

**Yu-Wei Leu, Ph.D.**  
Department of Life Science  
National Chung Cheng University

Office: 05-2720411 ext.66507

E-mail: [bioywl@ccu.edu.tw](mailto:bioywl@ccu.edu.tw)

**Education**

Ph.D. 1993-2001      Intercollege Genetic Program, The Pennsylvania State University,  
University Park, PA, USA.

B.S. 1984-1988      Department of Biology, TungHai University, Taichung,, Taiwan.

**Professional Experience**

2012-Present      Associate Professor, Department of Life Science and Institute of Molecular  
Biology, National Chung Cheng University, Chia-Yi, Taiwan.

2012 Sept.      Visiting Scholar, Dept. of Molecular Medicine, UTHSCSA, San Antonio, TX, USA.

2004-2011      Assistant Professor, Department of Life Science and Institute of Molecular  
Biology, National Chung Cheng University, Chia-Yi, Taiwan.

2005 Summer      Visiting Scholar, The Ohio State University Comprehensive Cancer Center, Columbus,  
OH, USA.

2003-2004      Postdoctoral Research Associate, Human Cancer Genetics Program,  
The Ohio State University Comprehensive Cancer Center, Columbus,  
OH, USA (The whole lab moved from MO to OH).

2002-2003      Postdoctoral Research Associate, Department of Pathology and  
Anatomical Science, Ellis Fischel Cancer Center, University of Missouri,  
Columbia, MO, USA.

2001-2002      Postdoctoral Research Associate, Ernest Gallo Clinic & Research  
Center, University of California, San Francisco, Emeryville, CA, USA.

**Honors:**

2008      6<sup>th</sup> National Innovation Award.

2009      7<sup>th</sup> National Innovation Award. (Students)

2011      Outstanding Research Award, College of Science, CCU.

2012      Taiwan Comprehensive University System, TCUS, Innovative Young Researcher Award.

**Research Interests:**

1. Targeted Epigenomic modifications.
2. Signaling-specific Epigenomic modifications in somatic stem cells and cancers.

**Patents:**

**Yu-Wei Leu**, Shu-Huei Hsiao and Tim H.-M. Huang. (2012) Treatment of a disease or a condition associated with aberrant gene hypomethylation by a method involving tailored epigenomic modification. U.S. Patent 9023819B2, filed June 9<sup>th</sup>, 2008, and issued 2012.

**Yu-Wei Leu**, Shu-Huei Hsiao and Tim H.-M. Huang. (2011) DETERMINING THE BIOLOGICAL FUNCTION OF A TARGET GENE IN A CELL. U.S. Patent 8067163B2, filed June 9<sup>th</sup>, 2008, and issued Nov. 29<sup>th</sup>, 2011.

**Yu-Wei Leu**, Shu-Huei Hsiao and Tim H.-M. Huang. (2011) TERMINATING THE EXPRESSION OF A TARGET GENE IN A CELL BY A METHYLATED POLYNUCLEOTIDE. Taiwan Patent I353254, 97121718, filed June 11<sup>th</sup>, 2011, issued Oct. 18<sup>th</sup>, 2011.

**Yu-Wei Leu**, Shu-Huei Hsiao and Tim H.-M. Huang. (2012) DETERMINING THE BIOLOGICAL FUNCTION OF A TARGET GENE IN A CELL. Taiwan Patent I364460, 97121717, filed June 11th, 2008, and issued Apr. 13th, 2012.

**Yu-Wei Leu**, Shu-Huei Hsiao, Chia-Chen Hsu, and Tim H.-M. Huang. (2013) IN VIVO MONITORING SYSTEM FOR DNA METHYLATION. Taiwan Patent I393779, 098135114, filed Oct. 16<sup>th</sup>, 2009, issued Feb. 21<sup>st</sup>, 2013.

## Publications

### Papers

Hui-Hung Tzeng, Chi-Hung Hsu, Ting-Hao Chung, Wen-Chien Lee, Chi-Hsien Lin, Wan-Chen Wang, Chen-Yu Hsiao, **Yu-Wei Leu**, and Tzu-Hsien Wang (2015) Cell Signaling and Differential Protein Expression in Neuronal Differentiation of Bone Marrow Mesenchymal Stem Cells with Hypermethylated Salvador/Warts/Hippo (SWH) Pathway Genes. *PLOS ONE*, DOI:10.1371/journal.pone.0145542. (12/15, 2015 accepted)

Hong-Chang Chen, Hsuan-Yuan Huang, Yao-Li Chen, Kuan-Der Lee, Yi-Ru Chu, Ping-Yi Lin, Chia-Chen Hsu, Pei-Yi Chu, Tim H.-M. Huang, Shu-Huei Hsiao, and **Yu-Wei Leu** (2015) Methylation of the Tumor Suppressor Genes *HIC1* and *RassF1A* Clusters Independently From the Methylation of Polycomb Target Genes in Colon Cancer. *Annals of Surgical Oncology*, DOI 10.1245/s10434-015-5024-z. (11/13, 2015 accepted)

Chih-Cheng Chen, Kuan-Der Lee, Mei-Yu Pai, Pei-Yi Chu, Chia-Chen Hsu, Chia-Chen Chiu, Li-Tzong Chen, Jang-Yang Chang, Shu-Huei Hsiao and **Yu-Wei Leu** (2015) DNA methylation change is associated with the development of drug resistance in cervical cancer. *Cancer Cell Int.* 15:98-107.

**Yu-Wei Leu**,<sup>†</sup> Pei-Yi Chu,<sup>†</sup> Chien-Min Chen, Kun-Tu Yeh, Yu Ming Liu, Yen Hui Lee, Shan Tsu Kuo, Shaw-Jenq Tsai, Tim H.-M. Huang and Shu-Huei Hsiao (2014) Early Life Ethanol Exposure Causes Long-Lasting Disturbances on Rat Mesenchymal Stem Cells by Epigenetic Modifications. *Biochem. Biophys. Res. Commun.* 453: 338-344. (<sup>†</sup>contributed equally to this paper)

Chih-Cheng Chen, Jyh-Pyng Gau, Hui-Ju Chou, Jie-Yu You, Cih-En Huang, Yi-Yang Chen, Jrhau Lung, Yi-Sheng Chou, **Yu-Wei Leu**, Chang-Hsien Lu, Kuan-Der Lee and Ying-Huang Tsai (2014) Frequencies, clinical characteristics, and outcome of somatic CALR mutations in JAK2-unmutated essential thrombocythemia. *Ann Hematol.* 93: 2029-2036.

Yao-Li Chen, Ming-Han Kuo, Ping-Yi Lin, Wan-Ling Chuang, Chia-Chen Hsu, Pei-Yi Chu, Chia-Huei Lee, Tim H.-M. Huang, **Yu-Wei Leu**<sup>\*</sup>, and Shu-Huei Hsiao<sup>\*</sup> (2013) *ENSA* expression correlates with attenuated tumor propagation in liver cancer. *Biochem. Biophys. Res. Commun.*, 446: 56-61. (<sup>\*</sup>co-correspondence)

Rui Wang, Hang-Kai Hsu, Yisong Wang, Xun Lan, **Yu-Wei Leu**, Peggy Farnham, Tim Huang, Victor X. Jin (2013) LOcating Non-Unique matched Tags (LONUT) to improve the detection of the enriched regions for ChIP-seq. *PLOS ONE*, 8:1-10.

Chia-Huei Lee, Thian-Sze Wong, Jimmy Yu-Wai Chan, Shao-Chun Lu, Pinpin Lin, Ann-Joy Cheng, Yin-Ju Chen, Jeffrey Shu-Ming Chang, Shu-Huei Hsiao, **Yu-Wei Leu**, Chuan-I Li, Jenn-Ren Hsiao, Jang-Yang Chang (2013) Epigenetic Regulation of the X-Linked Tumor Suppressors *BEX1* and *LDOC1* in Oral Squamous Cell Carcinoma. *J. Pathol.*, 230:298-309.

Yao-Li Chen, Chih-Jan Ko, Ping-Yi Lin, Wan-ling Chuang, Chia-Chen Hsu, Pei-Yi Chu, Mei-Yu Pai, Chun-Chun Chang, Ming-Han Kuo, Yi-Ru Chu, Chun-Hsin Tung, Tim H.-M. Huang, **Yu-Wei Leu**<sup>\*</sup> and Shu-Huei Hsiao<sup>\*</sup> (2012) Clustered DNA methylation changes in Polycomb target genes in early stage liver cancer. *Biochem. Biophys. Res. Commun.*, 425: 290-296. (<sup>\*</sup>co-correspondence)

Kuan-Der Lee, Mei-Yu Pai, Chia-Chen Hsu, Chih-Cheng Chen, Yao-Li Chen, Pei-Yi Chu, Chia-Huei Lee, Li-Tzong Chen, Jang-Yang Chang, Tim H.-M. Huang, Shu-Huei Hsiao<sup>\*</sup> and **Yu-Wei Leu**<sup>\*</sup> (2012) Targeted

*Casp8AP2* methylation increases drug resistance in mesenchymal stem cells and cancer cells. *Biochem. Biophys. Res. Commun.*, 422: 575-585. (\*co-correspondence)

Jia-Shing Chen, Ih-Jen Su, **Yu-Wei Leu**, Kung-Chia Young and H. Sunny Sun. (2012) Expression of T-Cell Lymphoma Invasion and Metastasis 2 (TIAM2) Promotes Proliferation and Invasion of Liver Cancer. *Int J Cancer*. 130:1302-1313.

I-Wen Teng\*, Pei-Chi Hou\*, Kuan-Der Lee, Pei-Yi Chu, Kun-Tu Yeh, Victor X. Jin, Min-Jen Tseng, Shaw-Jenq Tsai, Yu-Sun Chang, Chi-Sheng Wu, H. Sunny Sun, Kuen-daw Tsai, Long-Bin Jeng, Kenneth P. Nephew, Tim H.-M. Huang, Shu-Huei Hsiao+ and **Yu-Wei Leu**+ (2011) Targeted methylation of two tumor suppressor genes is sufficient to transform mesenchymal stem cells into cancer stem/initiating cells. *Cancer Research*, 71(13): 4653-63. (\*contributed equally to this paper; + co-correspondence).

Chia-Chen Hsu\*, **Yu-Wei Leu**\*, Min-Jen Tseng, Kuan-Der Lee, Tzen-Yu Kuo, Jia-Yi Yen, Yen-Ling Lai, Yi-Chen Hung, Wei-Sheng Sun, Pei-Yi Chu, Chien-Min Chen, Kun-Tu Yeh, Pearly S. Yan, H. Sunny Sun, Yu-Sun Chang, Shaw-Jenq Tsai, Tim H.-M. Huang, and Shu-Huei Hsiao (2011) Functional characterization of *Trip10* in cancer cell growth and survival. *Journal of Biomedical Science*, 18:12. (\* contributed equally to this paper).

Yi-Shiuan Lin, Arthur Y. Shaw, Shi-Gang Wang, Chia-Chen Hsu, I-Wen Teng, Min-Jen Tseng, Tim H.-M. Huang, Ching-Shih Chen, **Yu-Wei Leu**\* and Shu-Huei Hsiao\* (2011) Identification of novel DNA methylation inhibitors via a two-Component reporter gene system. *Journal of Biomedical Science*, 18:3. (\*co-correspondence).

Chia-Chen Hsu, Hsin-Pai Li, Yu-Hung Hung, **Yu-Wei Leu**, Wu-Hsiung Wu, Feng-Sheng Wang, Kuan-Der Lee, Pey-Jium Chang, Chi-Sheng Wu, Yen-Jung Lu, Tim H.-M. Huang, Yu-Sun Chang and Shu-Huei Hsiao (2010) Targeted methylation of *CMV* and *E1A* viral promoters. *Biochem. Biophys. Res. Commun.*, 402:228-234.

Shu-Huei Hsiao\*, Kuan-Der Lee\*, Chia-Chen Hsu, Min-Jen Tseng, Victor X. Jin, Wei-Sheng Sun, Yi-Chen Hung, Kun-Tu Yeh, Pearly S. Yan, Yen-Yu Lai, H. Sunny Sun, Yen-Jung Lu, Yu-Sun Chang, Shaw-Jenq Tsai, Tim H.-M. Huang and **Yu-Wei Leu** (2010) DNA methylation of the *Trip10* promoter accelerates mesenchymal stem cell lineage determination. *Biochem. Biophys. Res. Commun.*, 400:305-312.

Lu YJ, Wu CS, Li HP, Liu HP, Lu CY, **Leu YW**, Wang CS, Chen LC, Lin KH, Chang YS. (2010) Aberrant methylation impairs low density lipoprotein receptor-related protein 1B tumor suppressor function in gastric cancer. *Genes Chromosomes Cancer*, 49(5): 412-24.

Wu CS, Lu YJ, Li HP, Hsueh C, Lu CY, **Leu YW**, Liu HP, Lin KH, Huang TH, Chang YS (2010) Glutamate receptor, ionotropic, kainate 2 silencing by DNA hypermethylation possesses tumor suppressor function in gastric cancer. *Int J Cancer*. 126: 2542-52.

Shu-Huei Hsiao, Tim H.-M. Huang and **Yu-Wei Leu** (2009) Excavating relics of DNA methylation changes during the development of neoplasia. *Seminars in Cancer Biology*, 19:198-208.

**Yu-Wei Leu** and Tim H.-M. Huang. Global DNA Methylation in the Modeling of Tumoral Progression. *Cell Science Reviews*, 4: No. 2, 2007 (ISSN1742-8130).

Pearly S. Yan, Venkataramu Chinnambally, Ashraf Ibrahim, Joseph C. Liu, Nils Diaz, Barbar Centeno, Frank Weber, **Yu-Wei Leu**, Charis Eng, Timothy J. Yeatman, Tim H.-M. Huang. Mapping Geographic Zones of Cancer Risk with Epigenetic Biomarkers in Normal Breast Tissue. (2006) *Clin Cancer Research*, 63: 6626-6636.

Alfred S. Cheng, Victor X. Jin, Meiyun Fan, Laura T. Smith, Sandya Liyanarachchi, Pearly S. Yan, **Yu-Wei Leu**, Michael W. Chan, Christoph Plass, Kenneth P. Nephew, Ramana V. Davuluri, Tim H.-M. Huang.

Combinatorial analysis of transcription factor partners reveals recruitment of c-MYC to ER $\alpha$ -responsive promoter. (2006) *Mol. Cell*, 21: 393-404.

Hsin-Pai Li, **Yu-Wei Leu** and Yu-Sun Chang. Epigenetic changes in virus-associated human cancers. (2005) *Cell Research*, 15: 262-271.

**Yu-Wei Leu**, Pearly S. Yan, Meiyun Fan, Victor X. Jin, Joseph C. Liu, Susan H. Wei, Ramana V. Davuluri, Christoph Plass, Kenneth P. Nephew, and Tim H.-M. Huang. Loss of estrogen signaling leads to epigenetic silencing of its target genes in breast cancer. (2004) *Cancer Research*, 64:8184-8192.

Victor X Jin\*, **Yu-Wei Leu\***, Sandya Liyanarachchi, Hao Sun, Kenneth P. Nephew, Tim H.-M Huang, Ramana V Davuluri. Identifying estrogen receptor a target genes using integrated computational genomics and chromatin immunoprecipitation microarray. (2004) *Nucleic Acids Res*, 32: 6627-6635. (\*contributed equally to this paper).

**Yu-Wei Leu**, Farahnaz Rahmatpanah, Huidong Shi, Joseph C. Liu, Susan H. Wei, Pearly S. Yan, Tim Hui-Ming Huang. Double RNA interference of *DNMT3b* and *DNMT1* enhances DNA demethylation and gene reactivation. (2003) *Cancer Research*, 63: 6110-6115.

Huidong Shi, Susan Wei, **Yu-Wei Leu**, Farahnaz Rahmatpanah, Joseph Liu, Pearly Yan, Kenneth P. Nephew, Tim H.-M. Huang. Triple analysis of the cancer epigenome: an integrated microarray system for assessing gene expression, DNA methylation, and histon acetylation. (2003) *Cancer Research*, 63: 2164-2171.

Pearly S. Yan, Huidong Shi, Farahnaz Rahmatpanah, Tim Hsiao, Andrew Hsiao, **Yu-Wei Leu**, Joseph C. Liu, Tim H.-M. Huang. Differential distribution of DNA methylation within the *RASSF1A* CpG island in breast cancer. (2003) *Cancer Research*, 63: 6178-6186.

**Yu-Wei Leu** and Tim Hui-Ming Huang. Diagnostic arrays for epigenetic markers. *Toxicologic Pathology*, (2003) 31 (1) 140-170.

#### **Book Chapter**

**Yu-Wei Leu**, Alfred S.-L and Tim Hui-Ming Huang. (2006) Use of CpG island microarray to interrogate the cancer epigenome. *Promoter and CpG island Microarrays* (Winegarden NA, Takashi M, eds). *DNA Press* (ISBN: 0-9748765-6-9).

Tim Huang, **Yu-Wei Leu** and Shu-Huei Hsiao (2012) Epigenetic reprogramming of mesenchymal stem cells. *Epigenetic Alterations in Oncogenesis (Advances in Experimental Medicine and Biology)* (Adam R. Karpf, eds). *Springer* (ISBN-10: 1441999663 | ISBN-13: 978-1441999665).