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### The active constituents of yacon leaves

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Yacon, *Smallanthus sonchifolius*, which was originally cultivated in the Andean highlands of South America, was introduced into China via Japan in the 1990s. It has been reported that the tubers of yacon contain a high concentration of oligofructans and polyphenols, and that its leaf extract has potent antidiabetic effects. To determine the antidiabetic components of the yacon leaves, 16 compounds were isolated from water and ethanolic extracts of yacon leaves by various kinds of chromatography methods, such as silica gel, ODS, Sephadex-LH20 column and preparative HPLC. Eight new compounds were characterized as smaditerpenic acid A (1), smaditerpenic acid B (2), smaditerpenic acid C (3), smaditerpenic acid D (4), *ent*-kaurane-3 $\beta$ , 16 $\beta$ , 17, 19-tertol (5), *ent*-kaurane-16 $\beta$ , 17, 18, 19-tertol (6), 4-[(1E)-3-butoxybut-1-en-1-yl]-3, 5, 5-trimethylcyclohex-3-en-1-yl  $\beta$ -D-glucopyranoside (7) and 5, 8-dihydroxyl-(5H, 8H)- $\beta$ -ionol (8). Other ingredients were all firstly isolated from the title genus and they were: *ent*-kaurane-3 $\beta$ , 16 $\beta$ , 17-triol (9), *ent*-kaurane-16 $\beta$ , 17-diol-19-oic acid (10), *ent*-kauran-16 $\beta$ , 17, 18-triol (11), 1-pentacosanol (12), octacosanol (13), 3', 4', 5-trihydroxy-3, 7-dimethoxyflavone (14), 3, 4-dihydroxybenzaldehyde (15) and isorhamnetin (16). The  $\alpha$ -glucosidase inhibition activity of smaditerpenic acid-type and kaurane-type compounds were examined, indicating the inhibition activity of smaditerpenic acid-type compounds are stronger and their intensity is similar to Acarbose. The contents of chlorogenic acid and smaditerpenic acid A in yacon leaves cultivated in China, Korea, Japan and Peru was compared, indicating the smaditerpenic acid A in yacon leaves increased concurrently as the latitude. In addition, the anti-diabetes activity of extracts prepared with different extraction methods was compared.

### Biography

Deqiang Dou is a Professor in the College of Pharmacy, Liaoning University of Traditional Chinese Medicine. He received his PhD and MSc in Shenyang Pharmaceutical University and BSc in Jilin University and also has two years Post-doctoral experience in Meijo University, Japan and the Rutgers University, USA. He is the Council member of Tonic Drugs Pharmacology, Chinese Pharmacological Society and Liaoning Pharmaceutical Society etc. More than 20 projects including national 973, NSFC etc. were undertaken and fulfilled. His current research focuses on the quality, bioactives, new drug development and adverse drugs reactions of traditional Chinese medicine. He received 5 prizes for the Progress of Science and Technology over Provincial grades were awarded and over 200 papers have been published, of which 50 are published in SCI-indexed journals.

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