Supplementary materials









Figure S1. HPLC analysis of AH stem ethanol extract (A) and the standard products of paprazine (B) and FA (C) (Chengdu biopurify, China). Chemical structure of two components, paprazine and FA (D).

Studies on the composition of the AH have not been reported, and the phytochemical components of the AH have been identified and the indicator materials have been established. The AH was fractionated by solvent polarity, hexane, ethyl acetate, butanol and water to separate the components of the AH. Among them, ethyl acetate fraction was obtained by concentration gradient elution of chloroform / methanol mixture. Isolated compounds were identified by NMR spectroscopy. Most of the separated materials were of the Benzoic acid derivatives. Accurate analysis of these two substances was done by comparing HPLC peak with standard materials.

A. 10 compounds are (1) p-hydroxybenzoic acid, (2) β-hydroxypropiovanillone, (3) 3-hydroxy-4-methoxybenzoic acid, (4) Vanillic acid, (5) p-hydroxybenzaldehyde, (6) Vanillin, (7) p-Coumaric acid, (8) Scopoletin, (9) paprazine and (10) FA.

B. (9) paprazine (*trans*-N-coumaroyltyramine)

NMR data: 1H NMR (CD3OD, 500 MHz) d 7.44 (1H, d, J = 15.7 Hz, H-7), 7.40 (2H, d, J = 8.6 Hz, H-2' and 6'), 7.05 (2H, d, J = 8.5 Hz, H-2 and 6), 6.79 (2H, d, J = 8.6 Hz, H-3' and 5'), 6.72 (2H, d, J = 8.4 Hz, H-3 and 5), 6.38 (1H, d, J = 15.7 Hz, H-8), 3.46 (2H, t, J = 7.4 Hz, H-8'), 2.75 (2H, t, J = 7.4 Hz, H-7'); 13C NMR (CD3OD, 125 MHz) d 127.76 (C-1), 130.72 (C-2), 116.27 (C-3), 160.51 (C-4), 116.27 (C-5), 130.72 (C-6), 141.75 (C-7), 118.48 (C-8), 169.24 (C-9), 131.33 (C-1'), 130.53 (C-2'), 116.72 (C-3'), 156.93 (C-4'), 116.72 (C-5'), 130.53 (C-6'), 35.83 (C-7'), 42.55 (C-8')

C. (10) *trans*-N-feruloyltyramine

NMR data:1H NMR (CDCl3, 500 MHz) d 7.43 (1H, d, J = 15.7 Hz, H-3), 7.11 (1H, d, J = 1.9 Hz, H-2'), 7.05 (2H, d, J = 8.5 Hz, H-2''' and H-6'''), 7.02 (1H, dd, J = 8.2, 2.0 Hz, H-6'), 6.79 (1H, d, J = 8.2 Hz, H-5'), 6.72 (2H, d, J = 8.5 Hz, H-3''' and H-5'''), 6.40 (1H, d, J = 15.7 Hz, H-2), 3.87 (3H, s, 3'-OCH3), 3.46 (2H, dd, J = 8.0, 6.7 Hz, H-1''). 2.75 (2H, t, J = 7.4 Hz, H-2''); 13C NMR (CDCl3, 125 MHz) d 169.17 (C-1), 156.91 (C-6''), 149.82 (C-4'), 149.28 (C-1'), 142.00 (C-3), 131.31 (C-3''), 130.72 (C-4''), 130.72 (C-8''), 128.29 (C-3'), 123.21 (C-6'), 118.78 (C-2), 116.47 (C-5'), 116.27 (C-5''), 116.27 (C-7''), 111.59 (C-2'), 56.4 (3'-OCH3), 42.53 (C-1''), 35.8(C-2'')