

個人履歷表 (*Curriculum vitae*)

湯硯安 (Yen-An Tang)

Genome Institute of Singapore (GIS),

*Agency for Science, Technology and Research (A*STAR)*

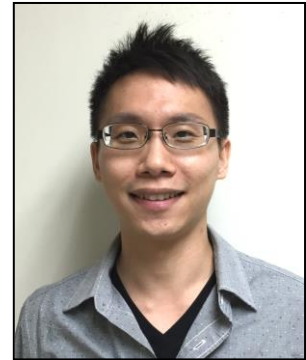
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■ 基本資料 / Personal Information

1. 國籍/Nationality 台灣/Taiwanese
2. 性別/Sex 男/Male
3. 出生日期/Date of birth 01 Aug 1982

■ 主要學、經歷 / Education and Experiences

1. 2015/01-present 博士後研究員 / 新加坡基因體研究中心
Postdoctoral research fellow, Cancer Therapeutics & Stratified Oncology, Genome Institute of Singapore (GIS), A*STAR
2. 2013/01-2014/12 博士後研究員 / 國立成功大學 藥理所
Postdoctoral research fellow, Department of Pharmacology, National Cheng Kung University, Taiwan
3. 2009/09-2012/12 博士 / 國立成功大學 基礎醫學研究所
PhD program, Institute of Basic Medical Sciences, National Cheng Kung University, Taiwan
4. 2008/10-2009/08 研究助理 / 國立成功大學 藥理所
Research assistant, Department of Pharmacology, National Cheng Kung University, Taiwan
5. 2005/09-2007/06 碩士 / 國立清華大學 生物科技研究所
Master program, Institute of Biotechnology, National Tsing Hua University, Taiwan
6. 2000/09-2004/06 學士 / 國立臺灣師範大學 生命科學系
Bachelor program, Department of Life Sciences, National Taiwan Normal University, Taiwan

■ 領域專長 / Fields of specialty

1. Project management
2. Networking
3. Data analysis Microarray analysis; ChIP-seq analysis; SPSS
4. Cancer biology Cancer epigenetics; Cancer metastasis; Cancer stem cells; Tumor-associated fibroblast; Anti-cancer therapeutics
5. Biochemistry Protein phosphorylation and ubiquitination; Nucleotide excision repair; Protein purification
6. Animal model Subcutaneous xenograft model; Tail vein injection metastasis model; Orthotopic transplant model of colorectal cancer

■ 研發成果智慧財產權 / Intellectual Property Rights and Patent

1. 專利名稱 REGULATOR ASSOCIATED WITH EXPRESSION OF DNMT3A GENE AND APPLICATION THEREOF

(1)專利類別: 發明專利
(2)國別: 台灣
(3)專利號碼: I494107
(4)發明人: 王憶卿、湯硯安
(5)專利權人: 國立成功大學
(6)專利核准日期: 2015/08 – 2032/12

■ 獲獎、榮譽 / Awards and Honors:

1. 2014 Young Scientists Program (YSP) fellowship of 15th IUBMB-24th FAOBMB International Conference
2. 2014 The 1st prize award of oral presentation in 29th Joint Annual Conference of Biomedical Sciences
3. 2013 The 3rd prize award of excellent poster in 8th annual conference of Asia epigenetic alliance and 2nd Taipei epigenetics and chromatin meeting
4. 2013 The excellent thesis award in 2013 CHENG-HSING Medical Foundation
5. 2012 The outstanding research award in 2012 Thesis Contest at National Cheng Kung University
6. 2011 The 3rd prize award of oral presentation in 2011 annual meeting of Taiwan Society of Biochemistry and Molecular Biology
7. 2011 The excellent poster in 2011 International Symposium on Cell Signaling and Gene Regulation
8. 2007 Honorary member of Phi Tau Phi Scholastic Honor Society of The Republic of China
9. 2007 The winner of excellent poster contest held in College of Life science, National Tsing Hua University

■ 研究興趣、成果與未來研究規劃 / Research Interest, Achievement, and Future Plan

My research interests are **cancer epigenetics, transcriptional regulation, and cancer stem cells (CSCs)**. Our team and I had investigated the mechanisms leading to overexpression of DNA methyltransferases (DNMTs) in lung cancer. We identified that tobacco-specific carcinogen NNK stabilizes DNMT1 protein through AKT/GSK3 β / β TrCP signaling pathway, leading to promoter hypermethylation of tumor suppressor genes in lung cancer (*J. Clin. Invest.*, 2010). In addition, we demonstrated that dysregulation of p53/Sp1, MDM2/RB, MDM2/Foxo3a controls lead to DNMT1, DNMT3A, DNMT3B overexpression in lung cancer, respectively (*Cancer Res.*, 2010; *Clin. Cancer Res.*, 2012; *J Thorac Oncol.*, 2014). Importantly, I identified the novel mechanisms of stemness transcription factor Oct4-driven lung tumorigenesis by integrating bioinformatics, ChIP-seq analysis, and functional validation (*Nucleic Acids Res.*, 2015).

I am also interested in **development of novel targeted therapeutics for cancer treatment, including epi-drugs and small molecule inhibitors**. We had shown that three novel histone deacetylase (HDAC) inhibitors, OSU-HDAC-44, HTPB, and YCW1, exert promising anti-cancer activities, leading to growth and metastasis suppression (*PLoS One*, 2010; *PLoS One*, 2012) and sensitization of drug-resistant lung cancer cells to cisplatin chemotherapy (*Cancer Lett.*, 2014). In addition, we developed a novel sialyltransferase inhibitor, Lith-O-Asp, to inhibit angiogenesis and metastasis in cancers through inhibition of integrin sialylation and FAK/paxillin signaling (*Cancer Res.*, 2011). Recently, we successfully patented our novel finding that Nutlin-3, originally known as MDM2 antagonist, regulates *DNMT3A* expression and DNA methylation (*Issued in 2015, Patent Number: I494107*).

My current position is a postdoctoral research fellow and I work in the lab of Dr. Qiang Yu (*Jan 2015-present*; Genome Institute of Singapore, A*STAR, Singapore). I initiated a new project on investigating cross-talk between tumor microenvironment and colorectal CSCs using patient-derived cancer-associated fibroblast and tumorsphere cells. I have identified the key molecule driving self-renewal and chemo-resistance of colorectal CSCs and now evaluate a novel therapeutic strategy by targeting the interaction between CSCs and stromal cells. I'm the leader of this project and build up network with other principle investigators and clinician to aim for clinical application.

The scientific research is the great career for me to make use of what I have learned and take on greater challenges in the cancer research field. I will further pursue the alteration of cancer metabolism in CSCs and develop new strategy for cancer intervention in the future (please see my research proposal). In addition, I hold a teaching license and had been trained to be a teacher with passion, patience and good teaching skill during my bachelor program (Department of Life Sciences, National Taiwan Normal University). Please find my teaching proposal as attachment. Therefore, **my experiences on both teaching and scientific research could fully support the qualification for my application for Assistant Professor of College of Medicine, China Medical University.**

著作目錄

湯硯安 (Yen-An Tang)

Postdoctoral Research Fellow

Cancer Therapeutics & Stratified Oncology, Genome Institute of Singapore (GIS),

Agency for Science, Technology and Research (A*STAR)

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■ Publications:

A. Journal publications:

1. **Yen-An Tang**, C.-H. Chen, H. S. Sun, C.-P. Cheng, V. S. Tseng, H.-S. Hsu, W.-C. Su, W.-W. Lai, Y.-C. Wang*. (2015). Global Oct4 target gene analysis reveals novel downstream PTEN and TNC genes required for drug-resistance and metastasis in lung cancer. *Nucleic Acids Res.*, 43:1593-1608. (SCI, IF=9.112, Ranking 20/290= 6.9% in Biochemistry & Molecular Biology)
2. J. Jen, L.-L. Lin, H.-T. Chen, S.-Y. Liao, F.-Y. Lo, **Yen-An Tang**, W.-C. Su, R. Salgia, C.-L. Hsu, H.-C. Huang, H.-F. Juan and Y.-C. Wang*. (2015). Oncoprotein ZNF322A transcriptionally deregulates alpha-adducin, cyclin D1 and p53 to promote tumor growth and metastasis in lung cancer. *Oncogene*, doi: 10.1038/onc.2015.296. [Epub ahead of print] (SCI, IF=8.459, Ranking 13/211= 6.2% in Oncology)
3. R.-C. Tseng, J.-M. Chang, J.-H. Chen, W.-R. Huang, **Yen-An Tang**, I.-Y. Kuo, J.-J. Yan, W.-W. Lai, Y.-C. Wang*. (2015). Deregulation of SLIT2-mediated cdc42 activity is associated with esophageal cancer metastasis and poor prognosis. *J. Thorac. Oncol.*, 10:189-198. (SCI, IF=5.282, Ranking 7/58= 12.1% in Respiratory System)
4. Y.-C. Yang, **Yen-An Tang (co-first)**, J.-M. Shieh, R.-K. Lin, H.-S. Hsu, Y.-C. Wang*. (2014). DNMT3B overexpression by deregulation of FOXO3a-mediated transcription repression and MDM2 overexpression in lung cancer. *J. Thorac. Oncol.*, 9:1305-1315. (SCI, IF=5.282, Ranking 7/58= 12.1% in Respiratory System)
5. W.-J. Huang, **Yen-An Tang (co-first)**, M.-Y. Chen, Y.-J. Wang, F.-H. Hu, T.-W. Wang, S.-W. Chao, H.-W. Chiu, Y.-L. Yeh, H.-Y. Chang, H.-F. Juan, P. Lin*, and Y.-C. Wang*. (2014). A histone deacetylase inhibitor YCW1 with antitumor and antimetastasis properties enhances cisplatin activity against non-small cell lung cancer in preclinical studies. *Cancer Lett.*, 346:84-93. (SCI, IF=5.621, Ranking 24/211= 11.4% in Oncology)

6. J.-M. Shieh, **Yen-An Tang**, T.-H. Yang, C.-Y. Chen, H.-S. Hsu, Y.-H. Carol Tan, R. Salgia, and Y.-C. Wang*. (2013). Lack of association of C-Met-N375S sequence variant with lung cancer susceptibility and prognosis. *Int. J. Med. Sci.*, 10: 988-994. (SCI, IF=2.003, Ranking 50/154= 32.5% in Medicine, General & Internal)
7. J.-Y. Chen, **Yen-An Tang**, W.-S. Li, Y.-C. Chiou, J.-M. Shieh*, Y.-C. Wang*. (2013). A synthetic podophyllotoxin derivative exerts anti-cancer effects by inducing mitotic arrest and pro-apoptotic er stress in lung cancer preclinical models. *PLoS One*, 8:e62082. (SCI, IF=3.234, Ranking 9/57= 15.8% in Multidisciplinary Sciences)
8. **Yen-An Tang**, R.-K. Lin, Y.-T. Tsai, H.-S. Hsu, Y.-C. Yang, C.-Y. Chen, Y.-C. Wang*. (2012). MDM2 overexpression deregulates the transcriptional control of RB/E2F leading to DNA methyltransferase 3A overexpression in lung cancer. *Clin. Cancer Res.*, 18:4325-4333. (SCI, IF=8.722, Ranking 12/211= 5.7% in Oncology)
9. J.-M. Shieh, T.-T. Wei, **Yen-An Tang**, S.-M. Huang, W.-L. Wen, M.-Y. Chen, S. B. Salunke, C.-S. Chen, C.-T. Chen*, and Y.-C. Wang*. (2012). Mitochondrial apoptosis and FAK signaling disruption by a novel histone deacetylase inhibitor, HTPB, in antitumor and antimetastatic mouse models. *PLoS One*, 7:e30240. (SCI, IF=3.234, Ranking 9/57= 15.8% in Multidisciplinary Sciences)
10. J.-Y. Chen, **Yen-An Tang**, S.-M. Huang, H.-F. Juan, L.-W. Wu, Y.-C. Sun, S.-C. Wang, K.-W. Wu, G. Balraj, T.-T. Chang, W.-S. Li, H.-C. Cheng, and Y.-C. Wang*. (2011). A novel sialyltransferase inhibitor suppresses FAK/Paxillin signaling and cancer angiogenesis and metastasis pathways. *Cancer Res.*, 71: 473-483. (SCI, IF=9.329, Ranking 11/211= 5.2% in Oncology)
11. **Yen-An Tang**, W.-L. Wen, J.-W. Chang, T.-T. Wei, Y.-H. Tan, S. Salunke, C.-T. Chen, C.-S. Chen, and Y.-C. Wang*. (2010). A novel histone deacetylase inhibitor exhibits antitumor activity via apoptosis induction, F-actin disruption and gene acetylation in lung cancer. *PLoS One*, 5:e12417. (SCI, IF=3.234, Ranking 9/57= 15.8% in Multidisciplinary Sciences)
12. R.-K. Lin, C.-Y. Wu, J.-W. Chang, L.-J. Juan, H.-S. Hsu, C.-Y. Chen, Y.-Y. Lu, **Yen-An Tang**, Y.-C. Yang, P.-C. Yang and Y.-C. Wang*. (2010). Dysregulation of p53/Sp1 control leads to DNA methyltransferase 1 overexpression in lung cancer. *Cancer Res.*, 15: 5807-5817. (SCI, 5-Year IF=9.329, Ranking 11/211= 5.2% in Oncology)
13. R.-K. Lin, Y.-S. Hsieh, P.-P. Lin, H.-S. Hsu, C.-Y. Chen, **Yen-An Tang**, C.-F. Lee, and Y.-C. Wang*. (2010). The tobacco-specific carcinogen NNK induces DNA methyltransferase 1 accumulation and tumor suppressor gene hypermethylation in mice and lung cancer patients. *J. Clin. Invest.*, 120: 521-532. (SCI, IF=13.215, Ranking 3/123= 2.4% in Medicine, Research & Experimental)
14. J.-P. Li, C.-Y. Wang, **Yen-An Tang**, Y.-W. Lin, J.-L. Yang*. (2008). Role of ERK signaling in nucleotide excision repair and genotoxicity in response to As(III) and Pb(II). *Pure Appl.*

Chem., 12: 2735-2750. (SCI, 5-Year IF=2.492, Ranking 52/157= 33.1% in Chemistry, Multidisciplinary)

15. H.-S. Hsu, C.-K. Wen, **Yen-An Tang**, R.-K. Lin, W.-Y. Li, W.-H. Hsu, Y.-C. Wang*. (2005). Promoter Hypermethylation is the predominant mechanism in *hMLH1* and *hMSH2* deregulation and is a poor prognostic factor in non-smoking lung cancer. *Clin. Cancer Res.*, 11: 5410-5416. (SCI, 5-Year IF=8.722, Ranking 12/211= 5.7% in Oncology)

B. Symposium publications:

1. **Yen-An Tang**, J.-P. Li, J.-L. Yang*. 2007. Arsenite-elicited Skp2 proteolysis requires lysosomal proteases and APC/CCdh1 but not 26S proteasome. 2nd World Conference of Stress (Budapest, Hungary, 23-26 August, 2007) (Poster)
2. T.-T. Wei, **Yen-An Tang**, W.-L. Wen, and Y.-C. Wang*. 2010. Novel histone deacetylase inhibitors – HTPB and triantennary dendritic HTPB capped nanohybrid with CdSe/ZnS Nanoparticle (Nano-HTPB) in Lung Cancer Treatment. The 25th Joint Annual Conference of Biomedical Sciences. (Oral)
3. **Yen-An Tang**, R.-K. Lin, Y.-T. Tsai, H.-S. Hsu, Y.-C. Yang, C.-Y. Chen, Y.-C. Wang*. 2011. MDM2 deregulates both RB and p53 leading to DNA methyltransferase 3A overexpression in lung cancer. Nineteenth Symposium on Recent Advances in Cellular and Molecular Biology. (Poster)
4. J.-Y. Chen, **Yen-An Tang**, S.-M. Huang, H.-F. Juan, L.-W. Wu, Y.-C. Sun, S.-C. Wang, K.-W. Wu, G. Balraj, T.-T. Chang, W.-S. Li, H.-C. Cheng, Y.-C. Wang*. 2011. A Novel Sialyltransferase Inhibitor Suppresses FAK/Paxillin Signaling and Cancer Angiogenesis and Metastasis Pathways. Nineteenth Symposium on Recent Advances in Cellular and Molecular Biology. (Oral)
5. Y.-C. Yang, **Yen-An Tang**, Y.-C. Wang*. 2011. FOXO3a mediates DNMT3B transcriptional repression by HDAC3. Nineteenth Symposium on Recent Advances in Cellular and Molecular Biology. (Poster)
6. M.-Y. Chen, T.-T. Wei, S.-M. Huang, **Yen-An Tang**, C.-T. Chen, Y.-C. Wang*. 2011. Novel histone deacetylase inhibitor – HTPB and triantennary dendritic HTPB capped nanohybrid with CdSe/ZnS nanoparticles (Nano-HTPB) in lung cancer treatment. Nineteenth Symposium on Recent Advances in Cellular and Molecular Biology. (Poster)
7. **Yen-An Tang**, R.-K. Lin, Y.-T. Tsai, H.-S. Hsu, Y.-C. Yang, C.-Y. Chen, Y.-C. Wang*. 2011. MDM2 deregulates both RB and p53 leading to DNA methyltransferase 3A overexpression in lung cancer. The 26th Joint Annual Conference of Biomedical Sciences. (Oral)
8. J.-Y. Chen, **Yen-An Tang**, S.-M. Huang, H.-F. Juan, L.-W. Wu, Y.-C. Sun, S.-C. Wang, K.-W. Wu, G. Balraj, T.-T. Chang, W.-S. Li, H.-C. Cheng, Y.-C. Wang*. 2011. A Novel Sialyltransferase Inhibitor Suppresses FAK/Paxillin Signaling and Cancer Angiogenesis and Metastasis Pathways. The 26th Joint Annual Conference of Biomedical Sciences. (Poster)
9. Y.-C. Yang, **Yen-An Tang**, Y.-C. Wang*. 2011. FOXO3a mediates DNMT3B transcriptional repression by HDAC3. The 26th Joint Annual Conference of Biomedical Sciences. (Poster)
10. **Yen-An Tang**, R.-K. Lin, Y.-T. Tsai, H.-S. Hsu, Y.-C. Yang, C.-Y. Chen, Y.-C. Wang*. 2011. MDM2 deregulates both RB and p53 leading to DNA methyltransferase 3A overexpression in lung

- cancer. 2011 International Symposium on Cell Signaling and Gene Regulation. (**Poster presentation award**)
11. **Yen-An Tang**, R.-K. Lin, Y.-T. Tsai, H.-S. Hsu, Y.-C. Yang, C.-Y. Chen, Y.-C. Wang*. 2011. MDM2 overexpression deregulates the transcriptional control of RB/E2F leading to DNA methyltransferase 3A overexpression in lung cancer. 2011 The annual meeting of Taiwan Society of Biochemistry and Molecular Biology. (**Oral presentation award**)
 12. **Yen-An Tang**, R.-K. Lin, Y.-T. Tsai, H.-S. Hsu, Y.-C. Yang, C.-Y. Chen, Y.-C. Wang*. 2012. MDM2 overexpression deregulates the transcriptional control of RB/E2F leading to DNA methyltransferase 3A overexpression in lung cancer. 2012 Keystone Symposia meeting on "*Epigenomics and Chromatin Regulations*". (Poster)
 13. C.-H. Chen, **Yen-An Tang**, Y.-C. Wang*. 2013. Oct4-mediated transcription deregulation in lung tumorigenesis and drug resistance. The 28th Joint Annual Conference of Biomedical Sciences. (Oral)
 14. **Yen-An Tang**, C.-H. Chen, Y.-C. Wang*. 2013. Deregulation of Oct4-centered transcriptional network promotes lung cancer progression and drug resistance. The 18th Taiwan Joint Cancer Conference. (Poster)
 15. **Yen-An Tang**, C.-H. Chen, Y.-C. Wang*. 2013. Deregulation of Oct4-centered transcriptional network promotes lung cancer progression and drug resistance. 8th annual conference of Asia epigenetic alliance and 2nd Taipei epigenetics and chromatin meeting. (**Poster presentation award**)
 16. **Yen-An Tang**, C.-H. Chen, Y.-C. Wang*. 2013. Deregulation of Oct4-centered transcriptional network promotes lung cancer progression and drug resistance. 2013 The annual meeting of Taiwan Society of Biochemistry and Molecular Biology. (Poster)
 17. **Yen-An Tang**, C.-H. Chen, Y.-C. Wang*. 2013. Deregulation of Oct4-centered transcriptional network promotes lung cancer metastasis and drug resistance. The 29th Joint Annual Conference of Biomedical Sciences. (**Oral presentation award**)
 18. F.-H. Hu, Y.-H. Lu, **Yen-An Tang** and Y.-C. Wang*. 2013. A histone deacetylase inhibitor YCW3 with antitumor properties shows synergistic activity with DNA demethylation reagent against lung cancer in preclinical studies. The 29th Joint Annual Conference of Biomedical Sciences. (Poster)
 19. **Yen-An Tang**, C.-H. Chen, Y.-C. Wang*. 2014. PTEN and TNC are novel Oct4-regulating genes required for drug-resistance and metastasis in lung cancer. Young Scientists Program (YSP) fellowship of 15th IUBMB-24th FAOBMB International Conference. (**Oral presentation award**)
 20. **Yen-An Tang**, C.-H. Chen, Y.-C. Wang*. 2014. PTEN and TNC are novel Oct4-regulating genes required for drug-resistance and metastasis in lung cancer. 2014 Regional Forum Series: Global Controls in Stem Cells. (Poster)