

up period. In the control group, five patients experienced a recurrence of disease and nine patients had metastases, with a median disease-free survival (DFS) of 5.7 years. The rate of recurrences and metastases in the observation group was lower than in the control group, and the DFS was longer, but there were no significant differences between the two groups ( $p < 0.05$ ).

**Conclusions** TCM combined with Western medicine can relieve the clinical Chinese medical symptoms of breast cancer, promote QoL, and decrease CA15-3, CEA and CA125 levels, but shows no efficacy in preventing or delaying recurrence and metastasis.

**Acknowledgments** This research was financially supported by the Medicine and Health Care Science and Technology Development Plan Projects Foundation of Shandong Province (Grant No. 2014WS0282) and the Application Technology Research and Development Project Foundation in Rizhao City (Grant No. 2014SZSH002).

### 36 STUDY ON THE TASTE-MASKING PERFORMANCE OF MESOPOROUS MOLECULAR SIEVES

<sup>1</sup>Liyan Wu, <sup>2</sup>Anqi Liu, <sup>1</sup>Yuanbao Jin, <sup>1</sup>Ruwen Yuan, <sup>1,2</sup>Bo Gao\*. <sup>1</sup>Department of Chemistry and Pharmacy, Zhuhai College of Jilin University, Zhuhai, China; <sup>2</sup>College of Life Science, Jilin University, Changchun, China

10.1136/jim-2016-000328.36

**Objectives** Patient medication compliance can be seriously affected by a bitter taste. There are various taste-masking agents, but they urgently need to be improved. Mesoporous molecular sieves are a type of 3-dimensional nanostructure that has a regular pore diameter (2–50 nm), has a large surface area, and is non-toxic. These structures are widely used in biomedicine but their application in the drug taste-masking field has not previously been reported. The objective of this investigation was to prepare three different mesoporous molecular sieves (MCM-41, MCM-48 and HMSS) and to determine their masking properties through volunteer tasting.

**Methods** MCM-41, MCM-48 and HMSS were synthesized using a hydrothermal method. The bitter-tasting drug cetirizine (CTH) was used as the model drug. CTH-sieve composites were prepared using the impregnation method and the composites were characterized by means of XRD, FTIR, nitrogen physical adsorption and TGA. Three commonly used taste-masking agents were used as contrast to mask the bitter flavor of CTH.

**Results** MCM-41, MCM48 and HMSS showed a large CTH loading capacity of 25.12%, 32.91% and 50.00%, respectively, and effectively reduced the bitter taste of CTH by covering the oral mucous membrane thus reducing irritation.

**Conclusions** The pore structure and large surface area of the sieves improved taste-masking efficiency compared with common taste-masking agents. Mesoporous molecular sieves have the potential to increase the efficacy of taste-masking agents.

**Acknowledgments** This research was financially supported by Jilin Provincial Development and Reform Commission Industrial Technology Research and Development Funds (Grant No. 2014Y091).

## Natural Medicines

### 37 OPTIMIZATION OF SUPERCRITICAL CARBON DIOXIDE EXTRACTION CONDITIONS OF SEMEN CASSIAE VOLATILE OIL USING RESPONSE SURFACE METHODOLOGY AND ANTIMICROBIAL ACTIVITY DETECTION

<sup>1</sup>Liyan Wu, <sup>1</sup>Liyang Wang, <sup>1</sup>Yuanbao Jin, <sup>2</sup>Yuanyuan Jin, <sup>1</sup>Yanzhen Wang, <sup>1</sup>Fanxin Meng\*. <sup>1</sup>Department of Chemistry and Pharmacy, Zhuhai College of Jilin University, Zhuhai, China; <sup>2</sup>College of Pharmacy, Changchun University of Chinese Medicine, Changchun, China

10.1136/jim-2016-000328.37

**Objectives** The objective of this project was to study the process of extracting Semen cassia. The volatile components of Semen cassia were analyzed using supercritical CO<sub>2</sub> extraction (SCDE). Based on a single factor experiment, response surface methodology was used to investigate the extraction of volatile oil. According to the fitted curves under different conditions, the effects of pressure, temperature and time on extraction and interactions between various factors were determined. Antimicrobial activity was also measured.

**Methods** A Box-Behnken central composite design method was used based on single factor experiments. The influence of extraction temperature, extraction time and extraction pressure on extraction yield was studied. The response surface method was employed to analyze the results of experiments. The disk diffusion method was used to detect the antimicrobial activity of Semen cassiae volatile oil.

**Results** The results indicated that the optimum extraction conditions were as follows: extraction temperature 51°C, extraction time 3.22 hours and extraction pressure 25 MPa. Extraction yield reached 2.34%. The volatile oil of Semen cassiae extracted from the tested strains showed antimicrobial activity, with MIC values ranging from 2.5 to 5 mg/mL.

**Conclusions** SCDE is a stable and efficient process. Semen cassiae volatile oil had antimicrobial activity which could provide a theoretical basis for application of this oil.

### 38 ANALYSIS OF THE ANIMAL MODEL OF TINEA CORPORIS

Yajuan Wen, Ming Bai, Mingsan Miao\*. Department of Pharmacology, Henan University of Chinese Medicine, Zhengzhou, China

10.1136/jim-2016-000328.38

**Objectives** To explore common modeling methods and problems with the tinea corporis animal model.

**Methods** We summarize the classification and pathogenesis of the tinea corporis animal model, and analyze the methods used to establish the model and the characteristics of the model.

**Results** Animal models of tinea corporis are mainly established using the scratch method, sandpaper method, animal skin wound puncture, and inoculation with fungal strains such as *Trichophyton mentagrophytes* and *Trichophyton rubrum*. The most