

Tzung-Ju Wu

dahw0706@gmail.com

14 Temple St, APT 206, Framingham, MA, 01702

(732) 325-5375

SUMMARY

- ❖ **Multidisciplinary Ph.D. scientist** with comprehensive background in molecular cell biology, biochemistry, microbiology, bioengineering and bio-analytical chemistry
- Expertise in cell-based assay development for **biomarker identification** and **protein characterization**
- Expertise in development of genome-modified human cancer cells by **CRISPR/Cas9 genomic editing technology**
- Specialized in **pharmacokinetics (PK)** studies by using LC-MS/MS
- Strong in experimental design, **collaboration/leadership** in diverse teams, **problem solving** and **analytical skills**

EXPERIENCE

❖ **Scientist I, Biological Mass Spectrometry**

Genzyme, March 2015 – Present

- Developed the high throughput quantification assay of humanized antibody for non-clinical PK studies
- Supported the quantitative assay to determine sphingolipids level in lysosomal storage disease patients for biomarker development

❖ **Graduate Researcher**

Rutgers University, September 2007 – October 2014

- Discovered the potential biomarker to predict drug sensitivity of human cancer cells to rapamycin
- Developed a novel method for drug screening in yeast by rendering yeast cells sensitive to small molecules
- Established a yeast-screen system to identify drug-resistant mutations of mTOR in human cancer cells
- Established a CRISPR/Cas9 *in vivo* genome editing system to engineer genome-modified human cancer cells for validation of drug-resistant mutations
- Elucidated the binding mode of inhibitors at the active site of mTOR by protein structure analysis

❖ **Research Assistant**

National Yang-Ming University, Taiwan, September 2005 – June 2007

- Determined the interaction between Ku protein, the component of DNA repair machineries with telomere in yeast
- Characterized the binding mode of Ku protein on yeast telomere by using *in vitro* recombinant protein system

SPECIALIZED SKILLS

❖ **Bio-analytical :**

- LC-MS/MS
- ELISA
- Enzyme kinetics
- HPLC
- FACS

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❖ Gene Manipulation and Editing:

- Gene delivery by retro and lentivirus
- Site-directed mutagenesis
- In vivo genome editing
- PCR
- RNAi/shRNA knock-down
- Cloning
- Southern blotting

❖ Protein Characterization and Analysis:

- Protein expression and purification in multiple organisms (bacteria, yeast, insect, and mammalian cells)
- Immunoprecipitation
- Western blot analysis
- Electrophoretic mobility shift assays (EMSA)
- SPR/Biacore
- SDS-PAGE
- Immunofluorescence

❖ Cell Biology:

- Mammalian cell cultures
- Transient and stable transfections
- Stable cell-line generation
- Cell growth/apoptosis assay

❖ Signaling Pathway Study:

- Protein kinase activity assay
- Phospho-protein detection/characterization
- Pull-down assay

AWARDS

- The Award of Excellent Poster Presentation, 20th Symposium on Recent Advances in Biomedical Science, Taiwan, 2005
- First Prize in the Master Theses Competition, Institute of Biopharmaceutical Science, National Yang-Ming University, Taiwan, 2005
- The Award of Young Investigator, Cellular and Molecular Pharmacology Program, Rutgers University, NJ, 2011

EDUCATION

Ph.D. in Cellular and Molecular Pharmacology

Rutgers University-Cancer Institute of New Jersey, NJ
2007-2014

M.S. in Biopharmaceutical Science

Nation Yang-Ming University, Taiwan
2003-2005

B.S.C. in Chemistry

National Taiwan University, Taiwan
1999-2003

PUBLICATION

- Wu TJ, Chiang YH, Lin YC, Tsai CR, Yu TY, Sung MT, Lee YH, Lin JJ
“Sequential loading of *Saccharomyces cerevisiae* Ku and Cdc13p to telomeres”
J. Biol. Chem. 284(19): 12801-12808, 2009
- Wu TJ, Wang XW, Zhang YJ, Meng LH, Kerrigan JE, Burley SK, Zheng XF
“Identification of a Non-Gatekeeper Hotspot for Drug-Resistant Mutations in mTOR Kinase”, Cell Reports 11, 446-459, 2015

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- PRESENTATION**
- Poster presentation: “Characterization of *Saccharomyces cerevisiae* Ku protein at telomere” The Twentieth Symposium on Recent Advances in Biomedical Science, Taiwan, 2005
 - Poster presentation: “The ATP- competitive mammalian target of rapamycin (mTOR) inhibitors reverse the rapamycin resistance in breast cancer cells” New Jersey Annual Retreat on Cancer Research, 2011
 - Poster presentation: “The ATP-competitive mammalian target of rapamycin (mTOR) inhibitors suppress proliferation and induce apoptosis in the acquired rapamycin resistant breast cancer cells” AACR Conference on Molecularly Targeted Therapy: Mechanisms of Drug Resistance, 2012