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ERIK FUNG



07 INFLAMMATORY DISEASES



Principal Investigator

Erik Fung



Team members

Leong Ting Lui, Amy Chung, Hiu Wing Lau, Suyi Xie, Man Hei Lam, Ka Pok Leung, Hangqi Luo, Donghao Guo, Yidan Hao, Ka Man Yu

Research Progress Summary

Erik Fung is the founder of a start-up, PROTABOLIS LIMITED, which was in operation as of November 2021. Mission of the start-up is to maximise potential of health recovery and enhancement of exercise capacity.

During the past year, Erik chaired and delivered lectures in a number of local and international conferences, including:

1. "Section 3: Conceptualization and Measurement of Frailty in Advanced Heart Failure";
2. "Asian Pacific Society of Cardiology Consensus Statement on Sports Cardiology: Pre-participation Cardiovascular Screening in Young Competitive Athletes".

Other than collaborating with 7 Hong Kong researchers, Erik and his team also fostered research collaboration with researchers at University of New South Wales and EMBL Australia (Australia), University of Copenhagen (Denmark), Huawei Finland (Finland), Universitat Autònoma de Barcelona (Spain), University College London, University of Oxford and Imperial College London (United Kingdom), and University of Pittsburgh School of Medicine (United States of America).

## Research and Scholarship

### Research Awards and Recognitions

Member's Name	Details	
	Award	Organisation
Erik Fung	Healthy Longevity Catalyst Award 2021	U.S. National Academy of Medicine
	Doctor of Medicine by Research	Imperial College London, UK

### Fellowships

Member's Name	Details	
	Fellowship	Organisation
Erik Fung	Fellow	American College of Cardiology
	Faculty Postdoctoral Fellowship	Faculty of Medicine, The Chinese University of Hong Kong

### Academic Editorship

Member's Name	Details	
	Role	Journal
Erik Fung	Editorial Board Member	International Journal of Cardiology

### Reviewer of Journal / Conference

Member's Name	Details	
	Role	Journal / Conference
Erik Fung	Reviewer	JACC: Asia
		Aging
		Transplantation Direct
		Transplantation
		Genes

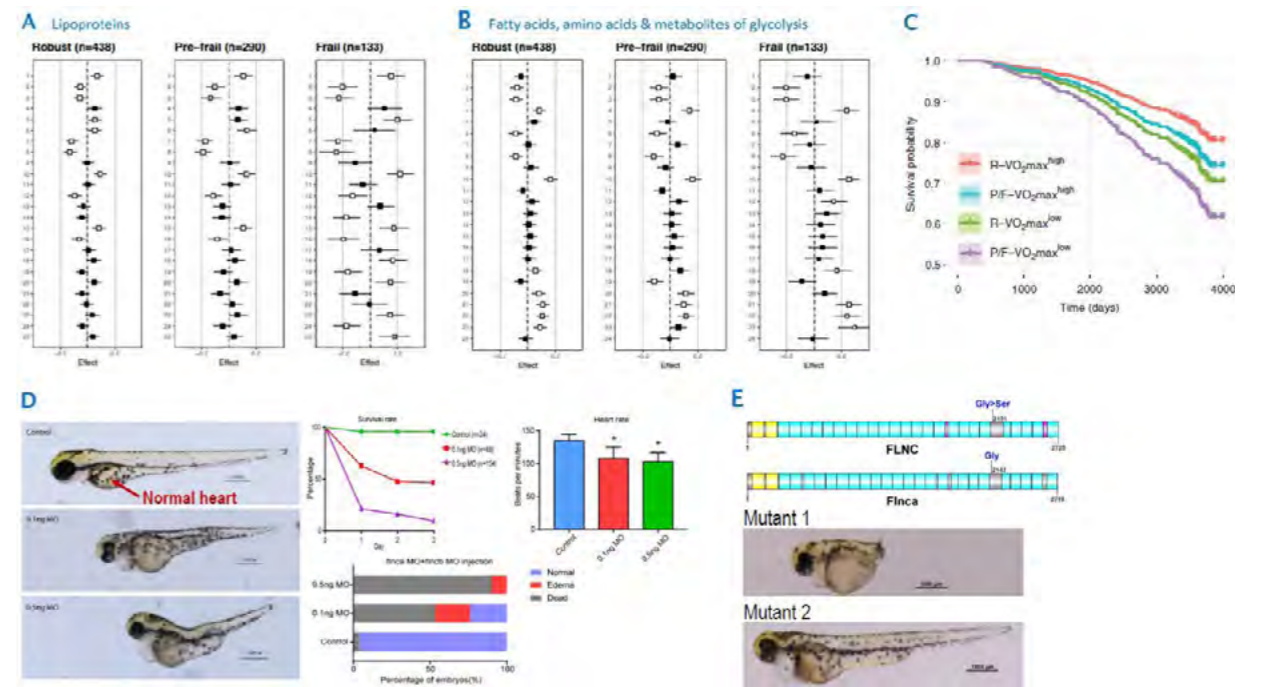
Member's Name	Details	
	Role	Journal / Conference
Erik Fung	Reviewer	Diabetic Medicine
		BMC Geriatrics
		Circulation: Heart Failure
		European Heart Journal
		Journal of American Heart Association
		Open Heart
		European Journal of Preventive Cardiology
		Heart
		ESC Heart Failure
	CHEST	
Conference Abstracts Reviewer	International Society of Heart & Lung Transplantation (ISHLT) 2020, 40 <sup>th</sup> Annual Meeting and Scientific Sessions (22–25 April 2020). Proceedings in the <i>Journal of Heart and Lung Transplantation</i> .	



## Grants and Consultancy

Name	Project Title	Funding Source	Start Date (dd/mm/yyyy)	End Date (dd/mm/yyyy)	Amount (HK\$)
Erik Fung	Fingerprinting Exhaled Volatile Compounds in Aging-Related Preclinical Heart Failure Using Breath Biopsy	United States National Academy of Medicine – Healthy Longevity Catalyst Award 2021-2022	09/2021	09/2022	USD 50,000
	Heart Failure Society of America–Asia Pacific Advanced Heart Failure Forum (HFSA–Conference) 2022 (Amended From HFSA–APAHFF 2021)	The Croucher Foundation – Croucher Foundation Sponsorship of Conferences, Workshops and Symposia 2021-2022	06/2021	08/2022	100,000
	Express Heart Check at Elderly Community Centres Across 18 Districts of Hong Kong (香港十八區長者地區中心心臟快速檢查)	The Social Innovation and Entrepreneurship (SIE) Fund, ORKTS – Knowledge Transfer Project Fund (KPF) 2021-2022	04/2021	09/2022	388,652
	Early Biomarkers in SARS-CoV-2 Infection: Correlation with Short/Medium/Long-Term Clinical Outcomes, and Implications on Acute Patient Management and Long-term Medical and Health Care	Food and Health Bureau – COVID Studies	03/2021	02/2024	9,868,154
	Aldose Reductase Inhibition for Stabilization of Exercise Capacity in Heart Failure	Research Grants Council – Research Matching Grant Scheme	09/2021	30/09/2022	110,811
	Levosimendan to Relieve End-Stage Heart Failure Symptoms in Cardiac Resynchronization Therapy Non-Responders (LORE-CRT) Study	Research Grants Council – Research Matching Grant	06/2021	30/09/2022	150,000
	A Profiling Study on Changes in Blood Metabolites in Response to Initiation of Edoxaban and/or Cardiovascular Medications	Research Grants Council – Research Matching Grant	06/2021	30/09/2022	11,519

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Erik Fung	Levosimendan to Relieve End-Stage Heart Failure Symptoms in Cardiac Resynchronization Therapy Non-Responders (LORE-CRT) Study	Synmosa BioPharma (Hong Kong) Company Ltd - Industry Research Donation	03/2021	05/2023	300,000
	DISCOVER CaReMe Global Registry	AstraZeneca (Hong Kong) - Industry Sponsored Research	12/2021	12/2022	703,125
	Aldose Reductase Inhibition for Stabilization of Exercise capacity in Heart Failure (ARISE-HF): A Multicenter, Randomized, Placebo-Controlled Study to Evaluate the Safety and Efficacy of AT-001 in Patients with Diabetic Cardiomyopathy / Stage B Heart Failure at High Risk of Progression to Overt Heart Failure (Stage C Heart Failure)	Applied Therapeutics Inc. - Industry Sponsored Research	12/2020	03/2025	1,598,218
	ETNA-AF Global: Non-Interventional Study on Edoxaban Treatment in Routine Clinical Practice for Patients with Nonvalvular Atrial Fibrillation in Hong Kong (ETNA-AF-Hong Kong)	Daiichi Sankyo Hong Kong Ltd. - Industry Sponsored Research	09/2017	10/2022	168,282



The Laboratory for Heart Failure + Circulation Research (LHFCR) leverages metabolomic profiling of human study cohorts (A & B), cardiorespiratory exercise physiology (C), and animal models of cardiomyopathy (D & E; morpholino oligonucleotides and CRISPR gene editing to disrupt the function of the filamin C gene in collaboration with Hui Zhao, SBS) to study mechanisms of heart failure. FLNC or flnc, filamin C; MO, morpholino oligonucleotide; P/F, pre-frail/frail; R, robust.

**Source: Erik Fung and members of Laboratory for Heart Failure & Circulation Research, The Chinese University of Hong Kong.**

## Publications

### A. Journal Papers

1. Fung E, Lui LT, Huang L, Cheng KF, Lau GHW, Chung YT, Ahmadabadi BN, Xie S, Lee JSW, Hui E, So WY, Sung JJY, King I, Goggins WB, Chan Q, Järvelin MR, Ma RCW, Chow E, Kwok T. Characterising frailty, metrics of continuous glucose monitoring, and mortality hazards in older adults with type 2 diabetes on insulin therapy (HARE): A prospective, observational cohort study. *The Lancet Healthy Longevity*. 2021;2(11):e724-e735. doi:10.1016/S2666-7568(21)00251-8.
2. Ojanen X, Cheng R, Törmäkangas T, Rappaport N, Wilmanski T, Wu N, Fung E, Nedelec R, Sebert S, Vlachopoulos D, Yan W, Price ND, Cheng S, Wiklund P. Towards early risk biomarkers: Serum metabolic signature in childhood predicts cardio-metabolic risk in adulthood. *eBioMedicine*. 2021;72:103611. doi:10.1016/j.ebiom.2021.103611.
3. Fung E, Cheng HY, Choi KC, Hui DSC, Yang C, Chair SY. Differential risks for heart failure hospitalization following severe respiratory infection by common pathogens. *European Journal of Preventive Cardiology*. 2021;(Ci):10-13. doi:10.1093/eurjpc/zwab123. (Letter, Epub ahead of print)
4. Teekakirikul P, Zhu W, Gabriel GC, Young CB, Williams K, Martin LJ, Hill JC, Richards T, Billaud M, Phillippi JA, Wang J, Wu Y, Tan T, Devine W, Lin J huey, Bais AS, Klonowski J, de Bellaing AM, Saini A, Wang MX, Emerel L, Salamacha N, Wyman SK, Lee C, Li HS, Miron A, Zhang J, Xing J, McNamara DM, Fung E, Kirshbom P, Mahle W, Kochilas LK, He Y, Garg V, White P, McBride KL, Benson DW, Gleason TG, Mital S, Lo CW. Common deletion variants causing protocadherin-α deficiency contribute to the complex genetics of BAV and left-sided congenital heart disease. *HGG advances*. 2021;2(3). doi:10.1016/j.xhgg.2021.100037. (Epub ahead of print)
5. Luk A, Zhang X, Fung E, Wu H, Lau ES, Yang A, Chow E, Kong AP, Ma RC, Chan JC. 223-OR: Heart failure with reduced, midrange and preserved ejection fraction in Chinese with type 2 diabetes: Risk factors and prognosis. *Diabetes*. 2021;70(Supplement\_1):223-OR. doi:10.2337/db21-223-or. (Meeting abstract)

