

開發富含槲皮素糖醛酸苷做為治療預防神經退化產業新趨勢；開發富含Antrocin B樟芝菌絲做為癌症輔助食品；
開發桑椹飲為多重護肝專利健康產品；開發龍葵膠囊為不易形成體脂肪及多重護肝專利健康食品

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第一案:神經退化治療預防產業新趨勢
富含槲皮素糖醛酸苷(Q3G)之槲草NLWE及NLAE促進adult hippocampus neurogenesis (ARN)做為預防及減少neurodegeneration作用

治療現況
目前所有的治療均是:
1. 保留或改善其認知功能
2. 減少行為混亂
3. 延緩疾病惡化

市場開發理念:
在治療無法治癒的形勢下,預防甚於治療,促進成人ARN作用減少 Loss of neuron and synapses

目前許多科學家認為,有些健康的老人並未隨其年齡增長而降低腦部能力或發展精神神經疾病 (Neuropsychiatric diseases) 主要原因為何? 為何高齡者仍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生存與功能,是延緩神經退化性疾病的關鍵。

2019確認成人海馬神經細胞新生(ARN)作用存在於健康人但AD病人缺少ARN

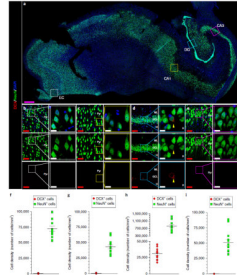


Fig. 1 Adult hippocampal neurogenesis is abundant in the dentate gyrus of neurologically healthy mice and decreases in AD mice. ...

LETTERS
nature medicine

Adult hippocampal neurogenesis is abundant in neurologically healthy subjects and drops sharply in patients with Alzheimer's disease

Elena P. Moreno-Jiménez^{1,2,3,4}, Miguel Flor-García^{1,2,3,4}, Julia Terrosos-Roncal^{1,2,3,4}, Alberto Rabano¹, Fabio Cadin¹, Noemi Pallas-Bazarra^{1,2,3,4}, Jesús Ávila^{1,2,3,4} and María Llorens-Martin^{1,2,3,4}

Adult Hippocampal Neurogenesis Is a Developmental Process Involved in Cognitive Development

Mihail V. Semenov^{1,2*}

Conclusion: Q3G-enriched NLWE and NLPE → HN → Anti-apoptosis → Cognitive impairment

Keywords: adult neurogenesis, subgranular zone, neural stem cells, radial glia like cells, hippocampus, cognitive impairment, neural transit cells, developmental processes

富含Q3G的NLAE

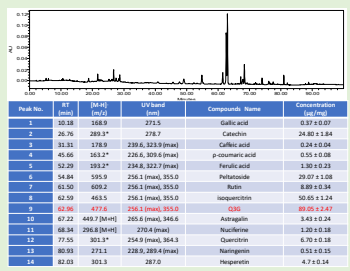
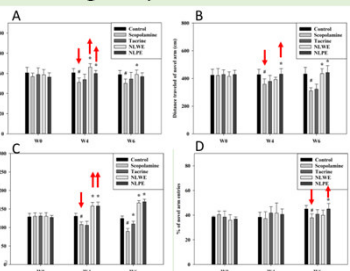


Figure 1. The HPLC/MS chromatogram of NLAE

Effect of NLWE and NLPE on spatial learning ability in the Y maze test



Q3G促進神經細胞增生
Quercetin-3-O-glucuronide promotes the proliferation and migration of neural stem cells

Samuel Baral^{1,2,3}, Ramona Parayre^{1,2,3}, Jarcho Kim^{1,2,3}, Ho-Seob Lee^{1,2,3}, Jungsoo Son^{1,2,3}

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ABSTRACT
Quercetin is a flavonoid compound showing neuroprotective effects in a broad range of animal models of neurodegeneration. ...

Localization of quercetin-3-O-glucuronide in human brain (Archives of Biochemistry and Biophysics 557 (2014) 11–17)

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

市場開發理念(1):
1. 過去已有文章指出Q3G具有促進小海馬神經細胞增生及遷移之功效。
2. NLWE及NLAE們已經在成人時期有促進AMH增加海馬區細胞新生作用,有減少神經退化疾病。
3. 本實驗驗證去利用HPLC/MS分析萃取物NLWE及NLAE各佔8.9%及89%之Q3G成分。(已有三種萃取物技術)

4. 研究證實Q3G之萃取物有促進小海馬區細胞新生作用(ARN)

市場開發理念(2):
1. 是神經退化疾病預防與保健之植物新藥保健食品,且我們已經實證NLWE及NLAE有促進成年海馬神經細胞新生(ARN)之功效。
2. NLWE及NLAE對於一般成人時期均有促進再神經新生作用,而非僅限於胎兒的兒作用。
3. NLWE(占8.9% Q3G)可發展成保健食品,NLAE(89% Q3G)可發展為增加ARN用途。

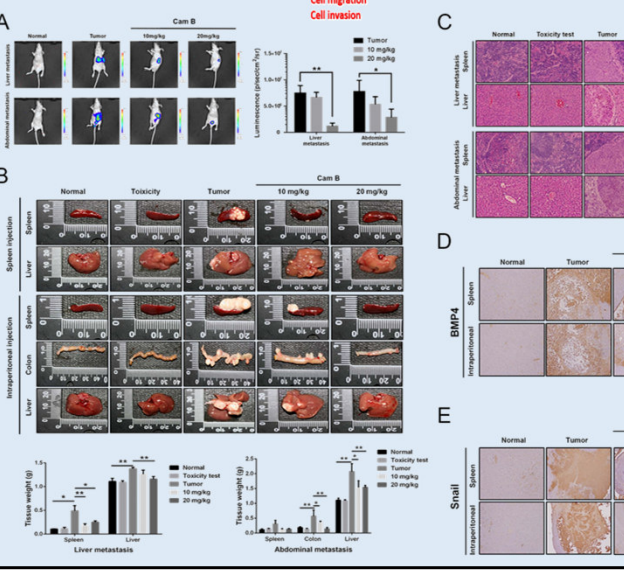
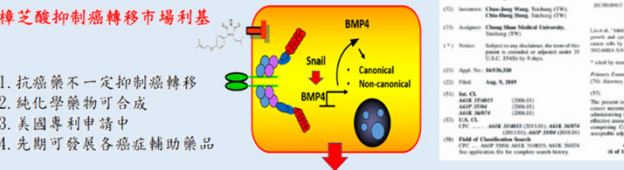
市場開發理念(3):
1. 2015年全球有990萬名失智症新增病例,每3秒就有一人罹患失智症。
2. 預防發生全民可食NLWE

引用文獻:
倫敦的國際失智症協會 (國際ADI) 出版,內容由協會全權負責, 2015年8月限期所有國際失智症協會

市場潛力:
1. 現今全球有超過4000萬名失智者,比西班牙的人口還多,2050年預計會增加至1億 3150萬名。失智症也帶來經濟負擔,目前全球失智症總成本估計為8180億美元,2018年會增加至1.6兆美元,與世界各國總產額相比,失智症總的總成本可媲美全球15大經濟體。根據預測,失智症將耗資(1420億美元),Google (9800億美元) 或沃爾瑪(Wal-Mart) (9570億美元) 的總資產。
2. 若用於全民皆可預防之預防,經濟效益巨大。

第二案:開發富含Antrocin B樟芝菌絲做為癌症輔助食品

現況:
1. 市場有5健康食品字號及多數保健食品
2. 提高免疫力,護肝功能
3. Antrocin B抑制癌細胞惡化轉移(US專利)
4. 開發為癌症輔助食品增加競爭力



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
龍葵保健食品研究開發
Summary of biological activity of Solanum elaeagnifolium extract

(II) 發明專利
龍葵保健食品研究開發
龍葵食品的安全性評估
龍葵食品的安全性試驗

產學合作項目
1. 本研究已發表龍葵降低血脂,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. 目前已確定確實符合衛福部公佈「不易形成體脂肪」及「化學性」、「酒精性」及「非酒精性(高脂醣飲食)」之護肝功能之評估。
3. 酒精性脂肪肝已取得中華民國專利,可做为專利原料。
4. 可將龍葵PFA製備為50 ml一口服錠片。
5. 人體試驗後可開發為治療肝藥藥物,較silymarin藥劑優勢,可治療各種肝炎。

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第三案:開發桑椹為多重護肝產品

United States Patent
Wang et al. US 10,912,760 B1
Date of Patent: Feb. 9, 2021

Hepatoprotective effect of mulberry water extracts on ethanol-induced liver injury by anti-inflammation and inhibition of lipogenesis in C57BL/6J mice
Chang-Cheng Tang¹, Hui-Pei Huang^{1,2}, Yi-Jia Lee^{1,2}, Yu-Hsien Tang¹, Chao-Jung Wang^{1,2*}

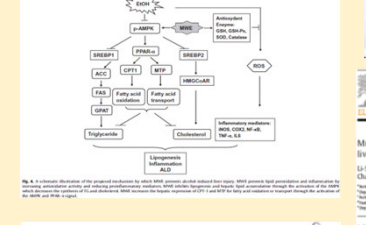


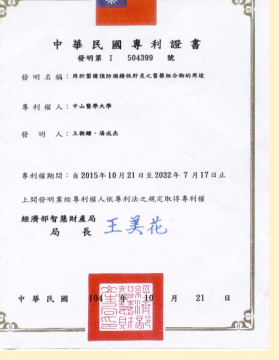
Fig. 4. In vivo experimental results of mulberry water extracts (MWEs) on ethanol-induced liver injury in C57BL/6J mice.

Research Article
Improvement of lipopolysaccharide-induced hepatic injuries and inflammation with mulberry extracts
Ting-Tai Ou¹, Chih-Yi Kuo^{1,2}, A-Hi Chang¹, Cheng-Chau Hsu¹, Hui-Jane Lee¹, Jih-Chin Peng¹ and Chao-Jung Wang^{1,2*}

ABSTRACT
Lipopolysaccharide (LPS) is a major component of gram-negative bacterial endotoxins, which has been shown to induce hepatic injury and inflammation. ...

AGRICULTURAL AND FOOD CHEMISTRY
Mulberry Water Extracts Possess an Anti-obesity Effect and Ability to Inhibit Hepatic Lipogenesis and Promote Lipolysis
Chang-Hsin Peng^{1,2}, Liang-Liang Chen^{1,2}, Chao-Ming Chang^{1,2}, Cheng-Chung Chang^{1,2}, and Chia-Jung Wang^{1,2*}

ABSTRACT
Obesity is a global health problem associated with metabolic syndrome. Mulberry water extract (MWE) contains various bioactive compounds, including polyphenols and flavonoids, which may have anti-obesity effects. ...



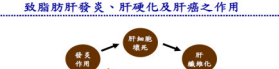
Research Article
Mulberry water extracts (MWEs) ameliorated carbon tetrachloride-induced liver damages in rat
Li-Sung Hsu¹, Hsiuh-Hsun Ho¹, Ming-Chang Lin^{1,2}, Chang-Cheng Chyau¹, Jih-Shin Peng¹, Chao-Jung Wang^{1,2*}

Research Article
Mulberry extract inhibits oleic acid-induced lipid accumulation via reduction of lipogenesis and promotion of hepatic lipid clearance
Ting-Tai Ou¹, Man-Jung Hsu^{1,2}, Kuei-Chuan Chan^{1,2}, Chien-Ning Huang^{1,2}, Hsiuh-Hsun Ho¹, and Chao-Jung Wang^{1,2*}

ABSTRACT
Oleic acid is a major component of dietary lipids and is known to induce hepatic lipid accumulation and liver damage. ...

Research Article
Solanum elaeagnifolium extract (SE) inhibits hepatic lipogenesis and promotes lipolysis
Chang-Hsin Peng^{1,2}, Liang-Liang Chen^{1,2}, Chao-Ming Chang^{1,2}, Cheng-Chung Chang^{1,2}, and Chia-Jung Wang^{1,2*}

ABSTRACT
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