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# 应用化学

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Significant differences in pharmacokinetic mechanism and metabolic pathway of Sijunzi (SJZ) Decoction between type 2 diabetic rats and normal rats were summarized.



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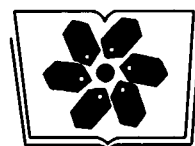
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# 应用化学

(YINGYONG HUAXUE)

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…………… 高松红 杨迪 李忠起 郑飞 JEON You-Jin\* 戴雨霖\*

本文分析和总结了中药组方四君子汤在二型糖尿病和健康大鼠中的药代动力学机制和代谢途径的差异。  
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..... 越 皓 周东月 张美玉 张 琰 戴雨霖 郑 飞\* 朱英豪\* (323)

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\* 通讯联系人.

# CHINESE JOURNAL OF APPLIED CHEMISTRY

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March 2021

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### Cover Picture

Rapid Resolution Liquid Chromatography with Tandem Mass Spectrometry on Pharmacokinetics of Type 2 Diabetic Rats with Oral Administration of Sijunzitang Decoration

GAO Song-Hong, YANG Di, LI Zhong-Qi, ZHENG Fei, JEON You-Jin\*, DAI Yu-Lin\*

Significant differences in pharmacokinetic mechanism and metabolic pathway of Sijunzi (SJZ) Decoction between type 2 diabetic rats and normal rats were summarized.

For details see pp315-322

### Preface

Preface of the Special Issue: "Natural Products Research and Application"—Promoting the Research Level on Natural Products and Propelling the Development of Public Health Industry

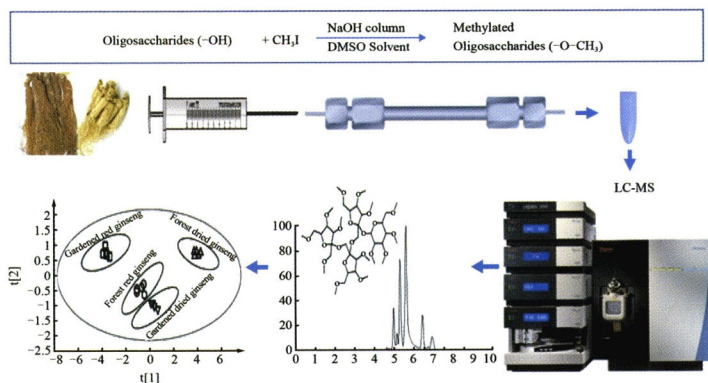
YUE Hao

2021, 38(3):245-246

### Full Papers

Determination of Oligosaccharides in Ginseng from Different Growth Environments by Ultra Performance Liquid Chromatography Triple Quadrupole Tandem Mass Spectrometry Combined with Solid Phase Methylation

ZHANG Na, LI Le-Le,  
HUANG Xin\*, LIU Shu-Ying\*

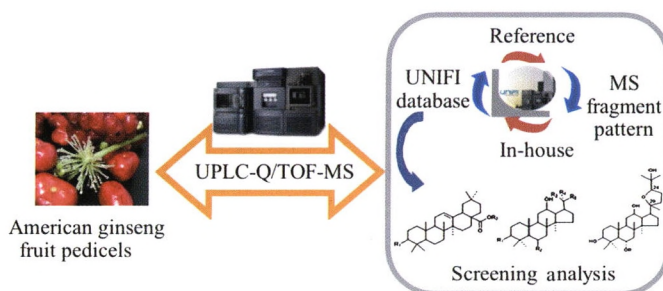


The solid phase methylation column is used to derivatize oligosaccharides and the distribution of oligosaccharides in ginseng from different growth environments can be detected by UPLC-QQ-MS.

2021, 38(3):247-255

Identification of Chemical Constituents of American Ginseng Fruit Pedicels by Ultra-performance Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry

LI Le, TAN Lu-Ying, WANG Cai-Xia, LI Kun, LI Ping-Ya, LIU Jin-Ping, LIU Yun-He \*

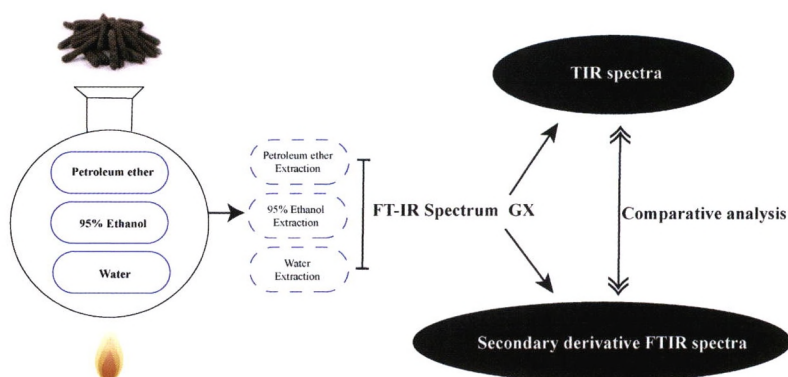


UPLC-Q/TOF-MS technology and the UNIFI screening platform were firstly used to quickly and comprehensively analyze the chemical components of American ginseng fruit pedicels.

2021, **38**(3):256-270

Infrared Spectrum about the Different Extracts of *Fructus Piperis Longi*

ZHANG Chun-Hui, LIU Xi-Jing, ZHANG Rong, TU Ya \*

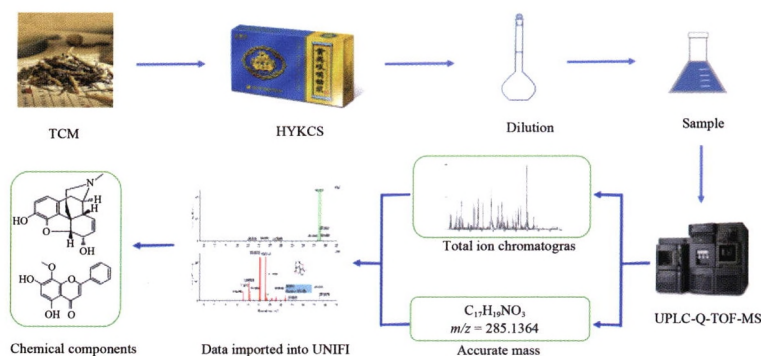


The chemical compositions of different solvents extracts of *Fructus Piperis Longi* were analyzed by FT-IR for tracking of active components, deciding extraction method and controlling overall quality.

2021, **38**(3):271-275

Characterization of Components in Huangying Kechuan Syrup by Ultra-high Liquid Chromatography Tandem Quadrupole-time-of-flight Mass Spectrometry

YAN Yi-Meng, YUE Ke-Xin, LIU Yu-Sheng, CHEN Ge, TIAN Han-Wen, LIU Zhong-Ying, LIU Zhi-Qiang, SONG Feng-Rui, PI Zi-Feng \*

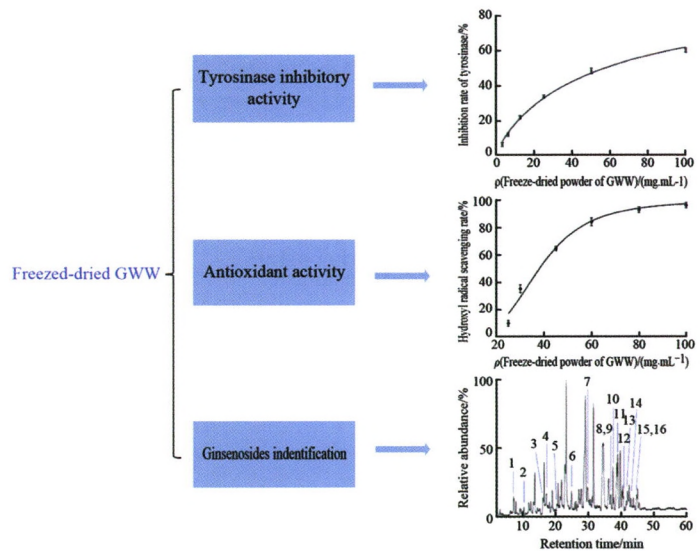


UPLC-Q-TOF-MS<sup>E</sup> technology could be used to analyze the total components of Huangying Kechuan Syrup rapidly and efficiently.

2021, **38**(3):276-288

Whitening Activity, Antioxidant Activity  
and Ginsenosides Analysis of  
Ginseng Wash Water

WANG En-Peng, DU Lian-Yun,  
JIANG Tao, LI Guang, WEI Kun,  
ZHU Shuang, YUE Hao\*,  
CHEN Chang-Bao\*

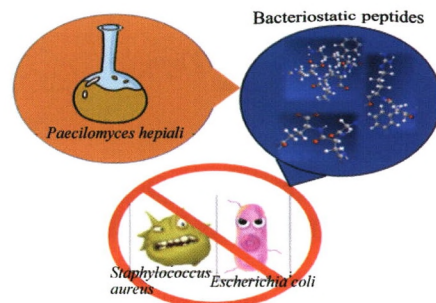


Ginseng Wash Water (GWW) was presented to show its tyrosinase inhibitory and antioxidant activity, from which 16 ginsenosides were identified by RRLC-Q-TOF MS/MS. The results showed that GWW could be used as a kind of natural cosmetics material.

2021, 38(3):289-297

Analysis of Amino Acid Sequence of Antimicrobial  
Peptides in the Fermentation Broth of  
*Paecilomyces hepiali* by RP-HPLC-MS

LYU Zhao-Feng, CHEN Shi-Heng,  
WANG Nan, BAI Cui, XIAO Dan\*

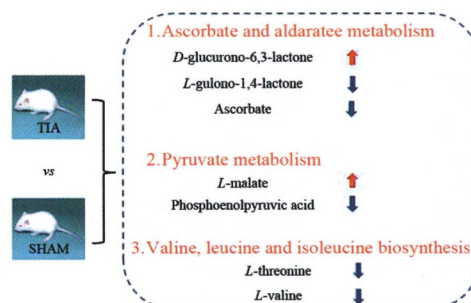


Three antimicrobial peptides were isolated from the fermentation broth of *Paecilomyces hepiali*, which had good antibacterial activity against *Escherichia coli* and *Staphylococcus aureus*.

2021, 38(3):298-304

Screening for Urine Metabolic Biomarkers of  
Transient Ischemic Attack

ZHANG Nan, LI Tie, YANG Guang,  
HUANG Xin, YUE Hao, WANG Yang,  
LIU Jun-Tong, LIU Shu-Ying\*,  
WANG Fu-Chun\*

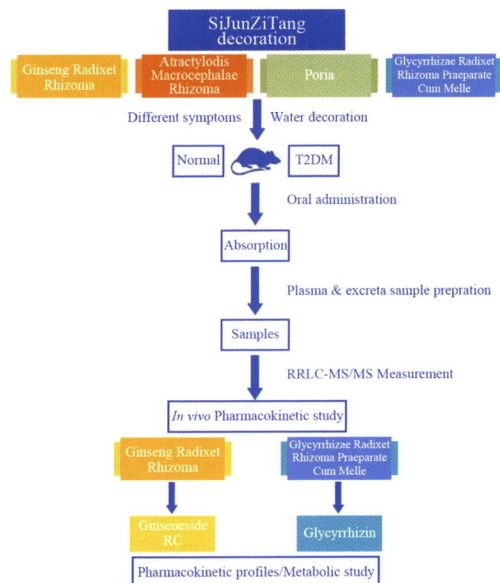


RRLC-Q-TOF-MS was used to screen for biomarkers of TIA. 7 important differential metabolites were found, mainly involved in ascorbate and aldarate metabolism, pyruvate metabolism and valine, leucine and isoleucine biosynthesis.

2021, 38(3):305-314

Rapid Resolution Liquid Chromatography with Tandem Mass Spectrometry on Pharmacokinetics of Type 2 Diabetic Rats with Oral Administration of Sijunzitang Decoration

GAO Song-Hong, YANG Di, LI Zhong-Qi, ZHENG Fei, JEON You-Jin\*, DAI Yu-Lin\*

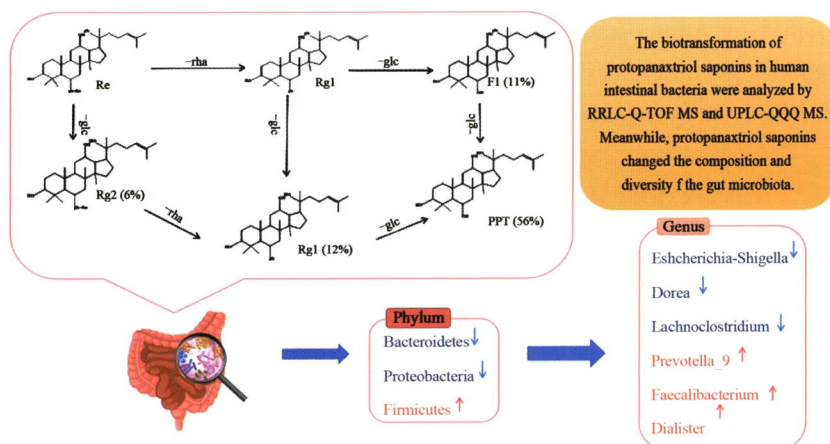


This analysis method is highly automated, sensitive and accurate, which will help the continued development of the clinical research of Sijunzi Decoction.

2021, 38(3):315-322

In vitro Biotransformation of Protopanaxatriol Saponins from Red Ginseng by Intestinal Flora and Its Effect on Intestinal Flora

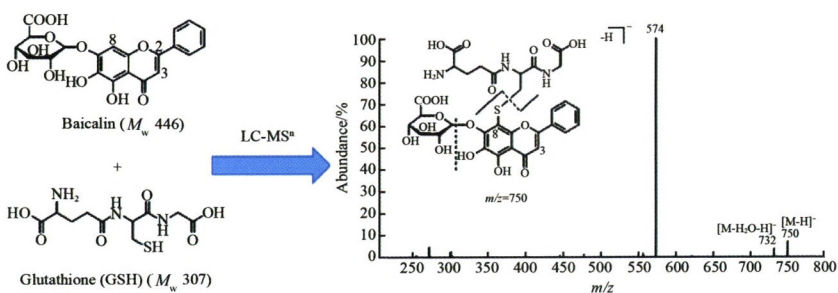
YUE Hao, ZHOU Dong-Yue, ZHANG Mei-Yu, ZHANG Yan, DAI Yu-Lin, ZHENG Fei\*, ZHU Ying-Hao\*



2021, 38(3):323-330

Electrospray Ionization Tandem Mass Spectrometry on the Interaction of Baicalin and Glutathione

TANG Jun, DU Yang, ZHAO Feng-Jiao, CUI Meng\*, LIU Zhi-Qiang



The results of LC-MS<sup>a</sup> provided insights of the interaction of glutathione with baicalin at molecular level.

2021, 38(3):331-342

(Executive Editor: YANG Li-Xin; Editing by ZHANG Yu-Hua)

\*To whom correspondence should be addressed

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