

# 宋二飞简历



宋二飞博士，广州中医药大学科技创新中心代谢研究所研究员，香港大学生物医药技术全国重点实验室荣誉副研究员。主要研究方向为肥胖引发的血管功能失调、心脏衰竭、二型糖尿病以及非酒精性脂肪肝炎等领域。宋二飞博士毕业于香港大学药理与药剂学系，师从国际著名心血管专家 P.M. Vanhoutte 教授；2015 年-2019 年期间，在加拿大约克大学接受博士后培训，合作导师 Gary Sweeney 教授。目前以第一（共一）或通讯（共同通讯）作者身份在 *Cell reports Medicine*, *PNAS*, *Diabetes*, *CMGH* 等杂志上发表 10 余篇 SCI 论文。现主持“十三五”国家重点研发项目子课题子任务一项，国家自然科学基金面上项目一项，曾主持或参与主持国家自然科学基金、Ontario Centres of Excellence 基金、香港大学种子基金以及其它多项国际合作基金。

联系方式：

Email: [amosgzy@gzucm.edu.cn](mailto:amosgzy@gzucm.edu.cn) 或 [amossong@connect.hku.hk](mailto:amossong@connect.hku.hk)

## 1. 教育经历

---

2010-2015 香港大学，药理学专业博士  
2007-2010 山西医科大学，药理学专业硕士  
2003-2007 内蒙古医科大学，药学专业学士

## 2. 工作经历

---

03/2025-至今 研究员，广州中医药大学；荣誉副研究员，香港大学生物医药技术全国重点实验室  
03/2022-02/2025 副研究员，暨南大学附属第一医院  
03/2019-02/2022 博士后，暨南大学附属第一医院  
07/2015-02/2019 博士后，加拿大约克大学生物系  
09/2014-06/2015 高级研究助理，香港大学药理与药剂学系

### 3. 专业会员

---

- 2023- 中国病理生理协会  
2022- 中国生物物理协会  
2021- 美国心脏病协会专业组 (American Heart Association, Professional)  
2016- 心脏与血管代谢学会 (Society for Heart and Vascular Metabolism)
- 2011- 美国药理学与实验治疗学学会 (American Society for Pharmacology &  
2015 Experimental Therapeutics)  
2010- 香港药理协会 (Hong Kong Pharmacology Society)  
2010- 香港心血管科学与医学研究学会 (Institute of Cardiovascular Science &  
Medicine)

### 4. 所获奖项

---

- 2020 梓文励志奖, 暨南大学  
2016 Willian C. Stanley 早期职业青年研究者奖, Society for Heart and Vascular  
Metabolism  
2013 杰出海报展示奖, 中国药理协会&香港药理协会  
2011 杰出海报展示奖, 香港大学

### 5. 主持和参与课题

---

- 2025/2028 主持国家自然科学基金面上项目“CUB 结构域包含蛋白 1 在介导非酒精性脂肪性肝炎发展过程中的分子机制研究”。课题经费 49 万人民币, 在研。
- 2022/2027 主持“十三五”国家重点研发计划项目子课题子任务一项 (2022YFA0806102): 项目“表观遗传调控组织/器官间分子对话介导代谢重塑的作用机制”/课题二“阐明对话分子介导器官间对话诱导糖脂代谢重编程及肥胖的分子机制”。课题经费: 30 万人民币。
- 2020/2022 主持国家自然科学基金青年项目“一项心肌自噬缺陷通过减少心钠素介导肥胖和代谢紊乱的研究”。课题经费 22 万人民币。结题。
- 2013/2015 参与国家自然科学基金青年项目一项“Lipocalin-2 介导肥胖相关非酒精性脂肪肝的作用及机理研究”。课题经费 23 万人民币
- 2018/2020 参与主持安大略卓越中心 (Ontario Centres of Excellence) 项目一项 “Examination of the basis for beneficial effects of copper fabric (29451)”。课题经费 4 万加币。

2018/2019 参与主持香港大学基础研究种子基金一项“Activation of lipocalin-2 by deamidation in perivascular adipose tissues (201311159081)”。  
课题经费 8 万港币。

## 6. 发表文章

---

### 5 representative publications:

1. Jia X, **Song E**, Liu Y, Chen J, Wan P, Hu Y, Ye D, Chakrabarti S, Mahajan H, George J, Yan S, Yu Y, Zhang G, Wang Y, Yang W, Wu L, Hua S, Lee CH, Li H, Jiang X, Lam KSL, Wang C, Xu A. Identification and multicentric validation of soluble CDCP1 as a robust serological biomarker for risk stratification of NASH in obese Chinese. **Cell Reports Medicine**. 2023 Nov 21;4(11):101257. PMID: 37918406. (IF:14.3; JCR ranking: Medicine, Research & Experimental Q1(5/136); 中科院医学一区, Top 期刊; Co-first author).
2. **Song E**, Da Eira D, Jani S, Sepa-Kishi D, Vu V, Hunter H, Lai M, Wheeler MB, Ceddia RB, Sweeney G. Cardiac Autophagy Deficiency Attenuates ANP Production and Disrupts Myocardial-Adipose Cross Talk, Leading to Increased Fat Accumulation and Metabolic Dysfunction. **Diabetes**. 2021 Jan;70(1):51-61. PMID: 33046483. (IF:9.3; JCR ranking: Medicine, Endocrinology & Metabolism Q1(18/145); 中科院医学一区, Top 期刊; First author).
3. Qiu H, **Song E**, Hu Y, Li T, Ku KC, Wang C, Cheung BMY, Cheong LY, Wang Q, Wu X, Hoo RLC, Wang Y, Xu A. Hepatocyte-Secreted Autotaxin Exacerbates Non-alcoholic Fatty Liver Disease Through Autocrine Inhibition of the PPAR $\alpha$ /FGF21 Axis. **Cellular and Molecular Gastroenterology and Hepatology**. 2022;14(5):1003-1023. PMID: 35931383. (IF:7.2; JCR ranking: Medicine, Gastroenterology & Hepatology Q1(19/93); 中科院医学一区, Top 期刊; Co-first author).
4. **Song E**, Ramos SV, Huang X, Liu Y, Botta A, Sung HK, Turnbull PC, Wheeler MB, Berger T, Wilson DJ, Perry CGR, Mak TW, Sweeney G. Holo-lipocalin-2-derived siderophores increase mitochondrial ROS and impair oxidative phosphorylation in rat cardiomyocytes. **Proceedings of the National Academy of Sciences of the United States of America (PNAS)**. 2018 Feb 13;115(7):1576-1581. (IF:11.1; JCR ranking: Q1; Multidisciplinary Sciences Q1(8/73); 中科院综合期刊一区, Top 期刊; First author).
5. Fan M, **Song E**, Zhang Y, Zhang P, Huang B, Yan K, Yang W, Xu Y, Hua S, Liu W, Wang C, Xu A, Ye D. Metabolic Dysfunction-associated Steatohepatitis Detected by Neutrophilic Crown-like Structures in Morbidly Obese Patients: A Multicentre and Clinicopathological Study. 2024 Mar. **Research**. 2024 May 29;7:0382. (IF:11; JCR ranking: Multidisciplinary Sciences Q1(9/73); 中科院综合期刊一区, Top 期刊; Co-first author).

### Other publications as first (co-first) and corresponding authors:

6. Tam E, **Song E**, Noskovicova N, Hinz B, Xu A, Sweeney G. Autophagy deficiency exacerbated hypoxia-reoxygenation induced inflammation and cell death via a mitochondrial DNA/STING/IRF3 pathway. **Life Sci**. 2024 Dec 1;358:123173. (IF:5.2; JCR ranking: Q1; Medicine; 中科院医学二区, Top 期刊, **Co-first author**).

7. **Song E**, Fan P, Huang B, Deng HB, Cheung BM, Félétou M, Vilaine JP, Villeneuve N, Xu A, Vanhoutte PM, Wang Y. Deamidated lipocalin-2 induces endothelial dysfunction and hypertension in dietary obese mice. **Journal of the American Heart Association**. 2014 Apr 10;3(2): e000837. (IF:5.4; JCR ranking: Medicine Q1, Cardiac & Cardiovascular systems (39/142); 中科院医学一区, Top 期刊; **First author**).

8. Sun X, Du J, Meng H, Liu F, Yang N, Deng S, Wan H, Ye D, **Song E**, Zeng H. Targeting autophagy with SAR405 alleviates doxorubicin-induced cardiotoxicity. **Cell Biology and Toxicology**. 2023 Dec;39(6):3255-3267. PMID: 37768392. (IF:6.1; JCR ranking: Q1; Medicine, Toxicology Q1(7/94); 中科院毒理学一区; **Co-corresponding author**).

9. **Song E**, Vu V, Varin TV, Botta A, Marette A, Sweeney G. Copper fabric improves the metabolic profile of obese mice: Potential role of the gut microbiota. **Basic & Clinical Pharmacology & Toxicology**. 2022 Nov;131(5):355-363. PMID: 35971882. (IF:3.1; JCR ranking: Q2; Pharmacology & Pharmacy; Toxicology; **Co-first author**).

10. **Song E**, Jahng JW, Chong LP, Sung HK, Han M, Luo C, Wu D, Boo S, Hinz B, Cooper MA, Robertson AA, Berger T, Mak TW, George I, Schulze PC, Wang Y, Xu A, Sweeney G. Lipocalin-2 induces NLRP3 inflammasome activation via HMGB1 induced TLR4 signalling in heart tissue of mice under pressure overload challenge. **American Journal Translational Research**. 2017 Jun 15;9(6):2723-2735. (IF:2.2; JCR ranking: Q4; Medicine, Research and Experimental; **First author**).

#### **Publications as co-authors:**

11. Zhang P, Liu D, Wu L, Wu X, Yan K, Fan M, Zou D, **Song E**, Jiang Y, Xu Y, Wu X, Zang S, Zhu F, Chen Y, Cen Z, Bi M, Zhang Y, Wang X, Liu W, Zhang R, Wang C, Hoo RLC, Xu A, Ye. Neutrophil serine proteases NE and PR3 controlled by the miR-223/STAT3 axis potentiate MASH and liver fibrosis. **D. Hepatology**. 2025 Mar 21. PMID: 40117649. (IF:14.31; JCR ranking: Medicine, Gastroenterology & Hepatology Q1(7/143); 中科院医学一区, Top 期刊; Co-author).

12. Yi Z, Yang B, Wan F, Lu J, Liu D, Lin L, Xu Y, Cen Z, Fan M, Liu W, Lu Q, Jiang G, Zhang Y, **Song E**, Gao J, Ye D. Chinese medicine Linggui Zhugan formula protects against diabetic kidney disease in close association with inhibition of proteinase 3-mediated podocyte apoptosis in mice. **J Ethnopharmacol**. 2024 Jul 31;335:118650. PMID: 39094755. (IF:4.8; JCR ranking: Q1; INTEGRATIVE & COMPLEMENTARY MEDICINE; Co-author).

13. Sung HK, Tang J, Jahng JWS, **Song E**, Chan YK, Lone AH, Peterson J, Abdul-Sater A, Sweeney G. Ischemia-induced cardiac dysfunction is exacerbated in adiponectin-knockout mice due to impaired autophagy flux. **Clinical and Translational Science**. 2024 Mar;17(3):e13758. PMID: 38515365. (IF:3.0; JCR ranking: Q3; Medicine, Research and Experimental; Co-author).
14. Chen J, Lu RS, Diaz-Canestro C, **Song E**, Jia X, Liu Y, Wang C, Cheung CKY, Panagiotou G, Xu A. Distinct changes in serum metabolites and lipid species in the onset and progression of NAFLD in Obese Chinese. **Computational and Structural Biotechnology Journal**. 2024 Jan 20;23:791-800. PMC10839226. (IF:6.0; JCR ranking: Q1; Biochemistry & Molecular Biology; Co-author).
15. Wu X, Cheung CKY, Ye D, Chakrabarti S, Mahajan H, Yan S, **Song E**, Yang W, Lee CH, Lam KSL, Wang C, Xu A. Serum Thrombospondin-2 Levels Are Closely Associated With the Severity of Metabolic Syndrome and Metabolic Associated Fatty Liver Disease. **The Journal of Clinical Endocrinology and Metabolism**. 2022;107(8):e3230-e40. (IF:5.8; JCR ranking: Q1; Endocrinology and Metabolism; Co-author).
16. Pang L, Jiang X, Lian X, Chen J, **Song EF**, Jin LG, Xia ZY, Ma HC, Cai Y. Caloric restriction-mimetics for the reduction of heart failure risk in aging heart: with consideration of gender-related differences. **Military Medical Research** 2022;9(1):33. (IF:21.0; JCR ranking: Q1; Medicine, General and Internal; Co-author).
17. Lin H, Wang L, Liu Z, Long K, Kong M, Ye D, Chen X, Wang K, Wu KK, Fan M, **Song E**, Wang C, Hoo RL, Hui X, Hallenborg P, Piao H, Xu A, Cheng KK. Hepatic MDM2 Causes Metabolic Associated Fatty Liver Disease by Blocking Triglyceride-VLDL Secretion via ApoB Degradation. **Advanced science (Weinheim)**. 2022;9(20):e2200742. (IF:15.1; JCR ranking: Q1; Chemistry, Multidisciplinary Sciences; Co-author).
18. Yang R, Hu Y, Lee CH, Liu Y, Diaz-Canestro C, Fong CHY, Lin H, Cheng KKY, Pravelil AP, **Song E**, Lam KSL, Xu A. PM20D1 is a circulating biomarker closely associated with obesity, insulin resistance and metabolic syndrome. **European Journal of Endocrinology**. 2021;186(2):151-61. (IF:6.5; JCR ranking: Q1; Endocrinology and Metabolism; Co-author).
19. Wu X, Shu L, Zhang Z, Li J, Zong J, Cheong LY, Ye D, Lam KSL, **Song E**, Wang C, Xu A, Hoo RLC. Adipocyte Fatty Acid Binding Protein Promotes the Onset and Progression of Liver Fibrosis via Mediating the Crosstalk between Liver Sinusoidal Endothelial Cells and Hepatic Stellate Cells. **Advanced science**. 2021 Jun;8(11):e2003721.(IF:15.1; JCR ranking: Q1; Chemistry, Multidisciplinary Sciences; Co-author).
20. Cai Y, Liu H, **Song E**, Wang L, Xu J, He Y, Zhang D, Zhang L, Cheng KK, Jin L, Wu M, Liu S, Qi D, Zhang L, Lopaschuk GD, Wang S, Xu A, Xia Z. Deficiency of telomere-associated repressor activator protein 1 precipitates cardiac aging

- in mice via p53/PPAR $\alpha$  signaling. **Theranostics**. 2021 Mar 4;11(10):4710-4727. (IF:11.6; JCR ranking: Q1; Medicine, Research & Experimental; Co-author).
- Yin Cai, Fan Ying, Hao Liu, Liang Ge, **Erfei Song**, Lin Wang, Dengwen Zhang, Eva Hoi Ching Tang, Zhengyuan Xia, Michael G. Irwin. Deletion of Rap1 protects against myocardial ischemia/reperfusion injury through suppressing cell apoptosis via activation of STAT3 signaling. **The FASEB Journal**, 2020;34(3):4482-4496. (IF:5.1; JCR ranking: Q1; Biology; Co-author).
- 21.
- Huang X, Slavkovic S, **Song E**, Botta A, Mehrazma B, Lento C, Johnson PE, Sweeney G, Wilson DJ. A Unique Conformational Distortion Mechanism Drives Lipocalin 2 Binding to Bacterial Siderophores. **ACS Chemical Biology**. 2020 Jan 17;15(1):234-242. (IF:5.1; JCR ranking: Q2; Biochemistry & Molecular Biology; Co-author).
- 22.
- Jahng JWS, Alsaadi RM, Palanivel R, **Song E**, Hipolito VEB, Sung HK, Botelho RJ, Russell RC, Sweeney G. Iron overload inhibits late stage autophagic flux leading to insulin resistance. **EMBO Reports**. 2019 Oct 4;20(10):e47911. (IF:7.5; JCR ranking: Q1; Biochemistry & Molecular biology; Co-author).
- 23.
- Boulanger CM, Baretella O, Blaise G, Bond RA, Cai Y, Chan CKY, Chataigneau T, Chen MJ, Chen H, Cheng Y, Clement DL, Cohen RA, Collis M, Danser AHJ, de Mey J, Detremmerie CMS, Duprez D, Feletou M, Flavahan N, Gao Y, Guo Y, Hoeffner U, Houston DS, Huang IB, Huang Y, Iliano S, Junquero D, Katusic ZS, Komori K, Lee MYK, Leung SWS, Li Z, Liang SC, Liu JTC, Luscher TF, Michel F, Miller VM, Mombouli JV, Morrison K, Muldoon SM, O'Rourke S, Perrault L, Quignard JF, Rusch NJ, Sanchez-Ferrer CF, Schini-Kerth V, Shen K, Shi Y, **Song E**, Sun KWY, Taddei S, Tang EHC, Tuncer M, van den Ende R, Vedernikov Y, Verbeuren TJ, Webb C, Weigert A, Wong KHK, Xu C, Yang K, Ying F, Zellers T, Zhao Y, Zou Q, Shimokawa H; Professor Paul M. Vanhoutte's former fellows. Tribute to Paul M. Vanhoutte, MD, PhD (1940-2019). **Arteriosclerosis, Thrombosis, and Vascular Biology**. 2019 Dec;39(12):2445-2447. (IF:6.6; JCR ranking: Q1; Hematology; Co-author).
- 24.
- Wang J, Chen G, Cui Q, **Song E**, Tao W, Chen W, Wang C, Jia S. Renal Subcapsular Transplantation of 2'-Deoxyguanosine-Treated Murine Embryonic Thymus in Nude Mice. **Journal of Visualized Experiments**. 2019 Jul 19;(149). (IF:1.1; JCR ranking: Q4; Multidisciplinary; Co-author).
- 25.
- Sung HK, **Song E**, Jahng JWS, Pantopoulos K, Sweeney G. Iron induces insulin resistance in cardiomyocytes via regulation of oxidative stress. **Scientific Reports**. 2019 Mar 15;9(1):4668. (IF:4.0; JCR ranking: Q2; Multidisciplinary; Co-author).
- 26.
- Yang K, Deng HB, Man AWC, **Song E**, Zhang J, Luo C, Cheung BM, Yuen KY, Jensen PS, Irmukhamedov A, Elie AGIM, Vanhoutte PM, Xu A, De Mey JGR, Wang Y. Measuring non-polyaminated lipocalin-2 for cardiometabolic risk assessment. **ESC Heart Failure**. 2017 Nov;4(4):563-575. (IF:3.8; JCR ranking: Q2; Cardiac and Cardiovascular System; Co-author).
- 27.

- Sung HK, Chan YK, Han M, Jahng JWS, **Song E**, Danielson E, Berger T, Mak TW, Sweeney G. Lipocalin-2 (NGAL) Attenuates Autophagy to Exacerbate Cardiac Apoptosis Induced by Myocardial Ischemia. **Journal of Cellular Physiology**. 2017 Aug;232(8):2125-2134. (IF:4.3; JCR ranking: Q1; Physiology; Co-author).
28. Elie AG, Jensen PS, Nissen KD, Geraets IM, Xu A, **Song E**, Hansen ML, Irmukhamedov A, Rasmussen LM, Wang Y, De Mey JG. Adipokine Imbalance in the Pericardial Cavity of Cardiac and Vascular Disease Patients. **PLoS One**. 2016 May 3;11(5):e0154693. (IF:3.1; JCR ranking: Q2; Multidisciplinary Sciences; Co-author).
29. Jahng JW, **Song E**, Sweeney G. Crosstalk between the heart and peripheral organs in heart failure. **Experimental & Molecular Medicine**. 2016 Mar 11;48(3):e217. (IF:9.4; JCR ranking: Q1; Medicine, Research and Experimental; Co-author).
30. Wang Y, **Song E**, Bai B, Vanhoutte PM. Toll-like receptors mediating vascular malfunction: Lessons from receptor subtypes. **Pharmacy and Therapeutics**. 2016 Feb; 158:91-100. (IF:11.6; JCR ranking: Q1; Pharmacology and Pharmacy; Co-author).
31. Cai Y, Ying F, **Song E**, Wang Y, Xu A, Vanhoutte PM, Tang EH. Mice lacking prostaglandin E receptor subtype 4 manifest disrupted lipid metabolism attributable to impaired triglyceride clearance. **The FASEB Journal**. 2015 Dec;29(12):4924-36. (IF:5.1; JCR ranking: Q1; Biology; Co-author).
32. Liang Y, Huang B, **Song E**, Bai B, Wang Y. Constitutive activation of AMPK  $\alpha$ 1 in vascular endothelium promotes high-fat diet-induced fatty liver injury: role of COX-2 induction. **British Journal of Pharmacology**. 2014 Jan;171(2):498-508. (IF:6.7; JCR ranking: Q4; Pharmacology and Pharmacy; Co-author).
33. Yang B, Fan P, Xu A, Lam KS, Berger T, Mak TW, Tse HF, Yue JW, **Song E**, Vanhoutte PM, Sweeney G, Wang Y. Improved functional recovery to I/R injury in hearts from lipocalin-2 deficiency mice: restoration of mitochondrial function and phospholipids remodeling. **American Journal Translational Research**. 2012;4(1):60-71. (IF:2.2; JCR ranking: Q4; Medicine, research and experimental; Co-author).
34. Liu JT, **Song E**, Xu A, Berger T, Mak TW, Tse HF, Law IK, Huang B, Liang Y, Vanhoutte PM, Wang Y. Lipocalin-2 deficiency prevents endothelial dysfunction associated with dietary obesity: role of cytochrome P450 2C inhibition. **British Journal of Pharmacology**. 2012 Jan;165(2):520-31. (IF:6.7; JCR ranking: Q4; Pharmacology and Pharmacy; Co-author).
- 35.

---

## 7. 学术活动组织（主办）：

---

2016/1 - 2016/5 Organizer and host, Research or Business? You can do both! Seminar, York University,  
Dr. Erfei Song from the Department of Biology at York University hosted a multidisciplinary research and business seminar on May 5 that aimed to bring forth new ideas, partnerships and networking possibilities. The seminar, "Research or Business? You can do both!", was led by Professor Aimin Xu from the University of Hong Kong. Xu has been highly successful in the academic field, and also in developing business via promoting the interface of both areas. Xu's ideas, experience and knowledge on academia and business would benefit and inspire many students and staff at York to initiate or develop their careers in academia, in combination with business. The event's schedule included an opening introduction, the seminar, and a reception. The seminar attracted around 40 audience from faculty members, postdoctoral fellows, graduate students, as well as undergraduates in the Faculties of Science, Engineering, Health and Business

## 8. 学术期刊编委会成员

---

2021-	Military Medical Research
2022-	Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)
2025	Cardiovascular Toxicology

## 9. 期刊审稿人

---

1. ESC Heart Failure
2. Scientific Reports
3. Journal of Molecular and Cellular Cardiology
4. Frontiers in Endocrinology
5. iScience
6. Postgraduate Medical Journal
7. Metabolism

## 10. 裁判 (Judge)

---

University of Toronto  
2018 April 17th, Sanofi Biogenius Canada – GTA 2018 Regional Competition