



高雄醫學大學藥學院 天然藥物研究所



吳志中 教授/所長

任教科目 --- (A) 大學部：
生藥學
藥理學
(B) 研究所：
天然藥物藥效評估特論

最高學歷 --- 台灣大學藥理學研究所博士

現任 ---

高雄醫學大學天然藥物研究所所長
高雄醫學大學天然藥物研究所教授
高雄醫學大學人事室主任
中山大學海洋生物科技暨資源學系合聘教授

經歷 ---

學術經歷：高雄醫學大學天然藥物研究所副教授
美國北卡羅萊納大學教堂山校區博士後研究
高雄醫學大學天然藥物研究所助理教授
大仁技術學院藥學系助理教授
台灣大學醫學院藥理學研究所博士後研究
行政服務：高雄醫學大學研發處學術研究組長
中華天然藥物學會常務監事、秘書長

最新動態

- 本校 2014 年 Outstanding Research Award 與 Award of Patent Approval

E-mail --- ccwu@kmu.edu.tw

聯絡電話 --- 07-3121101 ext. 2669

傳 真 --- 07-3114773

研究室網頁：

研究專長 --- *植物成分及化學合成物之藥理研究 (抗心血管疾病及抗癌活性)

*細胞訊息傳遞系統研究

著作論文

主要論文:

1. Wu, C.C., Ko, F.N., Wu, T.S. and Teng, C.M. (1994) Antiplatelet effects of Clausine-D isolated from *Clausena excavata*. *Biochem. Biophys. Acta* 1201: 1-6.
2. Ko, F.N., Wu, C.C., Kuo, S.C., Lee, F.Y. and Teng, C.M. (1994) YC-1, a novel activator of platelet guanylate cyclase. *Blood* 84: 4226-4233.
3. Wu, C.C., Ko, F.N., Kuo, S.C., Lee, F.Y. and Teng, C.M. (1995) YC-1 inhibited human platelet aggregation through NO-independent activation of soluble guanylate cyclase. *Br. J. Pharmacol.* 116: 1973-1978.
4. Wu, C.C., Ko, F.N., Huang, T.F. and Teng, C.M. (1996) Mechanisms regulated platelet spreading after initial platelet contact with collagen. *Biochem. Biophys. Res. Commun.* 220: 388-393.
5. Wu, C.C., Ko, F.N. and Teng, C.M. (1997) Inhibition of platelet adhesion to collagen by cGMP-elevating agents. *Biochem. Biophys. Res. Commun.* 231: 412-416.
6. Teng, C.M., Wu, C.C., Ko, F.N., Lee, F.Y. and Kuo, S.C. (1997) YC-1, a NO-independent activator of soluble guanylate cyclase, inhibits platelet-rich thrombosis in mice. *Eur. J. Pharmacol.* 320: 161-166.
7. Wu, C.C., Kuo, S.C., Lee, F.Y., Teng, C.M. (1999) YC-1 potentiates the antiplatelet effect of hydrogen peroxide via sensitization of soluble guanylate cyclase. *Eur. J. Pharmacol.* 381: 185-191.
8. Wu, C.C., Huang, S.W., Hwang, T.L., Kuo, S.C., Lee, F.Y., Teng, C.M.* (2000) YD-3, a novel inhibitor of protease-induced platelet activation. *Br. J. Pharmacol.* 130: 1289-1296.
9. Wu, C.C., Hwang, T.L., Liao, C.H., Kuo, S.C., Lee, F.Y., Lee, C.Y., Teng, C.M.* (2002) Selective inhibition of protease-activated receptor 4-dependent platelet activation by YD-3. *Thromb. Haemost.* 87: 1026-1033.
10. Wu, C.C., Hwang, T.L., Liao, C.H., Kuo, S.C., Lee, F.Y., Teng, C.M.* (2003) The role of PAR4 in thrombin-induced thromboxane production in human platelets. *Thromb. Haemost.* 90: 299-308.
11. Wu, C.C.*, Wang, W.Y., Kuo, R.Y., Chang, F.R., Wu, Y.C. (2004) Antiplatelet effects of KW-7, a new inhibitor of cyclic nucleotide phosphodiesterases. *Eur. J. Pharmacol.* 483: 187-194.
12. Wu, C.C.*, Chan, M.L., Chen W.Y., Tsai, C.I, Chang, F.R., Wu, Y.C. (2005) Pristimerin induces caspase-dependent apoptosis in MDA-MB-231 cells via direct effects on mitochondria, *Mol. Cancer Ther.* 4: 1277-1285.
13. Chen, W.Y., Wu, C.C.*, Lan, Y.H., Chang, F.R., Teng, C.M., Wu, Y.C. (2005) Goniiothalamine induces cell cycle-specific apoptosis by modulating the redox status in MDA-MB-231 cells. *Eur. J. Pharmacol.* 522: 20-29.
14. Wu, C.C.*, Wang, T.W., Wang, W.Y., Hsieh, P.W., Wu, Y.C. (2005) 2-(2-Br-phenyl)-8-methoxy-benzoxazinone (HPW-RX2), a direct thrombin inhibitor with a suppressive effect on thromboxane formation in platelets. *Eur. J. Pharmacol.* 527: 37-43.
15. Wu, C.C.* & Teng, C.M. (2006) Comparison of the effects of PAR1 antagonists, PAR4 antagonists, and their combinations on thrombin-induced human platelet activation. *Eur. J. Pharmacol.* 546: 142-147.

16. Wang, W.Y., Wu, Y.C. & Wu, C.C.* (2006) Prevention of platelet glycoprotein IIb/IIIa activation by a novel tyrosine kinase inhibitor 3,4-methylenedioxy-beta-nitrostyrene. *Mol. Pharmacol.* 70: 1380-1389.
17. Wu, C.C.*, Wu, C.I., Wang, W.Y., Wu, Y.C. (2007) Low concentrations of resveratrol potentiate the antiplatelet effect of prostaglandins. *Planta Med.* 73: 439-443.
18. Wang, W.Y., Hsieh, P.W., Wu, Y.C., Wu, C.C.* (2007) Synthesis and pharmacological evaluation of novel β -nitrostyrene derivatives as tyrosine kinase inhibitors with potent antiplatelet activity. *Biochem. Pharmacol.* 74: 601-611.
19. Chen, H.S., Kuo, S.C., Teng, C.M., Lee, F.Y., Wang, J.P., Lee, Y.C., Kuo, C.W., Huang, C.C., Wu, C.C.*, Huang, L.J.* (2008) Synthesis and antiplatelet activity of ethyl 4-(1-benzyl-1H-indazol-3-yl)benzoate (YD-3) derivatives. *Bioorg. Med. Chem.* 16: 1262-1278.
20. Chen, W.Y., Chang, F.R., Huang, Z.Y., Chen, J.H., Wu, Y.C., Wu, C.C.* (2008) Tubocapsenolide A, a novel withanolide, inhibits proliferation and induces apoptosis in MDA-MB-231 cells by thiol oxidation of heat shock proteins. *J. Biol. Chem.* 283: 17184-17193.
21. Hou, Y.Y., Wu, M.L., Hwang, Y.C., Chang, F.R., Wu, Y.C., Wu, C.C.* (2009) The natural diterpenoid ovatodiolide induces cell cycle arrest and apoptosis in human oral squamous cell carcinoma Ca9-22 cells. *Life Sci.* 85: 26-32.
22. Wu, C.C.*, Wu, S.Y., Liao, C.Y., Teng, C.M., Wu, Y.C., Kuo, S.C. (2010) The roles and mechanisms of PAR4 and P2Y₁₂/phosphatidylinositol 3-kinase pathway in maintaining thrombin-induced platelet aggregation. *Br. J. Pharmacol.* 161: 643-658.
23. Hsieh, P.W.*, Chang, Y.T., Chuang, W.Y., Chiang, S.Z., Wu, C.C.* (2010) The synthesis and biologic evaluation of anti-platelet and cytotoxic β -nitrostyrenes. *Bioorg. Med. Chem.* 18: 7621-7627.
24. Wu, C.C.*, Wang, W.Y., Wei, C.K., Teng, C.M. (2011) Combined blockade of thrombin anion binding exosite-1 and PAR4 produces synergistic antiplatelet effect in human platelets. *Thromb. Haemost.* 105: 88-95.
25. Chen, W.Y., Hsieh, Y.A., Tsai, C.I., Kang, Y.F., Chang, F.R., Wu, Y.C., Wu, C.C.* (2011) Protoapigenone, a natural derivative of apigenin, induces mitogen-activated protein kinase-dependent apoptosis in human breast cancer cells associated with induction of oxidative stress and inhibition of glutathione S-transferase pi. *Invest New Drugs* 29: 1347-1359.
26. Wang, H.C., Tsai, Y.L., Wu, Y.C., Chang, F.R., Liu, M.H., Chen, W.Y., Wu, C.C.* (2012) Withanolides-induced breast cancer cell death is correlated with their ability to inhibit heat protein 90. *PLoS One* 7: e37764.
27. Chuang, W.Y., Kung, P.H., Kuo, C.Y., Wu, C.C.* (2013) Sulforaphane prevents human platelet aggregation through inhibiting the phosphatidylinositol 3-kinase/Akt pathway. *Thromb. Haemost.* 109:1120-1130.
28. Kuo, C.Y., Wang, H.C., Kung, P.H., Lu, C.Y., Liao, C.Y., Wu, M.T., Wu, C.C.* (2014) Identification of CalDAG-GEFI as an intracellular target for the vicinal dithiol binding agent phenylarsine oxide in human platelets. *Thromb. Haemost.* 111: 892-901.
29. Liao, C.Y., Lee, C.L., Wang, H.C., Liang, S.S., Kung, P.H., Wu, Y.C., Chang F.R., Wu, C.C.* (2015) CLL2-1, a chemical derivative of orchid 1, 4-phenanthrenequinones, inhibits human platelet aggregation through thiol modification of CALDAG-GEFI. *Free Radic. Biol. Med.* 78:

101-110.

30. Chen, I.H., Chang, F.R., Wu, Y.C., Kung, P.H., Wu, C.C.* (2015) 3,4-Methylenedioxy- β -nitrostyrene inhibits adhesion and migration of human triple-negative breast cancer cells by suppressing β 1 integrin function and surface protein disulfide isomerase. *Biochimie* 110: 81-92.
31. Wang, H.C.*, Chang, F.R., Huang T.J., Kuo, C.Y., Tsai, Y.C., Wu, C.C.* (2015) (-)-Liriopein B suppresses breast cancer progression via inhibition of multiple kinases. *Chem. Res. Toxicol.* 18: 28: 897-906.
32. Zupkó, I., Jaeger, W., Topcu, Z., Wu, C.C. (2015) Anticancer properties of natural products. *Biomed. Res. Int.* 2015: 242070.
33. Wei, C.K., Chang, F.R., Hsieh, P.W., Wu, C.C.* (2015) Inhibition of the interactions between metastatic human breast cancer cells and platelets by β -nitrostyrene derivatives. *Life Sci.* 143, 147-155.
34. Chen, I.H., Shih, H.C., Hsieh, P.W., Chang, F.R., Wu, Y.C., Wu, C.C.* (2015) HPW-RX40 restores anoikis sensitivity of human breast cancer cells by inhibiting integrin/FAK signaling. *Toxicol. Appl. Pharmacol.* 289, 330-340.

其它論文：

35. Huang, T.L., Wu, C.C. and Teng, C.M. (1998) Comparative effects of methylene blue and ODQ on sodium nitroprusside-induced relaxation in guinea pig airways. *Br. J. Pharmacol.* 125: 1158-1163.
36. Hwang, T.L., Wu, C.C., Teng, C.M. (1999) YC-1 potentiates nitric oxide-induced relaxation in guinea-pig trachea. *Br. J. Pharmacol.* 128: 577-584.
37. Lee F.Y., Lien J.C., Huang L.J., Huang T.M., Tsai S.C., Teng C.M., Wu C.C., Cheng F.C., Kuo S.C., (2001) Synthesis of 1-benzyl-3-(5'-hydroxymethyl- 2'-furyl)indazole analogues as novel antiplatelet agents. *J. Med. Chem.* 44: 3746-3749.
38. Yang, Y.L., Chang, F.R., Wu, C.C., Wang, W.Y., Wu, Y.C., (2002) New *ent*-kaurane diterpenoids with anti-platelet aggregation activity from *Annona squamosa*. *J. Nat. Prod.* 65: 1462-1467.
39. Hwang T.L., Wu, C.C., Guh, J.H., Teng, C.M. (2003) Potentiation of TNF α expression by YC-1 in alveolar macrophages through a cyclic GMP-independent pathway. *Biochem. Pharmacol.* 66: 149-156.
40. Chang, F.R., Wu, C.C., Patnam, R., Kuo, R.Y., Wang, W.Y., Lan, Y.H., Wu, Y.C. (2003) Effect of active synthetic 2-substituted quinazolinones on anti-platelet aggregation and the inhibition of superoxide anion generation by neutrophils. *Arch. Pharm. Res.* 26: 511-515.
41. Lo, W.L., Wu, C.C., Chang, F.R., Wang, W.Y., Khalil, A.T., Lee, K.H, Wu, Y.C., (2003) Antiplatelet and anti-HIV constituents from *Euchresta formosana*. *Nat. Prod. Lett.* 17: 91-97.
42. Kuo, R.Y., Wu, C.C., Chang, F.R., Yeh, J.L., Chen, I.J., Wu, Y.C. (2003) Antiplatelet activity of synthetic pyrrolo-benzylisoquinolines, *Bioorg. Med. Chem. Lett.* 13: 821-823.
43. Chen, K.S., Wu, C.C., Chang, F.R., Chia, Y.C., Chiang, M.Y., Wang, W.Y., Wu, Y.C. (2003) Bioactive coumarins from the leaves of *Murraya omphalocarpa*. *Planta Med.* 69: 654-657.
44. Kuo R.Y, Chang, F.R., Wu, C.C., Patnam, R., Wang, W.Y., Du, Y.C., Wu, Y.C. (2003) Antiplatelet

- activity of benzylisoquinoline derivatives oxidized by cerium (IV) ammonium nitrate. *Bioorg. Med. Chem. Lett.* 13: 2789-2793.
45. Hwang, T.L., Hung, H.W., Kao, S.H., Teng, C.M., Wu, C.C., Cheng, S.J.S. (2003) Soluble guanylyl cyclase activator YC-1 inhibits human neutrophil functions through cGMP-independent but cAMP-dependent pathway. *Mol. Pharmacol.* 64: 1419-1427.
 46. Hsieh, P.W., Chang, F.R., Wu, C.C., Wang, W.Y., Gu, L.C., Wu, Y.C. (2004) Selective inhibition of collagen-induced platelet aggregation by a cyclic-peptide from *Drymaria diandra*. *Helv. Chim. Acta* 87: 57-66.
 47. Chen, Y.C., Chen, J.J., Chang, Y.L. Teng, C.M., Lin, W.Y., Wu, C.C., Chen, I.S. (2004) A new aristolactam alkaloid and anti-platelet aggregation constituents from *Piper taiwanense*. *Planta Med.* 70: 174-177.
 48. Sheu, J.H., Chao, C.H., Wang, G.H., Hung, K.C., Duh, C.Y., Chiang, M.Y., Wu, Y.C., Wu, C.C. (2004) The first A-nor-hippuristanol and two novel 4,5-secosuberosanoids from the Gorgonian *Isis hippuris*. *Tetrahedron Lett.* 45: 6413-6416.
 49. Cheng, M.J., Wu, C.C., Tsai, I.L., Chen, I.S. (2004) Chemical and antiplatelet constituents from the stem of *Zanthoxylum beecheyanum*. *J. Chin. Chem. Soc.* 51: 1065-1072.
 50. Hsieh, P.W., Chang, F.R., Wu, C.C., Wu, K.Y., Li, C.M., Chen, S.L., Wu, Y.C. (2004) New cytotoxic cyclic peptides and dianthramide from *Dianthus superbus*. *J. Nat. Prod.* 67: 1522-1527.
 51. Liaw, C.C., Chang, F.R., Wu, C.C., Chen, S.L., Bastow, K.F., Hayashi, K.I., Nozaki, H., Lee, K.H., Wu, Y.C. (2004) Nine new cytotoxic monotetrahydrofuranic annonaceous acetogenins from *Annona montana*. *Planta Med.* 70: 948-959.
 52. Hsieh, P.W., Chang, F.R., Wu, C.C., Li, C.M., Wu, K.Y., Chen, S.L., Yen, H.F., Wu, Y.C. (2005) Longicalycinin A, a new cytotoxic cyclic peptide from *Dianthus superbus* var. *longicalycinus* (Maxim.) Will. *Chem. Pharm. Bull.* 53: 336-338.
 53. Hsieh, P.W., Hwang, T.L., Wu, C.C., Chang, F.R., Wang, T.W., Wu, Y.C. (2005) The Evaluation of 2,8-disubstituted benzoxazinone derivatives as anti-inflammatory and anti-platelet aggregation agents. *Bioorg. Med. Chem. Lett.* 15: 2786-2789.
 54. Lin, A.S., Chang, F.R., Wu, C.C., Liaw, C.C., Wu, Y.C. (2005) New cytotoxic flavonoids from *Thelypteris torresiana*. *Planta Med.* 71: 867-870.
 55. Tsai, I.L., Lee, F.P., Wu, C.C., Duh, C.Y., Ishikawa, T., Chen, J.J., Chen, Y.C., Seki, H., Chen, I.S. (2005) New cytotoxic cyclobutanoid amides, a new furanoid lignan and anti-platelet aggregation constituents from *Piper arborescens*. *Planta Med.* 71: 535-542.
 56. Nakagawa-Goto, K., Chen, C.X., Hamel, E., Wu, C.C., Bastow, K.F., Brossi, A., Lee, K.H. (2005) Antitumor agents. Part 236: Synthesis of water-soluble colchicine derivatives. *Bioorg. Med. Chem. Lett.* 15: 235-238.
 57. Pan, W.B., Wei, L.M., Wei, L.L., Wu, C.C., Wu, Y.C. (2005) Esterification-nitration of ortho-hydroxyphenyl carboxylic acids and benzoic acids with cerium (IV) ammonium nitrate (CAN). *J. Chin. Chem. Soc.* 52: 173-180.
 58. Lan, Y.H., Chang, F.R., Liaw, C.C., Wu, C.C., Chiang, M.Y., Wu, Y.C. (2005) Digonioidiol, deoxygoniopyrone A, and goniofupyrone A: Three new styryllactones from *Goniothalamus amuyon*. *Planta Med.* 71:153-159.
 59. Nakagawa-Goto, K., Wu, J.H., Bastow, F., Wu, C.C., Lee, K.H. (2005) Antitumor agents 243.

- Syntheses and cytotoxicity of desmosdumotin C derivatives. *Bioorg. Med. Chem.* 13: 2325-2330.
60. Hsu, H.F., Houg. J.Y., Chang. C.L., Wu, C.C., Chang, F.R., Wu, Y.C. (2005) Antioxidant activity, cytotoxicity, and DNA information of *Glossogyne tenuifolia*. *J. Agric. Food Chem.* 53: 6117-6125.
 61. Liaw, C.C., Chang, F.R., Chen, S.L., Wu, C.C., Lee, K.H., Wu, Y.C. (2005) Novel cytotoxic monotetrahydrofuranic Annonaceous acetogenins from *Annona montana*. *Bioorg. Med. Chem.* 13: 4767-4776.
 62. Lan, Y.H., Chia, Y.C., Chang, F.R., Liaw, C.C., Wu, C.C., Wu, Y.C. (2005) HCA-017. Potential antiinflammatory activities of the new bractelactone and other compounds isolated from *Fissistigma bracteolatum*. *Helv. Chim. Acta* 88, 905-909.
 63. Su, J.H., Huang, H.C., Chao, C.H., Yan, L.Y., Wu, Y.C., Wu, C.C., Sheu, J.H. (2005) Vigulariol, a new metabolite from the sea pen *Vigularia juncea*. *Bull. Chem. Soc. Jpn.* 78: 877-879.
 64. Bruno, M., Rosselli, S., Maggio, A., Raccuglia, R.A., Bastow, K.F., Wu, C.C., Lee, K.H. (2005) Cytotoxic activity of some natural and synthetic sesquiterpene lactones. *Planta Med.* 71: 1176-1178.
 65. Chen, Y.H., Chang, F.R., Wu, C.C., Yen, M.H., Liaw, C.C., Huang, H.C., Kuo, Y.H., Wu, Y.C. (2006) New cytotoxic 6-oxygenated 8,9-dihydrofurocoumarins, hedyotiscone A - C, from *Hedyotis biflora*. *Planta Med.* 72:75-78.
 66. Lin, L., Shi, Q., Nyarko, A.K., Bastow, K.F., Wu, C.C., Su, C.Y., Shih, C.C., Lee, K.H. (2006) Antitumor agents. 250. Design and synthesis of new curcumin analogues as potential anti-prostate cancer agents. *J. Med. Chem.* 49: 3963-3972.
 67. Chia, Y.C., Chang, F.R., Wu, C.C., Teng, C.M., Chen, K.S., Wu, Y.C. (2006) Effect of isoquinoline alkaloids of different structural types on antiplatelet aggregation in vitro. *Planta Med.* 72:1238-1241.
 68. Chen, I.H., Chang, F.R., Wu, C.C., Chen, S.L., Hsieh, P.W., Yen, H.F., Du, Y.C., Wu, Y.C. (2006) Cytotoxic triterpenoids from the leaves of *Microtropis fokiensis*. *J. Nat. Prod.* 69: 1543-1546.
 69. Chang, F.R., Hwang, T.L., Yang, Y.L., Li, C.E., Wu, C.C., Issa, H.H., Hsieh, W.B., Wu, Y.C. (2006) Anti-inflammatory and cytotoxic diterpenes from formosan *Polyalthia longifolia* var. *pendula*. *Planta Med.* 72: 1344-1347.
 70. Hsieh, P.W., Hwang, T.L., Wu, C.C., Chiang, S.Z., Wu, C.I., Wu, Y.C. (2007) The evaluation and structure-activity relationships of 2-benzoylaminobenzoic esters and their analogues as anti-inflammatory and anti-platelet aggregation agents. *Bioorg. Med. Chem. Lett.* 17: 1812-1817.
 71. Hsieh, P.W., Huang, Z.Y., Chen, J.H., Chang, F.R., Wu, C.C., Yang, Y.L., Chiang, M.Y., Yen, M.H., Chen, S.L., Yen, H.F., Lubken, T., Hung, W.C., Wu, Y.C. (2007) Cytotoxic withanolides from *Tubocapsicum anomalum*. *J. Nat. Prod.* 70:747-753.
 72. Lin, A.S., Nakagawa-Goto, K., Chang, F.R., Yu, D., Morris-Natschke, S.L., Wu, C.C., Chen, S.L., Wu, Y.C., Lee, K.H. (2007) First total synthesis of protoapigenone and its analogues as potent cytotoxic agents. *J. Med. Chem.* 50:3921-3927.
 73. Lan, Y.H., Wang, H.Y., Wu, C.C., Chen, S.L., Chang, C.L., Chang, F.R., Wu, Y.C. (2007) New constituents from stems of *Artabotrys uncinatus*. *Chem. Pharm. Bull.* 55:1597-1599.
 74. Yang, Y.L., Chang, S.M., Wu, C.C., Hsieh, P.W., Chen, S.L., Chang, F.R., Hung, W.C., Issa, H.H., Wu, Y.C. (2007) Cytotoxic sesquiterpene lactones from *Pseudoelephantopus spicatus*. *J.*

Nat. Prod. 70: 1761-1765.

75. Lee, C.L., Chang, F.R., Hsieh, P.W., Chiang, M.Y., Wu, C.C., Huang, Z.Y., Lan, Y.H., Chen, M., Lee, K.H., Yen, H.F., Hung, W.C., Wu, Y.C. (2008) Cytotoxic ent-abietane diterpenes from *Gelonium aequoreum*. *Phytochemistry* 69: 276-287.
76. Chia, Y.C., Chang, F.R., Wang, J.C., Wu, C.C., Chiang, M.Y., Lan, Y.H., Chen, K.S., Wu, Y.C. (2008) Antiplatelet aggregation coumarins from the leaves of *Murraya omphalocarpa*. *Molecules* 13: 122-128.
77. Hsieh, P.W., Chiang, S.Z., Wu, C.C., Lo, Y.C., Shih, Y.T., Wu, Y.C. (2008) Synthesis and anti-platelet evaluation of 2-benzoylaminobenzoate analogs. *Bioorg. Med. Chem.* 16: 5803-5814.
78. Wu, S.F., Hsieh, P.W., Wu, C.C., Lee, C.L., Chen, S.L., Lu, C.Y., Wu, T.S., Chang, F.R., Wu, Y.C. (2008) Camptothecinoids from the seeds of Taiwanese *Nothapodytes foetida*. *Molecules* 13: 1361-1371.
79. Chen, I.H., Du, Y.C., Lu, M.C., Lin, A.S., Hsieh, P.W., Wu, C.C., Chen, S.L., Yen, H.F., Chang, F.R., Wu, Y.C. (2008) Lupane-type triterpenoids from *Microtropis fokienensis* and *Perrottetia arisanensis* and the apoptotic effect of 28-hydroxy-3-oxo-lup-20(29)-en-30-al. *J. Nat. Prod.* 71: 1352-1357.
80. Chen, Y.L., Lan, Y.H., Hsieh, P.W., Wu, C.C., Chen, S.L., Yen, C.T., Chang, F.R., Hung, W.C., Wu, Y.C. (2008) Bioactive cembrane diterpenoids of *Anisomeles indica*. *J. Nat. Prod.* 71: 1207-1212.
81. Lin, A.S., Lin, C.R., Du, Y.C., Lübken, T., Chiang, M.Y., Chen, I.H., Wu, C.C., Hwang, T.L., Chen, S.L., Yen, M.H., Chang, F.R., Wu, Y.C. (2009) Acasiane A and B and farnesirane A and B, diterpene derivatives from the roots of *Acacia farnesiana*. *Planta Med.* 75: 256-261.
82. Du, Y.C., Lin, A.S., Wu, C.C., Hsieh, P.W., Chen, Y.H., Chen, I.H., Chen, S.L., Yen, H.F., Lübken, T., Chang, F.R., Wu, Y.C. (2009) New cytotoxic lupane triterpenes from *Perrottetia arisanensis*. *Planta Med.* 75: 848-855.
83. Chen, I.H., Lu, M.C., Du, Y.C., Yen, M.H., Wu, C.C., Chen, Y.H., Hung, C.S., Chen, S.L., Chang, F.R., Wu, Y.C. (2009) Cytotoxic triterpenoids from the stems of *Microtropis japonica*. *J. Nat. Prod.* 72: 1231-1236.
84. Chang, C.L., Zhang, L.J., Chen, R.Y., Wu, C.C., Huang, H.C., Roy, M.C., Huang, J.P., Wu, Y.C., Kuo, Y.H. (2010) Quiquelignan A-H, eight new lignoids from the rattan palm *Calamus quiquetnerivius* and their antiradical, anti-inflammatory and antiplatelet aggregation activities. *Bioorg. Med. Chem.* 18: 518-525.
85. Yen, C.T., Wu, C.C., Lee, J.C., Chen, S.L., Morris-Natschke, S.L., Hsieh, P.W., Wu, Y.C. (2010) Cytotoxic *N*-(fluorenyl-9-methoxycarbonyl) (Fmoc)-dipeptides: structure-activity relationships and synergistic studies. *Eur. J. Med. Chem.* 45: 2494-2502.
86. Lee, C.L., Liao, Y.C., Hwang, T.L., Wu, C.C., Chang, F.R., Wu, Y.C. (2010) Ixorapeptide I and ixorapeptide II, bioactive peptides isolated from *Ixora coccinea*. *Bioorg. Med. Chem. Lett.* 20: 7354-7357.
87. Lee, C.L., Huang, C.H., Wang, H.C., Chuang, D.W., Wu, M.J., Wang, S.Y., Hwang, T.L., Wu, C.C., Chen, Y.L., Chang, F.R., Wu, Y.C. (2011) First total synthesis of antrocamphin A and its analogs as anti-inflammatory and anti-platelet aggregation agents. *Org. Biomol. Chem.* 9: 70-73.
88. Wu, S.F., Chang, F.R., Wang, S.Y., Hwang, T.L., Lee, C.L., Chen, S.L., Wu, C.C., Wu, Y.C.

- (2011) Anti-inflammatory and cytotoxic neoflavonoids and benzofurans from *Pterocarpus santalinus*. *J. Nat. Prod.* 74: 989-996.
89. Wu, S.F., Hwang, T.L., Chen, S.L., Wu, C.C., Ohkoshi, E., Lee, K.H., Chang, F.R., Wu, Y.C. (2011) Bioactive components from the heartwood of *Pterocarpus santalinus*. *Bioorg. Med. Chem. Lett.* 21: 5630-5632.
90. Hunyadi, A., Chuang, D.W., Danko, B., Chiang, M.Y., Lee, C.L., Wang, H.C., Wu, C.C., Chang, F.R., Wu, Y.C. (2011) Direct semi-synthesis of the anticancer lead-drug protoapigenone from apigenin, and synthesis of further new cytotoxic protoflavone derivatives. *PLoS One* 6: e23922.
91. Cheng, Y.D., Hwang, T.L., Wang, H.H., Pan, T.L., Wu, C.C., Chang, W.Y., Liu, Y.T., Chu, T.C., Hsieh, P.W. (2011) Anthranilic acid-based inhibitors of phosphodiesterase: Design, synthesis, and bioactive evaluation. *Org. Biomol. Chem.* 9: 7113-7125.
92. Lai, W.C., Wang, H.C., Chen, G.Y., Yang, J.C., Korinek, M., Hsieh, C.J., Nozaki, H., Hayashi, K., Wu, C.C., Wu, Y.C., Chang, F.R. (2011) Using the pER8:GUS reporter system to screen for phytoestrogens from *Caesalpinia sappan*. *J. Nat. Prod.* 74: 1698-1706.
93. Hsieh, S.F., Hsieh, T.J., El-Shazly, M., Du, Y.C., Wu, C.C., Hwang, T.L., Wu, Y.C., Chang, F.R. (2012) Chemical constituents from *Farfugium japonicum* var. *formosanum*. *Nat. Prod. Commun.* 7: 435-440.
94. Wang, H.C., Lee, A.Y., Chou, W.C., Wu, C.C., Tseng, C.N., Liu, K.Y., Lin, W.L., Chang, F.R., Chuang, D.W., Hunyadi, A., Wu, Y.C. (2012) Inhibition of ATR-dependent signaling by protoapigenone and its derivative sensitize cancer cells to interstrand cross-link-generating agents in vitro and in vivo. *Mol. Cancer Ther.* 11: 1443-1453.
95. Liou, J.R., El-Shazly, M., Du, Y.C., Tseng, C.N., Hwang, T.L., Chuang, Y.L., Hsu, Y.M., Hsieh, P.W., Wu, C.C., Chen, S.L., Hou, M.F., Chang, F.R., Wu, Y.C. (2013) 1,5-Diphenylpent-3-en-1-ynes and methyl naphthalene carboxylates from *Lawsonia inermis* and their anti-inflammatory activity. *Phytochemistry* 88: 67-73.
96. Tsai, Y.C., Chiang, S.Y., El-Shazly, M., Wu, C.C., Beerhues, L., Lai, W.C., Wu, S.F., Yen, M.H., Wu, Y.C., Chang, F.R. (2013) The oestrogenic and anti-platelet activities of dihydrobenzofuroisocoumarins and homoisoflavonoids from *Liriope platyphylla* roots. *Food Chem.* 140: 305-314.
97. Wang, H.C., Wu, C.C., Cheng, T.S., Kuo, C.Y., Tsai, Y.C., Chiang, S.Y., Wong, T.S., Wu, Y.C., Chang, F.R. (2013) Active constituents from *Liriope platyphylla* root against cancer growth in vitro. *Evid. Based Complement Alternat. Med.* 2013, 857929.
98. Chen, S., Huang, H.Y., Cheng, M.J., Wu, C.C., Ishikawa, T., Peng, C.F., Chang, H.S., Wang, C.J., Wong, S.L., Chen, I.S. (2013) Neolignans and phenylpropanoids from the roots of *Piper taiwanense* and their antiplatelet and antitubercular activities. *Phytochemistry*. 93: 203-209.
99. Lai, W.C., Tsui, Y.T., Singab, A.N., El-Shazly, M., Du, Y.C., Hwang, T.L., Wu, C.C., Yen, M.H., Lee, C.K., Hou, M.F., Wu, Y.C., Chang, F.R. (2013) Phyto-SERM Constituents from *Flemingia macrophylla*. *Int J Mol Sci.* 14: 15578-15594.
100. Lee, C.L., Yen, M.H., Chang, F.R., Wu, C.C., Wu, Y.C. (2014) Antiplatelet aggregation effects of phenanthrenes from *Calanthe arisanensis*. *Nat. Prod. Commun.* 9: 83-84.
101. Lian, R.C., Lin, M.H., Liao, P.H., Fu, J.J., Wu, M.J., Wu, Y.C., Chang, F.R., Wu, C.C., Pan, P.S. (2014) Direct synthesis of the arylboronic acid analogues of phenylglycine via

microwave-assisted four-component Ugi reaction. *Tetrahedron* 70: 1800-1804.

102. Chen, S., Cheng, M.J., Wu, C.C., Peng, C.F., Huang, H.Y., Chang, H.S., Wang, C.J., Chen, I.S. (2014) Three new phenylpropanoids from the roots of *Piper taiwanense* and their inhibitory activities on platelet aggregation and *Mycobacterium tuberculosis*. *Chem. Biodivers.* 11: 792-799.
103. Liou, J.R., Wu, T.Y., Thang, T.D., Hwang, T.L., Wu, C.C., Cheng, Y.B., Chiang, M.Y., Lan, Y.H., El-Shazly, M., Wu, S.L., Beerhues, L., Yuan, S.S., Hou, M.F., Chen, S.L., Chang, F.R., Wu, Y.C. (2014) Bioactive 6S-Styryllactone Constituents of *Polyalthia parviflora*. *J. Nat. Prod.* 77: 2626-32.
104. Tsai, Y.C., Hsu, C.C., El-Shazly, M., Chiang, S.Y., Wu, C.C., Wu, C.C., Lai, W.C., Yen, M.H., Wu Y.C., Chang, F.R. (2015) Phytochemicals and Estrogen-Receptor Agonists from the Aerial Parts of *Liriope platyphylla*. *Molecules* 20: 6844-6855.
105. Cheng, Y.B., Tsai, Y.H., Lo, I.W., Haung, C.C., Tsai, Y.C., Beerhues, L., El-Shazly, M., Hou, M.F., Yuan, S.S., Wu, C.C., Chang, F.R., Wu, Y.C. (2015) Pandalisines A and B, novel indolizidine alkaloids from the leaves of *Pandanus utilis*. *Bioorg Med Chem Lett.* 25: 4333-4336.
106. Kuo, C.Y., Chou, W.C., Wu, C.C., Wong, T.S., Kakadiya, R., Lee, T.C., Su, T.L., Wang, H.C. (2015) Repairing of N-mustard derivative BO-1055 induced DNA damage requires NER, HR, and MGMT-dependent DNA repair mechanisms. *Oncotarget.* 6: 25770-25783.

專利:

1. Wu, Y.C., Lin, A.S., Chang, F.R., Wu, C.C. (2009) Composition for treating cancer cells and preparation method for the same. United States Patent.
2. 吳永昌, 林安聲, 張芳榮, 吳志中 (2010) 用於毒殺癌症細胞的組合物及其製備方法。中華民國專利。
3. 王惠君, 吳永昌, 張芳榮, 吳志中 (2015) 抑制 ATR 與 FANCD2 激活之組成物與方法。中華民國專利。

榮譽:

國科會甲種研究獎勵
科技部獎勵特殊優秀人才
高雄醫學大學研究傑出教師
高雄醫學大學專利獲證傑出貢獻獎
法國國家研究署研究計畫國際專家審查員

近年研究計畫:

93, 94 年, 國科會計畫: 新型抗血小板藥物 NS-1 之藥理活性及機制探討
95, 96 年, 國科會計畫: 酪氨酸激酶抑制劑在血小板的功能性研究
97, 98 年, 國科會國家型生技製藥計畫: 以酪氨酸激酶為標的之抗癌轉移藥物研發
98-101 年, 國科會計畫: 探討 PAR4 在血小板活化的角色與機轉及其拮抗劑在抗血栓治療之可能應用

100-103 年，國科會國家型生技製藥計畫：WYC-0209 及其衍生物之抗癌新藥開發--(子計畫二)WYC-0209 及其衍生物抑制 ATR/FANCD2 活化之機轉研究

103-106 年，國科會計畫：新穎抗血小板標的藥物研究

邀請演講：

2006, 3 月，長庚大學天然藥物研究所。講題：YD-3, a novel inhibitor of protease-activated receptor-4 in human platelets.

2006, 10 月，嘉義大學生物藥學研究所。講題：Discovery of new antiplatelet agents with novel mechanisms of action.

2007, 5 月，輔英科技大學。講題：從天然物尋找具有潛力的抗癌成分

2009, 4 月，義守大學生物科技系。講題：Discovery of anticancer drugs.

2009, 5 月，長庚大學天然藥物研究所。講題：Discovery of β -nitrostyrene tyrosine kinase inhibitors as potential anti-metastatic agents.

2011, 5 月，東華大學。講題：Finding novel anticancer agents from Formosan plants.

2013, 11 月，匈牙利 Szeged 大學藥學院。講題：Current studies on bioactivities of natural products in KMU.

2014, 5 月，澳門科技大學，第三屆中藥研究高新技術研修班。講題：Discovering antiplatelet agents from (based on) nature.

2015, 3 月，中國醫藥大學生物科技系。講題：Aim at novel targets of platelets.

2015, 3 月，東海大學化學系。講題：新穎抗血小板藥物研究及其應用。

2015, 4 月，澳門科技大學，第四屆中藥研究高新技術研修班。講題：Natural antiplatelet compounds and beyond.

2015, 4 月，台東大學生物科技系。講題：Drug discovery from natural products.

2015, 5 月，長庚大學中醫藥學術研討會。講題：凝血酶受體 PAR4 拮抗劑研發。

2015, 9 月，第 30 屆天然藥物研討會。講題：Targeting platelet signaling molecules by natural compounds.

2015, 10 月，中山大學生物醫學研究所。講題：Natural products-based drug discovery for cardiovascular diseases.

2015, 10 月，台灣中藥產業前瞻論壇。講題：天然物新藥研究的挑戰與機會。

期刊編輯：

BioMed Research International (Guest Editor)

期刊論文審查員：

1. Thrombosis and Haemostasis
2. European Journal of Pharmacology

3. Free Radical Biology of Medicine
4. Journal of Proteomics
5. Oncotarget
6. Molecular Biology of the Cell
7. Arthritis and Rheumatism
8. BMC Cancer
9. Pharmacological Research
10. Journal of Agricultural and Food Chemistry
11. Journal of Natural Products
12. Journal of Carcinogenesis and Mutagenesis
13. Journal of Cellular and Molecular Medicine
14. Evidence-based Complementary and Alternative Medicine
15. Chemico-Biological Interactions
16. Cell Biochemistry and Function
17. Enzyme and Microbial Technology
18. Assay and Drug Development Technologies
19. Archiv der Pharmazie
20. Clinical Medicine: Oncology
21. Molecules
22. Journal of Heterocyclic Chemistry
23. Journal of Traditional and Complementary Medicine
24. Chemical Research in Toxicology
25. Toxins
26. Molecular and Cellular Endocrinology
27. Journal of Medicinal Plants Research
28. Journal of Food and Drug Analysis
29. Journal of Haematology & Thromboembolic Diseases
30. Kaohsiung Journal of Medical Sciences
31. Biomarkers and Genomic Medicine
32. Biomedical Journal

學會會員：

台灣藥理學會會員

中華天然藥物學會會員

American Society for Biochemistry and Molecular Biology (ASBMB), Member

