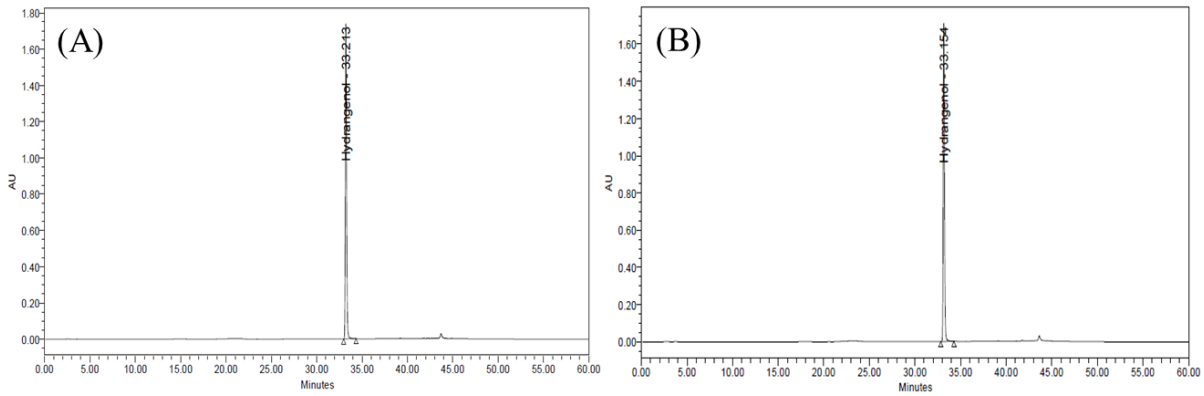
Table S1. The primer sequences for qRT-PCR

Gene	Forward sequence	Reverse sequence
HYAL1	5' TACACAGCATGCTCAGAAAG 3'	5' AGTGTCTCCATTCCAAACAG 3'
HYAL2	5' AATCTGTGGAACGCTACATC 3'	5' GCCTGCTTCATTACTCTGTC 3'
Involucrin	5' GGGTCAGTCACTTAAGCAAG 3'	5' CTACTTCTCCTGCTGTGTCC 3'
Filaggrin	5' CTCAGGAGGAAGAGGACAGT 3'	5' CAAGGTGCTTTGCTGTAAAT 3'
COL1A1	5' CCCAGAACATCACCTATCAC 3'	5' GAGGTCTTGGTGGTTTTGTA 3'
MMP-1	5' TTGCCCAGAGAAAAGCTTCAG 3'	5' TAGCAGCCCAGAGAAGCAACA 3'
MMP-3	5' GTTCTGGGCTATACGAGGGC 3'	5' GGCAGCATCGATCTTCTTCA 3'
COX-2	5' TGCTGTACAAGCAGTGGCAA 3'	5' GCAGCCATTTCCTTCTCTCC 3'
IL-6	5' GAGGATACCACTCCCAACAGACC 3'	5' AAGTGCATCATCGTTGTTCATACA 3'
NQO-1	5' TGGCCGATTCAGAGTGGCAT 3'	5' AAACAGGCTGCTTGGAGCAAAA 3'
GCLM	5' GGGAACCTGCTCAACTGGGG 3'	5' CTGCATGGGCATGGTGCATT 3'
GCLC	5' TCCGGCATCGGAGAGGAGA 3'	5' AGCAGTTGCCCATCCCGAAT 3'
β-actin	5' ATCACTATTGGCAACGAGCG 3'	5' TCAGCAATGCCTGGGTACAT 3'

Figure S1.



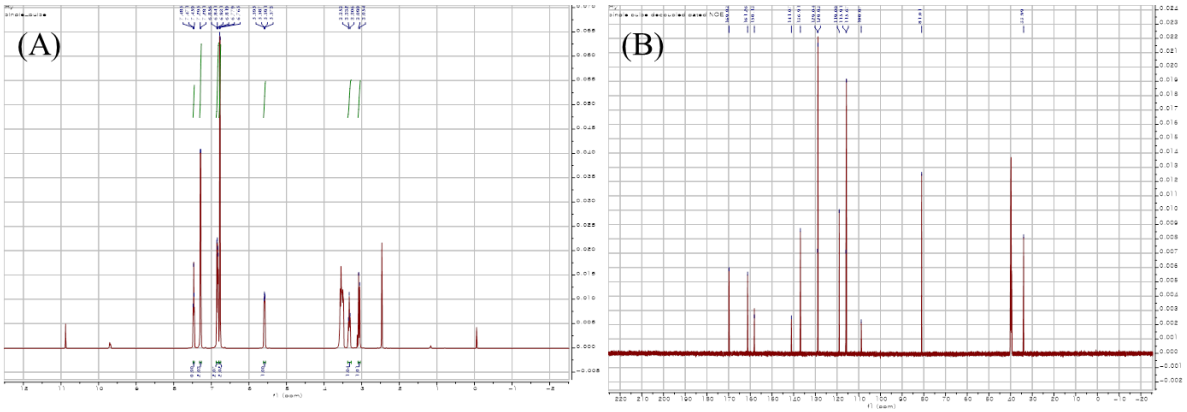
<HPLC analysis conditions>

- Column : Luna C18 (5 μm, 250 × 4.6 mm, Phenomenex)
- Detector : Waters 2489 UV/Vis Detector (228 nm)
- Pump : Waters e2695
- Oven temperature : 30°C
- Injection volume : 20 μL
- Flow rate : 1 mL/min
- Solvent system : Gradient system (linear gradient system)

Time (min)	% A (ACN)	% B (H_2O)
Initial	20	80
15	25	75
30	50	50
40	100	0
50	20	80

Figure S1. (A) HPLC profile of hydrangenol isolated from WHS and (B) authentic reference hydrangenol

Figure S2.



^{1}H-NMR (600 MHz, DMSO-d_6 – D_2O)
δ: 7.47 (1H, dd, J = 7.2, 8.4 Hz, H-6), 7.29 (2H, d, J = 8.4 Hz, H-2′,6′), 6.85 (1H, d, J = 8.4 Hz, H-7), 6.83 (1H, d, J = 7.2 Hz, H-5), 6.77 (2H, d, J = 8.4 Hz, H-3′,5′), 5.50 (1H, dd, J = 3.6, 12.0 Hz, H-3), 3.33 (1H, dd, J = 12.0, 15.6 Hz, H-4a), 3.07 (1H, dd, J = 3.6, 15.6 Hz, H-4b).

^{13}C-NMR (125 MHz, DMSO-d_6 – D_2O)
δ: 34.0 (C-4), 81.0 (C-3), 108.9 (C-9), 115.7 (C-3′,5′), 115.9 (C-7), 119.0 (C-5), 128.8 (C-2′,6′), 129.0 (C-1′), 136.9 (C-6), 141.1 (C-10), 158.1 (C-4′), 161.3 (C-8), 169.8 (C-1).

Figure S2. (A) 1H and (B) 13C NMR spectra of hydrangenol isolated from WHS measured in DMSO-d6-H2O. The chemical structure of hydrangenol was elucidated by instrumental analyses. 1D-NMR experiments were conducted using (A) 1H-(600 MHz) and (B) 13C-NMR (150 MHz), and recorded with VNS (JEOL, Tokyo, Japan).