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## **EDUCATION**

**Ph.D.**, Department of Biomedical Engineering and Environmental Sciences, National Tsing-Hua University, Hsin-Chu, Taiwan

## **PROFESSIONAL EXPERIENCE**

- 2015.8 ~                    **Assistant Professor**, Graduate Institute of Biomedical Sciences,  
China Medical University, Taichung, Taiwan
- 2014.8 – 2015.7        **Assistant Research Fellow**, Research Center for Tumor Medical  
Science, China Medical University, Taichung, Taiwan
- 2011.04 – 2014.7      **Postdoctoral Fellow**, Biomedical Informatics Institute, National  
Yang Ming University, Taipei, Taiwan

## **RESEARCH INTEREST**

Genomics, Lipidomics, Bioinformatics, Next Generation Sequencing

## BOOK CHAPTER

Liu SH, **Cheng WC**. Identification of Cancer Driver Genes from a Custom Set of Next Generation Sequencing Data. In “Cancer Driver Genes” *Methods Mol Biol.* 2019;1907:19-36

## PUBLICATIONS

1. **Cheng WC**, Liao TT, Lin CC, Yuan LE, Lan HY, Lin HH, Teng HW, Chang HC, Lin CH, Yang CY, Huang SC, Jiang JK, Yang SH, Yang MH\*, Hwang WL\*. RAB27B-activated secretion of stem-like tumor exosomes delivers the biomarker microRNA-146a-5p, which promotes tumorigenesis and associates with an immunosuppressive tumor microenvironment in colorectal cancer. *Int J Cancer.* 2019 Apr. [Epub ahead of print] (SCI, IF: 7.36; 23/223 (10.31%) in ONCOLOGY)
2. Liu LC, Wang YL, Lin PL, Zhang X, **Cheng WC**, Liu SH, Chen CJ, Hung Y, Jan CI, Chang LC, Qi X, Hsieh-Wilson LC, Wang SC\*. Long non-coding RNA HOTAIR promotes invasion of breast cancer cells through chondroitin sulfotransferase CHST15. *Int J Cancer.* 2019 Apr. [Epub ahead of print] (SCI, IF: 7.36; 23/223 (10.31%) in ONCOLOGY)
3. Su CC, Hsieh KL, Liu PL, Yeh HC, Huang SP, Fang SH, **Cheng WC**, Huang KH, Chiu FY, Lin IL, Huang MY, Li CY\*. AICAR Induces Apoptosis and Inhibits Migration and Invasion in Prostate Cancer Cells Through an AMPK/mTOR-Dependent Pathway. *Int J Mol Sci.* 2019 Apr 3;20(7). (SCI, IF: 3.687; 52/171 (30.4%) in CHEMISTRY, MULTIDISCIPLINARY)
4. Kao SH, **Cheng WC**, Wang YT, Wu HT, Yeh HY, Chen YJ, Tsai MH, Wu KJ\*. Regulation of miRNA biogenesis and histone modification by K63-polyubiquitinated DDX17 controls cancer stem-like features. *Cancer Res.* 2019 Mar. [Epub ahead of print] (SCI, IF: 9.13; 17/223 (7.62%) in ONCOLOGY)
5. Han Y, Yang J, Qian X, **Cheng WC**, Liu SH, Hua X, Zhou L, Yang Y, Wu Q, Liu P, Lu Y\*. DriverML: a machine learning algorithm for identifying driver genes in cancer sequencing studies. *Nucleic Acids Res.* 2019 Feb. [Epub ahead of print] (SCI, IF: 11.561; 10/292 (3.4%) in BIOCHEMISTRY & MOLECULAR BIOLOGY)
6. Hsu RH, Hwu WL, Chen M, Chung IF, Peng SS, Chen CY, **Cheng WC**, Chien YH, Lee NC\*. Next-generation sequencing identifies TRPV4-related skeletal dysplasia in

- a boy with progressive bowlegs. *Pediatr Neonatol*. 2019 Feb;60(1):102-104. (SCI, IF: 1.232; 87/124 (70.1%) in PEDIATRICS)
7. Hwang WL, Lan HY, **Cheng WC**, Huang SC, Yang MH\*. Tumor stem-like cell-derived exosomal RNAs prime neutrophils for facilitating tumorigenesis of colon cancer. *J Hematol Oncol*. 2019 Jan;12(1):10. (SCI, IF: 7.33; 6/71 (8.45%) in HEMATOLOGY)
  8. Huang CY, Hsueh YM, Chen LC, **Cheng WC**, Yu CC, Chen WJ, Lu TL, Lan KJ, Lee CH, Huang SP, Bao BY\*. Clinical significance of glutamate metabotropic receptors in renal cell carcinoma risk and survival. *Cancer Med*. 2018 Dec;7(12):6104-6111. (SCI, IF: 3.202; 110/217 (49.324%) in ONCOLOGY)
  9. Huang MY, Tu CE, Wang SC, Hung YL, Su CC, Fang SH, Chen CS, Liu PL, **Cheng WC**, Huang YW, Li CY\*. Corylin inhibits LPS-induced inflammatory response and attenuates the activation of NLRP3 inflammasome in microglia. *BMC Complement Altern Med*. 2018 Aug;18(1):221. (SCI, IF: 2.109; 8/27 (29.6%) in INTEGRATIVE & COMPLEMENTARY MEDICINE)
  10. Gong L, Wong CH, **Cheng WC**, Tjong H, Menghi F, Ngan CY, Liu ET, Wei CL. Picky comprehensively detects high-resolution structural variants in nanopore long reads. *Nat Methods*. 2018 Jun;15(6):455-460 (SCI, IF: 26.919; 1/79 (0.633%) in BIOCHEMICAL RESEARCH METHODS)
  11. Shih JC, Ma GC, **Cheng WC**, Chen CY, Wu WJ, Chen M. SMAD2 as a risk locus for human left atrial isomerism detected by mother-fetus-pair exome sequencing and image studies including fetal ultrasound. *Ultrasound Obstet Gynecol*. 2018 May; [Epub ahead of print]
  12. Kao TL, Kuan YP, **Cheng WC**, Chang WC, Jeng LB, Yeh S, Ma WL. Estrogen receptors orchestrate cell growth and differentiation to facilitate liver regeneration. *Theranostics*. 2018 Apr 9;8(10):2672-2682. (SCI, IF: 8.537; 8/133 (6.01%) in MEDICINE, RESEARCH & EXPERIMENTAL)
  13. Chang WC, **Cheng WC**, Cheng BH, Chen L, Ju LJ, Ou YJ, Jeng LB, Yang MD, Hung YC, Ma WL. Mitochondrial Acetyl-CoA Synthetase 3 is Biosignature of Gastric Cancer Progression. *Cancer Med*. 2018 Mar ; 7(4):1240-1252 (SCI, IF: 3.202; 110/217 (49.324%) in ONCOLOGY)

14. Lin KH, Huang MY, **Cheng WC**, Wang SC, Fang SH, Tu HP, Su CC, Hung YL, Liu PL, Chen CS, Wang YT, Li CY. RNA-seq transcriptome analysis of breast cancer cell lines under shikonin treatment. *Sci Rep*. 2018 Feb 8;8(1):2672. (SCI, IF: 4.122; 12/64 (18.75%) in MULTIDISCIPLINARY SCIENCES)
15. Fan CC, **Cheng WC**, Huang YC, Sher YP, Liou NJ, Chien YC, Lin PS, Lin PS, Chen CH, Chang WC. EFHD2 promotes epithelial-to-mesenchymal transition and correlates with postsurgical recurrence of stage I lung adenocarcinoma. *Sci Rep*. 2017 Nov 6;7(1):14617. (SCI, IF: 4.122; 12/64 (18.75%) in MULTIDISCIPLINARY SCIENCES)
16. Wu MZ, **Cheng WC**, Chen SF, Nieh S, Connor CO, Liu CL, Tsai WW, Wu CJ, Martin L, Lin YS, Wu KJ, Lu LF, and Belmonte JC. miR25/93 mediates hypoxia-induced immunosuppression by repressing cGAS. *Nat Cell Biol*. 2017 Oct;19(10):1286-1296. (SCI, IF: 19.064; 7/190 (3.68%) in CELL BIOLOGY)
17. Chen L, Bao BY, Chang WC, Ho JY, Cheng BH, Wang CL, Tang Q, **Cheng WC**, Chang HW, Hung YC, Ma WL. Short androgen receptor poly-glutamine-promoted endometrial cancer is associated with benzo[a]pyrene-mediated aryl hydrocarbon receptor activation. *J Cell Mol Med*. 2017 Aug; 22(1):46-56 (SCI, IF:4.302; 25/133 (18.79%) in MEDICINE, RESEARCH & EXPERIMENTAL)
18. Chiu KL, Lin YS, Kuo TT, Lo CC, Huang YK, Chang HF, Chuang EY, Lin CC, **Cheng WC**, Liu YN, Lai LC, and Sher YP. ADAM9 Enhances CDCP1 by Inhibiting miR-1 through EGFR Signaling Activation in Lung Cancer Metastasis. *Oncotarget*. 2017 May;8(29):47365-47378
19. Hung YL, Fang SH, Wang SC, **Cheng WC**, Su CC, Chen CS, Huang MY, Hua KF, Shen KH, Wang YT, Suzuki K\*, and Li CY\*. Corylin protects LPS-induced sepsis and attenuates LPS-induced inflammatory response. *Sci Rep*. 2017 Apr; 7:46299 (SCI, IF: 4.122; 12/64 (18.75%) in MULTIDISCIPLINARY SCIENCES)
20. Chung IF, Chang SH, Chen CY, Liu SH, Li CY, Chan CH, Shih CC, and **Cheng WC\***. YM500v3: a database for small RNA sequencing in human cancer research *Nucleic Acids Res*. 2017 Jan; 45(D1):D925-D931. (SCI, IF: 11.561; 10/292 (3.4%) in BIOCHEMISTRY & MOLECULAR BIOLOGY)
21. Wu HT, Kuo YC, Hung JJ, Huang CH, Chen WY, Chou TY, Chen Y, Chen YJ, Chen YJ, **Cheng WC**, Teng SC, Wu KJ. K63-polyubiquitinated HAUSP

- deubiquitinates HIF-1  $\alpha$  and dictates H3K56 acetylation promoting hypoxia-induced tumour progression. *Nat Commun*. 2016 Dec; 7:13644. (SCI, IF: 12.124; 3/64 (4.68%) in MULTIDISCIPLINARY SCIENCES)
22. Chang WC, Huang SF, Lee YM, Lai HC, Cheng BH, **Cheng WC**, Ho YP, Jeng LB, Ma WL\*. Cholesterol import and steroidogenesis are biosignatures for gastric cancer patient survival. *Oncotarget* 2016 Nov; 9:692-704
  23. Lai HC, Yeh CC, Jeng LB, Huang SF, Liao PY, Lei FJ, **Cheng WC**, Hsu CL, Cai X, Chang C\*, Ma WL\*. Androgen receptor mitigates postoperative disease progression of hepatocellular carcinoma by suppressing CD90+ populations and cell migration and by promoting anoikis in circulating tumor cells. *Oncotarget* 2016 Jun;
  24. Chung IF, Chen CY, Su SC, Li CY, Wu KJ, Wang HW\*, **Cheng WC\***. DriverDBv2: a database for human cancer driver gene research. *Nucleic Acids Res*. 2016 Jan;44(D1):D975-9. (SCI, IF: 11.561; 10/292 (3.4%) in BIOCHEMISTRY & MOLECULAR BIOLOGY)
  25. **Cheng WC**, Chung IF, Tsai CF, Huang TS, Cheng CY, Wang SC, Chang TY, Sun HJ, Chao YC, Cheng CC, Wu CW and Wang HW. YM500v2: A small RNA sequencing (smRNA-seq) database for human cancer miRNome research. *Nucleic Acids Research*, 2015 JAN:43(D1):D862-867 (SCI, IF: 11.561; 10/292 (3.4%) in BIOCHEMISTRY & MOLECULAR BIOLOGY)
  26. Wang HW, Sun HJ, Chang TY, Lo HH, **Cheng WC**, Tseng GC, Lin CT, Chang SJ, Pal N, and Chung IF. Discovering monotonic stemness marker genes from time-series stem cell microarray data. *BMC Genomics*, 2015 JAN:16 Suppl 2:S2 (SCI, IF: 3.73; 38/160 (23.7%) in BIOTECHNOLOGY & APPLIED MICROBIOLOGY)
  27. Tsai YP, Chen HF, Chen SY, **Cheng WC**, Wang HW, Shen ZJ, Song C, Teng SC, He C, Wu KJ. TET1 regulates hypoxia-induced epithelial-mesenchymal transition by acting as a co-activator. *Genome Biol*. 2014 DEC:15(12):513. (SCI, IF: 13.214; 4/160 (2.5%) in BIOTECHNOLOGY & APPLIED MICROBIOLOGY)
  28. Huang HN, Chen SY, Hwang SM, Yu CC, Su MW, Mai W, Wang HW, **Cheng WC**, Schuyler SC, Ma N, Lu FL, Lu J. miR-200c and GATA binding protein 4 regulate human embryonic stem cell renewal and differentiation. *Stem cell research*. 2014 MAR:12(2):338-353 (SCI, IF: 1.829; 98/160 (61.25%) in BIOTECHNOLOGY & APPLIED MICROBIOLOGY)

29. Chen KH, Wang KJ, Tsai ML, Wang KM, Adrian AM, **Cheng WC**, Yang TS, Teng NC, Tan KP, Chang KS. Gene selection for cancer identification: a decision tree model empowered by particle swarm optimization algorithm. *BMC Bioinformatics*. 2014, FEB:15(1):49. (SCI, IF: 2.213; 14/59 (23.7%) in MATHEMATICAL & COMPUTATIONAL BIOLOGY)
30. **Cheng WC**, Chung IF, Chen CY, Sun HJ, Fen JJ, Teng WC, Chang TY, Wong TT\*, Wang HW\*. DriverDB: A exome sequencing (exome-seq) database for cancer driver gene identification. *Nucleic Acids Research*, 2014, JAN:42(D1):D1048-1054 (SCI, IF: 11.561; 10/292 (3.4%) in BIOCHEMISTRY & MOLECULAR BIOLOGY)
31. **Cheng WC**, Chung IF, Huang TS, Chang ST, Sun HJ, Wong TT\*, Wang HW\*. YM500: A small RNA Sequencing (smRNA-Seq) database for miRNA research. *Nucleic Acids Research*, 2013, JAN:41(D1): D285-D294. (SCI, IF: 11.561; 10/292 (3.4%) in BIOCHEMISTRY & MOLECULAR BIOLOGY)
32. Li CY, Chiang CS, **Cheng WC**, Chen CR, Shu WY, Tsai ML, Huang CL, Chang HZ, Hseu RS, Chang CW, Fang SH, Hsu IC. Gene expression profiling of dendritic cells in different physiological stages under Cordyceps sinensis treatment. *PLoS One*, 2012, JUL:7(7): e40824. (SCI, IF: 2.766; 15/64 (23.43%) in MULTIDISCIPLINARY SCIENCES)
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34. Chen CR, Shu WY, Tsai ML, **Cheng WC**, Hsu IC. THEME: a web tool for loop-design microarray data analysis. *Computers in Biology and Medicine*, 2012, FEB:42(2): 228-234. (SCI, IF: 2.115; 15/59 (25.4%) in MATHEMATICAL & COMPUTATIONAL BIOLOGY)
35. Chang CW, **Cheng WC**, Chen CR, Shu WY, Tsai ML, Huang CL, Hsu IC. Identification of Human Housekeeping Genes and Tissue-Selective Genes by Microarray Meta-Analysis. *PLoS One*, 2011, JUL:6(7): e22859. (SCI, IF: 2.766; 15/64 (23.43%) in MULTIDISCIPLINARY SCIENCES)
36. **Cheng WC**, Chang CW, Chen CR, Tsai ML, Shu WY, Li CY, Hsu IC. Identification of Reference Genes across Physiological States for qRT-PCR through Microarray.

- PLoS One***, 2011, FEB:6(2): e17347. (SCI, IF: 2.806; 15/64 (23.43%) in MULTIDISCIPLINARY SCIENCES)
37. Li CY, Chao LP, Wang SC, Tsai ML, Chang HZ, Fang SH, Liao PC, Ho CL, Chen ST, **Cheng WC**, Chiang CS, Hua KF, Hsu IC. Honokiol Inhibits LPS-induced Maturation and Inflammatory Response on Human Monocyte-derived Dendritic Cells. ***Journal of Cellular Physiology***. 2010, SEP:226(9): 2338-2349. (SCI, IF: 3.923; 16/84 (15.66%) in PHYSIOLOGY)
38. **Cheng WC**, Tsai ML, Chang CW, Huang CL, Chen CR, Shu WY, Lee YS, Wang TH, Hong JH, Li CY, Hsu IC. Microarray Meta-analysis Database (M<sup>2</sup>DB): A Uniformly Pre-processed, Quality Controlled, and Manually Curated Human Clinical Microarray Database. ***BMC Bioinformatics***. 2010, AUG:10;11(1):421. (SCI, IF: 2.213; 14/59 (23.7%) in MATHEMATICAL & COMPUTATIONAL BIOLOGY)