Hui-Chun Wang, Ph.D.

王惠君

PERSONAL

Last name : Wang **First name:** Hui-Chun

Address for Contact :

Room N738, GINP, No.100, Shih-Chuan 1st Rd., Kaohsiung City 807, Taiwan

Tel: +886 (07) 312-1101 ext. 6921 **Fax:** +886 (07) 311-4773

e-mail: wanghc@kmu.edu.tw

EDUCATION

Aug. 1999 to May. 2006	Graduate Institute of Life Sciences, National Defense Medical Center, Taipei, Taiwan
Ph.D. degree	Graduate study with Professor Dr. C-Y Shen
	"Ataxia telangiectasia mutated and checkpoint kinase 2 regulate BRCA1 to promote the fidelity of DNA end-joining"
Aug. 1997 to Jun. 1999	Graduate Institute of Physiology, National Defense Medical Center, Taipei, Taiwan
M.S. degree	Graduate study with Professor Dr. C-J Tseng
	"Role of oxidative stress in amphetamine-induced neurotoxicity of rat striatum"

WORKING EXPERIENCE

Aug 2018 to present	**Director**
	Graduate Institute of Natural Products, Kaohsiung Medical University
Aug. 2017 to present	**Professor**
	Graduate Institute of Natural Products, Kaohsiung Medical University
Aug. 2013 to Jul.2017	**Associate Professor**
	Graduate Institute of Natural Products, Kaohsiung Medical University
Aug. 2008 to Jul.2013	**Assistant Professor**
	Graduate Institute of Natural Products, Kaohsiung Medical University
Aug. 2006 to Aug. 2008	**Concurrently Assistant Professor**
	School of public health, National Defense Medical Center
Jun. 2006 to Aug.2008	**Postdoctoral Fellow**
	Institute of Biomedical Science, Academia Sinica

AWARDS

AACR-ITO EN, Ltd. Scholar-in-Training Award, USA

Merit Mentors Award, KMU

Outstanding Research Award, KMU
The Faculty Teaching Award, KMU
Award of Patent Approval, KMU

TEACHING COURSES

1. Special Topics in Development of Natural Products
2. Special Topics on Target-based Research of Natural Products
3. Special Topics on Natural Product Biochemistry
4. Advanced Topics on Biotechnology and Botanical New Drug Research
5. Advanced Topics on Cancer Biology

MEMBERSHIP

1. Member of the Chinese Natural Medicine Society of Taiwan since 2008
2. Active member of the American Association for Cancer Research since 2008

TECHNICAL SPECIALTY

1. Molecular techniques: DNA cloning, genotyping by sequencing, RFLP and TaqMan probe assays, RNAi, NGS, CRISPR
2. Cell culture-based techniques: DNA transfection by methods of liposome and electroporation, RNA interference, flow cytometry, immunofluorescence staining and laser confocal microscopy, survival assays.
3. Gene expressions: RT-PCR, Northern blot, Western blot, reporter assay
4. Expression and isolation of recombinant proteins in bacterial and inset systems
5. Protein-protein interaction assays: immunoprecipitation, pull-down assay
6. Protein-DNA interaction assays: chromatin immunoprecipitation assay, gel mobility shift assay
7. Others: SAS program for statistical analysis, DNA repair assays, DNA methylation assay, protein kinase assay, apoptosis staining

Hui-Chun Wang, Ph.D.

王惠君

PUBLICATIONS

1. **Wang HC**, Chou WC, Shieh SY, Shen CY*. Ataxia telangiectasia mutated and checkpoint kinase 2 regulate BRCA1 to promote the fidelity of DNA end-joining. Cancer Res. 2006;66:1391-400.

2. Genome-wide association study identifies novel breast cancer susceptibility loci. Nature 2007;447:1087-93. Easton DF *et al.* (**Wang HC** is listed as the 27th among 105 authors).

3. Hsu HM, **Wang HC**, Chen ST, Hsu GC, Shen CY, Yu JC. Breast cancer risk is associated with the genes encoding the DNA double-strand break repair Mre11/Rad50/Nbs1 complex. Cancer Epidemiol Biomarkers Prev. 2007;16:2024-32.

4. Chou WC, **Wang HC**, Wong FH, Ding SL, Wu PE, Shieh SY*, Shen CY*. Chk2-dependent phosphorylation of XRCC1 in the DNA damage response promotes base excision repair. EMBO J. 2008; 27:3140-1450. (the 5th. *TienTe Lee* Biomedical Foundation Best Thesis Award, 2009.)

5. Udler MS *et al.* (**Wang HC** is listed as the 25th among 35 authors). FGFR2 variants and breast cancer risk: fine-scale mapping using African American studies and analysis of chromatin conformation. Hum Mol Genet. 2009; 18:1692-1703.

6. Gaudet MM *et al.* (**Wang HC** is listed as the 96th among 119 authors). Five polymorphisms and breast cancer risk: results from the Breast Cancer Association Consortium. Cancer Epidemiol Biomarkers Prev. 2009; 18:1610-1616.

7. Milne R. *et al.* (**Wang HC** is listed as the 86th among 95 authors).Risk of estrogen receptor-positive and -negative breast cancer and single-nucleotide polymorphism 2q35-rs13387042. J Natl Cancer Inst. 2009; 101:1012-1018.

8. Lee CL, Huang CH, **Wang HC**, Chuang DW, Wu MJ, Wang SY, Hwang TL, Wu CC, Chen YL, Chang FR*, Wu YC*. First total synthesis of antrocamphin A and its analogs as anti-inflammatory and anti-platelet aggregation agents. Org Biomol Chem. 2011; 9:70-73.

9. Lai WC, **Wang HC**, Chen GY, Yang JC, Korinek M, Hsieh CJ, Nozaki H, Hayashi KI, Wu CC*, Wu YC, Chang FR*. Using the pER8:GUS Reporter System to Screen for Phytoestrogens from Caesalpinia sappan. J Nat Prod. 2011;74:1698-1706.

10. Chung YM, **Wang HC**, El-Shazly M, Leu YL, Cheng MC, Lee CL, Chang FR*, Wu YC*. Antioxidant and Tyrosinase Inhibitory Constituents from the Desugared Sugarcane Extract, a By-Product of Sugar Production. J Agric Food Chem. 2011; 59:9219-9225.

11. Hunyadi A, Chuang DW, Danko B, Chiang MY, Lee CL, **Wang HC**, Wu CC, Chang FR*, Wu YC*. Direct semi-synthesis of the anticancer lead-drug Protoapigenone from Apigenin, and synthesis of

further new cytotoxic protoflavone derivatives. PLoS One 2011; 6:e23922.

12. Liao WT, Huang TS, Chiu CC, Pan JL, Liang SS, Chen BH, Chen SH, Liu PL, **Wang HC**, Wen ZH, Wang HM*, Hsiao SW*. Biological properties of acidic cosmetic water from seawater. Int J Mol Sci. 2012;13:5952-5971.

13. **Wang HC**, Tsai YL, Wu YC, Chang FR, Liu MH, Chen WY, Wu CC*. Withanolides-induced breast cancer cell death is correlated with their ability to inhibit heat protein 90. PLoS One. 2012;7(5):e37764

14. **Wang HC***, Lee AY, Chou WC, Wu CC, Tseng CN, Liu KY, Lin WL, Chang FR, Chuang DW, Hunyadi A, Wu YC*. Inhibition of ATR-dependent signaling by protoapigenone and its derivative sensitizes cancer cells to interstrand cross-link-generating agents *in vitro* and *in vivo*. Mol Cancer Ther. 2012 11 (7):1443-1453

15. Danko B, Martins A, Chuang DW, **Wang HC**, Amaral L, Molnár J, Chang FR, Wu YC*, and Hunyadi A*. *In vitro* cytotoxic activity of novel protoflavone analogs – selectivity towards a multidrug resistant cancer cell line. Anticancer Res. 2012; 32:2863-2869. {SCI} (IF=1.725 Ranking/ONCOLOGY: 136/196=69.39%)

16. Chen WC, Wang SY, Chiu CC, Tseng CK, **Wang HC***, and Lee JC*. Lucidone suppresses hepatitis C virus replication by Nrf2-mediated heme oxygenase-1 induction. Antimicrobial Agents and Chemotherapy 2013; 57(3):1180-91.

17. Tseng CN*, Chang HW, Stocker J, **Wang HC**, Lu CC, Wu CH, Yang JG, Cho CL, Huang HW*. A Method to Identify RNA A-to-I Editing Targets Using I-Specific Cleavage and Exon Array Analysis. Mol Cell Probes. 2013 Feb;27(1):38-45.

18. **Wang HC***, Wu CC, Cheng TS, Kuo CY, Tsai YC, Chiang SY, Wong TS, Wu YC, Chang FR*. Active constituents from *Liriope platyphylla* root against cancer growth *in vitro*. Evid-Based Compl Alt. 2013; 2013: 857929.

19. **Wang HC**, Chu FH, Chien SC, Liao JW, Hsieh HW, Li WH, Lin CC, Shaw JF, Kuo YH*, Wang SY*. Establishment of metabolite profile for an *Antrodia cinnamomea* health food product and investigation of its chemoprevention activity. J Agric Food Chem. 2013; 61: 8556–8564

20. **Wang HC**, Tseng YH, Wu HR, Chu FH, Yueh-Hsiung Kuo YH* and Wang SY*. Anti-proliferation Effect on Human Breast Cancer Cells *via* Inhibition of pRb Phosphorylation by Taiwanin E Isolated from *Eleutherococcustrifoliatus*. Nat Prod Commun. 2014; 9: 1303-1306.

21. Kuo CY, **Wang HC**, Kung PH, Lu CY, Liao CY, Wu MT, Wu CC*. Identification of CalDAG-GEFI as an intracellular target for the vicinal dithiol binding agent phenylarsine oxide in human platelets. Thromb Haemost. 2014; 111:892-901

22. Ting YC, Ko HH, **Wang HC**, Peng CF, Chang HS, Hsieh PC, Chen IS. Biological evaluation of secondary metabolites from the roots of *Myrica adenophora*. Phytochemistry. 2014; 103:89-98.

23. Chang HW, **Wang HC**, Chen CY, Hung TW, Hou MF, Yuan SS, Huang CJ, Tseng CN. 5-azacytidine induces anoikis, inhibits mammosphere formation and reduces metalloproteinase 9 activity in MCF-7 human breast cancer cells. **(co-first author)** Molecules. 2014;19:3149-59.

24. Cheng YB, Chien YT, Lee JC, Tseng CK, **Wang HC**, Lo IW, Wu YH, Wang SY, Wu YC*, Chang FR*. Limonoids from the seeds of Swietenia macrophylla with inhibitory activity against dengue virus 2. J Nat Prod. 2014;77:2367-74. {SCI} [IF=3.947 (2013) Rank/PLANT SCIENCES: 21/199 =10.6%]

25. Hou YL, Chang HS, **Wang HC**, Wang SY, Chen TY, Lin CH, Chen IS*. Sassarandainol: A new neolignan and anti-inflammatory constituents from the stem of Sassafras randaiense. Nat Prod Res. 2015;29:827-32. {SCI} [IF=0.919 (2014) Rank/CHEMISTRY, APPLIED: 46/72 =63.9%]

26. Liao CY, Lee CL, **Wang HC**, Liang SS, Kung PH, Wu YC, Chang FR, Wu CC*. CLL2-1, a chemical derivative of orchid 1,4-phenanthrenequinones, inhibits human platelet aggregation through thiol modification of calcium-diacylglycerol guanine nucleotide exchange factor-I (CalDAG-GEFI). Free Radic Biol Med. 2015; 78:101-10.

27. **Wang HC***, Chang FR, Huang TJ, Kuo CY, Tsai YC, Wu CC*. (-)-Liriopein B Suppresses Breast Cancer Progression via Inhibition of Multiple Kinases. Chem Res Toxicol. 2015;28:897-906.

28. Kuo CY, Chou WC, Wu CC, Wong TS, Kakadiya R, Lee TC, Su TS*, **Wang HC***. Repairing of N-mustard derivative BO-1055 induced DNA damage requires multiple DNA repair mechanisms. Oncotarget 2015;6:25770-83 {SCI} [IF=6.359 (2014) Rank/ONCOLOGY: 21/211 =10.0%]

29. Stanković T, Dankó B, Martins A, Dragoj M, Stojković S, Isaković A, **Wang HC**, Wu YC, Hunyadi A, Pešić M. Lower antioxidative capacity of multidrug-resistant cancer cells confers collateral sensitivity to protoflavone derivatives. Cancer Chemother Pharmacol. 2015;76:555-65.

30. Kuo CY, Zupkó I, Chang FR, Hunyadi A, Wu CC, Weng TS, **Wang HC***. Dietary flavonoid derivatives enhance chemotherapeutic effect by inhibiting the DNA damage response pathway. Toxicol Appl Pharmacol. 2016; 311:99-105. 2016; 311:99-105 {SCI} [IF=3.585 (2018) Rank/TOXICOLOGY: 21/99=22.6%)

31. Huang CY, Chang CW, Tseng YJ, Lee J, Sung PJ, Su JH, Hwang TL, Dai CF, **Wang HC**, Sheu JH*. Bioactive Steroids from the Formosan Soft Coral *Umbellulifera petasites*. Mar Drugs. 2016;14. pii: E180.

32. Chang HS, Lin CH, Chen YS, **Wang HC**, Chan HY, Hsieh SY, Wu HC, Cheng MJ*, Yuan GF,

Lin SY, Lin JY, and Chen IS*. Secondary metabolites of the endophytic fungus *Lachnum abnorme* from *Ardisia cornudentata*. Int. J. Mol. Sci. 2016;17. pii: E1512.

33. Bózsity N, Minorics R, Szabó J, Mernyák E, Schneider G, Wölfling J, **Wang HC**, Wu CC, Ocsovszki I, Zupkó I*. Mechanism of antiproliferative action of a new D-secoestrone-triazole derivative in cervical cancer cells and its effect on cancer cell motility. J Steroid Biochem Mol Biol. 2017;165(Pt B):247-257.

34. Chao CH, Wu CY, Huang CY, **Wang HC**, Dai CF, Wu YC, Sheu JH*. Cubitanoids and Cembranoids from the Soft Coral *Sinularia nanolobata*. Mar Drugs. 2016;14. pii: E150. [IF=3.345 (2015) Rank/ CHEMISTRY, MEDICINAL: 13/59=22.0%)

35. Cheng AN, Fan CC, Lo YK, Kuo CL, **Wang HC**, Lien IH, Lin SY, Chen CH, Jiang SS, Chang IS, Juan HF, Lyu PC, Lee AY*. Cdc7-Dbf4-mediated phosphorylation of HSP90-S164 stabilizes HSP90-HCLK2-MRN complex to enhance ATR/ATM signaling that overcomes replication stress in cancer. Sci Rep. 2017;7:7024.

36. Cheng YB, Liu FJ, Wang CH, Hwang TL, Tsai YF, Yen CH, **Wang HC**, Tseng YH, Chien CT, Chen YA, Chang FR, Wu YC. Bioactive Triterpenoids from the Leaves and Twigs of *Lithocarpus litseifolius* and *L. corneus*. Planta Med. 2018;84:49-58.

37. Sinka I, Kiss A, Mernyák E, Wölfling J, Schneider G, Ocsovszki I, Kuo CY, **Wang HC**, Zupkó I. Antiproliferative and antimetastatic properties of 3-benzyloxy-16-hydroxymethylene-estradiol analogs against breast cancer cell lines. Eur J Pharm Sci. 2018;123:362-370.

38. Ötvös SB, Vágvölgyi M, Girst G, Kuo CY, **Wang HC**, Fülöp F, Hunyadi A*. Synthesis of Nontoxic Protoflavone Derivatives through Selective Continuous-Flow Hydrogenation of the Flavonoid B-Ring. Chempluschem. 2018;83:72-76.

39. Fási L, Di Meo F, Kuo CY, Stojkovic Buric S, Martins A, Kúsz N, Béni Z, Dékány M, Balogh GT, Pesic M, **Wang HC**, Trouillas P, Hunyadi A. Antioxidant-inspired drug discovery: antitumor metabolite is formed in situ from a hydroxycinnamic acid derivative upon free radical scavenging. J Med Chem. 2019;62:1657-1668

40. **Wang HC**, Hua HH, Chang FR, Tsai JY, Kuo CY, Wu YC, Wu CC*. Different effects of 4β-hydroxywithanolide E and withaferin A, two withanolides from Solanaceae plants, on the Akt signaling pathway in human breast cancer cells. Phytomedicine 2019;53:213-222.{SCI} [IF=4.180 (2018) Rank/INTEGRATIVE & COMPLEMENTARY MEDICINE: 1/27=3.70%)

41. Kuo CY, Schelz Z, Tóth B, Vasas A, Ocsovszki I, Chang FR, Hohmann J, Zupkó I, **Wang HC***. Investigation of natural phenanthrenes and the antiproliferative potential of juncusol in cervical cancer cell lines. Phytomedicine. 2019; 58:152770. {SCI} [IF=4.180 (2018) Rank/INTEGRATIVE

& COMPLEMENTARY MEDICINE: 1/27=3.70%)

42. Kuo CY, Weng TS, Kumar KJS, Tseng YH, Tung TW, Wang SY, **Wang HC***. Ethanol Extracts of Dietary Herb, Alpinia nantoensis, Exhibit Anticancer Potential in Human Breast Cancer Cells. Integr Cancer Ther. 2019; 18:1534735419866924. {SCI} [IF=2.634 (2018) Rank/INTEGRATIVE & COMPLEMENTARY MEDICINE: 7/27=25.9%)

43. Chou WC, Hsiung CN, Chen WT, Tseng LM, **Wang HC**, Chu HW, Hou MF, Yu JC, Shen CY. A functional variant near XCL1 gene improves breast cancer survival via promoting cancer immunity. Int J Cancer. 2020; 146:2182-2193.

44. Latif AD, Jernei T, Podolski-Renić A, Kuo CY, Vágvölgyi M, Girst G, Zupkó I, Develi S, Ulukaya E, **Wang HC**, Pešić M, Csámpai A, Attila Hunyadi A. Protoflavone-Chalcone Hybrids Exhibit Enhanced Antitumor Action through Modulating Redox Balance, Depolarizing the Mitochondrial Membrane, and Inhibiting ATR-Dependent Signaling. Antioxidants (Basel). 2020;9:519.