

# Supplementary Materials: New Diphenol and Isocoumarins from the Aerial Part of *Lawsonia inermis* and their Inhibitory Activities against NO Production

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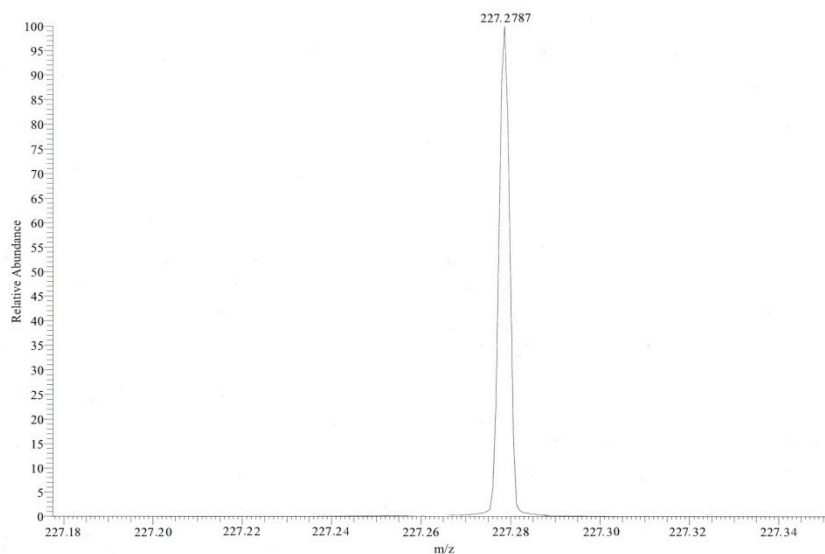


Figure S1. HR-ESI-MS spectrum of 1.

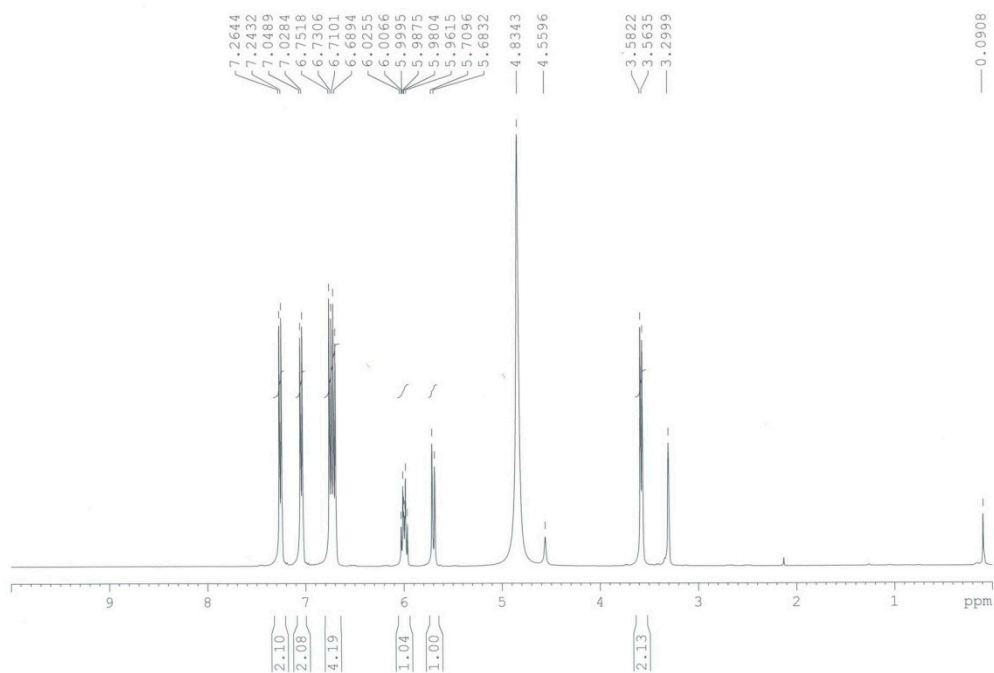


Figure S2. <sup>1</sup>H-NMR spectrum of 1 (CD<sub>3</sub>OD, 500 MHz).

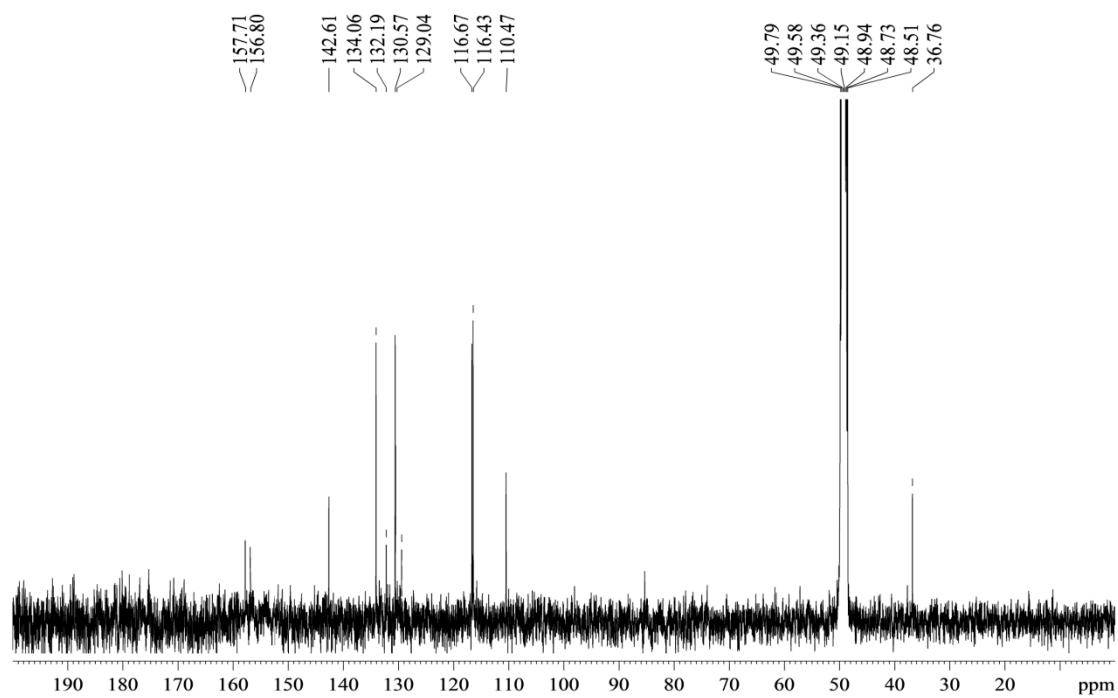


Figure S3.  $^{13}\text{C}$ -NMR spectrum of **1** ( $\text{CD}_3\text{OD}$ , 125 MHz).

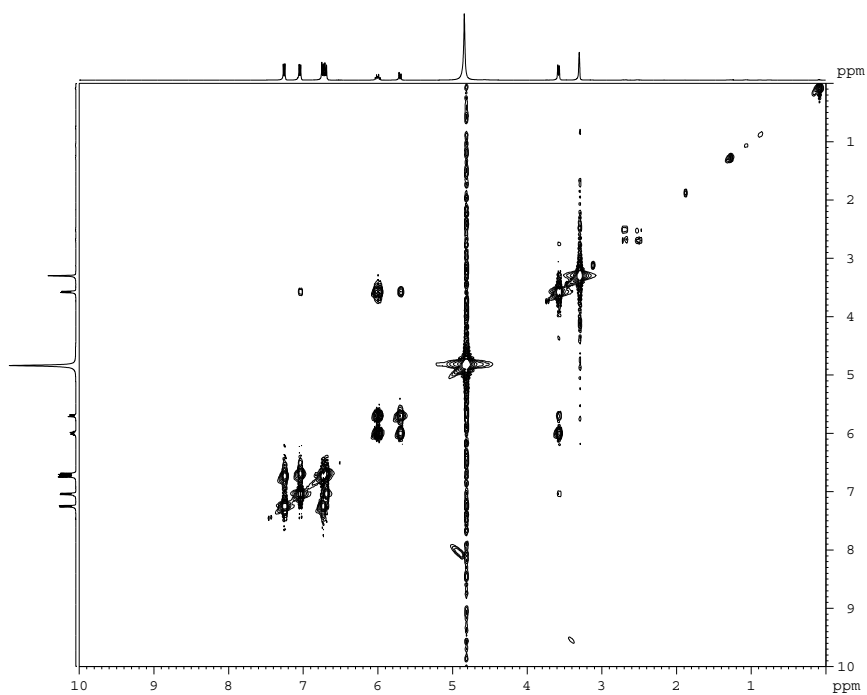


Figure S4.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of **1**.

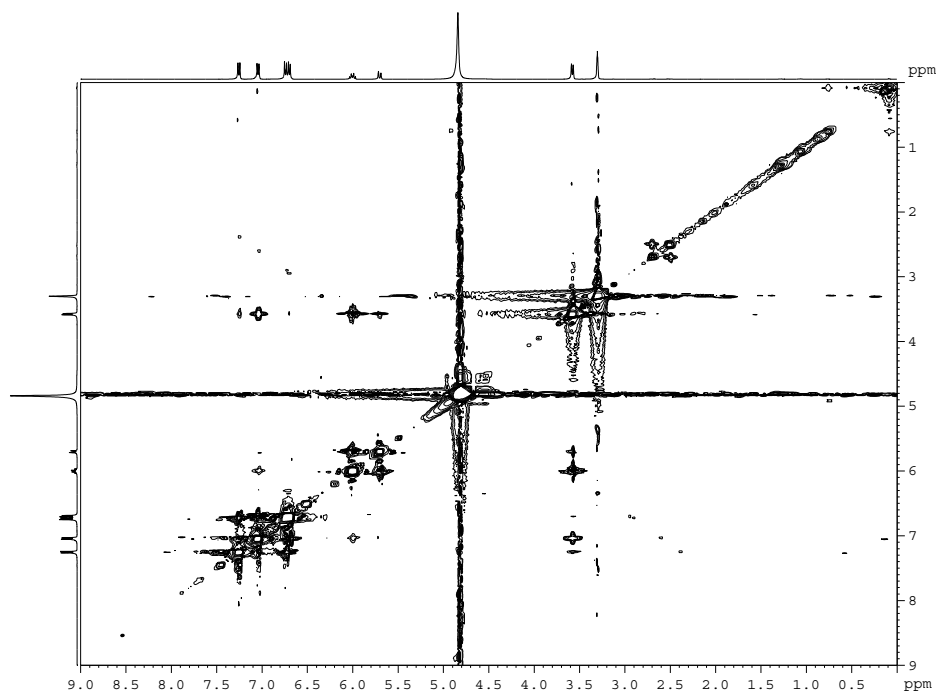


Figure S5. NOESY spectrum of 1.

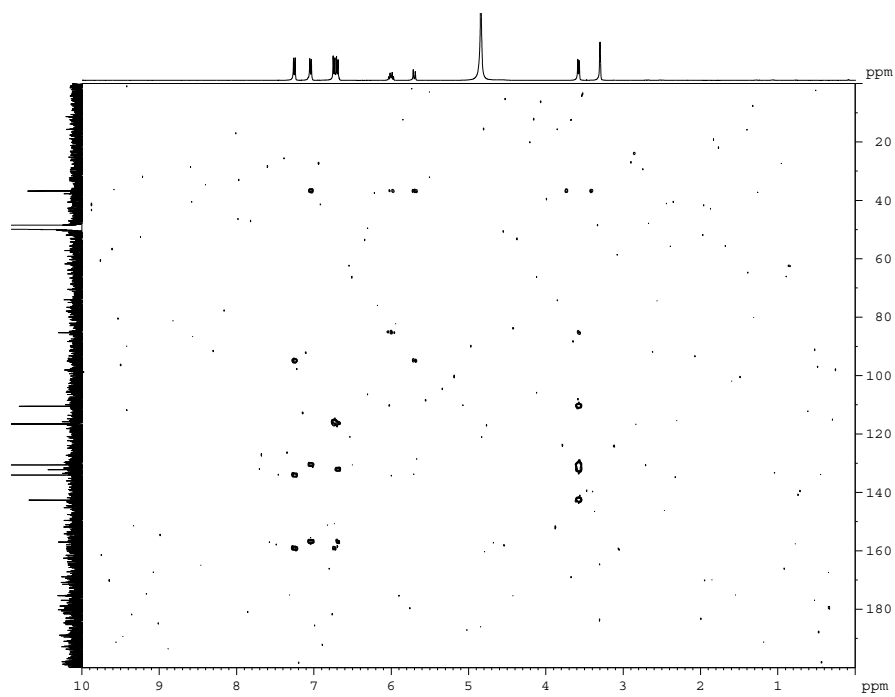


Figure S6. HMBC spectrum of 1.

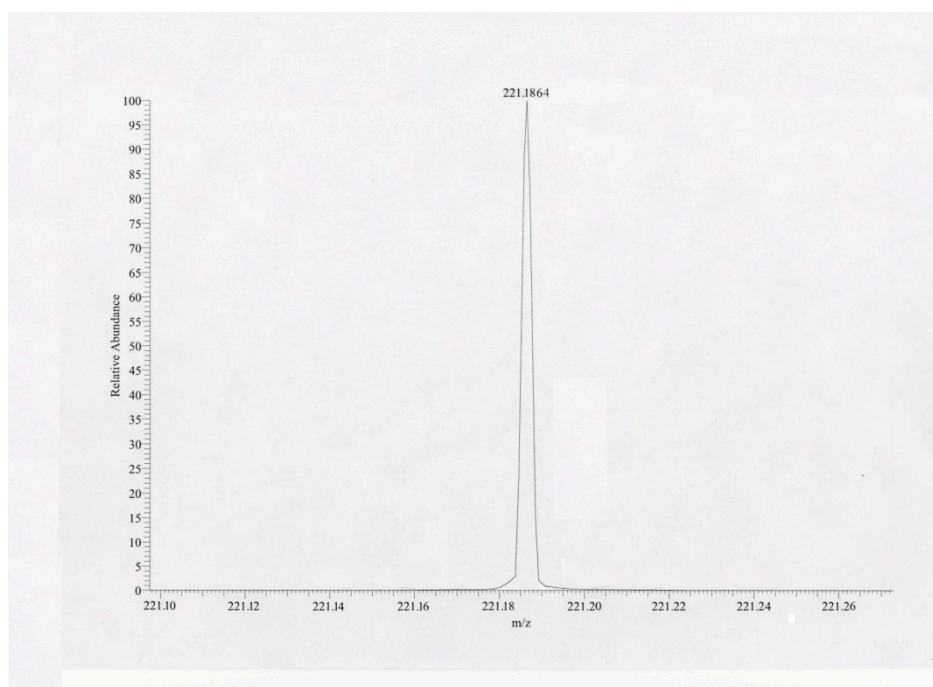


Figure S7. HR-ESI-MS spectrum of **2**.

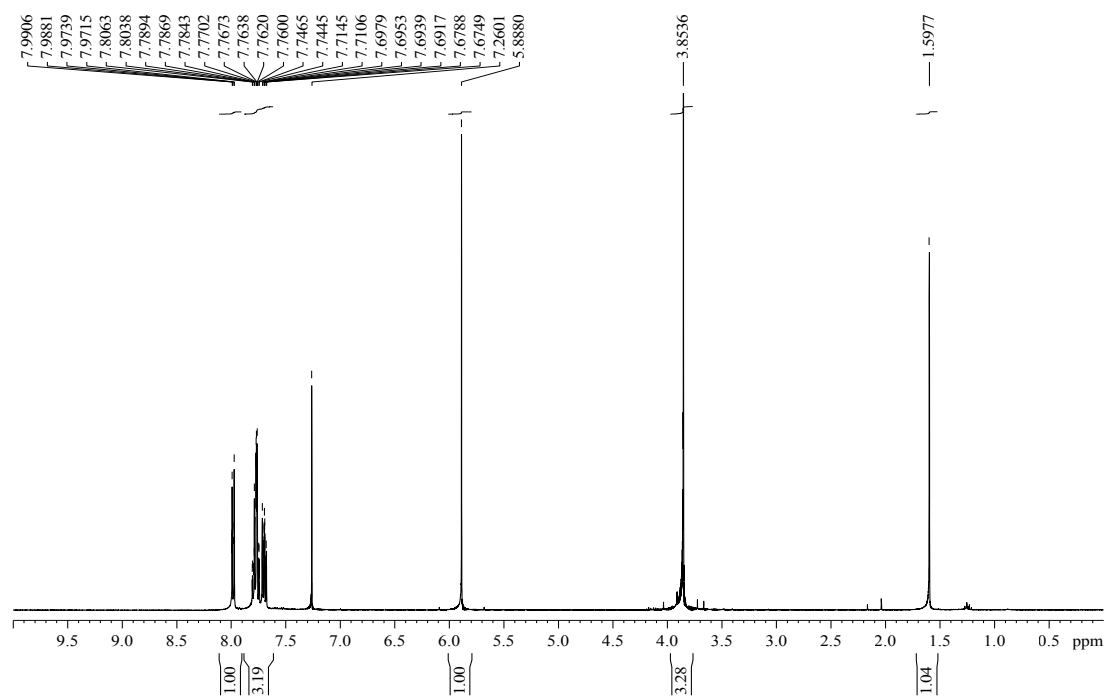
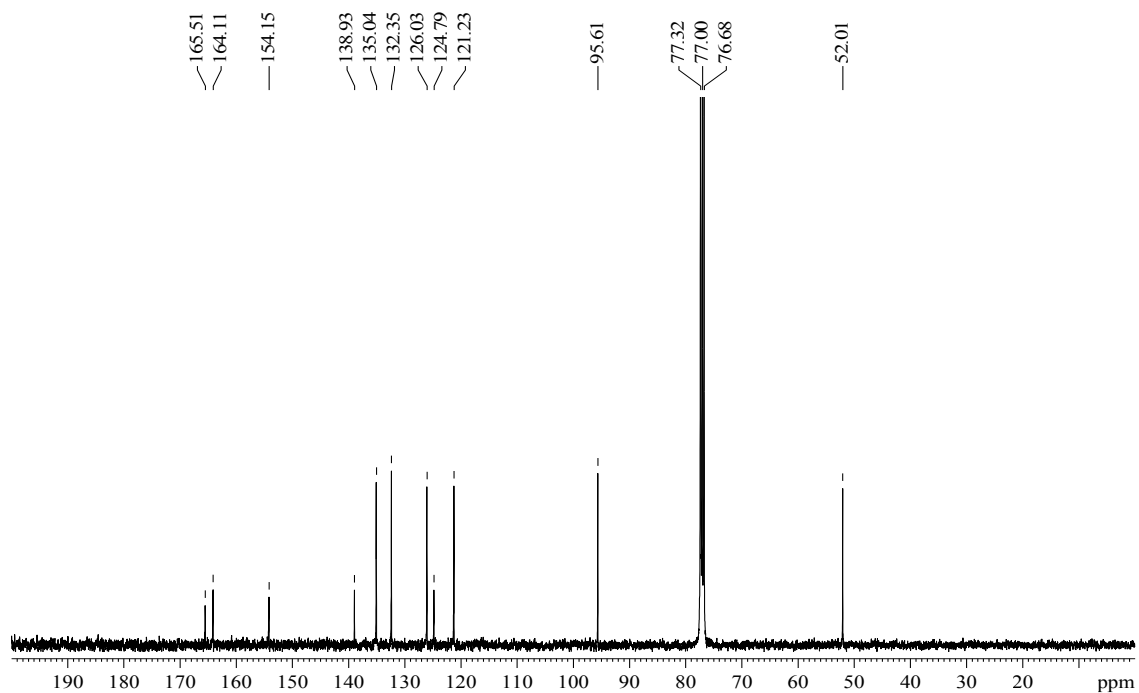
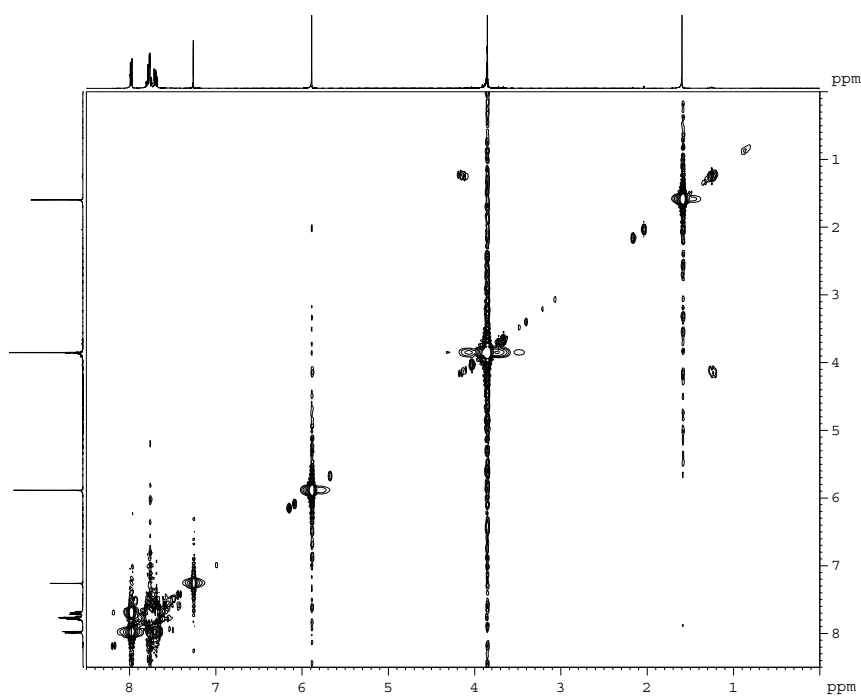


Figure S8. <sup>1</sup>H-NMR spectrum of **2** (CDCl<sub>3</sub>, 500 MHz).

Figure S9.  $^{13}\text{C}$ -NMR spectrum of **2** ( $\text{CDCl}_3$ , 125 MHz).Figure S10.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of **2**.

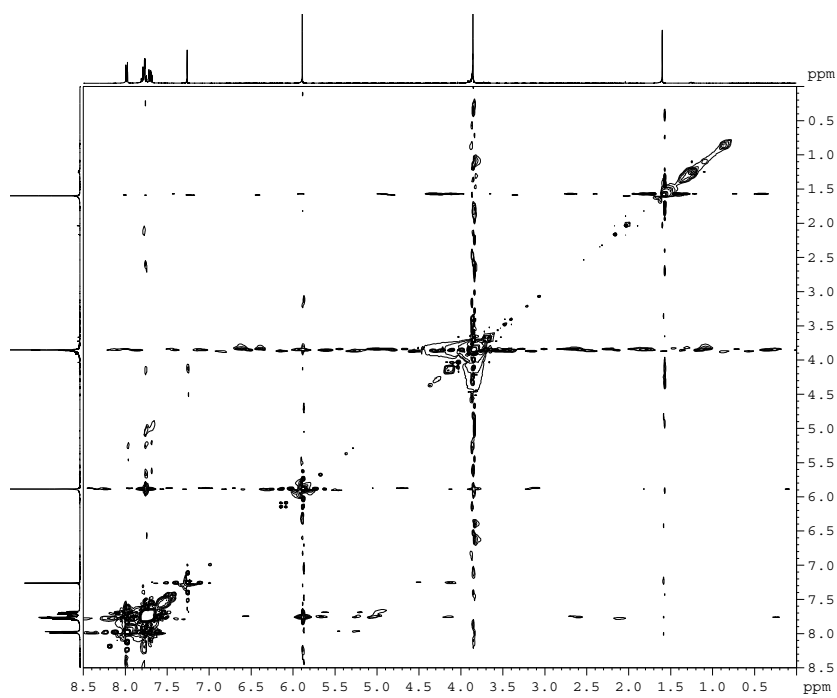


Figure S11. NOESY spectrum of 2.

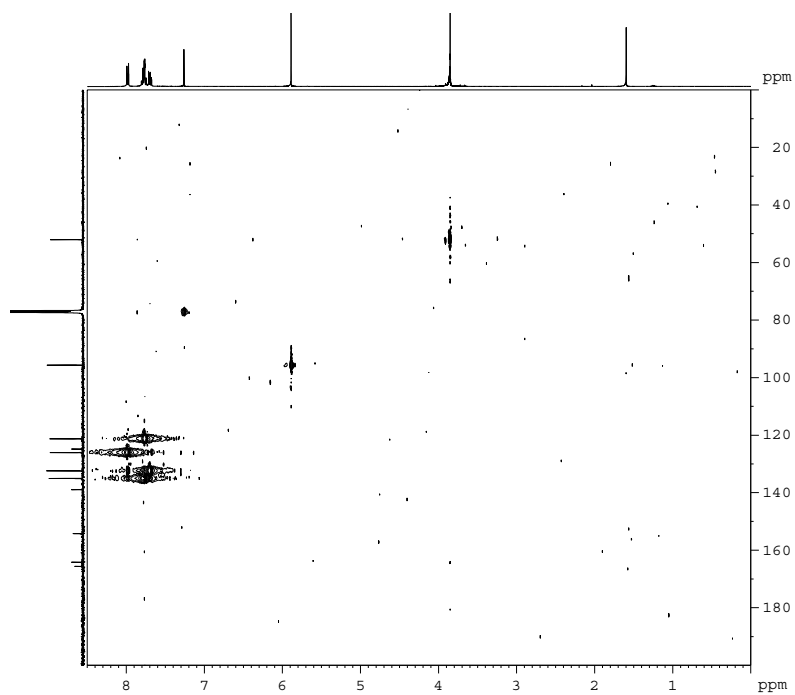


Figure S12. HMBC spectrum of 2.

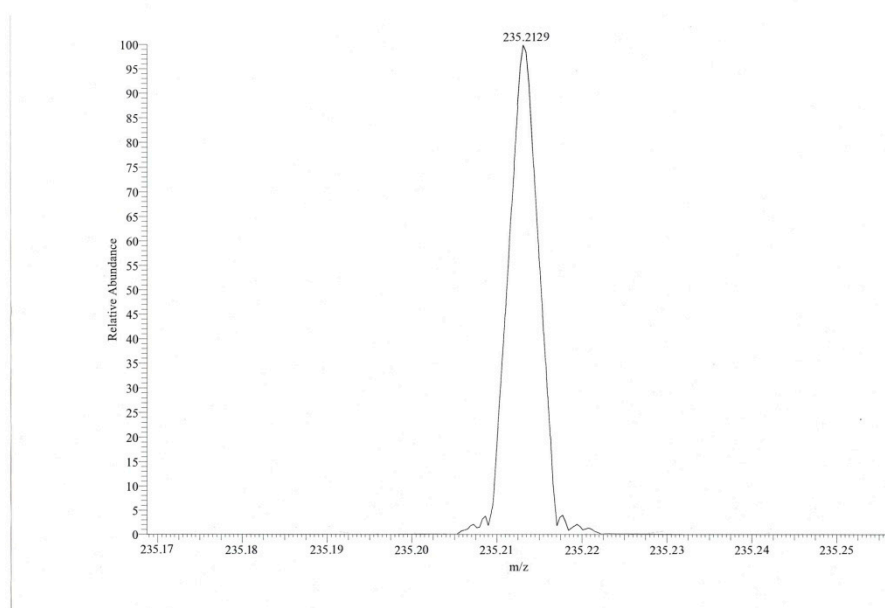


Figure S13. HR-ESI-MS spectrum of 3.

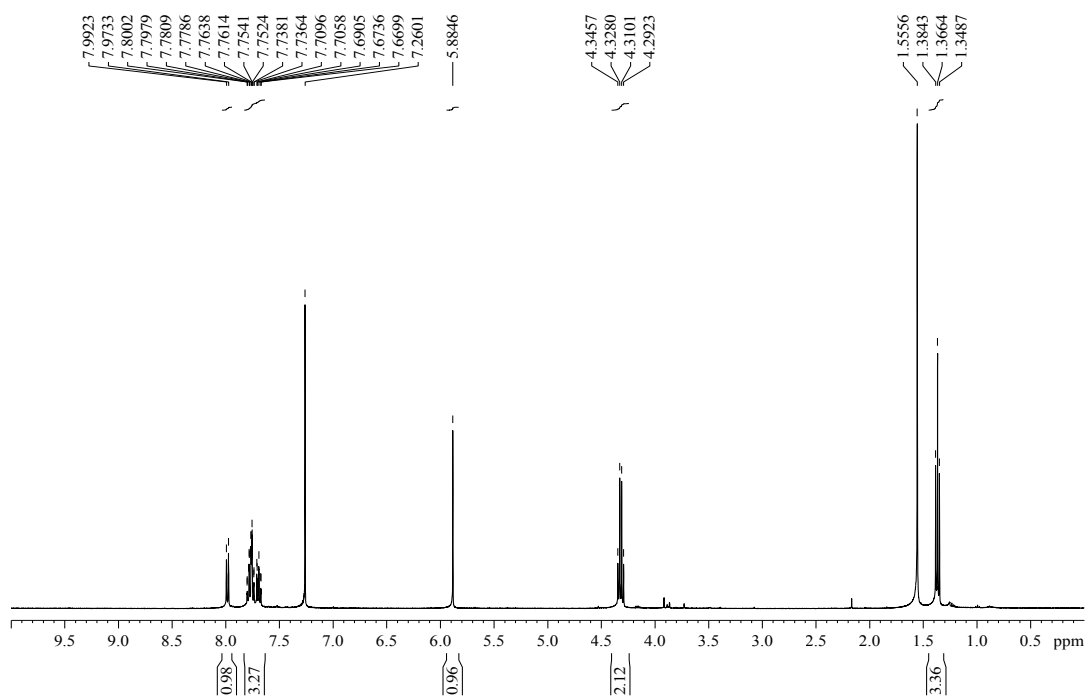


Figure S14. <sup>1</sup>H-NMR spectrum of 3 (CDCl<sub>3</sub>, 500 MHz).

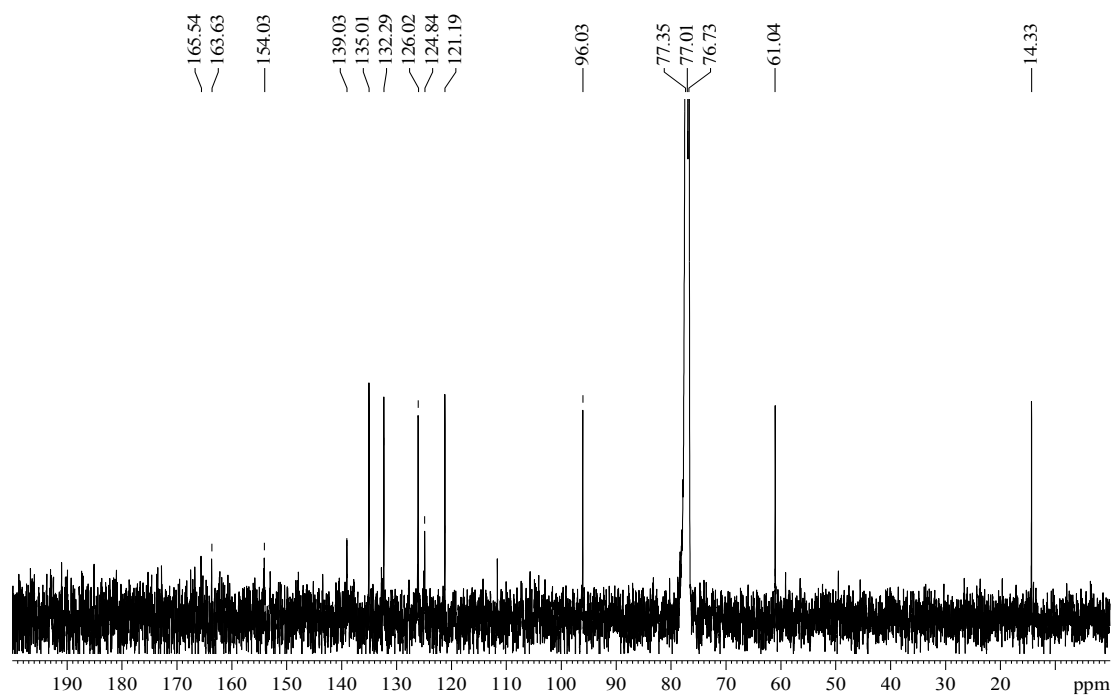


Figure S15.  $^{13}\text{C}$ -NMR spectrum of 3 ( $\text{CDCl}_3$ , 125 MHz).

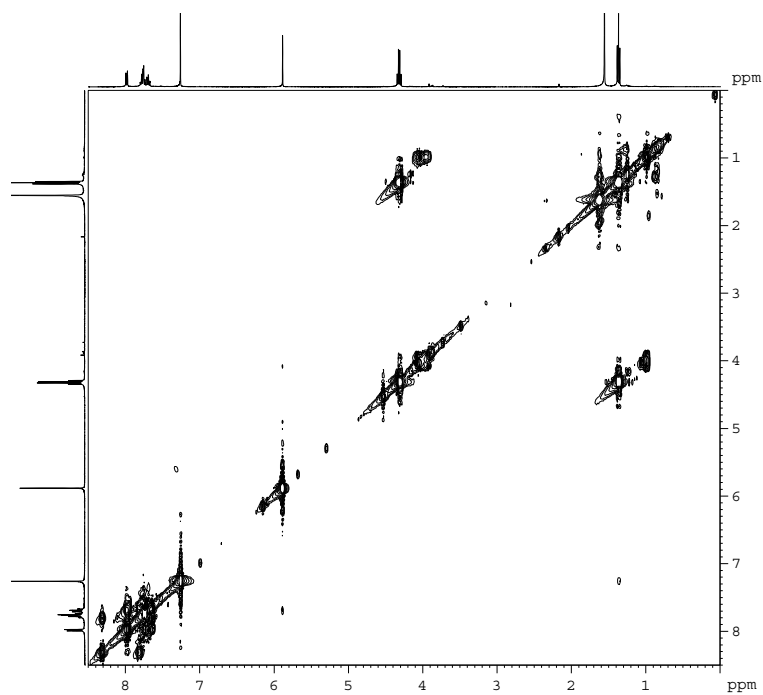


Figure S16.  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of 3.



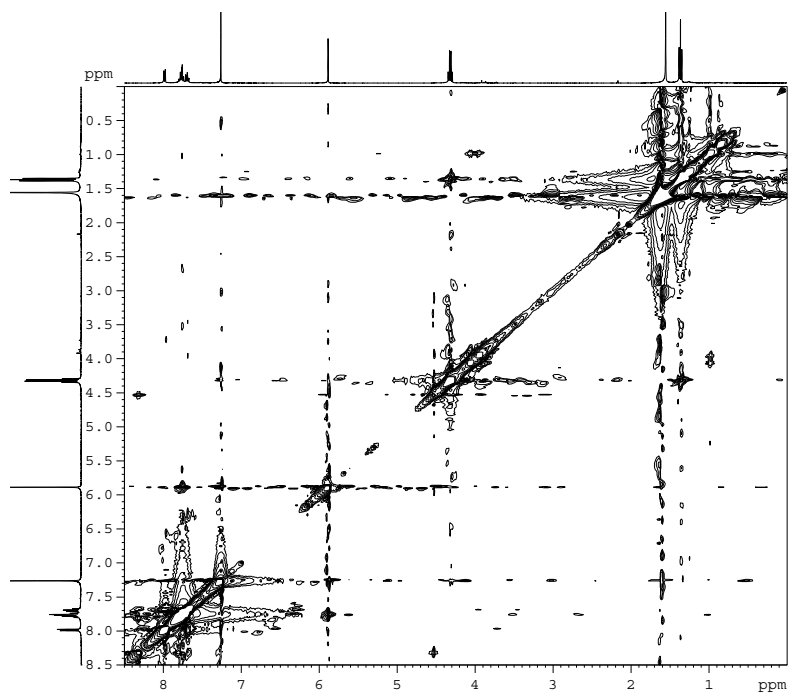


Figure S17. NOESY spectrum of 3.

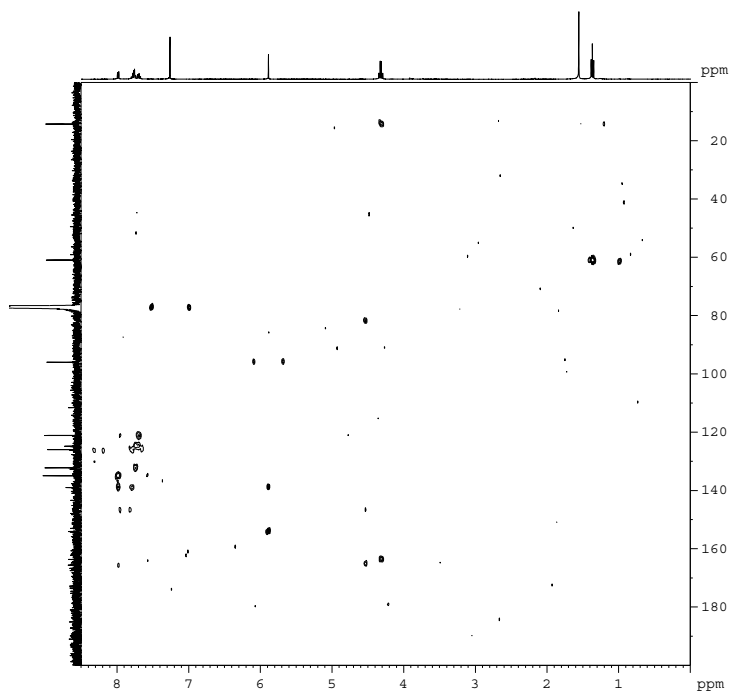


Figure S18. HMBC spectrum of 3.

**Table S1.** Inhibitory effect of compounds 1–9 on overproduction of nitric oxide in LPS-stimulated RAW 264.7 cells.

	Dose ( $\mu\text{M}/\text{mL}$ )	Cell Viability (% of Control)	NO Inhibition (% of Control)	IC <sub>50</sub> ( $\mu\text{g}/\text{mL}$ )
Control	(-)	92.8 $\pm$ 6.1	(-)	
LPS	(+)	99.5 $\pm$ 2.3	(-)	
(Z)-4,4'-(Prop-1-ene-1,3-diyl)diphenol (1)	2.5	95.0 $\pm$ 1.0	38.8 $\pm$ 4.0	5.63 $\pm$ 3.64
	5	87.6 $\pm$ 1.5	47.8 $\pm$ 4.7	
	10	78.5 $\pm$ 1.5	60.2 $\pm$ 1.8	
	20	58.4 $\pm$ 2.2	81.6 $\pm$ 2.9	
Inermiscarbonates A (2)	2.5	98.8 $\pm$ 1.4	5.7 $\pm$ 0.7	>20
	5	87.0 $\pm$ 1.9	6.4 $\pm$ 0.7	
	10	83.1 $\pm$ 1.7	2.3 $\pm$ 0.5	
	20	79.2 $\pm$ 2.4	1.6 $\pm$ 0.5	
Inermiscarbonates B (3)	2.5	99.7 $\pm$ 1.6	-4.8 $\pm$ 0.7	>20
	5	100.4 $\pm$ 1.9	0.4 $\pm$ 0.5	
	10	95.0 $\pm$ 1.4	9.7 $\pm$ 0.6	
	20	83.0 $\pm$ 1.1	28.0 $\pm$ 0.5	
4'-Hydroxyflavanone (4)	2.5	99.7 $\pm$ 2.3	8.2 $\pm$ 0.3	15.72 $\pm$ 2.52
	5	95.8 $\pm$ 2.8	14.0 $\pm$ 0.7	
	10	93.4 $\pm$ 2.6	32.0 $\pm$ 2.9	
	20	67.1 $\pm$ 2.1	59.6 $\pm$ 1.4	
Apigenine (5)	2.5	93.4 $\pm$ 1.3	-11.1 $\pm$ 0.5	8.67 $\pm$ 3.84
	5	93.7 $\pm$ 1.1	32.4 $\pm$ 2.7	
	10	81.4 $\pm$ 1.5	54.6 $\pm$ 3.4	
	20	62.6 $\pm$ 1.5	78.2 $\pm$ 2.4	
Kampferol (6)	2.5	97.9 $\pm$ 1.2	30.7 $\pm$ 1.5	6.67 $\pm$ 3.48
	5	92.0 $\pm$ 0.7	41.1 $\pm$ 3.8	
	10	77.0 $\pm$ 1.6	62.5 $\pm$ 2.6	
	20	59.3 $\pm$ 1.2	75.9 $\pm$ 0.7	
Luteolin (7)	2.5	99.3 $\pm$ 2.3	30.9 $\pm$ 2.4	6.17 $\pm$ 2.86
	5	100.7 $\pm$ 1.7	46.0 $\pm$ 1.8	
	10	96.1 $\pm$ 1.2	59.1 $\pm$ 3.2	
	20	80.1 $\pm$ 1.8	81.6 $\pm$ 1.8	
Quercetin (8)	2.5	100.8 $\pm$ 1.6	23.6 $\pm$ 1.6	7.61 $\pm$ 3.34
	5	100.2 $\pm$ 1.8	40.8 $\pm$ 3.5	
	10	98.6 $\pm$ 1.4	56.0 $\pm$ 3.6	
	20	92.2 $\pm$ 0.9	66.7 $\pm$ 3.5	
(-)-Catechin (9)	2.5	89.4 $\pm$ 2.5	20.7 $\pm$ 2.9	14.52 $\pm$ 3.31
	5	83.4 $\pm$ 1.4	28.8 $\pm$ 1.1	
	10	80.2 $\pm$ 2.3	41.2 $\pm$ 1.2	
	20	78.6 $\pm$ 2.9	57.5 $\pm$ 0.8	