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Supplementary material

Saponins are responsible for the anti-obesogenic activity of Acacia concinna

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Supplementary Figure S1. ¹H-NMR of the AC saponin



Supplementary Figure S2. ESI-MS spectrum of the AC saponin

	Compound 1		Compound 2		Compound 3		Compound 4	
No.	literature data[1]	Isolated	literature data[1]	Isolated	literature data[2]	Isolated	literature data[2]	Isolated
3	6.85 (br t, 6.6)	6.91 (br t)	6.85 (br t, 6.6)	6.90 (1H, t)	6.76 (1H, br t, 6.8)	6.76 (1H, t)	6.77 (1H, tq, 7.8, 1.5)	6.79 (1H, tq)
4	2.40 (m)	2.44 (2H_m)	2.40 (m)	2.39 (2H m)	2.30 (2H m)	2.27 (2H m)	2.32 (2H m)	2.30 (2H,
5	1.73	1.76	1.73	1.70	1.71	(211, III) 1.70	(211, III) 1.73 (2H, t,	1.75
7	(m) 6.03	(2H, m)	(m) 5.94	(2H, m)	(2H, m) 6.01	(2H, m)	8.3) 6.03	(2H, m)
8	(dd, 17.3, 11.0) 5.16	6.01 (1H, dd)	(dd, 17.3, 11.0) 5.22	5.91 (1H, dd)	(1H, dd, 17.6, 10.7) 5.17	6.01 (1H, dd)	(1H, dd, 17.8, 11.2) 5.17	6.03 (1H, dd)
	(br d, 11.0) 5.22 (br d, 17.3)	5.15 (2H, dd)	(br d, 10.7) 5.28 (br d, 17.1)	5.20 (2H, dd)	(1H, dd, 10.7, 1.0) 5.23 (1H, dd, 17.6, 1.0)	5.17 (2H, dd)	(1H, dd, 11.2, 1.0) 5.23 (1H, dd, 17.8, 1.0)	5.18 (2H, dd)
9	4.31 (br s)	4.31 (2H, s)	4.31 (s)	4.30 (1H, s)	1.80 (3H, s)	1.80 (2H, s)	1.80 (3H, d, 1.5)	1.82 (2H, s)
10	1.34 (s)	1.33 (6H, s)	1.37 (s)	1.37 (2H, s)	1.33 (3H, s)	1.33 (3H, s)	1.33 (3H, s)	1.36 (3H, s)
1	Qui		Qui		Xyl		Qui	
1	4.31 (d, 7.8)	4.31 (1H, d)	4.35 (d, 7.8)	4.33 (1H, d)	4.28 (1H, d, 7.3)	4.29 (1H, d)	4.51 (1H, d, 7.8)	4.31 (1H, d)
2	3.16 (dd, 9.1, 7.8)	3.19 (m)	3.16 (dd, 9.1, 7.8)	3.14 (1H, dd)	3.14 (1H, dd, 9.3, 7.8)	3.16 (1H, dd)	3.16 (1H, dd, 9.3, 7.8)	3.16 (1H, dd)
3	3.28 (t, 9.1)	3.27 (1H, t)	3.28 (t, 9.1)	3.27 (1H, t)	3.28 (1H, t, 9.0)	3.28 (1H, t)	3.27 (1H, t, 9.3)	3.27 (1H, t)
4	2.98 (t. 9.1)	2.95 (1H, t)	2.98 (t. 9.1)	2.97 (1H, t)	3.46 (1H. m)	3.46 (1H. m)	2.97 (1H, t, 9.3)	2.97 (1H, t)
5	3.18 (m)	3.19 (m)	3.18 (m)	3.23 (1H, m)	3.08 (1H. t, 11.0) 3.76	3.08 (1H, t)	3.19 (1H, dq, 9.3, 5.9)	3.19 (1H, dq)
6					(1H, dd, 11.5, 5.6)	3.76 (1H, dd)	1.00	
6	1.23 (d, 5.9)	1.22 (3H, d)	1.22 (d, 5.3)	1.23 (3H, d)			1.22 (3H, d, 5.9)	1.24 (2H, d)

Supplementary Table S1. Comparation of ¹H-NMR data of compound 1-4 with literature data



Supplementary Figure S3. ¹H-NMR spectrum of compound 1 (500 MHz, CD₃OD)



Supplementary Figure S4. ¹H-NMR spectrum of compound 2 (500 MHz, CD₃OD)



Supplementary Figure S5. ¹H-NMR spectrum of compound **3** (500 MHz, CD₃OD)



Supplementary Figure S6. ¹H-NMR spectrum of compound 4 (500 MHz, CD₃OD)



Supplementary Figure S7. ¹H-NMR spectrum of compound **5** (500 MHz, Acetone-*d*₆)



Supplementary Figure S8. ¹³C-NMR spectrum of compound **5** (500 MHz, Acetone-*d*₆)



Supplementary Figure S9. COSY spectrum of compound 5 (500 MHz, Acetone-d₆)



Supplementary Figure S10. HSQC spectrum of compound 5 (500 MHz, Acetone-d₆)



Supplementary Figure S11. HMBC spectrum of compound 5 (500 MHz, Acetone-d₆)



Supplementary Figure S12. ¹H-NMR spectrum of compound **6** (500 MHz, Acetone-*d*₆)



Supplementary Figure S13. ¹³C-NMR spectrum of compound **6** (500 MHz, Acetone-*d*₆)



Supplementary Figure S14. COSY spectrum of compound 6 (500 MHz, Acetone- d_6)



Supplementary Figure S15. HSQC spectrum of compound 6 (500 MHz, Acetone- d_6)



Supplementary Figure S16. HMBC spectrum of compound 6 (500 MHz, Acetone-d₆)





Supplementary Figure S17. GC-MS analysis of the sugars in AC saponin.

From top to bottom: D-glucose, L-rhamnose, D-quinovose, D-xylose, D-arabinose, acid hydrolyzed AC saponin



Supplementary Figure S18. LC-MS analysis of alkaline hydrolysis product.

From top to bottom: Extracted ion chromatograms presumed to correspond to [M+NH₄]⁺ of Glc-Ara: m/z 782.4, Glc-Rha: m/z 796.4, Ara-Rha: m/z 766.4, Glc-Glc-Glc: m/z 974.5, Glc-Glc-Ara: m/z 944.5, Glc-Glc-Rha: m/z 958.5, or Glc-Rra-Rha: m/z 928.5 attached to acacic acid lactone and total ion chromatogram.



Supplementary Figure S19. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Glc-Ara attached acacic acid lactone (m/z 782.4)



Supplementary Figure S20. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Glc-Rha attached acacic acid lactone (m/z 796.4)



Supplementary Figure S21. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Ara-Rha attached acacic acid lactone (m/z 766.4)



Supplementary Figure S22. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Glc-Glc-Glc attached acacic acid lactone (m/z 974.5)



Supplementary Figure S23. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Glc-Glc-Ara attached acacic acid lactone (m/z 944.5)



Supplementary Figure S24. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Glc-Glc-Rha attached acacic acid lactone (m/z 958.5)



Supplementary Figure S25. MS spectrum of the peak presumed as a $[M+NH_4]^+$ ion of Glc-Ara-Rha attached acacic acid lactone (m/z 928.5)

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