

Interventional of Cardiology Research Laboratory

Lab Introduction

To enhance the knowledge flow from molecular and genetic epidemiology to clinical medicine, the Interventional of Cardiology Research Laboratory was established in E-Da Hospital in 2007. This lab focuses on the genetic dissection of complex human diseases. The program gives special emphasis to deciphering the molecular mechanisms underlying cardiovascular disease to improve our capacities for cardiovascular disease diagnosis, prognosis, and treatment, as well as prevention. Recent research focus on four major themes: coronary artery disease, arrhythmias, heart failure, and ventricular function, vascular biology including prevention, and imaging. At the present time, three categories of research topics are included in our on-going projects:

1. Clinical and basic experimental studies of cardiovascular disease: A cohort prospective and cross-sectional investigation of risk factors, special on adipocytokines and inflammatory cytokines, in the pathogenesis, prognosis, prevention, and treatment of cardiovascular disease.
2. The electrophysiological effect of 3 protein-bounded uremic toxins: indoxyl sulfate, p-cresol, and p-cresyl sulfate on cardiomyocyte and their role in clinical arrhythmogenesis.
3. Developing and evaluating the rapid test device for clinical emergency and critical markers of Troponin-I and B-type natriuretic peptide detection.

Lab Members

Lab Administrator: Yung-Chieh Yen, M.D., Chao-Ping Wang, M.D., Chia-Chang Hsu, M.D., I-Ting Tsai, M.D., Li-Wen Lin, M.D., Yung-Chuan Lu, M.D., Wei-Chin Hung, M.D., Teng-Hung Yu, M.D., Cheng-ching Wu, M.D., Lee, Thung-Lip, M.D., Hsuan, Chin-Feng, M.D., Wei, Ching-Ting, M.D., Chia-Chi Chen, M.D.

Assistant Researcher : Fu-Mei Chung, Ph.D., Pei-Yang Tai, I-Ching Chen, Bo-Lun Lai

Contact Information

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Techniques:

Cell culture

RT-PCR

qPCR

ELISA

Paraffin block sectioning

Immunohistochemistry

Immunofluorescent stain

Equipments:

Polymerase chain reaction cyclers

Microcentrifuge

Digital dry bath

Magnetic stirrer

4°C, -20°C refrigerators, and liquid nitrogen tank (20L)

Research Projects

Project titles	PI	Source	Duration
Genetic polymorphism of transcription factor 21 in the pathogenesis of the severity of coronary artery disease.	Chao-Ping Wang	EDAH	2024/03~2025/02
Genetic polymorphism of transcription factor 7 in the pathogenesis of acute myocardial infarction.	Teng-Hung Yu	EDAH	2024/03~2025/02
Study on Sfrp5/Wnt5a levels and heart rate variability in general population and their relationship with non-alcoholic fatty liver disease.	Cheng-Ching Wu	EDCH	2024/03~2025/02
Exploring the relationship between transcription factor 7 like 1 and hepatocellular carcinoma.	Chia-Chang Hsu	EDDH	2024/03~2025/02
Genetic polymorphism of transcription factor 7-like 2 in the pathogenesis of type 2 diabetes mellitus.	Yung-Chuan Lu	EDAH	2024/03~2025/02
Exploring the relationship between C-type lectin domain family 1 member B and breast cancer.	Ching-Ting Wei	EDAH	2024/03~2025/02

Selected Publications (2020~2024):

1. Chia-Chi Chen, Wei-Hua Tang, Cheng-Ching Wu, Thung-Lip Lee, I-Ting Tsai, Chin-Feng Hsuan, Chao-Ping Wang, Fu-Mei Chung, Yau-Jiunn Lee, Teng-Hung Yu*, Ching-Ting Wei* Pretreatment Circulating Albumin, Platelet, and RDW-SD Associated with Worse Disease-Free Survival in Patients with Breast Cancer. *Breast Cancer: Targets and Therapy*. 2024 Jan ;16:23-39.
2. Teng-Hung Yu, Thung-Lip Lee, I-Ting Tsai, Chin-Feng Hsuan, Chao-Ping Wang, Yung-Chuan Lu, Wei-Hua Tang, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Cheng-Ching Wu* *Transcription factor 21* rs12190287 polymorphism is related to stable angina and ST elevation myocardial infarction in a Chinese Population. *International Journal of Medical Sciences*. 2024 Jan; 21(3): 483-491.
3. Teng-Hung Yu[#], Wei-Hua Tang[#], Wei-Chin Hung, Thung-Lip Lee, I-Ting Tsai, Chin-Feng Hsuan, Chia-Chi Chen, Fu-Mei Chung, Yau-Jiunn Lee, Cheng-Ching Wu* Elevated plasma leptin levels are associated with vascular access dysfunction in patients on maintenance hemodialysis. *Journal of Clinical Laboratory Analysis*. 2023 Oct;37(19-20):e24974.
4. Teng-Hung Yu, Cheng-Ching Wu, I-Ting Tsai, Chin-Feng Hsuan, Thung-Lip Lee, Chao-Ping Wang, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Wei-Chin Hung*, Wei-Hua Tang* Circulating mannose-binding lectin concentration in patients with stable coronary artery disease is associated with heart failure and renal function. *Clinica Chimica Acta*. 2023 Aug;548:117528.
5. Chia-Chi Chen, Teng-Hung Yu, Cheng-Ching Wu, Wei-Chin Hung, Thung-Lip Lee, Wei-Hua Tang, I-Ting Tsai, Fu-Mei Chung, Yau-Jiunn Lee, Chia-Chang Hsu* Loss of ficolin-3 expression is associated with poor prognosis in patients with hepatocellular carcinoma. *International Journal of Medical Sciences*. 2023 Jul;20(8):1091-1096.
6. Wei-Chin Hung, Teng-Hung Yu, Cheng-Ching Wu, Thung-Lip Lee, I-Ting Tsai, Chin-Feng Hsuan, Chun-Yu Chen, Fu-Mei Chung, Yau-Jiunn Lee, Wei-Hua Tang* FABP3, FABP4, and heart rate variability among patients with chronic schizophrenia. *Frontiers in Endocrinology*. 2023 May;14:1165621.
7. Chi-Chang Chang[#], Chia-Chang Hsu[#], Teng-Hung Yu, Wei-Chin Hung, Shyh-Ming Kuo, Chia-Chi Chen, Cheng-Ching Wu, Fu-Mei Chung, Yau-Jiunn Lee, Ching-Ting Wei* Plasma levels and tissue expression of liver-type fatty acid-binding protein in patients with breast cancer. *World Journal of Surgical Oncology*. 2023 Feb;21(1):52.

8. Wei-Chin Hung, Teng-Hung Yu, Cheng-Ching Wu, Thung-Lip Lee, Wei-Hua Tang, Chia-Chi Chen, I-Cheng Lu, Fu-Mei Chung, Yau-Jiunn Lee, Chia-Chang Hsu* Nonalcoholic Fatty Liver Disease Is Related to Abnormal Corrected QT Interval and Left Ventricular Hypertrophy in Chinese Male Steelworkers. *Int J Environ Res Public Health*. 2022 Nov 6;19(21):14555.
9. Wei-Chin Hung#, Wei-Hua Tang#, Teng-Hung Yu, Cheng-Ching Wu, Chao-Ping Wang, Yung-Chuan Lu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Chia-Chang Hsu* Low plasma growth/differentiation factor 1 levels are associated with liver fibrosis in patients with stable angina. *J Clin Lab Anal*. 2022 Oct 21;e24745.
10. Wei-Chin Hung, Teng-Hung Yu, Chao-Ping Wang, Chia-Chang Hsu, Yung-Chuan Lu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Cheng-Ching Wu*, Wei-Hua Tang* Fibroblast growth factor 21 is associated with widening QRS complex and prolonged corrected QT interval in patients with stable angina. *BMC Cardiovasc Disord*. 2022 Sep 30;22(1):432.
11. Yung-Chuan Lu#, Chao-Ping Wang#, Wei-Chin Hung, Cheng-Ching Wu, Teng-Hung Yu, Chia-Chang Hsu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Wei-Hua Tang* Interactive effect of obesity and cognitive function decline on the risk of chronic kidney disease progression in patients with type 2 diabetes mellitus: a 9.1-year cohort study. *Int J Med Sci*. 2022; 19(11): 1660-1671.
12. Wei-Hua Tang, Wei-Chin Hung, Chao-Ping Wang, Cheng-Ching Wu, Chin-Feng Hsuan, Teng-Hung Yu, Chia-Chang Hsu, Ya-Ai Cheng, Fu-Mei Chung, Yau-Jiunn Lee, Yung-Chuan Lu* The Lower Limit of Reference of Urinary Albumin/Creatinine Ratio and the Risk of Chronic Kidney Disease Progression in Patients With Type 2 Diabetes Mellitus. *Front Endocrinol (Lausanne)*. 2022 Jun 2;13:858267.
13. Teng-Hung Yu#, Chin-Feng Hsuan#, Cheng-Ching Wu, Wei-Chin Hung, Thung-Lip Lee, I-Ting Tsai, Ching-Ting Wei, Jer-Yiing Houg, Fu-Mei Chung, Yau-Jiunn Lee, Yung-Chuan Lu* Association of plasma fatty acid-binding protein 3 with estimated glomerular filtration rate in patients with type 2 diabetes mellitus. *Int J Med Sci*. 2022 Jan 1;19(1):82-88.
14. Ching-Ting Wei, I-Ting Tsai, Cheng-Ching Wu, Wei-Chin Hung, Chin-Feng Hsuan, Teng-Hung Yu, Chia-Chang Hsu, Jer-Yiing Houg, Fu-Mei Chung, Yau-Jiunn Lee, Yung-Chuan Lu* Elevated plasma level of neutrophil gelatinase-associated lipocalin (NGAL) in patients with breast cancer. *Int J Med Sci*. 2021 May 13;18(12):2689-2696.
15. Thung-Lip Lee, Chin-Feng Hsuan, Cheng-Ching Wu, Wei-Chin Hung, I-Ting Tsai, Ching-Ting Wei, Teng-Hung Yu, I-Cheng Lu, Fu-Mei Chung, Yau-Jiunn Lee, Yung-Chuan Lu* Association between Triglyceride Glucose Index and Corrected QT Prolongation in Chinese Male Steelworkers. *Int J Environ Res Public Health*. 2021 Apr 12;18(8):4020.

16. Yung-Chuan Lu, Thung-Lip Lee, Chin-Feng Hsuan, Wei-Chin Hung, Cheng-Ching Wu, Chao-Ping Wang, Ching-Ting Wei, Teng-Hung Yu, Fu-Mei Chung, Yau-Jiunn Lee, I-Ting Tsai*. Elevated plasma fatty acid-binding protein 3 is related to prolonged corrected QT interval and reduced ejection fraction in patients with stable angina. *Int J Med Sci.* 2021 Mar 11;18(9):2076-2085.
17. Yung-Chuan Lu#, Cheng-Ching Wu#, I-Ting Tsai, Wei-Chin Hung, Thung-Lip Lee, Chin-Feng Hsuan, Teng-Hung Yu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Chao-Ping Wang*. Associations among total p-cresylsulfate, indoxyl sulfate and hippuric acid levels with hemodialysis quality indicators in maintenance hemodialysis patients. *Clin Chim Acta.* 2021 Jan; 516 (2021) 83-91.
18. I-Ting Tsai, Wei-Chin Hung, Yung-Chuan Lu, Cheng-Ching Wu, Thung-Lip Lee, Chin-Feng Hsuan, Teng-Hung Yu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Chao-Ping Wang*. Circulating hepassocin level in patients with stable angina is associated with fatty liver and renal function. *Int J Med Sci.* 2021 Jan 1;18(1):1-7.
19. Chao-Ping Wang#, Yung-Chuan Lu#, Wei-Chin Hung, I-Ting Tsai, Yu-Hung Chang, Der-Wei Hu, Chia-Chang Hsu, Cheng-Ching Wu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee*. Inter-relationship of risk factors and pathways associated with chronic kidney disease in patients with type 2 diabetes mellitus: a structural equation modelling analysis. *Public Health.* 2021 Jan;190:135-144.
20. I-Ting Tsai#, Cheng-Ching Wu#, Wei-Chin Hung, Thung-Lip Lee, Chin-Feng Hsuan, Ching-Ting Wei, Yung-Chuan Lu, Teng-Hung Yu, Fu-Mei Chung, Yau-Jiunn Lee, Chao-Ping Wang*. FABP1 and FABP2 as markers of diabetic nephropathy. *Int J Med Sci.* 2020 Aug 27;17(15):2338-2345.
21. Yau-Jiunn Lee, Chao-Ping Wang, Wei-Chin Hung, Wei-Hua Tang, Yu-Hung Chang, Der-Wei Hu, Yung-Chuan Lu, Teng-Hung Yu, Cheng-Ching Wu, Fu-Mei Chung, Chia-Chang Hsu*. Common and Unique Factors and the Bidirectional Relationship Between Chronic Kidney Disease and Nonalcoholic Fatty Liver in Type 2 Diabetes Patients. *Diabetes Metab Syndr Obes.* 2020 Apr 17;13:1203-1214.
22. Cheng-Ching Wu#, Chao-Sung Chang#, Chia-Chang Hsu, Chao-Ping Wang, I-Ting Tsai, Yung-Chuan Lu, Jer-Yiing Houg, Chi-Chang Chang, Fu-Mei Chung, Yau-Jiunn Lee, Wei-Chin Hung*. Elevated Plasma Adiponectin Levels Are Associated with Abnormal Corrected QT Interval in Patients with Stable Angina. *Int Heart J.* 2020 Jan 31;61(1):29-38.
23. Chi-Chang Chang, Chao-Ping Wang, Wei-Chin Hung, Ching-Ting Wei, Wei-Hua Tang, Cheng-Ching Wu, I-Ting Tsai, Ya-Ai Cheng, Yau-Jiunn Lee, Chia-Chang Hsu*. Circulating P-Cresylsulphate Level is Associated with Hepatocellular Carcinoma in Chronic Hepatitis B or C Virus Infection. *E-Da Medical Journal* 2020;7(1):11-21

24. Yung-Chuan Lu[#], Chi-Chang Chang[#], Chao-Ping Wang, Wei-Chin Hung, I-Ting Tsai, Wei-Hua Tang, Cheng-Ching Wu, Ching-Ting Wei, Fu-Mei Chung, Yau-Jiunn Lee, Chia-Chang Hsu*. Circulating fatty acid-binding protein 1 (FABP1) and nonalcoholic fatty liver disease in patients with type 2 diabetes mellitus. *Int J Med Sci.* 2020 Jan 14;17(2):182-190.