Study on Supercritical Fluid Extraction of Aristolochic Acids in *Aristolochia* Plants

by

Liang Qingyou

Master of Science

2007

Institute of Chinese Medical Sciences
University of Macau

碩士學位論文

論文題目

利用超临界流体萃取技术从马兜铃属植物中提取马兜铃酸的研究

研究生姓名：梁庆优

導　　師：郑颖 博士

專　　業：中药学

日　　期：2007-06-22

澳門大學中華醫藥研究院

Table of Contents

Abstract I

Abstract (Chinese) III

Nomenclature V

List of Figures VI

List of Tables VII

CHAPTER 1: Introduction 1

1.1 The Rationale of this study 1

1.2 Introduction to Aristolochic Aicd Nephropathy and Its Influence 1

1.3 Introduction to *Fructus Aristolochiae* and *Caulis Aristolochiae manshuriensis* 3

1.4 Introduction to Aristolochic Acids 3

1.5 Design of the Experiments 6

CHAPTER 2: Development of HPLC Condition 8

2.1 Introduction 8

2.2 Methods 8

2.3 Optimization of the HPLC condition 9

2.4 Validation of the HPLC method 14

2.5 Conclusion 20

CHAPTER 3: Optimization of Pressurized Liquid Extraction 21

3.1 Introduction to Pressurized Liquid Extraction System 21

3.2 Methods 21

3.3 Results and Discussion 24

3.4 Conclusion 32

CHAPTER 4: Optimization of Supercritical Fluid Extraction 33

4.1 Introduction to Supercritical Fluid Extraction 33

4.2 Instrument, Methods and Reagents 38

4.3 Optimization of Supercritical Fluid Extraction 43

4.4 Potential Application of SFE Method in Removal of AAs from *Aristolochia* Plants 54

4.5 Conclusion 57

CHAPTER 5:Conclusion 60

References 62

Acknowledgement 70