

YA-SHIUAN LAI

Title: Ph.D. Candidate
Contact: Plant Research Laboratory
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EDUCATION

Ph.D. Candidate, Cellular and Molecular Biology, 09/2012–present.

M.S., Life Science, National Central University, Taiwan, 09/2005–07/2007.

B.S., Molecular and Biochemistry, National Chiayi University, Taiwan, 09/2001–07/2005.

RESEARCH EXPERIENCE

Graduate Student Researcher: Plant Research Laboratory, Michigan State University, 09/2012–present.

Project: My goal is to identify the novel transducer that is involved in the unfolded protein response (UPR) in the rockcress plant (*Arabidopsis*).

Advisor: Dr. Federica Brandizzi.

Visiting Scholar: Plant Research Laboratory, Michigan State University, 02/2011–09/2012.

Project: I explored mechanisms of UPR transduction in plants by testing whether the morphology of the endoplasmic reticulum (ER) affects its function.

Advisor: Dr. Federica Brandizzi.

Research Assistant, Agriculture Biotechnology Research Center, Academia Sinica, Taiwan, 09/2007–01/2011.

Project: I explored the underlying mechanism of phosphate homeostasis in *Arabidopsis*.

Advisor: Tzu-Jen Chou.

PUBLICATIONS

C Ruberti, **YS Lai**, F Brandizz. “BAX-Inhibitor1 antagonizes the pro-survival role of bZIP28 in the signaling circuitry for ER stress resolution in plants.” *The Plant Journal*. 2015, accepted with minor revision.

G Stefano, L Renna, **YS Lai**, E Slabaugh, N Mannino, RA Buono, MS Otegui, F Brandizzi. “ER network homeostasis is critical for plant endosome streaming and endocytosis.” *Cell Discovery*. 2015, 1.

L Maneta-Peyret*, **YS Lai***, G Stefano, L Fouillen, F Brandizzi, P Moreau. “Phospholipid biosynthesis increases in RHD3-defective mutants.” *Plant Signaling & Behavior*. 2014, 9 (9), 947–953.

YS Lai, G Stefano, F Brandizzi. “ER stress signaling requires RHD3, a functionally conserved ER-shaping GTPase.” *Journal of Cell Science*. 2014, 127 (15), 3227–3232.

TY Liu, TK Huang, CY Tseng, **YS Lai**, SI Lin, WY Lin, JW Chen, TJ Chiou. “PHO2-Dependent degradation of PHO1 modulates phosphate homeostasis in *Arabidopsis*.” *The Plant Cell*. 2012, 24 (5), 2168–2183.

EXPERIMENTAL SKILLS

- Molecular biology experimental skills: gene cloning, quantitative real-time PCR, phytohormone extraction; Southern, Northern, and Western blot.
- Transient expression: transform plasmid into tobacco plants.
- Generating transgenic plants: agrobacterium mediated transformation and plant hybridization.
- Microscopy: stereo microscopy, FRET analysis, and confocal microscopy.
- General genetic experimental skills: *E. coli* and yeast transformation, yeast two-hybrid assay.
- In-vitro protein expression: expressing protein in *E. coli* and purifying protein using column.
- High-throughput experimental skills: DNA microarray and RNA sequencing.

COMPUTATIONAL SKILLS

- Bioinformatics application: NCBI GeneBank blast, TAIR, ARAMEMNON, and *Saccharomyces* genome database searches.
- R program.
- Sigma program.
- Prism program.
- Vector NTI software.
- Microsoft Office programs.