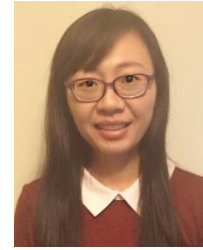


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**Address: Centre for Experimental Medicine, School of Medicine, Dentistry and  
Biomedical Sciences, Queen's University Belfast, UK**

## **EDUCATION AND RESEARCH EXPERIENCES**

**03/2015-Now Postdoctoral Research Fellow, Centre for Experimental Medicine,  
School of Medicine, Dentistry and Biomedical Sciences, Queen's  
University Belfast, UK**

- Working on the project funded by Fight for Sight to study the pathogenic mechanism link to cell-based therapy for diabetic retinopathy  
Using pericyte progenitor cells derived from a sub-population of MSC and iPSC to repair damaged capillary in retina caused by hyperglycemia or hypoxia and study the related mechanism.
- **Involved Research Techniques:** cell culture, in vitro angiogenesis assay, flow cytometer, real-time PCR, immunostaining, in vivo matrigel plug assay, etc.

**08/2014-02/2015 Research assistant in School of Biomedical Science, Faculty of Medicine,  
The Chinese University of Hong Kong, Hong Kong SAR, China**

- Study the function of NOX4 (subunits of NADPH oxidase) in differentiation of human fetal pancreatic progenitors

Knock out NOX4 through CRISPR/Cas9 based technique in pancreatic progenitors isolated from human fetal, and then induce these progenitors into insulin producing cells for transplantation into type 1 diabetic mice.

- **Involved Research Techniques:** CRISPR/Cas9 mediated gene knock out, siRNA knock down, overexpression, human fetal pancreatic progenitors culture, islet-like cell clusters formation, real time PCR analysis, etc.

**08/2011-07/2014 PhD in Biomedical Sciences, Faculty of Medicine, The Chinese**

**University of Hong Kong, Hong Kong SAR, China**

- Investigated the role of NADPH oxidase in pancreatic progenitors differentiation

In cultured pancreatic rudiments, studied the regulatory function of NADPH oxidases during pancreas development; detect their role in beta cell regeneration within rat neonatal models.

- Co-culture of human pancreatic progenitors with liver stromal cells to improve differentiation efficacy of pancreatic progenitors

Liver stromal cells isolated from human fetal were co-cultured with human pancreatic progenitors, and the resultant insulin producing cells were transplanted into type 1 diabetic mice.

- Studied the regulation of AT<sub>2</sub>R in mouse embryonic pancreas development
- **Involved Research Techniques:** mouse embryonic pancreas culture, regeneration rats model handling, pancreatic progenitor cells culture and differentiation, islet transplantation, islet isolation, cell transfection, immunofluorescent staining, western blot, ROS level detection, ELISA test, MTT assay, etc.

**07/2009-07/2011 Research assistant in Department of Physiology, The Chinese**

**University of Hong Kong, Hong Kong SAR, China**

- Investigated the combination effect of sitagliptin and losartan in mouse islet regeneration  
Administration of type 1 diabetic mice with sitagliptin and losartan to assess their combination effect and studied the related signaling pathway.
- Studied the function of AT<sub>2</sub>R in the differentiation of human fetal pancreatic progenitors into islet like cell clusters
- **Involved Research Techniques:** type 1 diabetes mouse model induction, glucose stimulates insulin secretion (GSIS) test, oral glucose tolerance test (OGTT), blood glucose test, etc.

**09/2006-06/2009 MSc in Developmental Biology, College of Life Sciences, Nanjing**

## **Normal University, China**

- The role of interaction between Plk1 and CaM in mitotic entry and cytokinesis

Studied the dynamic change of localization of Plk 1 and CaM as well as their interaction during mitotic entry and cytokinesis.

- The function of the association of CaM and Hsp70 in S-phase arrest and apoptosis

➤ **Involved Research Techniques:** FRET (Fluorescent resonance energy transfer) mediated protein interaction study, CALI (Chromophore-assisted laser inactivation) mediated protein inactivation in single cell, plasmid construction, kinase activity assay, reporter gene assay, live cell imaging, etc.

**09/2002-06/2006 Bachelor of Science in Biological Sciences, College of Life Science,  
Nanjing Normal University, China**

## **LANGUAGE AND COMPUTER**

**Language:** Native in Chinese and fluent in English

**Computer:** Proficient in a wide range of software programs and statistical packages,

including, but not limited to, Microsoft Office, Photoshop, GraphPad Prism, Image J

## PUBLICATIONS

### Original articles

**Liang J**, Wu SY, Wang L, Zhang D, Leung KK, Leung PS (2015). NADPH oxidase-dependent reactive oxygen species stimulate  $\beta$ -Cell regeneration through differentiation of endocrine progenitors in murine pancreas. *Antioxidants & Redox Signaling* (Accepted)

Wang L, **Liang J**, Leung PS (2015). The ACE2/Ang-(1-7)/Mas axis regulates the development of pancreatic endocrine cells in mouse embryos. *PLoS One* **10**(6): e0128216

Leung KK, **Liang J**, Zhao S, Chan WY, Leung PS (2014). Angiotensin II type 2 receptor regulates the development of pancreatic endocrine cells in mouse embryos. *Dev Dyn* **243**(3): 415-427.

**Liang J**, Ng KY, Cheng Q, Xia Y, Wang CC, Leung PS (2014). Human Fetal Liver Stromal Cell Co-Culture Enhances the Differentiation of Pancreatic Progenitor Cells into Islet-Like Cell Clusters. *Stem Cell Rev* **10**(2):280–294.

**Liang J**, Leung KK, Lam SY, Leung PS (2012). Combined treatment with a dipeptidyl peptidase-IV inhibitor (sitagliptin) and an angiotensin II type 1 receptor blocker (losartan) promotes islet regeneration via enhanced differentiation of pancreatic progenitor cells. *Diabetes Obes Metab* **14**(9): 842-851.

Leung KK, **Liang J**, Ma MT, Leung PS (2012). Angiotensin II type 2 receptor is critical for the development of human fetal pancreatic progenitor cells into islet-like cell clusters and their potential for transplantation. *Stem Cells* **30**(3): 525-536.

Huang M, Wei JN, Peng WX, **Liang J**, Zhao C, Qian Y, Dai G, Yuan J, Pan FY, Xue B, Sha JH, Li CJ(2009).The association of CaM and Hsp70 regulates S-phase arrest and apoptosis in a spatially and temporally dependent manner in human cells. *Cell Stress Chaperones*. **14**(4):343-53.

### Conferences:

**Liang J**, Leung PS (2013). NADPH oxidase promotes pancreatic endocrine cell differentiation via mediation of SOX9. 49th Annual Meeting of the European Association for the study of Diabetes, Barcelona, September 2013. (Oral presentation)

**Liang J**, Leung PS (2011). Combination Effects of Sitagliptin and Losartan on the Neogenesis and Differentiation of Pancreatic Progenitor Cells. American Diabetes Association's 71<sup>st</sup> Scientific Sessions, San Diego, June 2011. (Poster presentation)

梁娟

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## 教育及科研背景

**2015/03 至今** 博士后科研人员，英国贝尔法斯特女王大学医科牙科及生物医学科学学院，实验医学中心

- 从事于 Fight for Sight 基金所资助的课题：糖尿病视网膜病变的细胞疗法及相关机制。

利用从 MSC 的一个亚细胞以及 iPSC 分化获得的周细胞祖细胞修复由高血糖或缺氧引起的视网膜毛细血管病变及研究相关机制。

- **相关科研技能**：细胞培养，体外血管再生，流式细胞仪技术，实时定量 PCR, 免疫荧光染色，体内 matrigel 植入分析等。

**2014/08-2015/02** 科研助理，香港中文大学医学院生物医学学院

- 研究 NOX4（NADPH 氧化酶的亚结构）在人胚胎胰脏祖细胞分化过程中的功能。

利用 CRISPR/Cas9 技术敲除从人类胚胎中分离出的胰脏祖细胞的 NOX4 基因，将获取的祖细胞诱导分化为胰岛素分泌细胞，并移植入一型糖尿病小鼠体内研究其对糖尿病的治疗作用。

- **相关科研技能：**CRISPR/Cas9 基因敲除，siRNA 基因下调，基因过表达，人胚胎胰脏祖细胞培养，类胰岛细胞簇培养，实时定量 PCR 等。

**2011/08-2014/07 博士研究生，香港中文大学医学院生物医学学院**

- 研究 NADPH 氧化酶在胰脏祖细胞分化中的作用。  
在体外培养的小鼠胰脏原基中，研究 NADPH 氧化酶在胰脏发育中的作用；并在大鼠胰脏再生模型中研究 NADPH 氧化酶在 beta 细胞再生中的作用。
- 共培养胰脏祖细胞和肝脏基质细胞以提高胰脏祖细胞的分化效率。  
将从人胎儿中分离的肝脏基质细胞与人胚胎胰脏祖细胞共同培养，将获取的胰岛素分泌细胞移植入一型糖尿病小鼠模型。
- 研究 AT2R 在小鼠胚胎胰脏发育中的调控作用。
- **相关研技术：**小鼠胚胎胰脏培养，胰脏再生大鼠模型构建，胰脏祖细胞培养和分化，胰岛移植，胰岛分离，细胞转染，免疫荧光染色，蛋白质印记，ROS 水平检测，ELISA 检测，MTT 检测等。

**2009/07-2011/07 科研助理，香港中文大学生理系**

- 研究西他列丁（sitagliptin）和氯沙坦（losrtan）的共同用药效果在小鼠胰岛再生中的作用。  
为一型糖尿病小鼠喂服西他列丁和氯沙坦，检测其的联合用药效果并研究相关机制。
- 研究 AT2R 在人胎儿胰脏祖细胞分化至类胰岛细胞簇过程中的功能。
- **相关科研技能：**一型糖尿病小鼠模型的构建，葡萄糖诱导的胰岛素分泌实验，口服葡萄糖耐受实验，血糖检测等。

**2006/09-2009/06** 硕士研究生，南京师范大学生命科学学院

- 研究 Plk1 和 CaM 的相互作用在有丝分裂进入和胞质分裂过程中的功能。  
研究在有丝分裂的进入和胞质分裂过程中，Plk1 和 CaM 定位的动态变化  
以及其相互作用。
- CaM 和 Hsp70 的协同作用在有丝分裂 S 期阻滞及细胞凋亡中的功能。
- **相关科研技能：**FRET(荧光能量共振转移技术，用于蛋白质相互作用的研究)，CALI(发色团辅助激光灭活技术，用于在单细胞上进行蛋白灭活)，  
质粒构建，激酶活性实验，报告基因分析，活细胞成像等。

**2002/09-2006/06** 理学学士，南京师范大学强化培养部

### 语言及计算机技能

**语言：**普通话母语，英语流利

**计算机：**精通常用软件及统计技术，如 office，Photoshop，GrapPad Prism, Image J 等。



## 论文发表

### 研究论文

**Liang J**, Wu SY, Wang L, Zhang D, Leung KK, Leung PS (2015). NADPH oxidase-dependent reactive oxygen species stimulate  $\beta$ -Cell regeneration through differentiation of endocrine progenitors in murine pancreas. *Antioxidants & Redox Signaling* (Accepted)(JCR 一区, IF: 7.407)

Wang L, **Liang J**, Leung PS (2015). The ACE2/Ang-(1-7)/Mas axis regulates the development of pancreatic endocrine cells in mouse embryos. *PLoS One* **10**(6): e0128216(JCR 一区, IF:3.234)

Leung KK, **Liang J**, Zhao S, Chan WY, Leung PS (2014). Angiotensin II type 2 receptor regulates the development of pancreatic endocrine cells in mouse embryos. *Dev Dyn* **243**(3): 415-427.(JCR 一区, IF:2.276)

**Liang J**, Ng KY, Cheng Q, Xia Y, Wang CC, Leung PS (2014). Human Fetal Liver Stromal Cell Co-Culture Enhances the Differentiation of Pancreatic Progenitor Cells into Islet-Like Cell Clusters. *Stem Cell Rev* **10**(2):280-294.(JCR 二区, IF:2.768)

**Liang J**, Leung KK, Lam SY, Leung PS (2012). Combined treatment with a dipeptidyl peptidase-IV inhibitor (sitagliptin) and an angiotensin II type 1 receptor blocker (losartan) promotes islet regeneration via enhanced differentiation of pancreatic progenitor cells. *Diabetes Obes Metab* **14**(9): 842-851.(JCR 一区, IF: 6.36)

Leung KK, **Liang J**, Ma MT, Leung PS (2012). Angiotensin II type 2 receptor is critical for the development of human fetal pancreatic progenitor cells into islet-like cell clusters and their potential for transplantation. *Stem Cells* **30**(3): 525-536.(JCR 一区, IF:6.523)

[Huang M](#), [Wei JN](#), [Peng WX](#), [Liang J](#), [Zhao C](#), [Qian Y](#), [Dai G](#), [Yuan J](#), [Pan FY](#), [Xue B](#), [Sha JH](#), [Li CJ](#)(2009).The association of CaM and Hsp70 regulates S-phase arrest and apoptosis in a spatially and temporally dependent manner in human cells. *Cell Stress Chaperones*. **14**(4):343-53.(JCR 三区, IF:3.163)

### 会议论文

**Liang J**, Leung PS (2013). NADPH oxidase promotes pancreatic endocrine cell differentiation via mediation of SOX9. 49th Annual Meeting of the European Association for the study of Diabetes, Barcelona, September 2013. (口头报告)

**Liang J**, Leung PS (2011). Combination Effects of Sitagliptin and Losartan on the Neogenesis and Differentiation of Pancreatic Progenitor Cells. American Diabetes Association's 71<sup>st</sup> Scientific Sessions, San Diego, June 2011. (墙报展示)