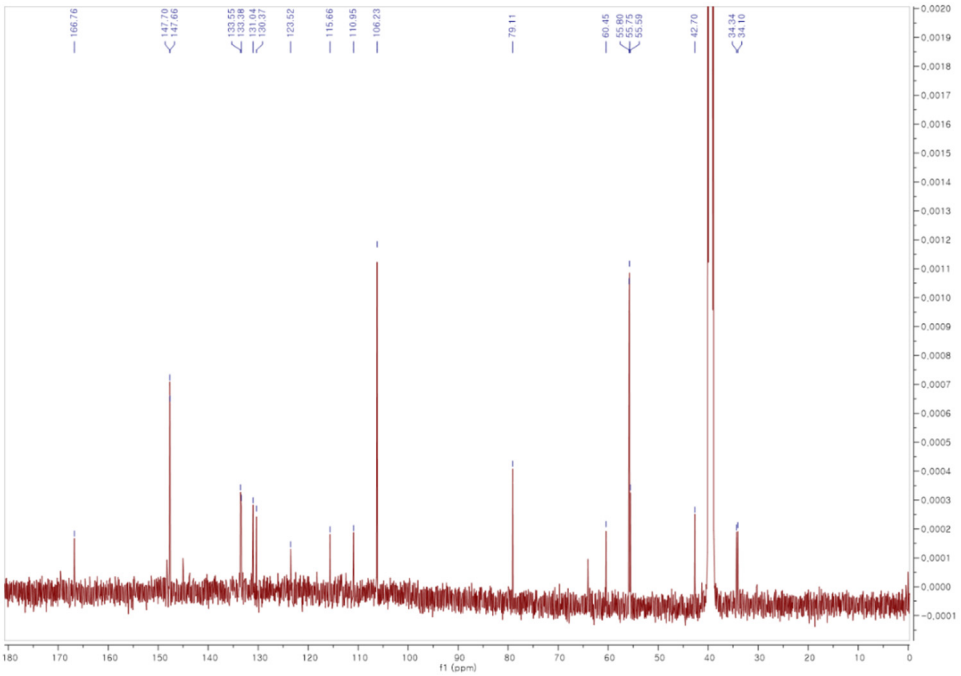

Figure S10. ^{13}C NMR spectrum of compound **5**

Table S5. ^{13}C NMR spectrum data of compound **5**

Positions	Paper Citation (150 MHz, DMSO-d_6)	Reference[a] (150 MHz, chloroform-*d*)
	δ_C	δ_c
C-1	130.37	126.7
C-2	106.23	106.1
C-3	147.66 147.71	145.3
C-4	133.38 133.55	137.0 132.7
C-5	147.66 147.71	145.3 145.5
C-6	106.23	106.1
C-7	34.34	32.9
C-8	38.51	41.3
C-9	64.05	67.4
C-1′	131.04	128.4
C-2′	106.23	105.0
C-3′	147.66 147.71	145.2 145.3
C-4′	133.38 133.55	132.7 137
C-5′	147.66 147.71	145.3 146.2
C-6′	106.23	106.1
C-7′	34.1	36.2
C-8′	42.7	47.6
C-9′	64.45	67.4
C-1″	124.49	124.8

Table S5. continued

Positions	Paper Citation (150 MHz, DMSO-d_6)	Reference (150 MHz, chloroform-*d*)
	δ_C	δ_c
C-2″	110.95	109.3
C-3″	148.23	146.8
C-4″	150.59	148.1
C-5″	115.56	114.9
C-6″	123.52	123.2
C-7″	145.04	137.6
C-8″	113.0	114.7
C-9″	166.76	167.4
3, 5, 3′, 5′-OCH_3	55.75 55.8	56.3
3″-OCH_3	55.59	56.3

[a]Chen, T.H.; Huang, Y.H.; Lin, J.J. Cytotoxic lignan ester from *cinnamomum osmophloeum*. *Planta Med*. **2009**, *76.6*, 613-619.

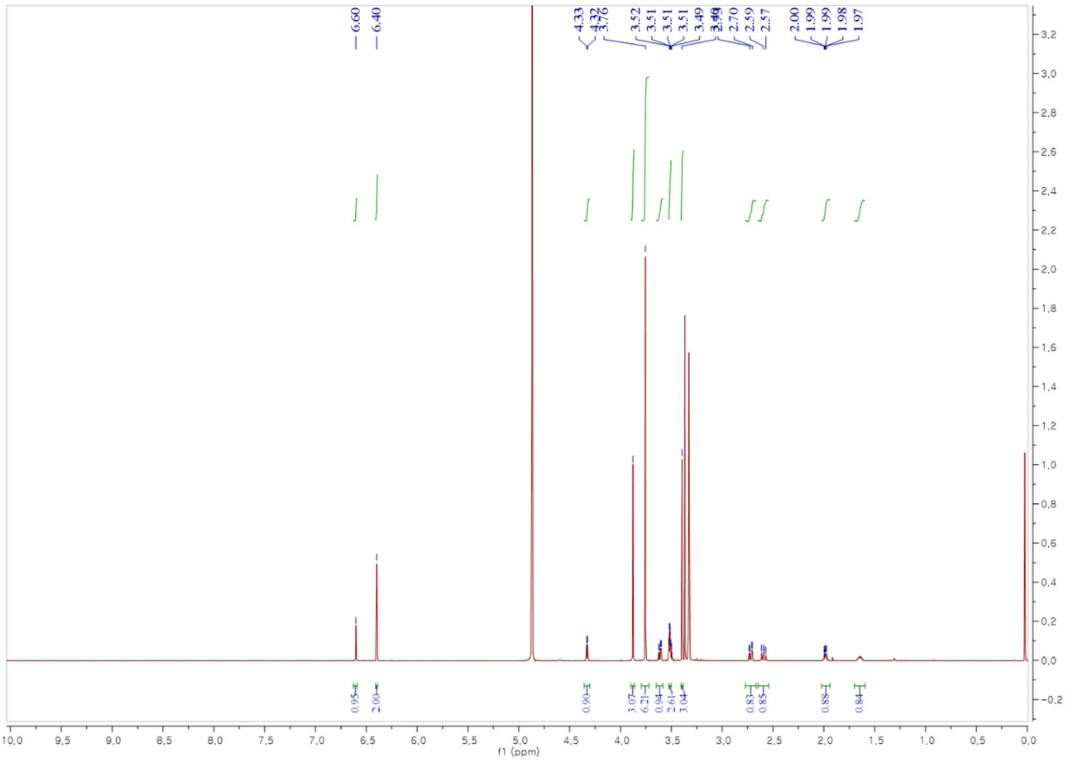

Figure S11. ^{1}H NMR spectrum of compound **6**

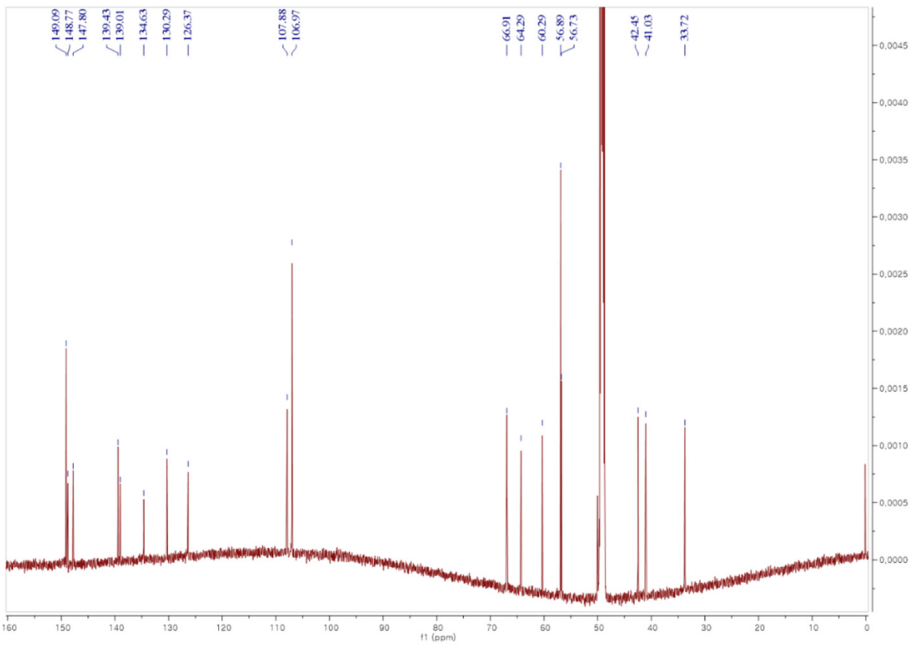

Figure S12. ^{13}C NMR spectrum of compound **6**

Table S6. ^{13}C NMR spectrum data of compound **6**

Positions	Paper Citation (150 MHz, methnol-d_4)	Reference[a] (150 MHz, chloroform-d)
	δ_C	δ_c
C-1	126.37	126.4
C-2	130.29	129.8
C-3	147.8	147.1
C-4	139.01	138.6
C-5	148.77	147.7
C-6	107.88	107.1
C-7	33.72	33.9
C-8	41.03	41.2
C-9	66.91	66.5
C-1′	139.93	139.3
C-2′	106.97	107.2
C-3′	149.09	148.3
C-4′	134.63	134.9
C-5′	149.09	148.3
C-6′	106.97	107.2
C-7′	42.45	42.6
C-8′	49.18	49.3
C-9′	64.29	63.8
3-OCH_3	60.29	59.4
5-OCH_3	56.73	56.4
3′, 5′-OCH_3	56.89	56.8

[a]Chen, T.H.; Huang, Y.H.; Lin, J.J. Cytotoxic lignan ester from *cinnamomum osmophloeum*. *Planta Med*. **2009**, *76.6*, 613-619.

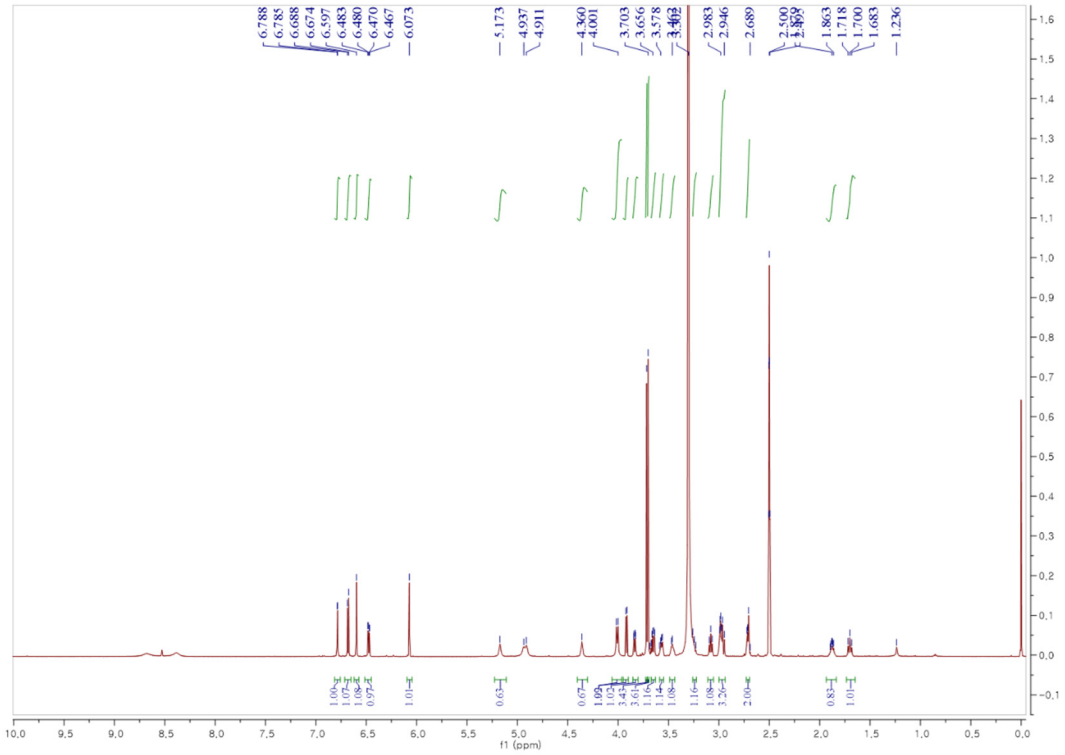

Figure S13. ^{1}H NMR spectrum of compound **7**

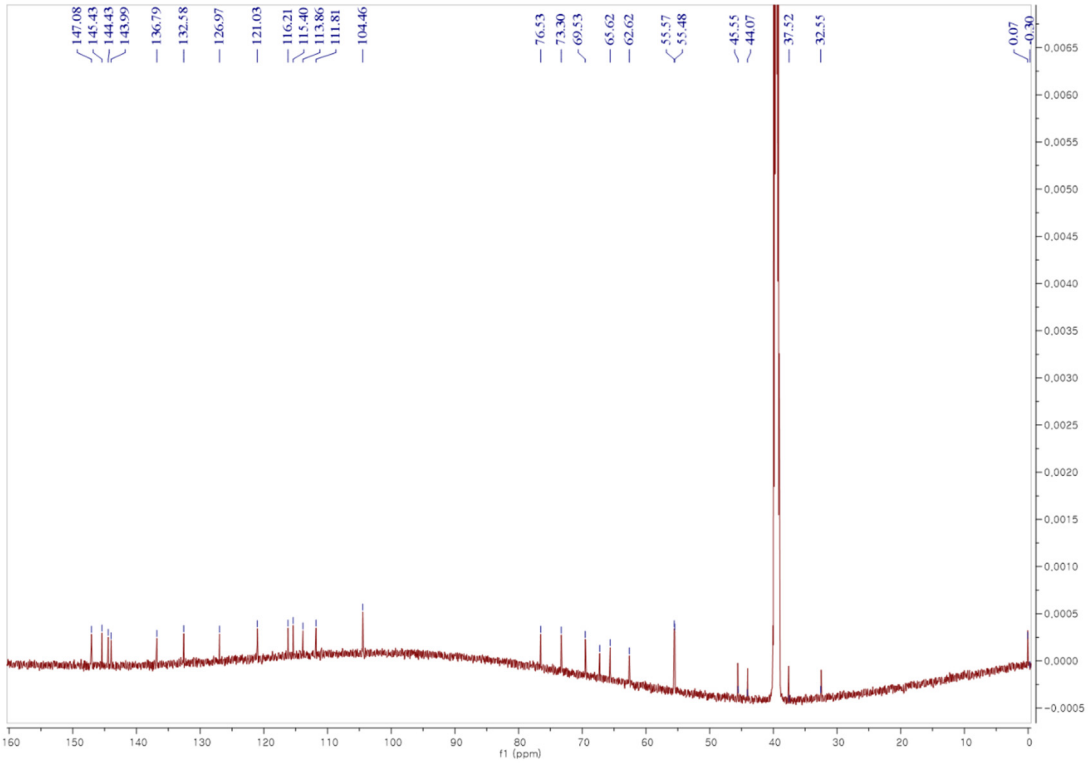

Figure S14. ^{13}C NMR spectrum of compound **7**

Table S7. ^{13}C NMR spectrum data of compound **7**

Positions	Paper Citation (150 MHz, DMSO-d_6)	Reference[a] (125 MHz, methnol-d_4)
	δ_C	δ_c
C-1	136.79	137.9
C-2	113.86	107.8
C-3	55.49 55.57 147.08	56.7 149.1
C-4	144.43	147.3
C-5	115.4	112.3
C-6	121.03	129.2
C-7	45.8	49.5
C-8	44.86	45.5
C-9	67.26	70.0
C-1′	132.58	134.9
C-2′	111.81	107.8
C-3′	145.43	149.10
C-4′	143.99	145.3
C-5′	116.21	117.3
C-6′	126.97	133.6
C-7′	31.75	33.8
C-8′	37.98	40.4
C-9′	62.62	65.3
C-1″	104.46	104.8
C-2″	73.3	74.9
C-3″	76.53	78.0
C-4″	69.53	71.3
C-5″	65.62	67.0

[a]Sadhu, S.K.; Khatun, A.; Phattanawasin, P.; Ohtsuki, T.; Ishibashi, M. Lignan glycosides and flavonoids from *Saraca asoca* with antioxidant activity. *J Nat Med*. **2007**, *61*, 480-482.

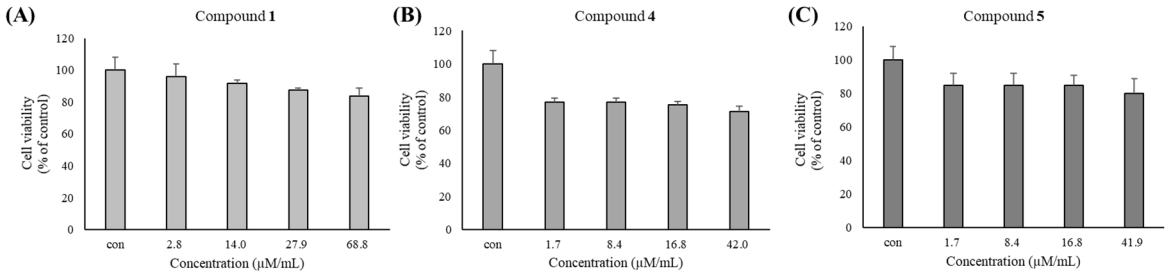

Figure S15. Cytotoxic activity of compounds. (A) Compound **1**; (B) Compound **4**; (C) Compound **5**