

開發富含懈皮素糖醛酸苷荷萃做為預防神經退化新趨勢產業 (促進成人海馬回細胞新生)

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富含解皮素糖醛酸苷(Q3G)之植萃NLWE及NLAE促進adult hippocampus neurogenesis(AHN)做為預防及減少 neurodegeneration作用

日本超過200萬人勝動推薦 横播各大電影獎最佳男主角獎 中華民國專利證書 專利權人:中山醫學大學 發 明 人 : 王朝鐘、張宴绫 專利權期間: 自2023年5月1日至2040年5月5日止

預防及治療現況

市場開發理念

市場開發

(12) United States Patent

(54) METHOD OF INHIBITING CANCER

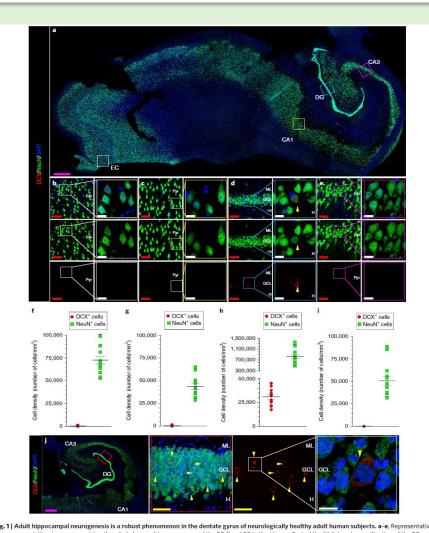
目前所有的治療均是: 在無法治療及預防的形 1. 全球每3秒就有一人罹患失 1. 保留或是改善其認知功能 勢下,促進成人AHN作用 智症 2. 促進AHN預防發生神經退化 2. 減少行為混亂 減少 Loss of neuron 全民可食富含Q3G荷葉產物 3. 延緩疾病惡化 and synapses

80歲老人還能產生大量腦神經細胞!阿茲海默治 療或有新解方

健康的老人並未隨其年齡增長而降低認知能力或是罹患神經精 神疾病,主要是因為他們的海馬迴持續保有神經新生的能力, 因此,如何有效增加成年神經新生並維持其存活率與功能,是預防或治療神經退化性疾病的新趨勢。 作用存在於健康人但阿滋海默病人缺少 AHN(說明阿滋海默病人早期有AHN阻礙)

LETTERS medicine Adult hippocampal neurogenesis is abundant in neurologically healthy subjects and drops sharply

in patients with Alzheimer's disease Elena P. Moreno-Jiménez<sup>1,2,3,6</sup>, Miguel Flor-García<sup>1,2,3,6</sup>, Julia Terreros-Roncal<sup>1,2,3,6</sup>, Alberto Rábano<sup>4</sup> Fabio Cafini<sup>5</sup>, Noemí Pallas-Bazarra <sup>13</sup>, Jesús Ávila<sup>1,3</sup> and María Llorens-Martín <sup>12,3,3</sup>



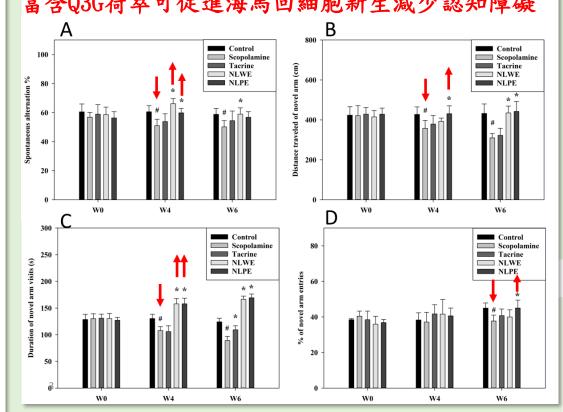
(45) Date of Patent:

(10) Patent No.: US 10,912,760 B1

ILS PATENT DOCUMENTS

2019確認成人海馬廻神經細胞新生(AHN) Q3G及荷萃活化小鼠海馬迴BDNF/TrkB/p-CREB pathway,促進小鼠海馬迴神經新生

> 促進海馬回新生預防 認知障礙 **Adult Hippocampal Neurogenesis Is** a Developmental Process Involved in **Cognitive Development**



Quercetin-3-0-glucuronide promotes the proliferation and migration of neural stem cells

Samrat Baral <sup>a,b,1</sup>, Ramesh Pariyar <sup>a,b,1</sup>, Jaehyo Kim <sup>b,c</sup>, Ho-Sub Lee <sup>b,c</sup>, Jungwon Seo <sup>a,b,\*</sup> Institute of Pharmaceutical Research and Development, College of Pharmacy, Wonkwang University, Iksan, Kored Hanbang Body-Fluid Research Center, Wonkwang University, Iksan, Korea

富含Q3G的荷萃



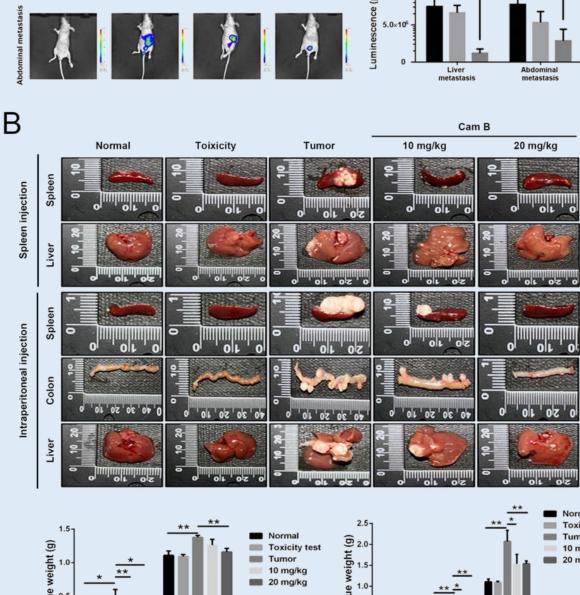
Q3G可入腦血閥進入腦部促進AHN localization of quercetin-3-Oglucuronide in human **brain(Archives of Biochemistry** and Biophysics 557 (2014) 11–17)

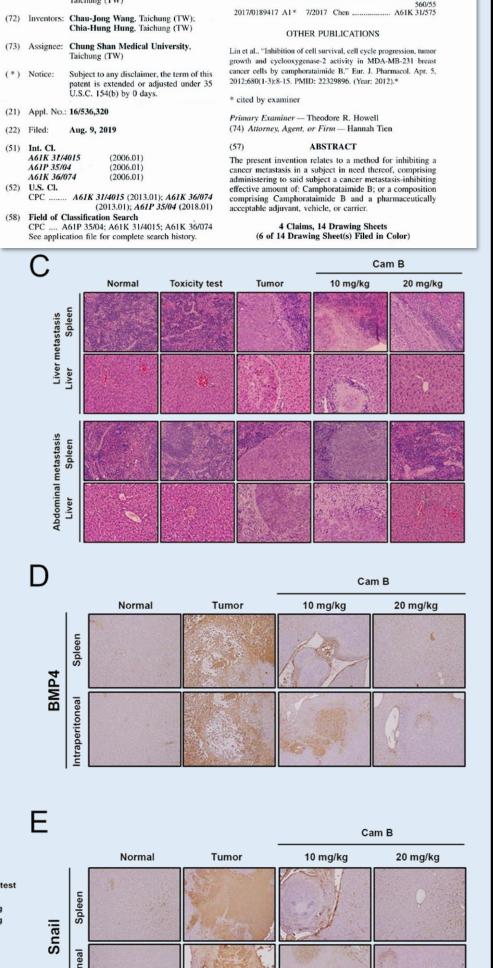
These results suggested that a Q3G can pass through the bloodbrain barrier, perhaps the CSF barrier, accumulate in specific types of cells, such as macrophages, and act as antiinflammatory agents in the brain

# 開發富含Antrodin B樟芝菌絲體做為癌症輔助食品

### 現況:

- 1. 市場有5健康食品字號及多數保健 食品,多用於提高免疫力,護肝功 能
- 2. 藉由Antrodin B 抑制癌細胞惡化 轉移的US專利開發為癌症輔助食品 增加樟芝市場競爭力





r-GT, ALP, T-protein, Glucose

Platelet, Lymphocyte, Monocyte

HCV, Hct, MCV, Organ Pathology

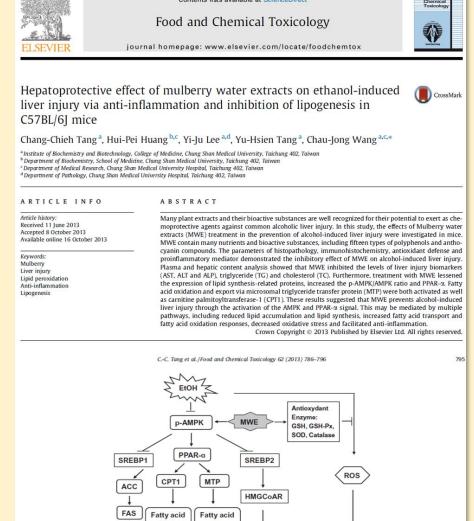
Normal

#### 第四案:開發龍葵不易形成體脂肪及多重護肝專利健康食品 (I) 龍葵功能 rum on various diseases 龍葵保健食品研究開發 (III) 發明專利 龍葵之安全性評估 龍葵萃取物28天毒性試驗 P 檢測項目 中華民國專利證書 发明专利证书 Body wt, AST, ALT WY Globumin, T-bilirubin

中国科本珠: 衛生者>食品衛生或>宣務資訊>台灣地區食品營養或分資料庫

# 開發桑椹為多重護肝產品

### 桑椹抑制慢性酒精性肝炎之護肝作用機轉



FAS Fatty acid oxidation Fatty acid transport

#### 桑椹抑制細菌性肝炎護肝作用

Improvement of lipopolysaccharide-induced

hepatic injuries and inflammation with mulberry extracts Ting-Tsz Ou, at Chih-Yi Kuo, a, bt Charng-Cherng Chyau, CHuei-Jane Lee, a Jih-Shin Penga and Chau-Jong Wanga,d\*

RESULTS: Rats were administered different doses of MWEs (0.5 and 1 g kg<sup>-1</sup>) 1 h before injection of LPS (5 mg kg<sup>-1</sup>) and then sacrificed 10 h after treatment with LPS. Liver function, inflammatory factors, oxidative stress index and hepatic histopathological alteration were examined in the rats with and without MWE treatment. Pretreatment with MWEs prevented LPS-induced liver damage by preventing associated increases of alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALKP), triglycerol (TG), cholesterol and low-density lipoprotein/high-density lipoprotein ratio. MWEs also suppressed oxidative stress to prevent the formation of hepatic malondalethyde (MDA). Furthermore, the molecular mechanism involved in LPS-induced liver injury was associated with reducing the expression of COX-2, NF-xB and iNOS in liver

Keywords: mulberry water extracts (MWEs): lipopolysaccharides (LPS): acute liver failure: inflammation: oxidative stres

## 桑椹抑制肥胖性肝炎之護肝作用

AGRICULTURAL AND **FOOD CHEMISTRY** 

Mulberry Water Extracts Possess an Anti-obesity Effect and Ability To Inhibit Hepatic Lipogenesis and Promote Lipolysis Chiung-Huei Peng,<sup>†,‡</sup> Li-Kaung Liu,<sup>†,§</sup> Chao-Ming Chuang,<sup>‡</sup> Charng-Cherng Chyau,<sup>‡</sup> Chieng-Ning Huang,<sup>‡</sup> and Chau-Jong Wang,<sup>§,§,‡</sup>

\*Division of Basic Medical Science, Hungkuang University, Number 34, Chung Chie Road, Shalu County, Taichung 433, Taiwan Institute of Biochemistry and Biotechnology, Chung-Shan Medical University, Number 110, Section 1, Chien-Kuo North Road, Institute of Biotechnology, Hungkuang University, Number 34, Chung Chie Road, Shalu County, Taichung 433, Taiwan <sup>1</sup>Department of Internal Medicine, Chung-Shan Medical University Hospital, Number 110, Section 1, Chien-Kuo North Road, Department of Medical Research, Chung-Shan Medical University Hospital, Number 110, Section 1, Chien-Kuo North Road, Taichung

ABSTRACT: Obesity plays a critical role in dyslipidemia and related disorders. Mulberry water extracts (MWEs) contain polyphenols, including gallic acid, chlorogenic acid, rutin, and anthocyanins. In this study, using 6-week-old male hamsters, we investigated the anti-obese effect of MWEs. After 12 weeks of treatment, MWEs lowered high-fat diet (HFD)-induced body weight and visceral fat, accompanied with hypolipidemic effects by reducing serum triacylglycerol, cholesterol, free fatty acid, and the low-density lipoprotein (LDL)/high-density lipoprotein (HDL) ratio (n = 8 for each group). MWEs decreased hepatic lipids, thus protected livers from impairment. The hepatic peroxisome proliferator-activated receptor α and carnitine palmitoyltransferase-1 were elevated, while fatty acid synthase and 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase were reduced by MWEs, indicating that MWEs regulated lipogenesis and lipolysis, which exerted the anti-obese and hypolipidemic effects. Noticeably, MWEs showed both efficacy and safety in vivo. In concluson, MWEs can be used to reduce body weight, serum, and liver KEYWORDS: Mulberry water extracts, anti-obese, hypolipidemic, lipogenesis, lipolysis

#### 產學合作項目

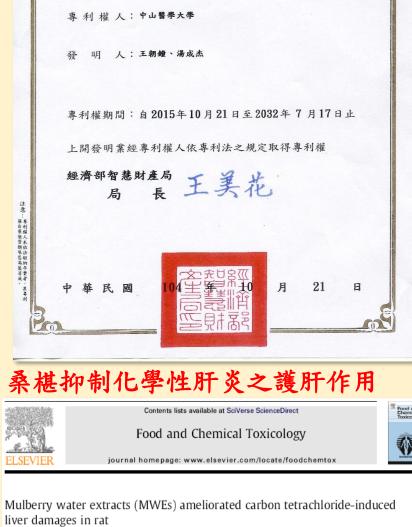
1.本研究室已發表桑椹降低血脂,抗氧化,抑制癌細胞轉移,減少脂肪肝,抑制 酒精性肝炎及抗肥胖及抑制動脈粥狀硬化之作用

2.目前已確定證實符合衛福部公佈 "不易形成體脂肪"及 "化學性", "酒精 及"非酒精性(高脂糧餵食)"之護肝功能之評估。

3.酒精性護肝已取得中華民國專利,可做為專利原料。

4.可將桑椹PFA製備為50ml一口瓶或錠片。

5.人體試驗後可開發為治療肝炎藥物,較silymarin飛蓟素優勢,可治療各種肝炎。



發 明 名 稱:用於製備預防酒精性肝炎之醫藥組合物的用途

Li-Sung Hsu<sup>a</sup>, Hsieh-Hsun Ho<sup>a</sup>, Ming-Cheng Lin<sup>b,c</sup>, Charng-Cherng Chyau<sup>d</sup>, Jih-Shin Peng<sup>a</sup> Chau-Jong Wang a,e,\* \*Institute of Biochemistry and Biotechnology, College of Medicine, Chung Shan Medical University, Taichung, Taiwa Department of Internal Medicine, Chung Shan Medical University Hospital, Taichung, Taiwan nstitute of Medicine, Chung Shan Medical University, Taichung, Taiwan nstitute of Biac Annology, College of Medicine and Nursing Hung Kunay University, Taichung, Taiwan Department of Medical Research, Chung Shan Medical University Hospital, Taichung, Taiwan ARTICLE INFO Article history: Received 13 December 2011 Accepted 30 May 2012 Available online 13 June 2012

ase (ALT), and alkaline phosphatase (ALP) were also reduced via cotreatment with MWEs compared with CCL, treatment alone. Correatment with MWE evidently reduced CCL-induced liver weight and inhibite and curative effects against CCl4-induced liver damage and fibrosis via decreased lipid peroxidation and

### 桑椹抑制肥胖性肝炎之護肝作用

SCI Mulberry extract inhibits oleic acid-induced

lipid accumulation via reduction of lipogenesis and promotion of hepatic lipid clearance Ting-Tsz Ou,<sup>a</sup> Man-Jung Hsu,<sup>a†</sup> Kuei-Chuan Chan,<sup>b,c</sup> Chien-Ning Huang,<sup>b,c</sup> Hsieh-Hsun Hoa and Chau-Jong Wanga,d\*

RESULTS: We found that MWE significantly reduced lipid accumulation, suppressed fatty acid synthesis, and stimulated fatty acid oxidation. Furthermore, MWE also inhibited acetyl coenzyme A carboxlase activities by stimulating adenosine monophosphate-activated protein kinase (AMPK). MWE attenuated the expression of sterol regulatory element-binding protein-1 (SREBP-1) and its target molecules, such as fatty acid synthase. Similar results were also measured in the expressions nethylglutaryl-CoA reductase, and SREBP-2. In contrast, the lipolytic enzyme expression of peroxisome proliferator activated CONCLUSIONS: Our study suggests that the hypolipidemic effects of MWE occur via phosphoryl lipid biosynthesis. Therefore, the mulberry extract may be active in the prevention of fatty liver ② 2011 Society of Chemical Industry Keywords: mulberry extracts; hyperlipidemia; AMPK; SREPB1c; PPARα; HepG2 cells

桑椹精華抑制肥胖性、酒精性、細菌性及化學性 致脂肪肝發炎、肝硬化及肝癌之作用



