

# Comparative Investigations on the Antioxidant Activity of Shi-Chuan Chinese Herbs

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## ABSTRACT

This investigation is divided into three parts. The first part is based on the test models of DPPH scavenging effect and Total Antioxidant Capacity (TAC) to compare the antioxidant activity of Shi-Chuan Chinese herbs. The results show that Baishao extract is the best with 91.4% DPPH elimination rate and 80.6% in Total Antioxidant Capacity at a concentration of 1 mg/mL. The IC50 of Baishao is 0.45 mg/mL and its antioxidant activity is as good as Vitamin C. The antioxidant from the best to the worst is in the order of Baishao Gougui, Gancao, Chuanxiong, Huangchi, Fuling, Dangshan, Baizhu, Danggui and Tihuang. The second part is to determine the antioxidant capacity of the ten herbs of Chinese herb extract mixed in certain percentages and evaluate their synergistic /suppression effects. The results reveal that antioxidant capacity increases with increasing concentration of the mixtures and Si-jun-zi is the best group in eliminating DPPH free radicals. It has 80.23% eliminating rate at 1 mg/mL level. However, Shi-chuan combination is the best in total antioxidant capacity and it can eliminate 70.53% of ABTS+. The third part is to analyze the content of total flavonoids in Shi-Chuan Chinese herbs. The content of total flavonoids shown from the highest to the lowest is in the order of Gancao 132.9 mg/g, Chuanxiong 87.21 mg/g, Huangchi 79.7 mg/g, Gougui 73.3 mg/g, Danggui 67.95 mg/g, Dangshan 19.07 mg/g, Baizhu 7.38 mg/g, Tihuang 6.8 mg/g, Fuling 0.21mg/g and Baishao 0.18 mg/g. The content of total flavonoids in the mixture will increase with the content of total flavonoids in the individual component, however, the total flavonoids is not much related to the antioxidant activity of Shi-Chuan Chinese herbs.

Keywords : DPPH ; TAC ; Antioxidant ; Shi-Chuan Chinese Herbs ; Total Flavonoid

## Table of Contents

封面內頁頁次 簽名頁 授權書iii 中文摘要iv 英文摘要vi 誌謝vii 目錄viii 圖目錄xi 表目錄xiii 第一章 緒言1 1.1 研究背景1 1.2 研究動機2 1.3 研究大綱2 第二章 文獻回顧 2.1 十全中草藥之探討4 2.2.1 黨蔘4 2.2.2 白朮6 2.2.3 茯苓9 2.2.4 甘草11 2.2.5 白芍14 2.2.6 當歸16 2.2.7 川芎19 2.2.8 地黃22 2.2.9 黃耆25 2.2.10肉桂28 2.2 活性氧與自由基的介紹29 2.3 人體的抗氧化系統31 2.4 抗氧化劑31 2.4.1抗氧化劑的作用機制31 2.4.2天然抗氧化劑的種類33 2.5 傳統藥方40 2.5.1 十全大補藥43 2.5.2 四君子43 2.5.3 四物44 2.6 抗氧化性測定法介紹44 2.6.1 總抗氧化能力45 2.6.2 DPPH自由基清除45 2.7 總黃酮類測定46 第三章 材料與方法47 3.1 試驗材料47 3.1.1 樣品製備47 3.1.2試藥47 3.1.3儀器48 3.2 試驗設計49 3.3 抗氧化性質分析49 3.3.1 DPPH自由基清除能力之測定49 3.3.2 總抗氧化能力之測定49 3.3.3 總類黃酮含量之測定50 第四章 結果與討論52 4.1 十全中草藥之萃取率52 4.2 Ascorbic acid 對DPPH和ABTS+陽離子自由基的清除作用52 4.3十全中草藥的抗氧化作用56 4.4十全中草藥的DPPH清除作用與總抗氧化能力比較57 4.5十全、四物以及四君子的組合式抗氧化活性分析58 4.6十全中草藥之總類黃酮含量測定73 第五章 結論76 參考文獻87 圖 目 錄頁次 圖2.1黨蔘5 圖2.2白朮8 圖2.3茯苓10 圖2.4甘草13 圖2.5白芍15 圖2.6當歸18 圖2.7川芎21 圖2.8 地黃24 圖2.9黃耆27 圖2.10肉桂30 圖2.11 BHA、BHT、PG及TBHQ的化學結構34 圖2.12類黃酮基本結構37 圖2.13主要類黃酮之結構38 圖2.14 L-抗壞血酸之結構39 圖2.15生育醇之結構41 圖2.16 類胡蘿蔔素之結構42 圖3.1試驗流程51 圖4.1不同濃度的Ascorbic acid 對DPPH自由基的清除作用54 圖4.2不同濃度的Ascorbic acid 對ABTS+陽離子自由基的清除作用55 圖4.3不同黨蔘萃取液濃度清除DPPH自由基與總抗氧化能力之比較60 圖4.4不同白朮萃取液濃度清除DPPH自由基與總抗氧化能力之比較61 圖4.5不同茯苓萃取液濃度清除DPPH自由基與總抗氧化能力之比較62 圖4.6不同甘草萃取液濃度清除DPPH自由基與總抗氧化能力之比較63 圖4.7不同當歸萃取液濃度清除DPPH自由基與總抗氧化能力之比較64 圖4.8不同白芍萃取液濃度清除DPPH自由基與總抗氧化能力之比較65 圖4.9不同川芎萃取液濃度清除DPPH自由基與總抗氧化能力之比較66 圖4.10不同地黃萃取液濃度清除DPPH自由基與總抗氧化能力之比較67 圖4.11不同黃耆萃取液濃度清除DPPH自由基與總抗氧化能力之比較68 圖4.12不同肉桂萃取液濃度清除DPPH自由基與總抗氧化能力之比較69 圖4.13十全、四物與四君子清除DPPH自由基之能力比較71 圖4.14十全、四物與四君子之總抗氧化能力比較72 圖4.15不同濃度之槲皮素標準曲線74 表 目 錄頁次 表2.1天然抗氧化劑之來源35 表4.1 十全中草藥之萃取率54 表4.2十全中草藥清除DPPH和ABTS+陽離子自由基的IC5059 表4.3十全中草藥中總黃酮含量75

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