Yi-Ju Chen, PhD

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Professional Summary

- Highly motivated scientist with expertise in Molecular Genetics, gene targeting, and Bioinformatics skills.
- Excellence in viral-based gene expression system, cell cultures and *in vivo* mouse models.
- Extensive experiences in identifying targets in cancer, diabetes, and stem cell biology.
- Discover new resource for *in vivo* beta-cell replacement therapy for diabetes.
- Demonstrate the role of FoxM1 and its targets in tumor progression.
- Elucidate the interplay among kinases, transcription factors, cancer cell proliferation and metastasis.

Professional and Educational Development

Postdoctoral Researcher, University of Pennsylvania, Philadelphia, PA, 2010-Present
- Publish paper in Cell Reports as first-author.
- Invited speaker in Keystone Symposium on Stem Cell and Reprogramming, CA, 2014.
- Identify intestinal stem cells as a new resource for beta cell replacement therapy.
- Generate both knock-in and transgenic mice as *in vivo* models.
- Design experiments and elucidate cell fate conversion from intestinal stem cells to beta cells via RNA-seq analysis.

Graduate Research Assistant, University of Illinois at Chicago, Chicago, IL, 2003-2009
- Publish two first-author and five co-authors papers
- Identify targets of FoxM1 in cell proliferation by using siRNA and cancer cell lines.
- Demonstrate that FoxM1 promotes tumor cell migration and invasion via JNK1 and MMP signaling.
- Elucidate that FoxM1 activity is controlled by sequential phosphorylation through different kinases.
  - Identify an *in vivo* phosphorylation site of FoxM1 that is required for its initial activity.

Research Assistant, National Cheng Kung University, Tainan, Taiwan, 2002-2003
- Establish a sequencing core facility for genetic polymorphism analysis and set up Taiwanese Polymorphism Marker Database (TPMD).

M.S. in Molecular Medicine, National Cheng Kung University, Tainan, Taiwan, 1999-2001
- Publish one first-author paper
- Demonstrate human oral cancer cells secrete VEGF to induce angiogenesis and elucidate the mechanism.
- Isolate Human Umbilicord Vein Endothelial Cells (HUVEC) from umbilical cord for angiogenesis assay.

Education

Ph.D., Department of Biochemistry & Molecular Genetics, University of Illinois at Chicago, IL, USA, 2009
M.S., Institute of Molecular Medicine, National Cheng Kung University, Tainan, Taiwan, 2001
B.S., Department of Medical Technology, Chung Shan Medical University, Taichung, Taiwan, 1999

Awards and Honors

2014 Keystone Symposia Scholarship.
- Awarded for Keystone Symposium on Stem Cell and Reprogramming, California, USA, April 2014.
- Only 13 people received scholarships in this international symposium.

2014 Biomedical Postdoctoral Travel Award.
- Awarded from Biomedical Postdoctoral Program at University of Pennsylvania.

Mentoring Experience

- As a postdoctoral researcher, I mentored undergraduate-, graduate-, and summer students resulting in:
  - Publication in peer-reviewed journal
  - Poster presentation in national meeting
- As a graduate student, I mentored a junior graduate student resulting in numerous publications in peer-reviewed journals

Skills

- **Cell Biology skills:** 3D extracellular matrix culture; confocal microscopy; isolation of primary cells, establishment of cell lines; stem cell culture; migration assay; invasion assay
- **Molecular Biology skills:** Genetic engineering; siRNA and shRNA-mediated gene knockdown; Retrovirus- and lentivirus-based gene delivery; Flow cytometry; Immunoprecipitation (IP); Chromatin immnunoprecipitation (ChIP); Immunofluorescence (IF); Electrophoretic mobility shift assay (EMSA); real-time PCR; GST-tagged protein expression/purification
- **Biochemistry:** ELISA; Kinase assay; Dual luciferase reporter assay; Cell proliferation assay
- **Genomic & Bioinformatics analysis:** Next-Generation Sequencing analysis; RNA-Seq analysis; Function and structure of genome; sequence alignment; BLAST; posttranscriptional modification; sequence motif identification; protein-protein interaction prediction; Primer design
- **Software:** Cytoscape, Partek Genomic Suite, Prism, Illustrator, MacVector, Vector NTI.

Professional Associations

- American Diabetes Association
- American Society for Cell Biology
- Beta Cell Biology Consortium

Professional License / Certification

Medical Technologist Certification, 1999, Taiwan

Publications

Chen YJ, Finkbeiner SR, Weinblatt D, Emmett MJ, Tameire F, Yousefi M, Yang C, Maehr R, Zhou Q, Shemer R, Dor Y, Li C, Spence JR, Stanger BZ. (2014) De novo formation of insulin-producing "neo-β-cell islets" from intestinal crypts. *Cell Reports* **6**:1046-58 **Selected for CELL REPORTS COVER (March 27th, 2014) and Biomedical Picture of the Day (BPoD) (April 27th, 2014); Recommend in Faculty of 1000**

Wang Z, Zheng Y, Park HJ, Li J, Carr JR, **Chen YJ**, Kiefer MM, Kopanja D, Bagchi S, Tyner AL, Raychaudhuri P. (2013) Targeting FoxM1 effectively retards p53-null lymphoma and sarcoma. *Mol Cancer Ther.* **12**:759-67

Wang Z, Park HJ, Carr JR, **Chen YJ**, Zheng Y, Li J, Tyner AL, Costa RH, Bagchi S, Raychaudhuri P. (2011) FoxM1 in Tumorigenicity of the Neuroblastoma cells and Renewal of the Neural Progenitors. *Cancer Res **71**:*4292-302

Dominguez-Brauer C, Brauer PM, **Chen YJ**, Pimkina J, Raychaudhuri P. (2010) Tumor suppression by ARF: gatekeeper and caretaker. *Cell Cycle*. **9**: 86-9 Review

Chen YJ, Dominguez C, Wang Z, Asara JM, Costa RH, Tyner AL, Lau LF and Raychaudhuri P. (2009) A conserved phosphorylation site within the Forkhead domain of FoxM1b is required for its activation by cyclin-Cdk1. *J Biol Chem.*, **284**: 30695-707

Dominguez-Brauer C, **Chen YJ**, Brauer PM, Pimkina J, Raychaudhuri P. (2009) ARF stimulates XPC to trigger nucleotide excision repair by regulating the repressor complex of E2F4. *EMBO Rep.*, 10: 1036-42

Wang IC*, **Chen YJ***, Hughes DE, Ackerson T, Major ML, Kalinichenko VV, Costa RH, Raychaudhuri P, Tyner AL, Lau LF. (2008) FoxM1 regulates transcription of JNK1 to promote the G1/S transition and tumor cell invasiveness. *J Biol Chem.* **283**:20770-8 *** Co-First authors**

Wang IC, **Chen YJ**, Hughes D, Petrovic V, Major ML, Park HJ, Tan Y, Ackerson T, Costa RH. (2005) Forkhead box M1 regulates the transcriptional network of genes essential for mitotic progression and genes encoding the SCF (Skp2-Cks1) ubiquitin ligase. *Mol Cell Biol*. **25**:10875-94 **Highlighted in *Microbe* Magazine (Jan. 2006); Recommended in Faculty of 1000**

Chen YJ, Jin YT, Shieh DB, Tsai ST, Wu LW. (2002) Molecular characterization of angiogenic properties of human oral squamous cell carcinoma cells. *Oral Oncol*. **38**:699-705

Conference Abstracts

Chen YJ, Finkbeiner SR, Li C, Spence J, Stanger BZ. De novo formation of insulin-producing "neo-β-cell islets" from intestinal crypts. ASCB/ifcb Annual Meeting. Philadelphia, PA, USA, Dec 2014 (**Oral presentation**)

Chen YJ, Finkbeiner SR, Li C, Spence J, Stanger BZ. De novo formation of insulin-producing "neo-β-cell islets" from intestinal crypts. Keystone Symposia: Stem Cells and Reprogramming. Olympic Valley, CA, USA, Apr 2014 (**Oral Presentation** and Poster)

Chen YJ, Weinblatt D, Finkbeiner SR, Li C, Spence J, Stanger BZ. De novo formation of insulin-producing "neo-β-cell islets" from intestinal crypts. NIDDK workshop on Imaging the Pancreatic Beta Cell. Bethesda, MD, USA, Apr 2013 (Poster)

Chen YJ. Cell cycle-dependent regulation of FoxM1 activity by phosphorylation. Emerging Information & Technology Conference-Young Investigator Conference (EITC-YIC), Harvard University, Cambridge, MA, USA, Aug 2011 (**Oral Presentation**)

Dominguez-Brauer C, **Chen YJ**, Raychaudhuri P. ARF stimulates XPC to trigger nucleotide excision repair by regulating the repressor complex of E2F4. Keystone Symposia on Emerging Themes in Tumor Suppressors: Function and Clinical Implications in the Post-Genomic Era. Sagebrush Inn and Conference Center, NM, USA, Jan 2009 (Poster)

Chen YJ, Raychaudhuri P, Costa RH. Plk1 mediated phosphorylation increase FoxM1B transcriptional activity at G2/M phase. Cold Spring Harbor Laboratory Meeting on Phosphorylation, Signaling and Disease. Cold Spring Harbor, NY, USA, May 2007 (Poster)

Chen YJ, Jin YT, Shieh DB, Wu LW. The role of angiogenesis in oral cancer cells. The Ninth Symposium on Recent Advances in Cellular and Molecular Biology, Kenting, Taiwan, Feb 2001 (Poster)

Invited Talks

Thought impossible for regenerative medicine – Direct induce "neo-islets" in adult tissues. Institute of Molecular Medicine, National Cheng Kung University, Tainan, Taiwan, Jan 2014.