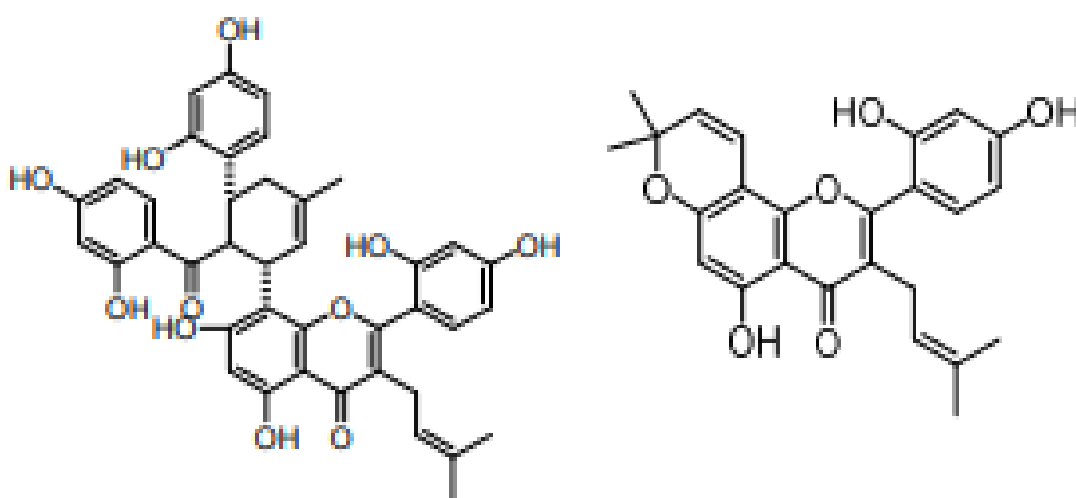


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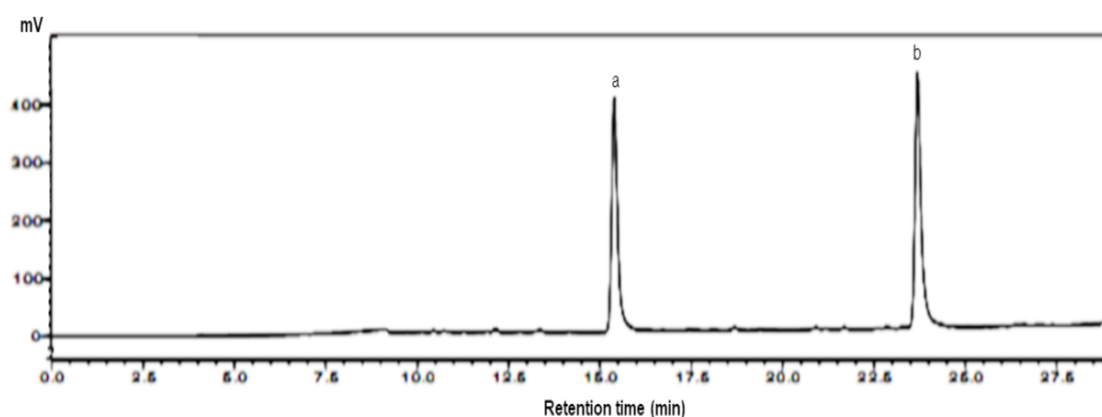
Supplementary Materials: Aqueous Extracts of *Morus alba* Root Bark and *Cornus officinalis* Fruit Protect against Osteoarthritis Symptoms in Testosterone-Deficient and Osteoarthritis-Induced Rats

Sunmin Park, Bo Reum Moon, Ji Eun Kim, Hyun Joo Kim and Ting Zhang

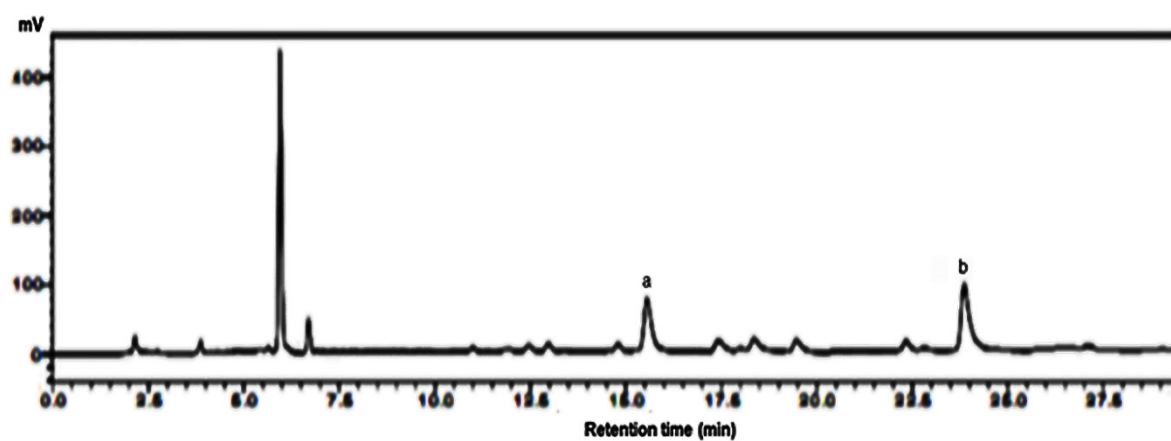
A Kuwanon Morusin



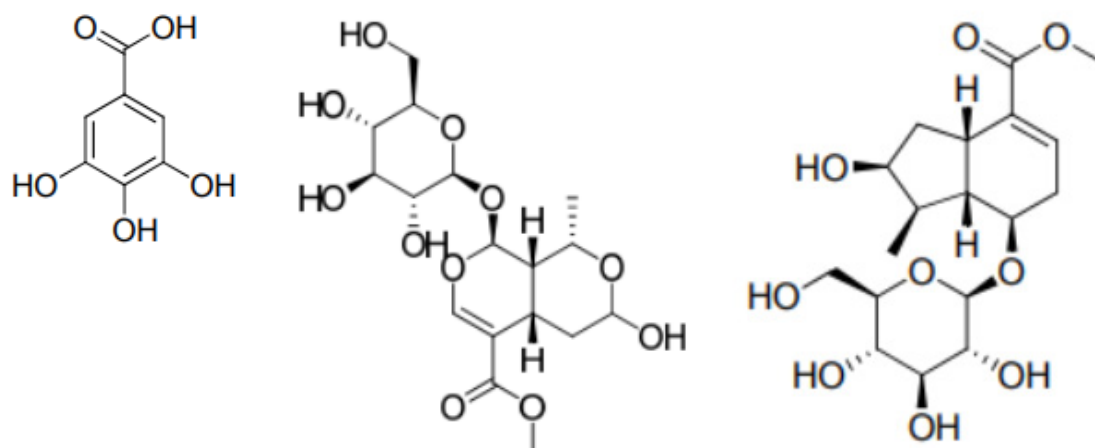
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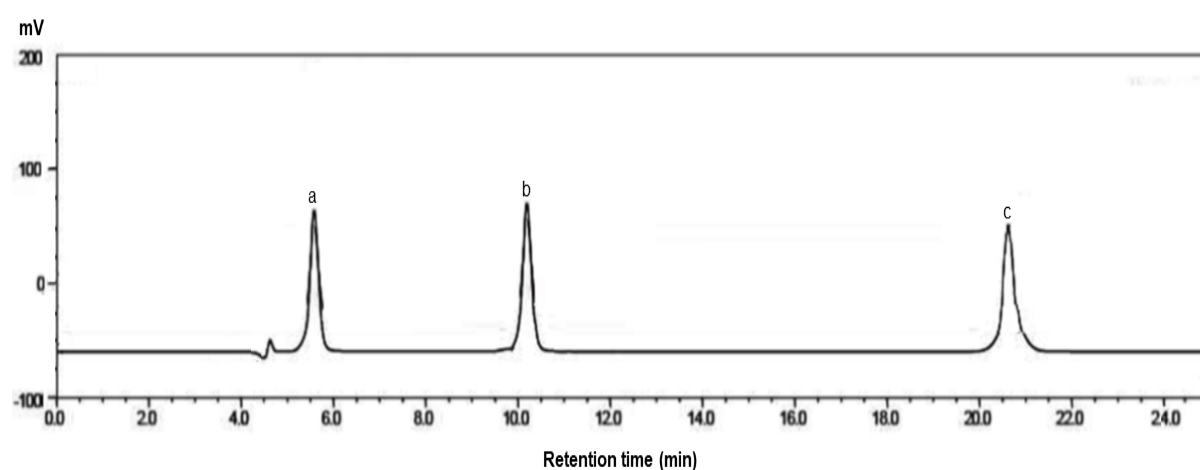
C



D Gallic acid Morroniside Loganin



E



F

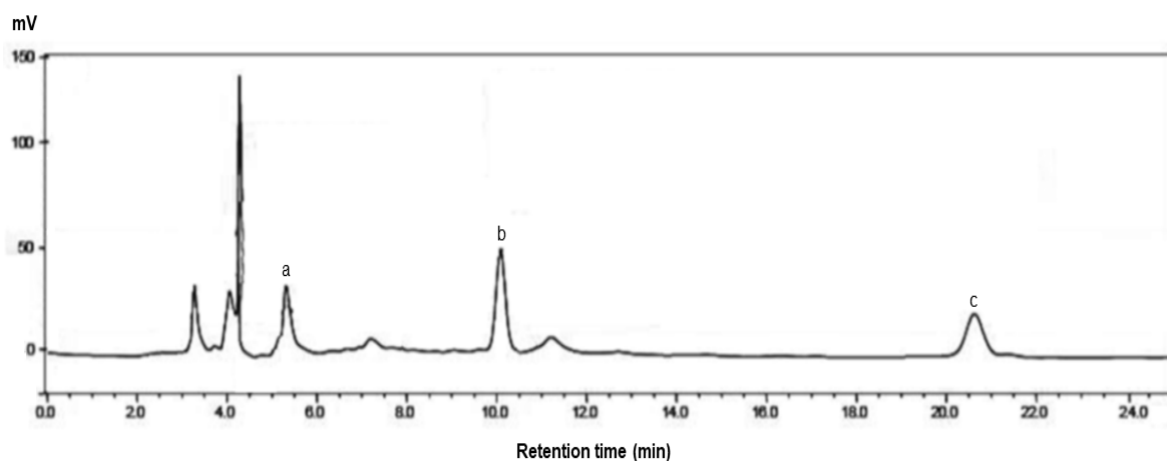
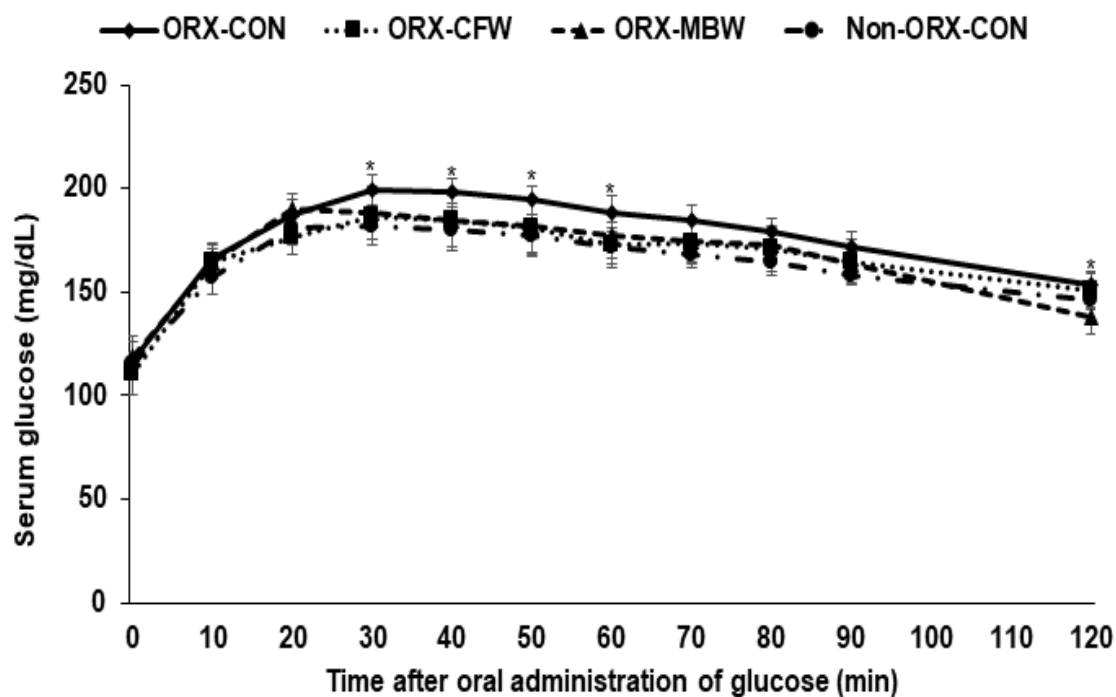


Figure S1. HPLC chromatogram of water extracts of *Morus alba* L. root bark and *Cornus officinalis* Siebold & Zucc fruits. (A) Chemical structure of kuwanon and morusin; (B) HPLC chromatogram of kuwanon and morusin standards; (C) HPLC chromatogram of water extracts of *Morus alba* L. root bark; (D) Chemical structure of gallic acid, morroniside, and loganin; (E) HPLC chromatogram of gallic acid, morroniside, and loganin; (F) HPLC chromatogram of *Cornus officinalis* Siebold & Zucc fruit.

A.



B.

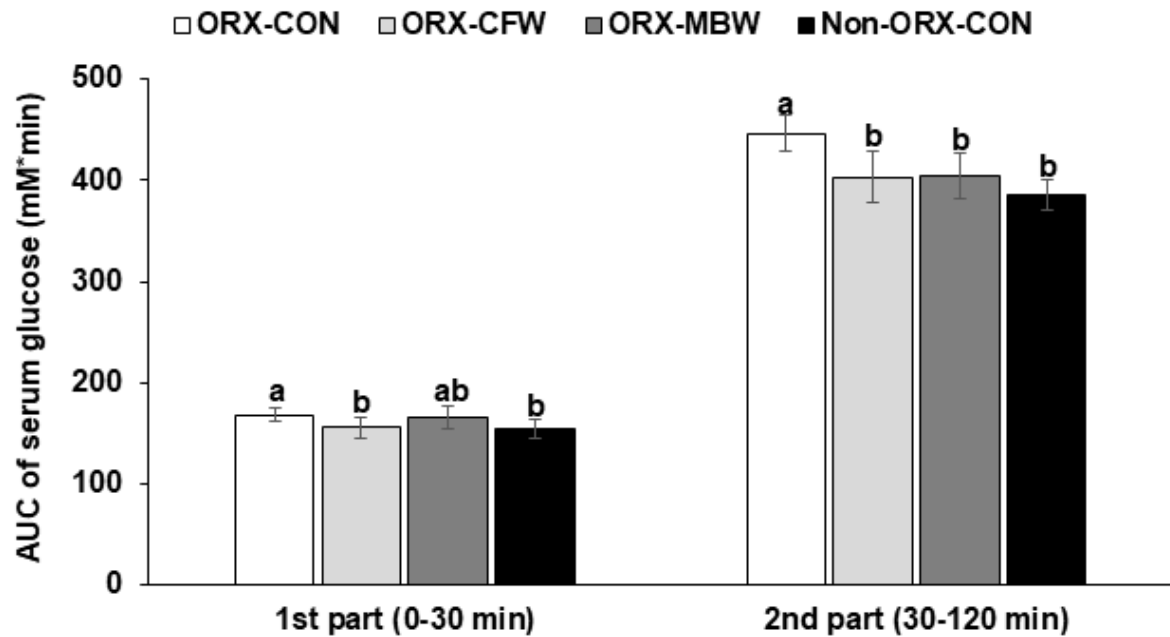
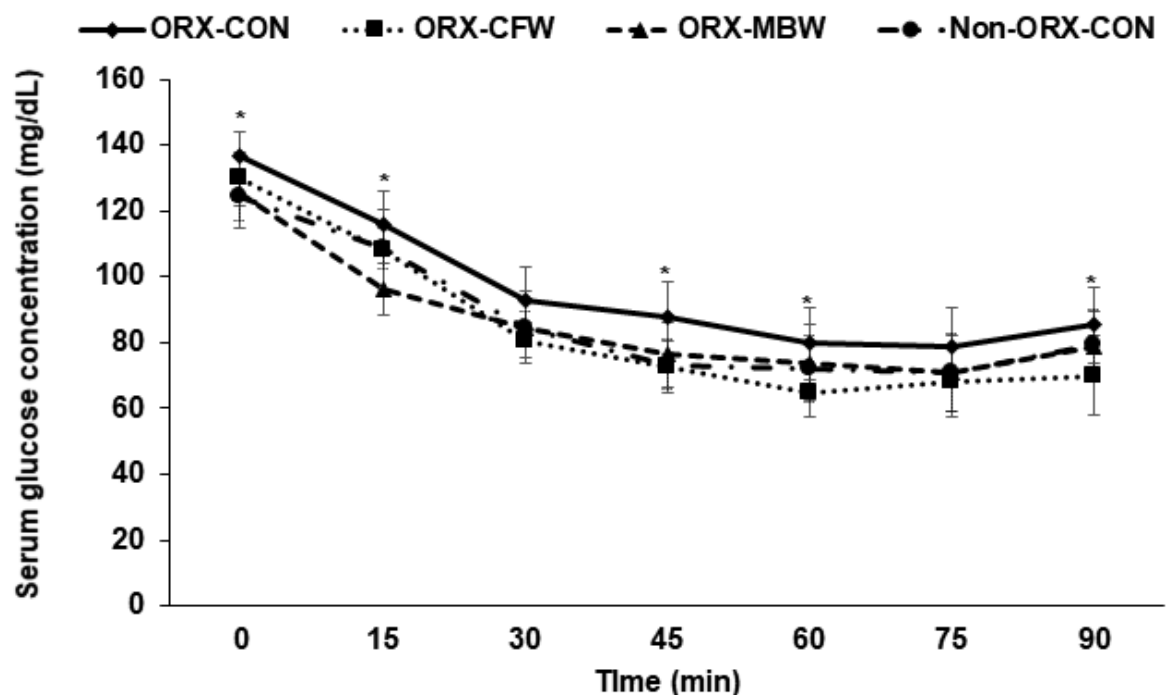


Figure S2. Serum glucose levels and area under the curve (AUC) during oral glucose tolerance test at 10th week. (A) Changes of serum glucose levels in 16-h fasted rats after oral challenge of 2 g glucose/kg body weight; (B) Area under the curve (AUC) of serum glucose calculated in the first (0–40 min) and second phases (40–120 min). Each bar or dot and error bar represented the mean \pm SD, $n = 10$. Means without a common alphabet differ at $P < 0.05$. ORX-OA-CON, ORX male rats with 43% fat diet with 0.5% dextrin; ORX-OA-CFW, ORX male rats with 43% fat diet with 0.5% CFW; ORX-OA-MBW: ORX male rats with 43% fat diet with 0.5% MBW; Non-ORX-OA-CON, Sham male rats with 43% fat diet with 0.5% dextrin.

A



B

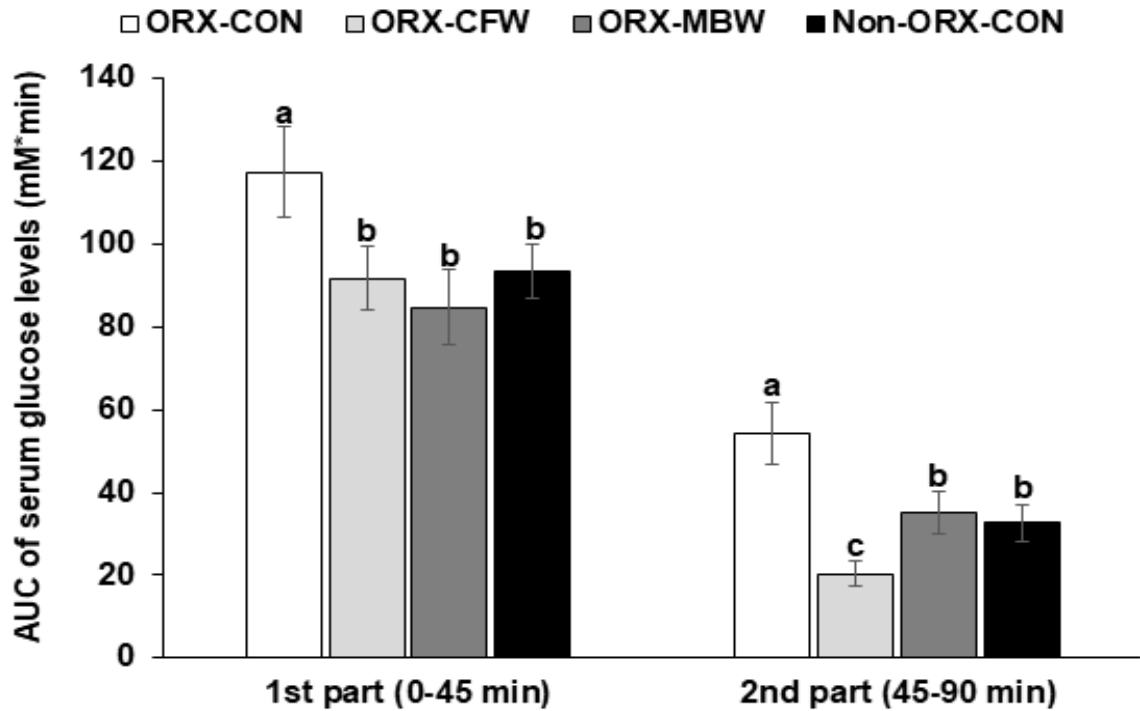


Figure S3. Changes of serum glucose levels during insulin tolerance test at 10th week; (A) Changes of serum glucose levels after 1 U insulin/kg body weight into subcutaneous injection after 6h food deprivation; (B) BArea under the curve (AUC) of serum glucose levels calculated in the first (0-30 min) and second phases (30-90 min). Each bar or dot and error bar represented the mean \pm SD, $n = 10$. Means without a common alphabet differ at $P < 0.05$. ORX-OA-CON, ORX male rats with 43% fat diet with 0.5% dextrin; ORX-OA-CFW, ORX male rats with 43% fat diet with 0.5% CFW; ORX-OA-MBW: ORX male rats with 43% fat diet with 0.5% MBW; Non-ORX-OA-CON, Sham male rats with 43% fat diet with 0.5% dextrin.