### Chen-Chung Lin, Ph.D.

**Contact information**

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**CURRENT POSITION**

**Associate Service Fellow**

Centers for Disease Control and Prevention (CDC)

National Institute For Occupational Safety and Health (NIOSH)

Health Effect Laboratory Division (HELD)

Allergy and Clinical Immunology Branch (ACIB)

Bio-Organic Chemistry Team (BOCT)

Morgantown, WV, 26506, U.S.A.

**EDUCATION**

**Ph.D.**  1/2009~8/2011 **West Virginia University**  Morgantown, WV, U.S.A.

Program in Cancer Cell Biology, School of Medicine

 8/2006~12/2008 **University of Alabama at Birmingham** Birmingham, AL, U.S.A.

Department of Cell Biology, School of Medicine

* Doctoral Dissertation: *MicroRNA Regulation of Krüppel-Like Factor 4 in Breast Cancer.*
* Advisor: Dr. John Michael Ruppert

**M.S.**  9/1999~6/2001 **National Cheng Kung University** Tainan, Taiwan

Department of Physiology, College of Medicine

* Master's Thesis: *Determination of Steroidogenesis and Prostaglandin Biosynthesis Capacity in Endometriotic Lesions.*
* Advisor: Dr. Shaw-Jenq Tsai

**B.S.** 9/1995~6/1999 **National Cheng Kung University** Tainan, Taiwan

Department ofBiology, College of Science

**PEER REVIEWED PUBLICATIONS**

* **Lin CC†, Sharma SB†, Farrugia MK, McLaughlin SL, Ice RJ, Loskutov YV, Pugacheva EN, Chen D, Brundage KM and Ruppert JM\* 2015 Krüppel-Like Factor 4 signals through microRNA-206 to promote tumor initiation and cell survival.** *Oncogenesis.* 4, e155. **†**Co-first author.
* **Farrugia MK, Sharma SB, Lin CC, McLaughlin SL, Ammer AG, Stoilov P, Creighton CJ, and Ruppert JM\* 2015. Regulation of anti-apoptotic signaling by Kruppel-like factors 4 and 5 mediates** **lapatinib resistance in breast cancer.** *Cell Death and Disease.* 6, e1699.
* **Deng W, Vanderbilt DB, Lin CC, Martin KH, Brundage KM, and Ruppert JM\* 2015 SOX9 inhibits β-TrCP-mediated protein degradation to promote nuclear GLI1 expression and cancer stem cell-like properties.** *J. Cell Sci.* 128, 1123-1138.
* **Addison JB, Koontz C, Fugett JH, Creighton CJ, Chen D, Farrugia MK, Padon RR, Voronkova MA, McLaughlin SL, Livengood RH, Lin CC, Ruppert JM, Pugacheva EN and Ivanov AV\* 2015 KAP1 promotes proliferation and metastatic progression of breast cancer cells.** *Cancer Res*. 75(2):344-55.
* **Sharma SB†, Lin CC†, Farrugia MK, McLaughlin SL, Ellis EJ, Brundage KM, Salkeni MA, and Ruppert JM\* 2014 microRNAs-206 and -21 Cooperate to Promote RAS-ERK Signaling by Suppressing the Translation of RASA1 and SPRED1.** *Mol Cell Biol.* 34(22):4143-64. **†**Co-first author.

* **Chou CF, Lin WJ, Lin CC, Luber AC, Godbout R, Mann M, and Chen CY\* 2013 DEAD Box Protein DDX1 Regulates Cytoplasmic Localization of KSRP.** *PLoS One.* 8(9):e73752.
* **Lin WJ, Zhang X, Lin CC, Tsao J, Zhu X, Cody JJ, Coleman JM, Gherzi R, Luo M, Townes T, Parkers JM, and Chen CY\* 2011 Post-transcriptional Control of Type I Interferon Genes by KSRP in The Innate Immune Response Against Viral Infection.** *Mol Cell Biol.* 31(16):3196-207.
* **Lin CC, Liu LZ, Addison JB, Ivanov AV, and Ruppert JM\* 2011 A KLF4-microRNA-206 Autoregulatory Feedback Loop can Promote or Inhibit Protein Translation Depending upon Cell Context.** *Mol Cell Biol.* 31(12):2513-27.
* **Wu MH, Shoji Y, Wu MC, Chuang PC, Lin CC, Huang MF, and Tsai SJ\* 2005 Suppression of Matrix Metalloproteinase-9 by Prostaglandin E2 in Peritoneal Macrophage Is Associated with Severity of Endometriosis.** *Am J Pathol* 167(4):1061-69.
* **Wu MH, Wang CA, Lin CC, Chen LC, Chang WC, and Tsai SJ\* 2005 Distinct Regulation of Cyclooxygenase-2** **by Interleukin-1β in Normal and Endometriotic Stromal Cells.** *J Clin Endocrinol Metab* 90(1):286-95.
* **Wu MH, Sun HS, Lin CC, Hsiao KY, Chuang PC, Pan HA, and Tsai SJ\* 2002 Distinct Mechanisms Regulate Cyclooxygenase-1 and -2 in Peritoneal Macrophages of Women with and without Endometriosis.** *Mol Hum Reprod* 8:1103-1110.
* **Wu MH, Chuang PC, Chen HM, Lin CC, and Tsai SJ\* 2002 Increased Leptin Expression in Endometriosis Cells Is Associated with Endometrial Stromal Cell Proliferation and Leptin Gene Upregulation.** *Mol Hum Reprod* 8:456-464.
* **Tsai SJ\*, Wu MH, Lin CC, Sun HS, and Chen HM 2001 Regulation of steroidogenic acute regulatory protein expression and progesterone production in endometriotic stromal cells.***J Clin Endocrinol Metab* 86:5765-5773.

**Conference ABSTRACTS and Presentations**

* **Lin CC, and Ruppert JM. “A Normal-Tumor Switch Alters the Activity of KLF4-miR-206 Signaling in Breast Cancer.”** The Experimental Biology Annual Meeting 2012, San Diego, California, USA (2012).
* **Ruppert JM, and Lin CC. “Posttranscriptional Regulation of KLF4 in Proliferating Epithelial Cells.”** 2010 FASEB Summer Research Conferences: Biology and Pathology of Krüppel-Like Factors (KLFs), Steamboat Springs, Colorado, USA (2010).
* **Lin CC, and Ruppert JM. “Identification of a Translational Control Element Involved in KLF4 Posttranscriptional Regulation.”** The Experimental Biology Annual Meeting 2010, Anaheim, California, USA (2010).
* **Lin CC, and Ruppert JM. “Posttranscriptional Regulation of KLF4 Gene Expression.”** The 100th Annual Meeting of the American Association for Cancer Research, Denver, Colorado, USA (2009).
* **Chuang PC, Wu MH, Lin CC, Pan SA, and Tsai SJ “Distant Mechanisms Regulate Cyclooxygenase-2 Expression in Peritoneal Macrophage of Women with or without Endometriosis.”** The 35th Annual Meeting of the Society for the Study of Reproduction, Baltimore, Maryland, USA (2002).
* **Lin CC, Wu MH, and Tsai SJ “Stimulation of Steroidogeneic Acute Regulatory Protein mRNA Expression by Prostaglandin E2 in Endometriotic Stromal cells.”** The 34th Annual Meeting of the Society for the Study of Reproduction, Ottawa, Ontario, Canada (2001).
* **Chuang PC, Wu MH, Lin CC, Pan SA, and Tsai SJ “Distant Regulation of Luteinizing Hormone Receptor, Prostaglandin F2α Receptor, and Prostaglandin G/H Synthase-2 on Human Granulosa-Lutein Cells.”** The 33rd Annual Meeting of the Society for the Study of Reproduction, Madison, Wisconsin, USA (2000).
* **Lin CC, Wu MH, and Tsai SJ “Quantification of Prostaglandin G/H synthase-2 mRNA Expression in Patients with Endometriosis.”** The 6th Taiwan-Hong Kong International Symposium, Kaohsiung, Taiwan (2000).

**PROFESSIONAL EXPERIENCE**

07/2016~Current **National Institute For Occupational Safety and Health (NIOSH)** Morgantown, WV, USA

 Health Effect Laboratory Division (HELD), Allergy and Clinical Immunology Branch (ACIB),

 Bio-Organic Chemistry Team (BOCT)

Associate Service Fellow

* Characterization of 4,4'-Methylenediphenyl Diisocyanate (MDI) exposure biomarkers in occupational asthma.

08/2011~06/2016 **West Virginia University** Morgantown, WV, USA

 **Mary Babb Randolph Cancer Center,** **Dr. J. Michael Ruppert’s Laboratory**

Postdoctoral Research Fellow

* Identified KLF4-miR-206/21 signaling maintains RAS-GTP levels and RAS-MEK-ERK signaling in triple-negative breast cancers (TNBCs).
* Revealed the tumor initiation and pro-survival roles of KLF4-miR-206 signaling in TNBCs.
* Determining the therapeutic potential of newly identified KLF4-miR-206/21 regulatory axis in breast cancer using anti-miR therapy**.**

09/2005~08/2006 **University of Alabama at Birmingham** Birmingham, AL, USA

 **Department of Biochemistry & Molecular Genetics, Dr. Ching-Yi Chen’s Laboratory**

Research Assistant

* Participated in the project “Determination of the minimal region of REV and KSRP protein participated in the degradation of HIV-genome**”**.
* Identified DDX1 as one of the novel proteins associated with KSRP and participated in KSRP mediated regulation of mRNA stability
* Helped in the generation of KSRP-null mouse.

12/2004~08/2005 **Academia Sinica**  Taipei, Taiwan

 **Institute of Biomedical Sciences, Dr.** **Yuh-Shan Jou’s Laboratory**

Research Assistant

* Participated in the project “The genomic variants responding to Iressa chemotherapy in human lung cancer**”**.

01/2004~05/2004 **National Taiwan University Hospital** Taipei, Taiwan

**Lung Cancer Research Laboratory**

Research Assistant

* Participated in the project “Determine roles of *Snail* gene family in human lung cancer**”**.

07/2001~03/2002 **National Cheng Kung University** Tainan, Taiwan

**Bioinformatic core center, Dr. Shaw-Jenq Tsai & Dr. H. Sunny Sun’s Laboratory**

Research Assistant

* Participated in the project “Building up the Bioinformatics Core Center at the Southern Taiwan in National Cheng Kung University.”
* Compiled a Megablast-result database of Long-Copy-Repeat on Chromosome 22.

03/1998~09/1999 **National Cheng Kung University** Tainan, Taiwan

**Department of Physiology, Molecular Endocrinology & Reproductive Physiology Laboratory**

Undergraduate student Internship

* Participated in the research “Regulation of Gene Expression in the Corpus Luteum by Luteotrophic and Luteolytic Hormones.”

07/1998~02/1999 **National Cheng Kung University** Tainan, Taiwan

**Department of Physiology, Molecular Endocrinology & Reproductive Physiology Laboratory**

Undergraduate student Internship

* Applied for under-graduate students’ research grant from National Science Council entitled “The Effects of PGF2α on PGHS-2 mRNA Expression in Human Granulosa Cells.”
* Executed, and reported the results of this project mentioned above.

07/1997~09/1997 **National Yang Ming University** Taipei, Taiwan

**Institute of Biochemistry, Dr. Kin-Fu Chak’s Laboratory**

Summer Student Internship

* Participated in the project “Identification of Novel *cry*-Type Genes from *Bacillus thuringiensis* Strains on the Basis of Restriction Fragment Length Polymorphism of PCR-Amplified DNA”.

**ManadAtory Military Services**

03/2002~01/2004 **Zhudong Veterans’ Hospital of Taiwan** Hsinchu County, Taiwan

**Department of Medical Laboratory Sciences**

Medical laboratory technician

* Withdrew blood from patients for out-patient clinic.
* Performed clinical laboratory exams on the blood sample, body fluids, etc.
* Provided services to the veterans of Taiwan and general public of Zhudong area.

**HONORS , GRANTS & SCHOLARSHIPS**

2002 *Recipient,* Excellent Master’s Thesis Award from the National Science Council of Taiwan.

 \* Received Scholarship for Excellent Academic Performance.

2000 *Recipient,* Excellent Grade Award at Academic year 2000 from Dept. of Physiology.

 \* Received this award for the 1st ranking of the class in this year.

2000 *Recipient,* Excellent Presentation Performance Award in Dept. of Physiology.

1998 *Recipient,* National Science Council of Taiwan Undergraduate Students’ Research Grant.

**Teaching**

02/2000~01/2001 **National Cheng Kung University** Tainan, Taiwan

**Department of Physiology**

Teaching Assistant

* Taught Physiology Lab Course for all undergraduate students from 5 academic departments in College of Medicine.

**MEMBERSHIP**

2009~2014 **American Society for Biochemistry and Molecular Biology (ASBMB)**

**TECHNIQUES**

* **Molecular biological techniques:**
	1. Nucleic acid based: DNA isolation and purification; DNA restriction fragment length polymorphism (RFLP); Chromatin immunoprecipation (ChIP); Molecular cloning techniques (including sub-cloning, site-direct mutagenesis, and plasmid constructions); RNA isolation (from primary tissues, cultured cells and Laser capture microdissection tissue samples); microRNA purification and assays; Northern blot; Polymerase chain reaction (PCR) primer design; Reverse-transcription (RT); Quantitative real-time PCR; Standard curve-quantitative competitive-RT-PCR (SC-QC-RT-PCR); Promoter and translational luciferase reporter assays.
	2. Protein based: Protein extraction; Western blot; Enzyme-linked immunosorbent assay (ELISA); Immunoprecipation; 35S-Met metabolic labeling for *de novo* protein synthesis; and Gelatin zymography.
* **Cell cultures and *in vitro* assays:** Primary cell isolation from clinical specimens or animal tissues; Tissue culture; Culture media preparation; Plasmid transfection; Retroviral and/or Lentiviral transduction; Wound scratch assay; *In vitro* cell migration and invasion assay using transwell; Soft agar assay; Flowcytometry analysis; Fluorescence-activated cell sorting (FACS); ATPlite assays for cell proliferation and cell survival; Apoptosis analyses; Dose response cell assay; Chemotherapy resistance cell assay.
* ***In vivo* assays:** Xenograftic animal assays including patient derived xenografts (PDX); Tumor initiation assay using limiting dilution; Transgenic mice generation; Genome typing for transgenic mice; Animal breeding.
* **Imaging:** Immunohistochemistry (IHC); Confocal microscopy; Laser capture microdissection (LCM);
* **Computer skills:**
	1. Office software: Microsoft Word; Excel; Power Point; Access; Adobe Acrobat.
	2. Imaging processing software: Adobe Photoshop; CorelDRAW Graphics Suite; Image J.
	3. Graphic and Statistical software: GraphPad Prism.
	4. Bibligographies, citations and references software: Endnote; Reference Manager**.**