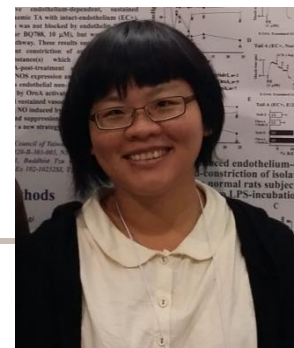


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CURRICULUM VITAE

Date of Birth: February 21, 1980
Place of Birth: Pingtung, Taiwan
Citizenship: Taiwan

學歷 EDUCATION

07/2004-07/2013 **Doctor of Philosophy (Ph.D., Pharmacology)**, Tzu Chi University
07/2002-07/2004 **Master's of Science (Pharmacology & Toxicology)**, Tzu Chi University
07/1995-06/2000 **Bachelor of Science (Pharmacology)**, University of Tajen

個人經歷 PROFESSIONAL EXPERIENCE

- **07/2004-07/2013 PhD. student, Pharmacology,**
Trained in Tzu Chi University, Institute of Medical Sciences, Center for Vascular Medicine, Hualien, Taiwan
Conducted dissertation research with Dr. Tony J-F. Lee. Graduate dissertation entitled, "Oroxylin A for protection and treatment against endotoxemic shock". From the perspective of vascular biology, we explore the pharmacological mechanism of Oroxylin A (OroA, a natural flavonoid compound from *Scutellaria baicalensis*) and its possible therapeutic strategies to try to improve endotoxin-induced bacteremia.
- **08/2013-08/2018 Postdoctoral trainee**
07/2012-08/2015 Tzu Chi University, Institute of Medical Sciences
08/2015-08/2018 Center of CardioVascular, Buddhist Tzu Chi General Hospital, Hualien
- **08/2018-current Assistant Researcher and Assistant Professor**
CardioVascular Research Center, Department of Medical Research, Hualien Tzu Chi Hospital
(助理研究員; 花蓮慈院心臟醫學發展中心暨心血管研究中心)
Teaching in Tzu Chi University of Science and Technology, Hualien
(部定助理教授; 助理字第 151732 號).

研究經歷 RESEARCH/WORK EXPERIENCE

Natural plant medicine/Chinese herbal medicine/pharmacognosy (天然藥物/中草藥/生藥學), vascular biology (血管生物學), cardiovascular pharmacology (心血管藥理學), and cerebral autoregulation (腦循環神經學).

Summarized research experience:

- 1) Investigation of candidate drugs extracted from natural plants for reversing endotoxemic refractory hypotension.
- 2) Examinations of stress-induced gene ATF3 in obesity-relative vascular disease.
- 3) Collaborative research: Role of fatty acid in the rat central nerve system and superior cervical ganglion transmission (detailed information in ***ONGOING COLLABORATION PROJECTS***).

The main research topic in the past was to explore the pharmacological mechanism of Oroxylin A (OroA, a natural flavonoid compound) and its possible therapeutic strategies from the perspective of vascular biology to improve endotoxemia. Explain the new mechanism that OroA regulates microRNA expression and protects against endotoxin-induced lung injury (refer to references 1, 2, 4, 7, 8, and 9). A novel vascular regulatory factor, long-chain fatty acid substance palmitic acid methyl ester (PAME), was isolated from rat aortic perivascular adipocytes (PVAT). The vascular tension system and biochemical substance series system were used to define the function of PAME's in regulating hypertension. The relevant physiological and pathological mechanisms occur (refer to reference 6). In 2017, Professor Dr. Tsonwin Hai from the Ohio State Institute of Neurology provided complete gene knockout mice to start research on the role and mechanism of the transcription factor ATF3 gene in regulating changes in vascular function caused by high-fat diet feeding and improving obesity-induced cardiovascular dysfunction. Our research results prove that the ATF3 gene protects vascular function and regulates blood pressure (refer to references 10, 11, and 12).

A vascular biologist with 15 years of experience designing and performing experiments focusing on pharmacology for the cardiovascular system, vascular biology, natural products, and the immune response to infection.

Published 5 first-author, 3 Co-corresponding manuscripts, and 4 coauthor manuscripts in scientific journals (detailed information in ***PUBLICATIONS***).

教學經歷 TEACHING EXPERIENCE

Courses offered by Tzu Chi University of Science and Technology:

Taught in Chinese: *Pharmacology* (Department of Nursing/四技護理系)

Pharmacy (Five Specialties/五專部)

All courses taught in English: *Medication Safety* (Department of Long-term Care-Philippines Special Class/菲律賓海外專班)

技術經驗 TECHNICAL EXPERIENCES

- » Animal model experience: Rodent endotoxemia models, rodent acute lung injury (ALI) animal models, rodent acute cerulein-induced pancreatitis model, obese model and various animal microsurgery (survival and non-survival surgeries). Production, breeding, and genotyping of conditional knockout mice.
- » Blood vessel myography was used to measure the contractility of ring segments of the arteries.
- » General cell culture techniques including primary aortic endothelial cells, vascular smooth muscle cells, adipocyte cell culture, BAEC cells, A7R5 cells, RAW264.7 cell line, and BV2 microglia cells.
- » Immunofluorescence, immunohistochemistry, hematoxylin and eosin Y staining.
- » Gene microarray analysis, western blots, ELISA, RT-PCR, next generation sequencing (NGS), and proteomics.
- » Metabolic studies, hormone measurement, electrophysiology, and telemetry system.
- » Proficient in general Microsoft applications, SPSS, Sigma Plot, and Prism statistics/data analysis programs.

學術期刊論文發表著作 PUBLICATIONS (07/2012-current)

1. **Tseng TL**, Chen MF, Tsai MJ, Hsu YH, Chen CP, *Lee TJ. (2012) Oroxylin-A rescues LPS-induced acute lung injury via regulation of NF- κ B signaling pathway in rodents. *PLoS One*. 7(10):e47403. doi: 10.1371/journal.pone.0047403. Epub 2012 October 10. (SCI, IF: 3.7) 本人為第一作者
2. Liu CH, Chen MF, **Tseng TL**, Chen LG, Kuo JS, *Lee TJ. (2012) Oroxylin A, but not vasopressin, ameliorates cardiac dysfunction of endotoxemic rats. *Evid Based Complement Alternat Med*. 2012:408187. doi: 10.1155/2012/408187. Epub 2012 October 24. (SCI, IF: 2.175)
3. Lai PF, Cheng CF, Lin H, **Tseng TL**, Chen HH, Chen SH (2013) ATF3 Protects against LPS-Induced Inflammation in Mice via Inhibiting HMGB1 Expression. *Evid Based Complement Alternat Med*. 2013;2013:716481. (SCI, IF: 2.175) 與急診部賴佩芳醫師合作
4. **Tseng TL**, Chen MF, Liu CH, Pang CY, Hsu YH, *Lee TJ. (2016) Induction of endothelium-dependent constriction of mesenteric arteries in endotoxemic hypotensive shock. *British Journal of Pharmacology* (SCI, IF: 6.3) 本人為第一作者
5. **Tseng TL**, Rajesh G Mishra, Chen MF, PY Chen, *Lee TJ. (2016) Bacterial toxin-induced abbreviated urea cycle in porcine cerebral vascular smooth muscle. *Vascular pharmacology* (SCI, IF: 3.8) 本人為第一作者
6. Liu CH, Hsu HJ, **Tseng TL**, Lin TJ, Weng WH, Chen MF, *Lee TJ. (2020) COMT-catalyzed palmitic acid methyl ester biosynthesis in perivascular adipose tissue and its potential role against hypertension. *Journal of Pharmacology and Experimental Therapeutics* (SCI, IF: 3.65) 與慈濟大學藥理學科劉晉宏老師合作

7. **Tseng TL**, Chen MF, Hsu YH, *Lee TJ. (2020) OroxylinA reverses lipopolysaccharide-induced adhesion molecule expression and endothelial barrier disruption in the rat aorta. Toxicology and Applied Pharmacology (SCI, IF: 3.7) 本人為第一作者
8. Li HF, Wu YL, **Tseng TL**, Chao SW, Lin H, and Chen HH. (2020) Inhibition of miR-155 potentially protects against Lipopolysaccharide-induced acute lung injury through the IRF2BP2-NFAT1 pathway. American Journal of Physiology-Cell Physiology (SCI, IF: 3.52) 與台北醫學大學生理學科林恆老師合作
9. **Tseng TL**, WY Ho, PJ Huang, JZ Liao, KH Lee. (2022) Oroxylin-A and its phosphonate derivative potentiate eNOS/NO-mediated relaxation and attenuate vasoconstrictor-induced contraction in the mouse aorta. Journal of Pharmacological Sciences (SCI, IF: 3.37) 本人為第一作者; 與嘉南藥理科技大學藥學系李冠漢老師合作
10. Li HF, HL Liu, PY Chen, Lin H, and **Tseng TL**. (2022) Role of PVAT in obesity-related cardiovascular disease through the buffering activity of ATF3. iScience (SCI, IF: 6.17) 本人為通訊作者;與台北醫學大學生理學科林恆老師合作
11. Li HF, Chen HH, **Tseng TL**, and Lin H. (2023) Perivascular adipose tissue- and adipocyte-derived extracellular vesicles maintain vascular homeostasis. Heliyon 9 (2023) e22607 本人為共同通訊作者
12. Lin H, Li HF, and **Tseng TL**. (2023) ATF3 facilitated PVAT anticontractile activity and vasorelaxation by governing adipocyte-derived factor HDL-bound S1P release. British Journal of Pharmacology (under review) 本人為通訊作者

國外會議發表 PRESENTATIONS (07/2016-current)

1. **Tseng TL**, MF Chen, CH Liu, *Lee TJ. (2016) Oroxylin A-induced Endothelium-dependent Constriction of Tail Arteries of Endotoxemic Hypotensive Rats. Experimental Biology, Oral and Poster Presentation, San Diego, USA.
2. **Tseng TL**, MF Chen, CH Liu, CY Pang, YH Hsu, *Lee TJ. (2016) Novel strategy of endothelium-dependent activation of muscle RhoA/ROCK pathway in amelioration of endotoxemic hypotensive shock. 7th Scientific Meeting of Asian Society for Vascular Biology, Oral and Poster presentation, Hualien, Taiwan.
3. **Tseng TL**, MF Chen, CH Liu, CY Pang, YH Hsu, *Lee TJ. (2017) Oroxylin A suppresses adhesion molecule expression and endothelial barrier disruption in endotoxemic arteries. Experimental Biology, Oral and Poster Presentation, Chicago, USA.
4. **Tseng TL**, Mei-Fang Chen, Chin-Hung Liu, and Tony J.F. Lee (2018, Apr). Induction of ET-1- and non-ET-1-mediated endothelium-dependent vasoconstriction in endotoxemic hypotensive shock. Experimental Biology 2018, San Diego, USA.

5. **Tseng TL**, MF Chen, *Lee TJ. (2019) Oroxylin A enhances rat serum-induced contractions via activation of the 5-HT/GRK2 pathway in smooth muscle cells of rat tail arteries. The 92nd Annual Meeting of the Japanese Pharmacological Society, Poster presentation, Osaka, Japan.
6. **Tseng TL**, WY Ho, PJ Huang, JZ Liao, KH Lee. (2022, Oct) Oroxylin-A and its phosphonate derivative potentiate eNOS/NO-mediated relaxation and attenuate vasoconstrictor-induced contraction in the mouse aorta. 2022. The 5th Taiwan Joint Conference of Pharmacy and Pharmaceutical Sciences-New Horizons for Pharmacy, Poster presentation, Taipei, Taiwan.
7. YH Sue, Li HF, PY Chen, Lin H, and **Tseng TL**. (2023, Mar) A distinguishable role of PVAT in obesity-related cardiovascular disease through vasoconstrictors' buffering activity of ATF3. The 100 Annual Meeting of the Japanese Physiology Society, Poster presentation, Kyoto, Japan.
8. YH Sue, Li HF, PY Chen, Lin H, and **Tseng TL**. (2024, Mar) ATF3 facilitates PVAT anticontractile activity and vasorelaxation by governing adipocyte-derived factor HDL-bound S1P release. The 101 Annual Meeting of the Japanese Physiology Society, Poster presentation, Fukuoka, Japan. (abstract submitted)

院外得獎經歷 ACADEMIC/PROFESSIONAL AWARDS

1. Natural Products Young Investigator Award (天然藥物年輕研究學者獎). 15th World Congress on Basic and Clinical Pharmacology IUPHAR, June 17-22, 2006, Beijing, China.
2. Young Investigator Award (年輕研究學者獎). 7th Scientific Meeting of Asian Society for Vascular Biology ASVB, October 27-29, 2016, Hualien, Taiwan.

科技部計畫 RESEARCH PROJECT

1. 科技部 個人型計畫 MOST 111-2320-B-303-001 (111/08/01-112/07/31)

中文名稱: 探討活化轉錄因子 3 保護高脂肪飲食誘發心血管變異之機制

英文名稱: The protective mechanism of ATF3 in high-fat diet-induced cardiovascular dysfunction

2. 國科會 個人型計畫 NSTC 112-2320-B-303-001 (執行中)

中文名稱: 探討 ATF3 與 IRF4-PGC-1 α 複合體控制棕色/米色脂肪細胞誘導血管舒張因子合成和分泌並參與血管張力調控分子機轉與脂質轉換的保護應用

英文名稱: The molecular mechanism and possible translational application of the ATF3-IRF4-PGC-1 α complex govern brown/beige adipocyte-derived vasorelaxation factors biosynthesis program and Vaso protective pathway.

3. 國科會 個人型計畫 (新案申請中)

- a. 中文名稱: 探討由血管周圍脂肪組織分泌含有特殊基因的外泌體在調控生理性血管力學和病理動態變化之分子機制及其在高血壓治療可能的臨床前應用

英文名稱: Molecular mechanisms of exosomes containing unique genes secreted from perivascular adipose tissue in regulating physiological and pathological vascular mechanics and their possible preclinical applications in the treatment of hypertension.

b. 中文名稱: 交感神經再塑性於心肌梗塞後心臟衰竭的病生理角色

英文名稱: The pathophysiological role of sympathetic neural remodeling in post-myocardial infarction heart failure