

# 國立嘉義大學特色研究團隊簡介

## 一、基本資料

編號：

團 隊 名 稱	微生物應用與種源 庫建立		
團 隊 總 主 持 人 姓 名	朱紀實	職 稱	教授
系 所 ( 單 位 )	生命科學院 食品科學系、水生生物系、生 化科技系、 微生物免疫與生物藥學系	電 話	(公 )2717898 (手機) 0918946981
	農學院 園藝學系、植物醫學系、生物 農業科技學系、動物科學系	E - m a i l	cschu@mail.ncyu.edu.tw
本團隊與補助計畫 關聯	<input type="checkbox"/> 無 <input checked="" type="checkbox"/> 是， <ol style="list-style-type: none"> <li>1. 委託機構: <u>經濟部學界科專計畫 (101-104, 1,400 萬元) (已結案)</u> 計畫名稱: <u>高異黃酮非基改大豆之高加價值產品研發 3 年計畫</u></li> <li>2. 委託機構: 農委會學界科專計畫(107/3-109/12, 第一年經費 490 萬元, 本校核 定經費 390 萬元) 計畫名稱: 毛木耳全株分級利用之高加價值產品開發 3 年計畫</li> <li>3. 委託機構: 科技部 2018 年度專題研究計畫(3 年, 申請中, 第一年申請經 費 700 萬元) 計畫名稱: 標的農產品(香菇、番石榴及芒果產業)保鮮及加工技術鏈結整合 應用</li> <li>4. 委託機構 科技部 2016 一般型研究計畫 計畫名稱 105 年度【篩選生薑活性成分於提升造血之功能與機制】MOST 105-2320-B-415-002. (1,000,000 元)</li> <li>5. 委託機構 科技部 ( 105/2-106/7, 100 萬元) 計畫名稱 以 CU300 開發生產無特定病原雞隻之飼糧</li> <li>6. 委託機構 科技部 (104/8-105/9, 95 萬元) 計畫名稱 利用蛋白質質譜指紋分析及多基因座比較序列分析法開發畜產益</li> </ol>		

生菌（枯草芽孢桿菌群）快速鑑別平台之研究

7. 委託機構 科技部 (103/8-105/7, 400 萬元)  
計畫名稱 篩選肉骨粉分解菌經固態發酵後促進肉雞生長之探討
8. 委託機構 科技部 (103/6-105/5, 100 萬元)  
計畫名稱 開發生產高蛋白發酵飼料促進雞、豬生長之探討(2/2)
9. 委託機構 農委會(105/1-106/1, 60 萬元)  
計畫名稱 開發生產納豆發酵產物(II) 對肉雞之應用
10. 委託機構 桔園生技有限公司 (105/1-106/1, 60 萬元)  
計畫名稱 開發生產發酵飼料配方
11. 委託機構 桔園生技有限公司 (105/1-106/1, 60 萬元)  
計畫名稱 開發生產添加劑 CU2 號
12. 委託機構 貿立實業股份有限公司(103/3-104/3, 10 萬元)  
計畫名稱 貿立精料在豬隻之應用
13. 委託機構 淨旦生物科技股份有限公司(104/9-105/9, 10 萬元)  
計畫名稱 SPF 雞隻專用飼料配方之開發
14. 委託機構 淨旦生物科技股份有限公司(104/11-105/11, 10 萬元)  
計畫名稱 SPF 雞隻專用飼料配方之開發(II)
15. 委託機構 桔園生技有限公司 (104/12~104/11, 10 萬元)  
計畫名稱 飼料產品檢驗分析
16. 委託機構 鼎唐能源科技股份有限公司 (105/03-106/03, 30 萬元)  
計畫名稱 評估生質丁酸運用在肉雞飼糧之可行性
17. 委託機構 鼎唐能源科技股份有限公司 (105/03-106/03, 50 萬元)  
計畫名稱 評估生質丁酸運用在蛋雞飼糧之可行性
18. 委託機構 桔園生技有限公司(105/3-106/3)(60 萬元) (已結案)  
計畫名稱 開發生產胜肽蛋白配方

19. 委託機構 農委會(105/1-105//12, 373000)  
計畫名稱 開發生產納豆發酵產物(III) 對肉雞之應用
20. 委託機構 益全生化科技股份有限公司(105/6-106/5, 18 萬元)  
計畫名稱 賽鴿機能性發酵能量食品開發
21. 委託機構 農委會(106/1-107/12, 432000) (已結案)  
計畫名稱 開發生產改善動物生長與排泄物異味之添加物
22. 委託機構 安佳美股份有限公司(105/9-106/9, 32 萬元)  
計畫名稱 比較 Nutri-Methionine®與 DL-Methoine 對白肉雞生長、屠體及血液生化性狀之影響
23. 委託機構 桔園生技有限公司(105/11-106/11, 60 萬元)  
計畫名稱 納豆蛋白之開發生產
24. 委託機構 英寶畜牧場(106/4-107/4,10 萬元)  
計畫名稱 開發生產寶利旺蛋白
25. 委託機構 科技部 (2013.08.01 至 2016.07.31 共 3,637,000 元)  
計畫名稱 一氧化碳對血管內皮細胞的保護機制：蛋白質巰基修飾所扮演的角色
26. 委託機構科技部 (2016.08.01- 2017.07.31, 國科會, ( 1,240,000 元)  
計畫名稱 含硫氨基抗氧化酵素穀氧還蛋白 3 在內皮細胞的保護機轉
27. 委託機構：香港商高華種子有限公司產學合作計畫  
計畫名稱：2018 年茄科與葫蘆科蔬菜作物病毒抗病性篩選(執行中)
28. 委託機構：科技部 2018 年度專題研究計畫  
計畫名稱：研發聯結瓜類捲葉病毒病顯性抗病基因之分子標(申請中)
29. 委託機構：科技部 2013 年度專題研究計畫(3 年, 102/08/01~105/09/30  
計畫名稱：快速雙重確認之高解析度核酸熔鏈技術在食品微生物菌種鑑定之應用研究

30. 委託機構: 能源科技股份有限公司  
計畫名稱: 建構具固碳能力之酪丁酸梭菌 (103/07-104/12 600,000 元)
31. 委託機構: 科技部(103/08-106/07 2,660,000 元)  
計畫名稱 探討以梭狀芽孢桿菌的丁醇耐受性機制，應用於生物反應器中生產高濃度丁醇之可行性
32. 委託機構: 科技部 (106/08-107/07 880,000 元)  
計畫名稱: 探討具丁醇耐受性之梭狀芽孢桿菌利用多重碳源於纖維床生物反應器生產高濃度丁醇之製程模擬及開發
33. 委託機構: 行政院農委會 (107/1-108/12 第一年核定 84 萬元)  
計畫名稱: 開發生產混合型發酵蛋白對南美白對蝦 (*Litopenaeus vannamei*) 之應用

1. 篩選機能性微生物
2. 建立種源庫
  - a. 數位資料庫
  - b. 乳酸菌
  - c. 麴菌
  - d. 食用菇菌
3. 利用微生物轉換現有藥用植物開發新化學物
4. 植物病原及其抗病種原收集
5. 產品開發
  - a. 生物防治
  - b. 糖尿病患之保健食品開發
  - c. 畜產發酵飼料添加物
  - d. 水產發酵飼料添加物
  - e. 水質改善
  - f. 放化療後之癌症輔助保健品
  - g. 免疫調節保健品
  - h. 植物病原檢測應用套組
  - i. 植物抗病種原之評估
  - j. 抗病番茄種原之抗病育種應用
  - k. 降低膽固醇保健食品開發
  - l. 調節血脂肪保健食品開發
  - m. 調節免疫力保健食品開發
  - n. 抗蛀牙與牙周病保健食品開發

o. 抗感染保健食品開發	
p. 抗過敏保健食品開發	
團隊連絡人	<input type="checkbox"/> 同團隊主持人 姓名： 翁博群      電話：(公)    2717922      (手機)
E-MAIL	brian@mail.ncyu.edu.tw

## 二、團隊成員 (表格不足時，請自行延伸)

姓名	單位/系所	職稱	研究專長
朱紀實	生命科學院 微生物免疫與生物藥學系	教授	微生物及產品開發
黃健政	生命科學院 食品科學院	副教授	食品加工、水產品藥物殘留 ELISA 快速檢測、水產品安全衛生、HACCP、食品工廠規劃及驗證
羅至佑		副教授	香料研究、天然產物化學、儀器分析、分析化學
呂英震		助理教授	益生菌篩選與鑑定、保健食品開發
賴泓智	生命科學院 水生生物系	教授	水域生態環境、水產養殖環境、養殖池底質
陳哲俊		副教授	蝦類生殖生理、微生物學
陳淑美		副教授	水生生物生理學、雙枚貝免疫學
董哲煌		助理教授	水產養殖、水產繁殖
陳瑞祥	生命科學院 生化科技系	教授	植物病害防治生物製劑與食藥用真菌資源之研發
廖慧芬		教授	生物醫學、腫瘤免疫、中草藥研究
林芸薇		教授	分子癌病、分子生物、訊號傳遞、基因毒理
陳政男		教授	發炎細胞生物學、細胞訊息傳遞、血管生物學
張心怡		副教授	組織工程、藥物傳遞
翁博群	生命科學院 微生物免疫與生物藥學系	副教授	免疫生理、營養免疫、飼料添加物或功能性食物補充品對於免疫的影響、老年醫學與免疫平衡、繁殖免疫、食藥物開發研究、動物試驗
翁炳孫		教授	細胞生理、抗氧化生物醫學、細胞訊號傳遞、分子藥理、心血管生理、分子生物技術、生物化學、分子毒理
陳俊憲		教授	天然物抗癌研究、癌症之化學預防研究、天然物抗發炎研究、自由基生物醫學研究、保健性生物活性物質研發、細胞凋亡研究、生物化學研究、毒理學研究

陳立耿		副教授	生藥學、天然物化學、儀器分析、中藥品質管制、光譜分析、分離純化技術、液相層析質譜分析
王紹鴻		副教授	微生物與免疫學、生命科學、生物科技
謝佳雯		助理教授	微生物學、分子生物學、蛋白質工程、發酵學
洪進雄	農學院	教授	蔬菜栽培與育種、菇類栽培、香藥草栽培
詹國靖	園藝系	助理教授	園產品加工學、園產品分析與檢驗
陳國隆	農學院 動物科學系	教授	動物營養、家禽生理、家禽免疫
周蘭嗣	農學院 生物農業科學系	副教授	食品微生物、微生物生理學、分子基因、分子檢測技術、次世代基因定
蔡文錫	農學院 植物醫學系	副教授	植物病毒診斷與鑑定、病毒病害管理、病毒抗病種源篩選與應用、轉基因病毒抗性之研發
黃健瑞		助理教授	植物病害農藥與非農藥防治、植物病害生物防治、植物聯繫性細菌
林志鴻		助理教授	植物細菌性病害診斷及檢測、植物病原細菌鑑定及特性分析、植物細菌性病害綜合管理

### 三、團隊研究特色說明

<p>研究構想、研究方法與執行策略</p>	<p><b>研究構想</b></p> <p>跨領域結合不同專長院系教師，研究領域包括細菌、真菌、病毒、微生物防治、發酵及健康食品開發、食品加工、機能性成分萃取及其功能性評估，如抗氧化、化妝保養品，機能性動物飼料發酵添加物、內皮細胞保護、糖尿病之細胞及動物實驗評估等，主要目的是結合教師們技術與在地產業結合，開發增值機能性產品，建立師生創新暨創業的態度，以自給自足模式，朝成立衍生企業及嘉大創業園區模式進行。</p> <p><b>研究方法</b></p> <ol style="list-style-type: none"> <li>1. 成立研究團隊 <ol style="list-style-type: none"> <li>a. 生物防治: 植醫系、生化系</li> <li>b. 菇類增值應用: 園藝系、食科系、微藥系</li> <li>c. 發酵健康食品開發: 微藥系、食科系、生農系</li> <li>d. 有效成分萃取及鑑定: 食科系、微藥系</li> <li>e. 細胞機能性評估: 生化系、微藥系</li> </ol> </li> </ol>
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	<p>f. 動物實驗評估: 食科系、生化系、微藥系</p> <p>g. 產品開發及評估: 動科系、水生系、生化系、食科系、微藥系</p> <p>2. 依跨領域團隊專長申請政府相關計畫</p> <p><b>執行策略群</b></p> <p>1. 成立教師社群</p> <p>2. 盤點現有資源，構想可質性計畫方案</p> <p>3. 在地產業結合</p>
預期效益	<p>1. 成立微生物種子庫，進行商業營運，</p> <p>2. 建立健康食品免疫及安全性細胞及動物評估平台，為雲嘉南地區產業服務，</p> <p>3. 與在地產業結合，發展微生物發酵機能性產品開發，</p> <p>4. 成立衍生企業。</p>
現有成果	<p>2015 至今</p> <p>1. 執行計畫 32 件，申請 2 件；</p> <p>2. 專利 9 件</p> <p>3. 技轉 5 件</p> <p>4. 文章 94 篇</p>
執行過程遭遇困難	<p>1. 經費來源</p> <p>2. 時間配合</p> <p>3. 儀器互用</p>

#### 四、本研究團隊近三年相關之相關研究成果 (2015-)

##### 1. 期刊論文(\*通訊作者)

朱紀實	
1.	Huang YK, <b>Chu C</b> , Wu CH, Chen CL and Cheng-Hsun Chiu CH. 2015. Evaluation of gram-negative bacterial infection by a stable and conjugative bioluminescence plasmid in a mouse model. Journal of Biomedical Science. <b>21</b> :78. [SCI]
2.	Lee HS, Loh YX, Lee JJ, Liu CS, <b>Chu C*</b> , 2015. Antimicrobial Consumption and resistance in five Gram-negative bacterial species in a hospital from 2003 to 2011. JMII 8(6):647-54. [SCI]
3.	Chen CL, Wang ST, <b>Chu C</b> , Wang SH. 2015. Comparison of four molecular typing methods for <i>Riemerella anatipestifer</i> . Taiwan Veterinary Journal 41 (3):177-185
4.	顧文君、馬復京、游漢明、 <b>朱紀實</b> ，2015。烏柏油之特性與利用。林產工業 34:143-150.
5.	Wang YH, Lu CC, Chiu CH, Wang MH, Yang TH, <b>Chu C*</b> . 2016. Genetically diverse serotypes III and VI substitute major clonal disseminated serotypes Ib and V as prevalent serotypes of Streptococcus agalactiae from 2007 to 2012. J Microbiol Immunol Infect. 49(5):672-678. [SCI]
6.	<b>Chu C</b> , Lu FJ, Yeh Rh, Li ZL, Chen CH. 2016. Synergistic antioxidant activity of resveratrol with genistein in high glucose incubation in Madin-Darby canine kidney epithelial cells. Biomed Rep. Mar;4(3):349-354.
7.	Changchien CH, Chen SW, Chen YY, <b>Chu C*</b> : 2016. Antibiotic susceptibility and genomic variations in <i>Staphylococcus aureus</i> associated with skin and soft tissue infection (SSTI) disease groups. BMC infectious Diseases. 16:276. [SCI]
8.	夏滄琪、陳立耿、陳聖雅、陳柏綸、 <b>朱紀實*</b> ，2016。十石(金珠)豆麥醬油發酵過程中異黃酮類之改變。嘉大

	農林學報 13:63-79.
9.	李勝霖、陳怡文、吳峻璋、謝鈞任、馬雅均、朱紀實、羅至佑、呂英震，2016。篩選以大豆為發酵基質生產血管收縮素轉換酶抑制能力最佳之乳酸菌株。嘉大農林學報 13:95-104.
10.	Chen KL, Lin JL, Yu CY, Su YC, Wu CP, <b>Chu C*</b> . 2016. Effects of challenge methods and feeding additives on antibody production and bactericidal activity against <i>Salmonella</i> Enteritidis, Gallinarum and Pullorum in chicken. Taiwan Veterinary Journal. 42(2):1-9.
11.	Huang TJ, Lin PY, Lee CH, Wu MH, Li YY, Yang TH, Cheng CC, Lee CY, Lu CC, <b>Chu C*</b> . 2016. Infectious spondylitis- <i>Staphylococcus aureus</i> with virulence gene <i>pvl</i> or <i>tst</i> cause more necrosis than apoptosis in human alveolar basal epithelial cell line A549. Advances in Microbiology 6:479-488.
12.	Chan KW, Lo C, <b>Chu C</b> , Chin LT, Wan YT, Yan WC. 2016. Development of a colloidal gold-based immunochromatographic test strip for detection of cetacean myoglobin. Journal of Visualized Experiments. 7/13/2016, Issue 113; doi:10.3791/53433.
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## 2. 專利

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