

# Wing-Yan Michael Chan , Ph.D.

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## Education

**1992 B.S.** Department of Biology, Tunghai University, Taiwan

**1995 M.S.** Department of Biology, Tunghai University, Taiwan

**2002 Ph.D.** Department of Anatomical and Cellular Pathology, The Chinese University of Hong Kong, Hong Kong

## Professions

Cancer Epigenetics

Cancer Systems Biology

Bioinformatics

## Current Title

Professor, Department of Life Science, National Chung Cheng University, Chia-Yi, Taiwan

## Experience

2012-2016 Associate Professor, Department of Life Science, National Chung Cheng University, Chia-Yi, Taiwan

2007-2012 Assistant Professor, Department of Life Science, National Chung Cheng University, Chia-Yi, Taiwan

**2004-2007 Postdoctoral Researcher**, Human Cancer Genetics, The Ohio State University, Columbus, Ohio, USA (Mentor: Prof. Tim H.M. Huang)

**2002-2004 Postdoctoral Fellow**, Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Hong Kong (Mentor: Prof. Francis K.L. Chan)

## Research Interest

Aberrant activation of JAK/STAT signaling pathway and its role in epigenetic silencing of STAT3 targeted gene in gastric cancer.

The role of TGF-beta/SMAD4 in epigenetic silencing of SMAD4 target genes in ovarian cancer.

Identification of aberrant gene promoter methylation as epigenetic signature for diagnosis and prognosis in urothelial cancer.

## Honor

2001 AACR Ito-En scholar-in-training award

2002 Sir Edward Youde Memorial Fellowship

2006 AACR-Aflac, Incorporated scholar-in-training award

2009 AACR Ito-En scholar-in-training award (Jian-Liang Chou, Ph.D. student)

2009 CCU Young Scholar Award

2011 CCU Distinguish Lecturer for General Education

## Publications

### Book Chapter

1. Lin HY, Huang TH, **Chan MW**. Aberrant Epigenetic Modifications in Radiation-Resistant Head and Neck Cancers. *Cancer Epigenetics, Methods in Molecular Biology*, 1238:321-32, 2015.
2. **Chan MW**, Peng Z, Weber JC, Li YW, Zuzolo MT, and Lin HJ. Methods of global epigenomic profiling. Chapter 22, in Sahu SC, eds., *Toxicology and Epigenetics*. John Wiley & Sons Press, New Jersey, 2012.
3. Nephew K, Balch C, Huang THM, Shu Z, **Chan MW**, and Yan PS. Epigenetics in Cancer stem cell development. Chapter 10, in Bapat S, eds., *Cancer stem cells: Identification and Targets*. John Wiley & Sons Press, New Jersey, 2009
4. Shiraishi M, **Chan MW** and Huang THM. Microarray analysis of DNA methylation targets identified by Methyl-CpG binding protein. Chapter 6, in Esteller M, eds., *DNA Methylation: Approaches and Applications*. CRC Press, Florida. 2004.

**Journal Paper** (Selected publications from a total of 73)

Complete list of publications:

PubMed <http://goo.gl/SVhqdR>

ResearchGate <http://goo.gl/iFnZzC>

1. Yeh CM, Chang LY, Lin SH, Chou JL, Hsieh, HY, Zeng LH, Chuang SY, Wang HW, Dittner C, Lin CY, Lin JM, Huang YT, Ng EK, Chang AS, Wu SF, Lin J, Yeh KT and **Chan MW**. Epigenetic silencing of the *NR4A3* tumor suppressor, by aberrant JAK/STAT signaling, predicts prognosis in gastric cancer. *Scientific Reports* (in press)
2. Lu CC, Shen CH, Chang CB, Hsieh HY, Wu JD, Tseng LH, Hwang DW, Chen SY, Wu SF, **Chan MW**, Hsu CD. Guizhi Fuling Wan as a novel agent for intravesical treatment for bladder cancer in mouse model. *Molecular Medicine* 2016 (Epub ahead of print)
3. Hsieh HY, Shen CH, Lin RI, Feng YM, Huang SY, Wang YH, Wu SF, Hsu CD, and **Chan MW**. Cyproheptadine exhibits antitumor activity in urothelial carcinoma cells by targeting GSK3 $\beta$  to suppress mTOR and  $\beta$ -catenin signaling pathways. *Cancer Letters* 370:56-65, 2016.
4. Yeh CM, Chen PC, Hsieh HY, Jou YC, Lin CT, Tsai MH, Huang WY, Wang YT, Lin RI, Chen SS, Tung CL, Wu SF, Chang DC, Shen CH, Hsu CD, and **Chan MW**. Methylomics analysis identifies ZNF671 as an epigenetically repressed novel tumor suppressor and a potential non-invasive biomarker for the detection of urothelial carcinoma. *Oncotarget* 6:29555-72, 2015.
5. Chou JL, Huang RL, Shay J, Chen LY, Lin SJ, Yan PS, Chao WT, Lai YH, Lai YL, Chao TK, Lee CI, Tai CK, Wu SF, Nephew KP, Huang TH, Lai HC\*, and **Chan MW**. Hypermethylation of the TGF- $\beta$  target, ABCA1 is associated with poor prognosis in ovarian cancer patients. *Clinical Epigenetics* 7:1, 2015
6. Lin HY, Hung SK, Lee MS, Chiou WY, Huang TT, Tseng CE, Shih LY, Lin RI, Lin JM, Lai YH, Chang CB, Hsu FC, Chen LC, Tsai SJ, Su YC, Li SC, Lai HC,

- Hsu WL, Liu DW, Tai CK, Wu SF, **Chan MW**. DNA methylome analysis identifies epigenetic silencing of FHIT as a determining factor for radiosensitivity in oral cancer: an outcome-predicting and treatment-implicating study. *Oncotarget* 6:915-34, 2015.
7. Cheng FH, Aguda BD, Tsai JC, Kočańczyk M, Lin MJ, Chen GC, Lai HC, Nephew KP, Hwang TW, **Chan MW**. A mathematical model of bimodal epigenetic control of miR-193a in ovarian cancer stem cells. *PLOS ONE* 9:e116050, 2014
  8. **Chan MW**, Chang CB, Tung CH, Sun J, Suen JL, Wu SF. Low-dose 5-aza-2'-deoxycytidine pretreatment inhibits experimental autoimmune encephalomyelitis by induction of regulatory T cells. *Molecular Medicine* 20:248-256, 2014.
  9. Lin HY, Huang TT, Lee MS, Hung SK, Lin RI, Tseng CE, Chang SM, Chiou WY, Hsu FC, Hsu WL, Liu DW, Su YC, Li SC, **Chan MW**. Unexpected Close Surgical Margin in Resected Buccal Cancer: Very Close Margin and DAPK Promoter Hypermethylation Predict Poor Clinical Outcomes. *Oral Oncology* 49:336-44, 2013
  10. Cheng AS, Li MS, Kang W, Cheng VY, Chou JL, Lau SS, Go MY, Lee CC, Ling TK, Ng EK, Yu J, Huang TH, To KF, **Chan MW**, Sung JJ, Chan FK. Helicobacter pylori causes epigenetic dysregulation of FOXD3 to promote gastric carcinogenesis. *Gastroenterology* 144:122-133, 2013
  11. Chen PC, Tsai MH, Yip SK, Jou YC, Ng CF, Chen Y, Wang X, Huang W, Tung CL, Chen GC, Huang MM, Tong JH, Song EJ, Chang DC, Hsu CD, To KF, Shen CH, **Chan MW**. Distinct DNA methylation epigenotypes in bladder cancer from different Chinese sub-populations and its implication in cancer detection using voided urine. *BMC Medical Genomics* 4:45, 2011
  12. Yeh KT, Chen TH, Yang HW, Chou JL, Chen LY, Yeh CM, Chen YH, Lin RI, Su HY, Chen GC, Deatherage DE, Huang YW, Yan PS, Lin HJ, Nephew KP, Huang TH, Lai HC, **Chan MW**. Aberrant TGF $\beta$ /SMAD4 signaling contributes to epigenetic silencing of a putative tumor suppressor, RunX1T1 in ovarian cancer. *Epigenetics* 6:727-739, 2011

13. Chou JL, Chen LY, Lai HC, and **Chan MW**. TGF- $\beta$ : friend or foe? The role of TGF- $\beta$ /SMAD signaling in epigenetic silencing of ovarian cancer and its implication in epigenetic therapy. *Expert Opinion on Therapeutic Targets* 14:1213-23, 2010.
14. Chou JL, Su HY, Chen LY, Liao YP, Hartman-Frey C, Lai YH, Yang HW, Deatherage DE, Kuo CT, Huang YW, Yan PS, Hsiao SH, Tai CK, Lin HJ, Davuluri RV, Chao TK, Nephew KP, Huang THM, Lai HC and **Chan MW**. Promoter hypermethylation of *FBXO32*, a novel TGF- $\beta$ /SMAD4 target gene and tumor suppressor, is associated with poor prognosis in human ovarian cancer. *Laboratory Investigation* 90:414-425, 2010
15. Qin H, **Chan MW**, Liyanarachchi S, Balch C, Potter D, Souriraj IJ, Cheng ASL, Agosto-Perez FJ, Nikonova EV, Yan PS, Lin HJ, Nephew KP, Saltz JH, Showe LC, Huang THM, and Davuluri RV. An integrative ChIP-Chip and gene expression profiling to model SMAD regulatory modules. *BMC Systems Biology* 3:73, 2009
16. **Chan MW**, Huang YW, Hartman-Frey C, Kuo CT, Deatherage D, Qin H, Cheng ASL, Yan PS, Davuluri RV, Huang THM, Nephew KP, and Lin HJ. Aberrant Transforming Growth Factor-beta 1 Signaling and SMAD4 Nuclear Internalization Confer Epigenetic Repression of *ADAM19* in Ovarian Cancer. *Neoplasia* 10:908-19, 2008
17. Zuo T, Wang L, Morrison C, Chang X, Zhang H, Li W, Liu Y, Wang Y, Liu X, **Chan MW**, Liu JQ, Love R, Liu CG, Godfrey V, Shen R, Huang THM, Yang T, Park BK, Wang CY, Zheng P and Liu Y. FOXP3 is an X-linked breast cancer suppressor gene and an important repressor of the HER-2/ErbB2 oncogene. *Cell* 129: 1275-86, 2007.
18. Cheng AS, Jin VX, Fan M, Smith LT, Liyanarachchi S, Yan PS, Leu YW, **Chan MW**, Plass C, Nephew KP, Davuluri RV, and Huang THM. Combinatorial analysis of transcription factor partners reveals recruitment of c-MYC to estrogen receptor  $\alpha$ - responsive promoters. *Molecular Cell* 21:393-404, 2006.
19. **Chan MW**, Wei SH, Wen P, Wang Z, Matei DE, Liu JC, Liyanarachchi S, Brown R, Nephew KP, Yan PS, and Huang THM. Hypermethylation of 18S and 28S Ribosomal DNA predicts progression-free survival in patients with ovarian

cancer. *Clinical Cancer Research* 11:7376-83, 2005

20. **Chan MW**, Chan LW, Tang NLS, Lee TL, Tong JHM, Lo KW, Cheung HY, Wong WS, Chan PSF, Lai FMM, and To KF. Hypermethylation of multiple genes in tumor tissues and voided urine in urinary bladder cancer patients. *Clinical Cancer Research* 8: 464-470, 2002.