

Hui-Chun Wang, Ph.D.

Professor

Graduate Institute of Natural Products

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Academic Qualifications:

- 1999-2006 PhD, Graduate Institute of Life Sciences, National Defense Medical Center, Taipei, Taiwan.
- 1997-1999 Master of Science, Graduate Institute of Physiology, National Defense Medical Center, Taipei Taiwan
- 1994-1997 Bachelor of Science, School of Public Health, Taipei Medical University, Taipei, Taiwan

Personal Experiences:

- 2006-2008 Postdoctoral Fellow, Institute of Biomedical Science, Academia Sinica, Taipei, Taiwan
- 2006-2008 Concurrently Assistant Professor, School of public health, National Defense Medical Center, Taipei, Taiwan
- 2008-2013 Assistant Professor, Graduate Institute of Natural Products, College of Pharmacy, KMU, Kaohsiung, Taiwan
- 2013-2017 Associate Professor, Graduate Institute of Natural Products, College of Pharmacy, KMU, Kaohsiung, Taiwan
- 2017- Professor, Graduate Institute of Natural Products, College of Pharmacy, KMU, Kaohsiung, Taiwan

Research Interests:

Our goal is to seek potential lead-like compounds from natural products to support chemoprevention and chemotherapy against cancers, metabolic diseases, and inflammatory diseases. Using molecular biological approaches, we hope to establish cell-based models to identify small molecular in targeting genes that are important to diseases and apply them to the established animal model for proof of concept for candidate natural compounds.

Awards:

- 2008 AACR-ITO EN, Ltd. Scholar-in-Training Award, USA
- 2011 Merit Mentors Award, KMU
- 2012 Outstanding Research Award, KMU
- 2013 Outstanding Research Award, KMU
- 2014 The Faculty Teaching Award, KMU
- 2014 Award of Patent Approval, KMU
- 2015 Outstanding Research Award, KMU
- 2017 Award of Patent Approval, KMU

Teaching Courses in Graduate Institute of Natural Products:

1. Special Topics in Biotechniques of Natural Products
2. Special Topics in Biomedical Sciences
3. Special Topics in Biochemistry

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

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. {SCI} (IF=7.517)
2. Easton DF *et al.* (**Wang HC** is listed as the 27th among 105 authors). Genome-wide association study identifies novel breast cancer susceptibility loci. *Nature* 2007;447:1087-93. {SCI} (IF=31.434)
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. {SCI} (IF=4.123; Rank 11/157=7.0%)
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. {SCI} (IF=8.662; Ranking/ BIOCHEMISTRY & MOLECULAR BIOLOGY: 19/263=7.22%) (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. {SCI} (IF=7.249; Ranking/ GENETICS & HEREDITY: 13/138=9.42%)
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. {SCI} (IF=4.770; Ranking/PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH: 8/105=7.62%)
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. {SCI} (IF=14.933; Ranking/ONCOLOGY: 5/143=3.50%)
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. {SCI} (IF=3.451; Ranking/CHEMISTRY, ORGANIC 12/56=21.43%)

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. {SCI} (IF=2.872; Ranking/PLANT SCIENCES: 28/188=14.89%)
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. {SCI} (IF=2.816; Ranking/AGRICULTURE, MULTIDISCIPLINARY: 2/55=3.65%)
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. {SCI} (IF=4.411; Ranking/BIOLOGY: 12/86=13.95%)
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. {SCI} (IF=2.598 Ranking/CHEMISTRY, MULTIDISCIPLINARY: 45/154=29.22%)
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:e37764 {SCI} (IF=3.730; Ranking/BIOLOGY: 7/56=12.5%)
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**;11:1443-1453 {SCI} (IF=5.599 Ranking/ONCOLOGY: 29/197=14.80%)
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**; 57:1180-91. (IF=4.841 Rank/PHARMACOLOGY & PHARMACY: 31/260=11.9%)
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**;27:38-45. {SCI} (IF=1.873 Rank/ BIOTECHNOLOGY & APPLIED MICROBIOLOGY 89/160=48.7%)
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. {SCI} (IF=1.722 Rank/INTEGRATIVE & COMPLEMENTARY MEDICINE:

8/21=38.09%)

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 {SCI} (IF=2.906 Rank/AGRICULTURE, MULTIDISCIPLINARY: 1/57=1.8%)
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 *Eleutherococcus trifolius*. *Nat Prod Commun.* **2014**; 9: 1303-1306 {SCI} (IF=0.924 Rank/ FOOD SCIENCE & TECHNOLOGY= 76/123 =61.8%)
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 {SCI} (IF=5.760 Rank/ PERIPHERAL VASCULAR DISEASE= 7/65 =10.8%)
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. {SCI} (IF=3.350 Rank/PLANT SCIENCES: 28/199=14.1%)
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. {SCI} (IF=2.095 Rank/ CHEMISTRY, ORGANIC= 30/58=51.7%)
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 Rank/PLANT SCIENCES: 21/199 =10.6%)
25. Hou YL, Chang HS, **Wang HC**, Wang SY, Chen TY, Lin CH, Chen IS*. Sassafrainol: A new neolignan and anti-inflammatory constituents from the stem of *Sassafras randaiense*. *Nat Prod Res.* **2015**;29:827-32. {SCI} (IF=0.919 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. {SCI} (IF=5.736 Rank/ENDOCRINOLOGY & METABOLISM: 16/128 =12.5%)
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. {SCI} (IF=3.529 Rank/CHEMISTRY, MEDICINAL: 10/59 =16.9%)
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 Rank/ONCOLOGY: 21/211 =10.0%)
29. 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.* **2016**;pii: S0960-0760(16)30196-0 {SCI} (IF=3.985 Rank/ENDOCRINOLOGY & METABOLISM: 32/131=24.4%)
30. 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 {SCI} (IF=3.325 Rank/CHEMISTRY, MULTIDISCIPLINARY: 51/163=31.3%)
31. 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 {SCI} (IF=3.345 Rank/ CHEMISTRY, MEDICINAL: 13/59=22.0%)
32. 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 {SCI} (IF=3.345 Rank/ CHEMISTRY, MEDICINAL: 13/59=22.0%)
33. 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 {SCI} [IF=3.847 (2015) Rank/TOXICOLOGY: 12/90=13.3%)
34. 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** Dec 5;7:7024.
35. 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.
36. **Wang HC**, Hua HH, Chang FR, Tsaia JY, Kuo CY, Wu YC, Wu CC*. Different effects of 4 β -hydroxywithanolide E and withaferin A, two withanolides from Solanaceae plants, on the Akt signaling pathway in human breast cancer cells. *Phytomedicin* **2019** (in press)
37. Kuo CY, Schelz Z, Tóth B, Vasas A, Ocsovszki I, Fang-Rong Chang FR, Judit Hohmann J, Zupkó I*, **Wang HC***. Investigation of natural phenanthrenes and the antiproliferative potential of juncusol in cervical cancer cell lines. *Phytomedicin* **2019** (in press)