

## **CURRICULUM VITAE: SOOKJA KIM CHUNG, PH.D**

### **OFFICE ADDRESS AND CONTACT DETAILS:**

Address:

鍾金淑子 / Sookja Kim Chung, Professor

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### **ACADEMIC QUALIFICATIONS:**

1987 Ph.D., Department of Anatomy and Cell Biology, University of Illinois College of Medicine, Chicago, U.S.A.

1981 M.A., Department of Chemistry, University of Illinois at Chicago, Chicago, U.S.A.

1978 B.A., Double Major in Biology & Chemistry, Lewis University, Lockport, IL, U.S.A.

### **PROFESSIONAL TRAINING:**

**June, 1988 – Mar., 1991**

Winston Foundation Fellow, Laboratory of Neurobiology and Behavior, Rockefeller University, New York, N.Y., USA

**Feb., 1987 - May, 1988**

NIH Postdoctoral Fellow, Department of Physiology, Northwestern University Medical Center, Chicago, IL, USA

### **ACADEMIC APPOINTMENTS:**

2019-Present: Professor, Macau University of Science and Technology, Macau

2018-2019: Professor, United International College, Zhuhai, China

2015- 2018: Professor, School of Biomedical Sciences, The University of Hong Kong, HK

2006–2015: Professor, Department of Anatomy, The University of Hong Kong, HK

2005–2006: Associate Professor, Department of Anatomy (Mapped as Associate Professor, equivalent to Investigator to Anatomy Dept. due to Administrative reorganization) The University of Hong Kong, Hong Kong, SAR, China

1998- 2005: Honorary Associate Professor, Department of Anatomy, The University of Hong Kong, Hong Kong, SAR, China

1992–2005: Investigator, Institute of Molecular Biology, May, 2001 substantiated, The University of Hong Kong, Hong Kong, China

1991-1998: Honorary Lecturer, Department of Anatomy, The University of Hong Kong, Hong Kong, China

1991-1992: Research Officer, Institute of Molecular Biology, The University of Hong Kong, Hong Kong, SAR, China

1988-1991: The Rockefeller University, New York, USA

Winston Foundation Fellow, Laboratory of Neurobiology and Behavior

1987-1988: Northwestern University Medical Center, Chicago, USA,  
NIH Postdoctoral Fellow, Department of physiology

1982 -1987 Predoctoral Student & Research and teaching assistant, Department of Anatomy and Cell Biology, Health Sciences Center, University of Illinois at Chicago, Chicago, IL, USA

## **OTHER ACADEMIC APPOINTMENTS:**

### **CURRENT HONORARY POSITIONS:**

**Honorary Professor** at School of Biomedical Sciences at The University of Hong Kong;

**Honorary Professor** at Air Force Military Medical University in Xian, China;

**Adjunct Professor** at Beijing Normal University-Hong Kong Baptist University, United International College in Zhuhai, China;

**Honorary Professor** at Chung-Nam Medical University in Daejeon, South Korea

2007–Present: Visiting Professor, The Fourth Military Medical University

2007–2018: Honorary Professor, Dept. Ophthalmology, The University of Hong Kong, HK

2005–2015: Co-ordinator for Overall Postgraduate Studies, Anatomy, HKU, HK

2012–2015: Chairman of Departmental Research Postgraduate Committee at Dept. Anatomy, The University of Hong Kong, HK

2005–2012: Departmental representative for MBBSII Haematology/Immunology System

2005–2015: Involved and coordinator for Anatomy 6100, Current Topics in Morphological Sciences, Cell Biology and Neuroscience (SBMS7700)

2012-present: Coordinator of Morphological Techniques in Cellular Functions, MMPH 6149

2011-2019 School/Departmental coordinator & departmental representative on Board of Studies for Master of Medical Science Program

2010–Present: School/Departmental coordinator for Histology and HC Liu Prize for MBBS

2006-Present: Internal Examiner for Anatomy related discipline

2015-2018: Chief Examiner for MBBS III exam

2016-2018: Chief Examiner for MBBS I exam

2016-2017: Interview panel for MBBS Non-Jupas application

2012: present: Departmental representative on MBBS Endocrine System

2016-present: School Human resources subcommittee member

2007–2010: Member of Faculty Higher Degree Committee, Faculty of Medicine, The University of Hong Kong, HK

2005–Present: Internal Reviewer for RGC, Faculty of Medicine, HKU

2004–Present: Member of management committee for HBHA Research Center, Faculty of Medicine, The University of Hong Kong, HK

2004–Present: Coordinator of research group for Degeneration and regeneration

2008–Present: Coordinator of research group for Diabetes and its complications

2007-2010: Member of the CRCG Research Panel for Medicine

2007–2010: Research Fellow (equivalent to Honorary Professor), Shanghai Jiao Tong University, China

2001–2011: Management Committee for the Area of Excellence in Molecular Neuroscience (hosting Institution, HKUST, and directed by Prof. Nancy Ip)

2012- present: Management Committee for the Theme-based Research Scheme (TBRS) Project “Stem Cell Stem for Nervous System Disorder” (T13-607/12R)

## **HONORS AND AWARDS:**

- Norman and Rosita Winston Fellowship (1988-1991), The Rockefeller University
- Academic Scholarship (1974 - 1978), Lewis University
- International Molecular Biology Network, elected member

## **PROFESSIONAL AFFILIATIONS: (including previous affiliation)**

- Society for Neurosciences
- American Association for the Advancement of Science

- The Rockefeller University Chapter of the Society of Sigma X
- American Diabetes Association
- The New York Academy of Science
- Hong Kong Society for Neuroscience
- Korean Society for Neuroscience

**EDITORIAL ADVISORY BOARD: SERVE OR INVITATION ONLY**

Recent Patents in Endocrinology and Metabolism; PLoS One; ET-12 Special Issue of Life Sciences; Research Signpost; OMICS Publishing Group - Anatomy & Physiology: Current Research; Lead Guest Editor for Special Issues in Experimental Diabetes Research; The Science Advisory Board; J of Biochemical and Pharmacological Research; Invited to serve as Editorial board member for Metabolic Brain Disease; invited to become a member of the *Life Sciences* Endothelin Special Editorial Advisory Board for the Proceedings of the Thirteenth *International Conference on Endothelin* (ET-13).

**AD HOC REVIEWER FOR THE FOLLOWING JOURNALS:**

Diabetes; Biochim. Biophys Acta; Acta Pharmacologica Sinica; Diabetologia; Diabetes Care; Diabetes/Metabolism Research and Reviews Biochim Biophys Acta; Pharmacol Res; Diabetes and its complications; J. Neurochem.; Eur. J. of Biochem.; International J. Biochem. & Cell Biol.; International J. Andrology; J. of Biomedical Sciences; Biological signal; The Journal of DNA Sequencing & Mapping; Neuroscience Letters; Neuro-signal; Molecular Genetics and Metabolism; IBRO Reports; Experimental Biology and Medicine; Clinical and Experimental Pharmacology and Physiology; Free Radical Biology and Medicine; J. Neuroscience Research; Experimental Eye Research; PLoS One; Genesis, The J Genetic and Development; Experimental Neurology; The Anatomical Record, Journal of Diabetes Investigation; Experimental Diabetes Research; Molecular Biology Reports; J. Peripheral Nervous System; J. of Diabetes Investigation; Liver International; Alcoholism: Clinical and Experimental Research; Experimental Gerontology; Developmental dynamics

**INVITATION TO REVIEW TEXT BOOK:**

Ross, Histology, Lippincott, Williams & Wilkins (was not completed due to technical problem being at overseas institution and too many other commitment)

**AD HOC GRANTS REVIEWER FOR:**

NIDDK, NIH; Wellcome Trust; The HK Research Grant Council GRF; Croucher Foundation (Biology/Medicine Interview Panel); The University of Hong Kong, Li Ka Shing Faculty of Medicine, internal RGC proposals; The University of Hong Kong, CRCG; External reviewer for RGC for GRF

**RESEARCH INTERESTS:**

- Pathogenesis of diabetic and ischemic complications and drug discovery
- Cellular osmotic, oxidative and ischemic stress
- Development, degeneration and regeneration
- Diabetes mellitus and diabetes insipidus
- Stem cells and drug discovery for stroke, Alzheimer's Disease, Parkinson's and depression
- Biopharmaceutical research for vascular disease

### **UNDERGRADUATE TEACHING EXPERIENCE:**

- 1978 – 1979: Department of Chemistry, University of Illinois at Chicago, IL., U.S.A.  
1982 – 1987: Department of Anatomy (Histology and Gross Anatomy), College of Medicine, University of Illinois, Chicago, IL, U.S.A.  
1992 – Present: Department of Anatomy (Participated in teaching and examination for Histology (mainly) and Gross Anatomy and Problem Based Learning tutoring to Medical students; Histology to Medical, Traditional Chinese Medicine, Nursing, Bioengineering, Pharmacy students), Faculty of Medicine, The University of Hong Kong, Hong Kong, China (except 2003), Average 100 hours of undergraduate teaching

### **UNDERGRADUATE AND POSTGRADUATE TEACHING: DETAILS AT HKU**

1. Member and Chairman of DRPC
2. Coordinator for departmental postgraduate program
3. Chair of Anatomy Departmental Postgraduate Symposium
4. Coordinator for Postgraduate course: Journal Club
5. Current Topics in Morphological Science
6. Dept. Representative of MBBS III Endocrine System Block Planning Group
7. Departmental coordinator and examiner for Special Field of Study: Master of Medical Science, Current Topics in Morphological Sciences, Cell Biology and Neuroscience (ANAT6100): Offer special module: Basic molecular biology techniques for medical students and stem cells
8. Postgraduate course: Current Postgraduate Course: Current Morphological Techniques in Cellular Functions (MMPH 6149)
9. Member of Board of Studies and departmental representative of Master of Medical Science
10. Departmental representative for MBBS hematology
11. Coordinator for HC Liu Prize in Anatomy
12. Coordinator for Histology
13. Participate in Information Day for Undergraduate Admissions.
14. Serve as Interviewer for MBBS
15. Serve as Interviewer for non-JUPAS Fast Track Application
16. Serve as Interviewer for HKDSE Admissions.
17. Represent the Faculty to recruit postgraduate students from Korea
18. Give lectures in top 4 Korean Universities for Graduate School to recruit postgraduate students from Korea.
19. Coordinate and assist in pledging equipments from Samsung Electronics HK Co., LTD for Telemedicine Unit, Eye Institute, The University of Hong Kong
20. Serve as interview committee member of S6 students fro Early Admission Scheme
21. Serve as supervisor for Special Study Module (MBBS)
22. Serve as internal examiners for Bachelor of Pharmacy, MBBS, BCHM, etc.
23. Serve as Acting and host external visitors.
24. Serve as facilitator for Workshop on Research Integrity
25. Serve as a peer reviewer for teaching assessment.
26. Serve as mentor to MBBSI students
27. Serve as Chief Examiner for MBBSIII exam.
27. Invited to participate in teaching foreign medical students, Guangzhou Medical University, Histology lecture on Respiratory System, 2016
28. Invited to discuss the Anatomy (Histology) teaching at the international meeting: “The reform of histology education: then as student, and now as teacher”, The 4<sup>th</sup> International Anatomical Sciences and Cell Biology Conference, Hong Kong, Dec 4 – 6<sup>th</sup>, 2016.

### **UNDERGRADUATE: Self-initiated SSM: 2010 to present**

1. Yam Felix Shi Da, 2008: Euro Backpack Trip
2. Lydia Lau, MBBS IV, 2009: Human Rights Research on Middle East Conflicts'
3. Chan Shing Him Will, 2009
4. Mark Cheng, MBBS IV, 2009
5. Karen Hui, MBBS IV, 2009
6. Chan Tak Hei Manson, MBBS III, 2011: Special Study Module: European Historical Exploration
7. Chan Chiu Wai Shirley MBBS III, 2011: Special Study Module: European Historical Exploration
8. Tsui Tan Hun Justin, MBBS III, 2011: Special Study Module: European Historical Exploration
9. Lau Sean Eiffel, MBBS III, 2011: Special Study Module: European Historical Exploration
10. Chan Yee Yee Evelyn, MBBS III, 2011: Special Study Module: European Historical Exploration
11. Lui Andrea Lok Kwan, MBBS III, 2011: Special Study Module: European Historical Exploration
12. Chow Chun Kei Boris, MBBS III, 2011: Special Study Module: European Historical Exploration
13. Lui Safiyah Nok Sze, MBBS III, 2011: Special Study Module: European Historical Exploration
14. Max Wong, MBBS III, 2011: Special Study Module: European Historical Exploration
15. Sam Lo, 2011
16. Lee Ho Yin Henry, MBBSIII, 2011, Exploration of food in Estern and Western Europe
17. Ng Chi Yuen, MBBSIII, 2011
18. Wong Ka Yau Raymond, MBBSIII, 2011
19. Ng Joshua, MBBSIII, 2011
20. Ting Ka Man Carmen, MBBSIII, 2011
21. Ng Kwun Hang, 2012
22. Barry Wo, MBBS I, Working experience in Chung's laboratory for EAS credits, 2012
23. Mandy Lam Hiu Ching, Becky Ng Bik Kwan, Venice Wan Ling Sze and Kelly Wong Ka Hei, MBBS III Elective, 2015
24. Adrian Ho Yik Sau, MBBSIII, 2016
25. Cheung Ka Nam, Samuel, MBBSIII, 2016
26. Dorian Joshua Lam, MBBS III, 2016
27. Yang Jian, Wendy, MBBS, 2016
28. Chung Ka Nam and Tsui Pui Yan Janet, MBBS III, 2016
29. Ho Yan Ho, John and Tse Babrielle Hoi Kiu, MBBS, 2016
30. Lau Wai Kay Vicki, MBBSIII, 2017

### **RESEARCH INTERNSHIP:**

#### **Secondary school**

Shreya Tanna, Island School, doing my IGCSEs with interest in Biology and Chemistry and Medicine

**MBBS:**

1. Hiu Ching Kristy Yim, MBBSIII: 2016/17
2. Ms. Huishan (Catherine) Wang, MBBSII: 2016/17
3. Chu Ku Yin, 2015-2016
4. Hiu Ching Kristy Yim, MBBSIII: 2017/2018
5. Ms. Huishan (Catherine) Wang, MBBSII: 2017/18
6. Cheung Tik Fung, MBBS II: 2017/2018
7. Cheung Ho Ming James, MBBSIII: 2017
8. Jason Wong, Summer, 2018

## Proposed for 2018 to 2019:

1. FUNG, Cheuk Man
2. Chen Sze Lam
3. Michelle Lam
4. Charlene Mok Hiu Ching
5. Lee Wai Chun
6. See Man Ting Selena
7. Chiu Yuen Fei Irene
8. YAN, Tsz Hin Benedict (Sept to Dec 2018 and SK Chung, proposed supervisor for Jan to May, 2019)
9. Chow Ching To (Bosco)
10. Cheung, Ngo Kiu
11. YU, Wai Yan, Natalie (Sept to Dec 2018 and SK Chung, proposed supervisor for Feb to May, 2019)
12. Tse Lok Yan, Corinna
13. Cheung Tik Fung

**BBMS:**

1. Wong Hang Sheung, To understand the role of exchange protein activated by cAMP 1 (Epac1) in pancreatic-beta cells by using simplified CLARITY tissue-clearing technology and three-dimensional (3D) confocal microscopy imaging, 2015 -2016, **BBMS4001 Final Year Project**
2. Wong Yiu Pan, Ray, BBMS II
3. Fong Tsz Lok, BBMS II

**Science:**

1. Chu, Ku Yin, Alex

**POSTGRADUATE STUDENT SUPERVISION as Primary Supervisor:**

1. Chan, Sing Kwok Theobald, Ph.D. (co-supervised with Dr. S.M. Chung), 1998, Thesis title: "Mouse preproendothelin-1 gene: transgenic mouse models to study tissue-specific and developmental expression and regulation". Current position: Senior Consultant, Medical and Biotech Group, Hong Kong Productive Council, Hong Kong.
2. Fu, Tsi Wing Douglas, M.Phil. (Primary supervisor), 1998. Project title: "The expression and regulation of genes that may contribute to the etiology of diabetic neuropathy". Best presentation Award at 2<sup>nd</sup> Symposium, Asian Society for Bioscientists, 1996, Current position: Senior manager, Biotech company, Hong Kong

3. Tsang, Chiu Suet Margaret, M.Phil. (Primary supervisor), 1999. Project title: "The regulation of endothelin-1 during mouse brain development and perinatal cerebral ischemia". Current position: Senior manager, Biotech company, Hong Kong
4. Song, Zhentao, Ph.D. (Primary supervisor), 1999. Project title: "Transgenic and knockout mouse models to study the molecular basis of the etiology of diabetic neuropathy". Selected as Presidential presentation at the ADA meeting. Current position: Instructor at UMDNJ, New Jersey, USA
5. Ho, Chung Yin Maggie, M.Phil. (Primary supervisor), Feb., 2000. Nominated for Li Kai Shing Thesis Award. Project title: "The functional role of endothelin-1 in astrocytes by making use of ET-1 deficient mice". Current position: Biotech company in Hong Kong
6. Law, Wai Sze, M.Phil. (collaborate with Prof. M. Schachner) May 12, 2000. Project title: "Conditional Knockout of L1 in hippocampus". Current position: Technician, Singapore
7. Kelvin Chiu, Mphil (Primary supervisor), 2002. Second place at the 7<sup>th</sup> Challenge Cup Research Award, China. Project title: "Generation of conditional ET-1 knockout mice by loxP/cre system to study its role in development"
8. Eric Ho, PhD (co-supervised with Prof. Karen Lam), 1999 - 2003. Project title: "Inactivation of aldose reductase on the progression of nerve conduction deficit associated with diabetes". Won Third place at the 7<sup>th</sup> Challenge Cup Research Award, China, Current position: Research officer, Department of Health, HK
9. Lee, Kenneth, PhD (co-supervised with Dr. SM Chung), 2002. Area of Excellence Studentship, Project title: "Knockout of Na<sup>+</sup>/Myoinositol co-transporter gene to study its physiological function". Current position: Postdoc at National Cancer Centre, Singapore
10. Koon, Michael, PhD (Primary supervisor), Jan, 2000 – Dec., 2002. Project title: "Over-expression of endothelin- 1 in the endothelial cells to understand its function". Short-listed for Best Presentation at the 5<sup>th</sup> Postgraduate symposium. Current position: Postdoc, Harvard Medical School, Awarded a research fellowship for the year 2006-2008 from Crohn's and Colitis Foundation of America (CCFA) for 3 years
11. YAW, Lai Ping, Mphil (Primary supervisor), Sept., 2001- 2003. Project title: "The functional role of endothelin-1 on astrocytes and neurons under hypoxia/ischemia by using ET-1 transgenic and knockout mice. Awarded for Travel fellowship to attend the workshop on "Neuroscience" organized by International Society of Neurochemist. Current position: Research Officer, IMCB, Singapore
12. Chan, Ann, Ph.D. (co-supervised with Dr. S.M. Chung), Mar, 2006, As of January, 2006, Postdoctoral Fellow, Anatomy, The University of Hong Kong
13. Cheung, Shiu Fai, PhD Candidate (co-supervised with Prof. K. Lam, Medicine candidate, Jan. 2003 – Mar. 2006
14. Tang Wai Ho, Mphil (co-supervised with Prof. SM Chung), Polyol pathway contributes to Fe-induced oxidative damage in I/R rat hearts, 2007
15. Leung, Justin W.C., Ph.D. Candidate (Primary supervisor), Sept. 2003 – Aug. 31, 2007
16. Mak, Keri, Ph.D. Candidate (Primary supervisor), Sept., 2004 - 2008
17. Cheung, Kwok Ho Alvin, Ph.D. candidate, (Primary supervisor) Sept., 2004 – Aug. 31, 2007)
18. Hung Ka Lok, Ph.D. candidate (Primary supervisor), Jan., 2005 – 2009
19. Chan, King Chung, Ph.D. candidate (Primary supervisor), Sept. 2005 - 2009
20. Li Hua, Ph.D. candidate (Primary supervisor, transferred from Dr. R. XU, co-supervised with Professor Karen Lam, Medicine), Sept. 2003 – Dec. 6, 2006
21. Alan Ka Lun Kai, Mphil, Sept. 1, 2006 – 2008

22. Amy Shuk Wai Ho, Master of Science, Sept. 1, 2006 – Aug. 31, 2007
23. Lisa Xu Zhang, Ph.D., Sept. 1, 2006 – Aug. 2010
24. Wai Ho Tang, PhD candidate (transfer from Prof. S Chung), Oct., 2010
25. Liu Jun, Mphil., Sept. 1, 2009 – Aug. 30, 2011
26. Lu Chen, Mphil., Sept. 1, 2009 – Aug. 30, 2011
27. Chen Yingxian, PhD, Sept. 1, 2010 – 2015
28. Zhou Lei, PhD, Sept 1, 2010 – 2015
29. Lee Tirrell, MPhil, Sept 1, 2011 - 2013
30. Tong Man Kit, MMedSc part-time, 2011 - 2013
31. Preeti Virwani, 2013- 2018
32. Rikke Rui Feng, 2014-2018
33. Tam Sze Wah, PhD, 2015-2018
34. Ms. Zhou Chuying, 2016

**POSTGRADUATE STUDENT SUPERVISION as Co-Supervisor:**

1. Ng, Tat Fong Donald, Ph.D. (co-supervised with Prof. K.F. So), Conferred November 1995. Thesis title: "A molecular basis for regeneration of CNS: a possible regulatory role of growth associated protein-43". Postdoc at the Dept. of Brain and Cognitive Science, MIT, Cambridge, MA, USA. Current position: Investigator, The Schepens Eye Research Institute, Harvard Med. School, Boston, USA
2. Lee, Yiu Wah Alan, Ph.D. (co-supervised with Dr. S.M. Chung), Conferred October 1995. Thesis title: "Transgenic mice expressing the aldose reductase gene in the lens showed that polyol accumulation is responsible for diabetic cataract". Best presentation, 1<sup>st</sup> Asian Cataract Research Conference, Guangzhou, China, 1995, Best Presentation Award at 2<sup>nd</sup> Symposium, Asian Society for Bioscientists, 1996. Postdoc at IMB and at Institut fur Biosynthese Neuraler Strukturen, Zentrum fur Molekulare Neurobiologie, Hamburg, Germany as of Mar., 1998; Current position: Assistant professor at Dept of Physiology at The University of Singapore
3. Lee, Fuk Ki, Ph.D. (co-supervised with Dr. S.M. Chung), Conferred 1998, Thesis title: "Sorbitol dehydrogenase: gene structure, function and mutation". Best Presentation, HK Society of Endocrinology Annual Meeting, 1995, Current position: Biotech company, Hong Kong
4. Cho, Kin Sang, Ph.D. (co-supervised with Prof. K.F. So), Conferred 1997. Project title: "Effects of intravitreal optic nerve and/or sciatic nerve graft on survival, sprouting and regeneration of axotomized retinal ganglion cells in Hamster". Current position: Postdoc at The Schepens Eye Research Institute, Harvard Med. Sch., Boston, USA
5. Yang, Huai Tao, Ph.D. Candidate (co-supervised with Dr. H. Yip), December 1, 1999. Project title: "The role of low affinity neurotrophin receptor (p75) and zebrin II on the formation of parasagittal zone formation in the developing rat cerebellum". Current position: Postdoc at University of Memphis, Tennessee
6. Chan, Pui Man Mendy, M.Phil. (co-supervised with Prof. K.F. So), 1999. Project title: "The use of transgenic mice over-expressing growth associated protein-43 in the neurons to study its role in CNS regeneration". Current position: Postdoc, New York
7. Ho, Tsun Bond Horace, M.Phil. (co-supervised with Dr. S.M. Chung), 2000. Best presentation in Molecular Biology, Faculty of Medicine Postgrad Research, 1998. Project title: "Inactivation of aldose reductase gene to study its function". Current position: PhD candidate at IMB, HKU
8. Chew, Tse Lun, M.Phil., Mar., (co-supervised with Prof. L.C. Chan and Dr. M. Sham) 2000. Project title: "Study of the structure and expression of the human EEN-B gene"; PhD candidate at Pathology

9. Lam, Amy, PhD (co-supervised with primary supervisor Dr. S.M. Chung) Sept 2000 – 2004. Current position: Postdoctoral Fellow in Center of Heart, Brain, Hormone and Healthy Aging and Department of Anatomy, The University of Hong Kong
10. Liu Jun, PhD (co-supervised with primary supervisor Dr. D.K.Y. Shum) Sept 2000 – 2004
11. Tam, Siu Man, Mphil (co-supervised with primary supervisor Dr. K.M. Yao), 2002 – 2004 Research Assistant, Dept. Biochem, The University of Hong Kong
12. Dai Zhijie, PhD (co-supervised with primary supervisor Prof. Annie Kung, 2005 - present
13. Chau, Jenny Fung Ling, Ph.D. (co-supervised with Dr. S.M. Chung) candidate, Dec, 2005, Awarded for Travel fellowship to attend the workshop on “Neuroscience” organized by International Society of Neurochemists, As of January 1, 2006, Postdoctoral Fellow, IMCB, Singapore
14. Chan, Wai Ho, Ph.D. (co-supervised with primary supervisor Prof. S.M. Chung), Dec, 2005
15. Horace Ho, Ph.D. candidate (co-supervised with primary supervisor, Prof. S.M. Chung, Physiology), Sept. 2003 – 2007
16. Wai Ho Tang, Mphil candidate (co-supervised with Prof. S.M. Chung, Physiology), Sept. 2005 – Aug. 31, 2007
17. Wai Ho Tang, PhD candidate (co-supervised with Prof. S.M. Chung, Physiology), Sept. 2007 – 2009
18. Cheng Wing Tim, Mphil candidate (co-supervised with Primary Supervisor, Prof. S.M. Chung), Sept., 2006 – 2008
19. Mi Xuesong, PhD candidate (co-supervised with Primary Supervisor, Prof. K.F. So), Sept 1, 2007 – Aug. 30, 2012
20. Fanny Feng Qian, PhD candidate (co-supervised with primary supervisor, Prof. K.F. So), Sept., 2009 – 2014
21. Dai Zhijie, PhD (co-supervised with Primary supervisor, Prof. A. Kwong), 2006 - 2009
22. Tai Wai (co-supervise with Dr. CW Cheung and Prof. MG Irwin) , Mphil, Sept. 1, 2009 – Aug., 2011
23. Chen Samantha, MPhil (co-supervised with Dr. CW Cheung), Sept.1, 2009 – Aug. 2011
24. Gu, Yong, PhD (co-supervise with primary supervisor, Dr. JG Shen), 2010- 2013
25. Wendy Karen Ho, Mphil (co-supervised with primary supervisor, Dr. Andrew Law), Sept 1, 2011 – 2013
26. Luo, Xin, PhD (co-supervise with Primary supervisor, Dr. CW Cheung, 2013-2016
27. Liu Jin, PhD (co-supervise with Primary supervisor, Dr. Amy Lo), 2013-2016
28. Gao Chong, PhD (co-sup with Prof. J Shen), 2014-present
29. Lee Un Man, Mphil (co-sup with Dr. SCS Wong), 2015-present
30. Shi Dongdong (co-sup with Dr. Z. Zhang), 2014-present
31. Tam Sze Wah, PhD (co-sup with Dr. Andrew Law), 2013-2016
32. Mr. Alberto Daniel Guerra, PhD Exchange student (co-sup with Prof. John Kao), 2016
33. Ms. Jian Min, PhD (co-sup with Dr. KH Chan), 2016
34. Ms. Weiwei Zhao, PhD (co-sup with Prof. WW Lu), 2017
35. Shi, Dong dong, PhD, 2018
36. Gao Chong, PhD, 2018
37. Lee Un Man, Mphil, 2018
38. Tao, Xiaoyu Derek, 2019-Present
39. Wang Xing Xia, Judy 2020- Present

40. Yuan Xiao Yun, Judy, 2020 - Present
41. Wang Linna, 2020 - Present

**PRIZES AND AWARDS received by the supervised Postgraduate students and Postdoctoral Fellow as Primary Supervisor:**

1. Fu, Tsi Wing Douglas, M.Phil., Best poster presentation at the Asia Pacific Bioscientists 2<sup>nd</sup> International Symposium and Workshop, Hong Kong, 1996
2. Song Zhentao, Ph.D., was accepted for Presidential presentation at the American Diabetes Association: 59th Scientific Session, San Diego, CA, U.S.A, 1999
3. Ho, Chung Yin Maggie, M.Phil., Nominated for Li Kai Shing Thesis Award, 2000
4. Ho, Eric, Ph.D., Awarded Third place at the 7<sup>th</sup> Challenge Cup Research Award, China, 2001
5. Chiu, Kelvin, M.phil., Awarded Second place at the 7<sup>th</sup> Challenge Cup Research Award, China, 2001.
6. Lee, Kenneth, Ph.D., Area of Excellence Studentship, 1999 – 2002
7. YAW, Lai Ping, Mphil, Awarded for Travel fellowship to attend the workshop on “Neuroscience” organized by International Society of Neurochemist, 2003
8. Koon, Michael, Ph.D., Short-listed for Best Presentation at the 5<sup>th</sup> Postgraduate symposium, 2003
9. Koon, Michael, Ph.D., Awarded a research fellowship for the year 2006- 2008 from Crohn's and Colitis Foundation of America (CCFA) for 3 years, 2005
10. Alvin Cheung, Ph.D. Candidate, Among the 5 best presenter at the Postgraduate symposium, 2005
11. Alvin Cheung, Ph.D. Candidate, Awarded a travel grant to FASEB meeting, April, 2006
12. Lisa Xu Zhang, Mphil, Candidate, Awarded as one of the Best presenter in the Department of Anatomy Postgraduate Seminar 2007
13. Alan Ka Lun Kai, Mphil candidate, awarded as the best post presenter at the Li Ka Shing Faculty of Medicine Postgraduate Symposium, 2007
14. Alan Ka Lun Kai, Mphil candidate, selected for “Late Breaking News” presentation at the Scientific meeting for American Diabetes Association, 2008
15. Alan Ka Lun Kai, Mphil candidate, selected for “Late Breaking News” presentation at the Scientific meeting for American Diabetes Association, 2008 Alan Kai, Mphil.
16. Alan Kai, Mphil. His abstracts were selected as Late Break News Presentation, American Diabetes Association Scientific meeting, New Orleans, 2009
17. Alan Kai, Mphil. His abstracts were selected as Late Break News Presentation, American Diabetes Association, 70th Scientific session, Orlando, 2010
18. Lisa Zhang, PhD. Selected as one of the best oral presenter in Postgraduate Symposium in Dept of Anatomy, 2010
19. Zhou Lei, PhD. Recipient of University Postgraduate Fellowship, 2010 – 2014
20. Xian Zijun Sarah, PhD, Recipient of University Postgraduate Fellowship, 2011 – 2015
21. Christina Chen, PhD, Recipient of Hui Ping Hing Scholarship, 2012, 2013, 2014
22. Xian Zijun Sarah, PhD, Recipient of Outstanding Abstract Presentor (Poster section) at the 8<sup>th</sup> International Symposium on Healthy Aging organized by HBBA Center, 2013.
23. Ms. Zhou Chuying, PhD, Recipient of Hong Kong PhD Fellowship, 2016-present
24. Rikki Feng Rui, Awarded with Best poster presentation, Faculty of Medicine postgraduate research symposium, HKU (2016)

**PRIZES AND AWARDS received by the supervised Postgraduate students and Postdoctoral Fellow as Co-Supervisor:**

1. Lee, Fuk Ki, Ph.D. (co-supervised with Dr. S.M. Chung), Best Presentation, HK Society of Endocrinology Annual Meeting, 1995
2. Lee, Yiu Wah Alan, Ph.D. (co-supervised with Dr. S.M. Chung), Best presentation, 1<sup>st</sup> Asian Cataract Research Conference, Guangzhou, China, 1995; Best Poster presentation at the Asia Pacific Bioscientists 2<sup>nd</sup> International Symposium and Workshop, Hong Kong, 1996
3. Ho, Tsun Bond Horace (co-supervised with Dr. S.M. Chung), M.Phil won Best presentation in Molecular Biology, Faculty of Medicine Postgrad Research, HKU, 1998
4. Ng, Tat Fong Donald, Postdoctoral Fellow, Selected for Late Breaking News for American Diabetes Association: 58th Scientific Session, 1998
5. Chau, Jenny Fung Ling, Ph.D. (co-supervised with Dr. S.M. Chung), Awarded Travel fellowship for the workshop on “Neuroscience” organized by International Society of Neurochemists, 2003
6. Chan, Wai Ho, Ph.D. (co-supervised with primary supervisor Dr. S.M. Chung), Awarded best oral presenter at the Heart, Brain, Hormone, and Healthy Aging Symposium, Mar., 2008
7. Xue Song Mi, PhD (co-supervised with primary supervisor Prof. KF So), Awarded Seri Travel Fellowship, 2011
8. Liu, Jin (co-sup with Dr. A Lo), Awarded with Wong Ching Yee Medical Postgraduate Scholarship and YS and Christabel Lung Postgraduate Scholarship 2014/2015

**MPhil/PhD THESIS EXAMINERS COMMITTEE:**

**Internal examiner:**

1. Tong Sik Kwong, MPhil, The University of Hong Kong, 1993. Eukaryotic expression cloning of the HIS50 $\beta$  Lymphocyte lineage-specific membrane protein by immunomagnetic selection.
2. Tat Fong Ng, PhD, The University of Hong Kong, 1996. Molecular basis for regeneration of CNS: a possible regulatory role of growth associated protein-43.
3. Sau Ping Tam, MPhil, The University of Hong Kong, 1996. Gene expression of hypothalamic somatostatin, growth hormone releasing factor, and their pituitary receptors in hypothyroidism.
4. Kin Sang Cho, PhD, The University of Hong Kong, 1997. Effects of intravitreal optic nerve and/or sciatic nerve graft on survival, sprouting and regeneration of axotomized retinal ganglion cells in hamster.
5. Kaimin Chan, PhD, The University of Hong Kong, 1997. Isolation and characterization of NRF2, a member of the NF-E2 family of transcription factors.
6. Sing Kwok Chan, PhD, The University of Hong Kong, 1998. Mouse preproendothelin-1 gene: transgenic mouse models to study tissue-specific and developmental expression and regulation.
7. Zeng Qing Rong, MPhil, The University of Hong Kong, 1998. The effect of intravitreal administration of peripheral nerve grafts or tropic factors on the axonal regeneration of retinal ganglion cells following a crush injury of the optic nerve.

8. Chan Pok Man, Mphil, The University of Hong Kong, 1999. Cloning of hamster GAP-43 to study the expression and regulation of GAP-43 mRNA in retina during degeneration and regeneration.
9. Song Zhentao, PhD, The University of Hong Kong, 1999. Effects of Schwann cell-specific over-expression of aldose reductase on diabetic and galactosemic neuropathy.
10. Ho Chung Yin, Maggie, Mphil, The University of Hong Kong, 2000. The functional role of endothelin-1 in astrocytes by making use of endothelin-1 knockout mice.
11. Inderjeet Bhatia, Mphil, The University of Hong Kong, 2000. An in vivo model of bilirubin neurotoxicity.
12. Law Wai Sze, Mphil, The University of Hong Kong, 2000. Conditional knockout of neural cell adhesion molecule L1 in mouse brain.
13. Jiang Hong, PhD, The University of Hong Kong, 2001. Effects of estrogen on human catechol-o-methyltransferase.
14. Liang Xiuhua, PhD, The University of Hong Kong, 2001. Neural damage and cytokine activation
15. Lee Ming Kei, PhD, The University of Hong Kong, 2002. Study of the physiological role of sodium/myoinositol co-transporter gene in knockout mice
16. Chiu, Kelvin W.C., Mphil, The University of Hong Kong, 2002. Generation of transgenic and knockout constructs to study the role of endothelin-1 expression on the development of craniofacial and cardiac structures
17. Koon, Micheal, PhD, The University of Hong Kong, Dec., 2002. Role of endothelin-1 and nitric oxide on the cardiovascular function
18. YAW, Lai Ping, Mphil, The University of Hong Kong, Aug., 2003. The functional role of endothelin-1 on astrocytes and neurons under hypoxia/ischemia by using ET-1 transgenic and knockout mice
19. Ho, Eric C.M., The University of Hong Kong, May 2003. Role of polyol pathway enzymes in the pathogenesis of diabetic neuropathy
20. Tsang, Wai Hung, The University of Hong Kong, May 2003. Studying the roles of mouse Sox10 by conditional gene targeting
21. Kwok, Chi Fung, Jessica, The University of Hong Kong, May 2004. Expression of Chondroitin Sulfates in the developing hindbrain-contribution to plasticity
22. Lee, King Yiu, The University of Hong Kong, Aug., 2004. The *ret* gene in the enteric nervous system: expression analysis and generation of *ret* deficient mice
23. Wing-Lok Ho, The University of Hong Kong, Dec., 2004. The role of neuronal mitochondrial uncoupling proteins in MPP<sup>+</sup>-induced toxicity: a potential for neuroprotection in Parkinsonism
24. Samuel Chung, The University of Hong Kong, June, 2005. The development and characterization of a gene-knockout mouse model for secretin receptor
25. Cheung Ngai, The University of Hong Kong, July, 2005. Structural and functional characterization of EEN/endophilin A2, a fusion partner in acute leukemia
26. Lai Suk King, Department of Physiology, The University of Hong Kong, Aug., 2005. Maturation profile of rat vestibular nuclear neurons: recognition of gravity-related vertical movement and role of ionotropic glutamate receptors
27. Wang Ying, Department of Chemistry, The University of Hong Kong, March, 2006. Exploring action mechanisms of chemotherapeutic agents in human cancer cell lines by biochemical and proteomic approaches
28. Mary Lee, Dept. of Pharmacology, The University of Hong Kong, Dec., 2006. Molecular changes in regenerated and senescent cultured endothelial cells
29. Yam, Nicholson, Dept. of Anatomy, The University of Hong Kong, July, 2007. Endothelin expression in Nasopharyngeal carcinoma cells

30. Lai, Wai Lung, PhD, Dept. Biochem., The University of Hong Kong, Sept., 2007
31. Fan, Ngo Yin, MPhil
32. Ma, Chun Hang, PhD
33. Li, Mingfang, PhD, Medicine, 2009
34. Wang, Silum, PhD, 2009
35. Kwong, Michael Wai Hang, PhD, 2009
36. Li Mei, PhD, Biochemistry, 2009
37. Li Huiying, Mphil, Pharmacology and Pharmacy, 2009
38. Mr. Ong Kwok Leung, PhD, 2010
39. Cham Wai Chung, Mphil, Biochem., 2010
40. Mr. Chang Junlei, PhD, Medicine, 2011
41. Ms. Liang Chaofan, PhD, Pharmacology and Pharmacy, 2011
42. Mr. Cao Zhiwen, MPhil, Physiology, 2011
43. Miss Ge Xuan, PhD, Medicine, 2012
44. Mr. Shiu Wing Ming Sammy, PhD, Medicine, 2013
45. Ms. Lam Hiu Chor, PhD, 2013

**Additional Examiner:**

1. Yeung Ho, Mphil, The University of Hong Kong, 2000. Chondroitin sulphate proteoglycans produced by astrocytes modulate neuron adhesion and neurite outgrowth
2. Sae-Pang Jearn Jang, PhD student, The University of Hong Kong, January, 2007
3. Cheung Vinci, PhD, Psychiatry, The University of Hong Kong, January, 2008

**External Examiner:**

1. Amy K.Y. Fu, PhD, The Hong Kong University of Science and Technology, 1998. The functional roles of trophic factors in the formation of neuromuscular junctions.
2. Fu Wing Yu, PhD, The Hong Kong University of Science and Technology, 2002. The functional roles of cyclin-dependent kinase 5 in neuronal development
3. Chung, Kai, PhD, The Hong Kong University of Science and Technology, 2003. Identification of Pctaire1 as a p35-interacting protein and a novel substrate for Cdk5
4. Suen, Po Man Ada, PhD, The Chinese University of Hong Kong, 2007. Isolation, characterization and differentiation of pancreatic progenitor cells from human fetal pancreas
5. Zhuolin Gong, PhD, The Hong Kong University of Science and Technology, 2010. The assembly of the Postsynaptic cytoskeletal scaffold in the development of the neuromuscular junction
6. MA, Man Ting, MPhil, 2010, The Chinese University of Hong Kong
7. XIE Weilin (Prof. Kenny K. Chung's student), PhD, 2011, Dept Biochem, The Hong Kong University of Science and Technology
8. Prof. Zhenguo Wu's PhD student, 2011, Dept Biochem, The Hong Kong University of Science and Technology
9. Weiqun Fang, PhD, 2011, Dept Biochem., The Hong Kong University of Science and Technology, The roles of axin in embryonic cerebral cortex development
10. Yanfeng Li, PhD, 2011, Dept Biochem., The Hong Kong University of Science and Technology, Functional analysis of Dusp27, a novel target gene of the JAK1/STAT1 pathway in myogenesis
11. Liang, Juan, School of Biomedical Sciences, CUHK, 2014
12. Ms. Liu, Sisi, School of Biomedical Sciences, CUHK, 2015

**Chairman of examination committees:**

1. Sung Lan, Mphil, The University of Hong Kong, 1999. Role of homocysteine in the expression of monocyte chemoattractant protein-1
2. Ho Sai Pong, Mphil, The University of Hong Kong, 2002. Generation and analysis of transgenic mice expressing collagen X with a mutation in the NC1 domain
3. Wong, Chi-Ming, PhD, The University of Hong Kong, 2003. Roles and regulation of *Saccharomyces cerevisiae* peroxiredoxins in cellular defense against oxidative and nitrosative stress
4. Shi Yi, PhD, The University of Hong Kong, 2006, "Endothelial dysfunction and changes in vascular smooth muscle responsiveness in femoral arteries of diabetes (type 1) and aging rats".
5. Chan, Kin Wang, PhD, The University of Hong Kong, 2007. "Study of the in vivo role of TSPYL2 in transgenic mice"
6. Chan Lai Yin, PhD, Pharmacology, The University of Hong Kong, 2008. "Acute actions of osthole in the modulation of vascular system"
7. Mr. Zhang Deyong, PhD
8. Ms. Lau Tik Yan Ivy, Mphil
9. Mr. Zu Yi
10. Ms. Zhou Li, PhD, Dept of Medicine, 2009
11. Mr. Chan Chi Ping, PhD, Dept Biochem, HKU, 2010
12. Mr. Guo Tianhuan, PhD, Pathology, HKU, 2009
13. Mr. Yeung Chun Yu, PhD, Medicine, HKU, 2009
14. Mr. Qin Kun, PhD, Microbiology, HKU, 2009
15. Mr. Law Wai Lok, Mphil, Clinical Oncology, HKU, 2010
16. Ms. Zhang Mei, PhD, Biochem, HKU, 2010
17. Zhongping Zhang, MPhil student, Diagnostic Radiology, HKU, 2011
18. Ms. Hu Huijing, PhD, Physiology, 2011
19. Mr. Cheung Chung Lam, PhD, Microbiology, 2011
20. Mr. Zhu Jiang, PhD, Surgery, 2012
21. Ms. Qi Chuanjie, PhD, Anatomy, 2012
22. Mr. Davis Ho, PhD, Surger, 2013
23. Ms. Zou Qian, PhD, Pharmacology and Pharmacy, 2013
24. Mr. Fan Pengcheng, PhD, Pharmacology and Pharmacy, 2013
25. Ms. Wen Xi, PhD, Microbiology, 2013
26. Mr. Cai Yin, PhD, Pharmacology and Pharmacy, 2014
27. Mr. Song Erfei, PhD, Pharmacology and Pharmacy, 2014
28. Ms. Liang Xiaoting, PhD, Medicine, 2014
29. Ms. Tai Wing Yin Evelyn, PhD, Physiology, 2014
30. Mr. Lu Xibin, PhD, Biochemistry, 2014
31. Mr. Dan Liu, PhD, Diagnostic Radiology, 2015
32. Ms. Tse Wing Sze, Mphil, Medicine, 2015
33. Ms. Zhong Ling, PhD, Pharmacology and Pharmacy, 2015
34. Ms. Cai Yu, PhD, Pharmacology and Pharmacy, 2016
35. Ms. Guo Yuhan, PhD, Medicine, 2016
36. Ms. Shu Lingling, PhD, Medicine, 2016
37. Ms. Huang Zhe, PhD, Medicine, 2016
38. Ms. Wang Baile, PhD, Medicine, 2016
39. Ms. Chen Jing, PhD, Pharmacology and Pharmacy, 2016
40. Mr. Kwok Ho Man, PhD, Medicine, 2017

41. Mr. Yiu Jensen Ho Cheung, MPhil, Pharmacology and Pharmacy, 2017
42. Ms. Chen Jian, MPhil, Pharmacology and Pharmacy, 2017
43. Ms. Xia Wei, PhD, Surgery, 2017
44. Mr. Man, Wing Chung, PhD, Pharmacology and Pharmacy, 2017

**PROFESSIONAL TRAINEES as Principal Supervisor:**

1. Dr. Wendy Fung, Senior Research Assistant (Postdoctoral Fellow), 2002 – 2003, IMB
2. Dr. William Wu, Senior Research Assistant (Postdoctoral Fellow), 2002 – 2003, IMB, Current position: Postdoc, U of Iowa, USA
3. Dr. Amy Lo, IMB, 1995 - Present; Current position: Research Associate, Department of Anatomy, The University of Hong Kong.
4. Dr. Donald Ng, Postgraduate student & Senior Research Assistant, IMB, 1996-1997; Current position: Research Scientist, Dept. of Brain and Cognitive Science, MIT
5. Dr. Theobald Chan, Postdoctoral fellow, IMB; Current position: Consultant, Medical and Biotech Group, Hong Kong Productive Council, Hong Kong.
6. Ms. Helena W.Y. Louie, Senior Research Assistant, IMB, 1996-1997; Current position: Research scientist, Disease Control Center, Toronto
7. Dr. Fanny Mo, Research Assistant, IMB, 1996-1999; Current position: Postdoc, NIH, U.S.A.
8. Ms. Marcella K L Ma, Senior Technician, IMB, 1994 – 2003, Current position: MSc student, HKU
9. Mr. Colin X F Lin, Research Assistant, IMB, 1993-1996; Current position: Research associate, Lexicon, U.S.A.
10. Ms. Janice W.S. Law, Research Assistant, IMB, 1996-1998; Current position: technician, Singapore.
11. Ms. Rose Y.L. Wong, Research Assistant, IMB, 1995-1996; Current position: Postgraduate student, Australia.
12. Mr. Horace T.B. Ho, Research Assistant, IMB, 1995-1997; Current position: Postgraduate student, Inst. of Molecular Biology, The University of HK.
13. Ms. Maggie C.Y. Ho, Research Assistant, IMB, 1996-1997; Current position: Postgraduate student, Inst. of Molecular Biology, The University of HK.
14. Mr. Andrew K.C. Wong, Research Assistant, IMB, 1997, Current position: technician, Canada.
15. Mr. W.L. Wong, Research Assistant, IMB, 1997.
16. Ms. Becky Cheung, Research Assistant, IMB, 1999, Current position: technician, HKU.
17. Ms. Amy Lam, Research Assistant, IMB, 1999.
18. Ms. Oi Fung Cheung, Research Assistant, IMB, 2002 - present
19. Mr. Shui Fai Cheung, Research Assistant, IMB, 2003, Current position: PhD candidate, HKU
20. Ms. Maggie Kai Lai Fung, Research Assistant, IMB, 2002 –2004, Current position: PhD student, HKU
21. Ms. Keri M.C. Mak, Research Assistant, IMB, 2003, Current position: Mphil student, HKU
22. Mr. Victor K.L. Hung, Research Assistant, IMB, 2003 – 2004, Current position: Ph.D. student, HKU
23. Mr. Alvin K. H. Cheung, IMB, 2004, Current position: Ph.D. student, Department of Anatomy
24. Ms. Amy Lam, Research Associate, IMB, 2004 – Aug., 2005, Current position: Postdoctoral Fellow at Faculty of Medicine, HKU

25. Dr. Ann Chen, Anatomy, Postdoc. Fellow, 2005 – present
26. Ms. Sau Ying Tse, Laboratory Attendant, Anatomy, 2005 – 2019
27. Mr. James Yue Bong Lau, Senior Technician, Anatomy, 2005 – present
28. Ms. Lai Ka Wai, Research Assistant II, Anatomy, 2005 – present
29. Mr. Chan King Chung, Research Associate, Anatomy, July, 2005 – Aug, 2005
30. Dr. Yeung Chung Man, Postdoctoral Fellow, Anatomy, Dec, 2005 – Feb. 2008
31. Dr. Jackson Chan, Postdoc. Fellow, Anatomy, Dec, 2005 – present
32. Dr. Amy Lam, Postdoctoral Fellow, Anatomy and Centre of HBHA, HKU, Jan, 2005 – 2008
33. Mr. Alan Kai, Research Assistant, Anatomy, HKU, 2005 – Aug. 30, 2006
34. Ms. Carman Lok, Anatomy and SBMS, HKU, 2007 to present
35. Ms. Chung Ting Wang, Research Assistant, Anatomy, Aug. 2005 – Aug. Nov. 30, 2006
36. Dr. Andrew Tai, Postdoc Fellow, Anatomy, Nov 2009 – Feb.15, 2011
37. Dr. Michael Yuen, Postdoc fellow, Anatomy, 2013
38. Dr. Aden So, Postdoc Fellow, Anatomy, 2014 to 2016
39. Dr. Cheng Xiao, HK Scholar Society Postdoc Fellow, 2015
40. Dr. Michael Song, Postdoc, 2016 to present
41. Dr. Chamila Pandula, Postdoc, 2016 to 2017
42. Dr. Yeung Ka Kit Patrick, Research Associate, Nov. 2006 – present

**MOLECULAR BIOLOGY WORKSHOP AND TRAINING FOR MBBS,  
SECONDARY SCHOOL AND UNIVERSITY SUMMER STUDENTS:**

1. Graham Shea, West Island School, 2002
2. Henrick Hoeg, West Island School, 2003
3. Vicent Goh, West Island School, 2004
4. Stanley Yeung, West Island School, 2004
5. Brandon Seah, West Island School, 2004
6. Johnny Kai Ming Chow, West Island School, Nov, 2005
7. Sameen Mazhar, West Island School, Nov, 2005
8. Gerene Garcia, West Island School, Nov, 2005
9. Vicent Enoch Goh Goh, University College London 2007
10. Samuel Wae Pang Cheung, State University of New York at Binghamton, 2007
11. Claire Park, Biomedical Engineering, The University of Hong Kong
12. Ella Fung, Biological Natural Sciences, University of Cambridge
13. Wu Ping, MBBS1, The University of Hong Kong, 2010
14. Barry Wo, MBBS1, The University of Hong Kong, 2012
15. Alex Chu, BS, Science Faculty undergraduate, The University of Hong Kong, 2015-2016

**RESEARCH FUNDING AS PRINCIPAL INVESTIGATOR:**

1. S.K. Chung: Location of sorbitol dehydrogenase gene expression in mouse, CRCG, HK\$ 60,000, July, 1992-1993, 35/089/0002
2. S.K. Chung and K.F. So: Molecular basis for regeneration of central nervous system: a possible regulatory role of growth associated protein-43, RGC, HK\$ 486,000, 1993-1996, 338/089/0002
3. S.K. Chung: Tissue specific expression and developmental regulation of human endothelin-1 gene, CRCG, HK\$ 72,000, July 1993-1996, 337/089/0001

4. S.K. Chung and S.S.M. Chung: Transgenic mouse models to study the molecular basis of diabetic neuropathy, RGC, HK\$ 503,000, Sep 1994-Jun 1997, 338/089/0003
5. S.K. Chung: Characterization of endothelin-1 gene expressing transgenic lines, CRCG, HK\$ 119,600, Jul 1994-1995, 335/089/0003
6. S.K. Chung: Study of the function of a developmentally essential gene, endothelin-1, using the two-tiered transgenic approach, RGC, HK\$ 880,000, Aug 1995-1998, 338/089/0006
7. S.K. Chung: Structural organization of endothelin-1 gene, CRCG, HK\$ 111,000, 1995-1996, 337/089/0002
8. S.K. Chung: The cell type-specific knockout of endothelin-1 gene to understand its function, RGC, HK\$ 692,000, Sep 1996-1998, 338/089/0008
9. S.K. Chung: Inactivation of aldose reductase gene in embryonic stem cells study its role in diabetic neuropathy, CRCG, HK\$ 135,000, Jul 1996-1997, 335/089/0007
10. S.K. Chung: Schwann cell-specific inactivation of neuro-proteins, aldose reductase, to study its role in diabetic neuropathy, HKUST- BRI, HK\$ 460,000, Sep 1996-1997, 394/089/1589
11. S.K. Chung and S. M. Chung: Targeted disruption of aldose reductase gene in mice to study its role in diabetic neuropathy, RGC, HK\$ 686,880, 1997-2000, 338/089/0009 (University representation for RGC visit to HKU)
12. S.K. Chung: The role of endothelin-1 and nitric oxide on the homeostasis of vascular tone in the ET-1 and NOS transgenic and knockout mice, CRCG, HK\$ 86,000, 1998-2000
13. S.K. Chung: Schwann cell-specific inactivation of neuro-proteins, aldose reductase, to study its role in diabetic neuropathy, HKUST- BRI HK\$ 475,480, 1997-1998
14. S.K. Chung: Generation of ligand-inducible knockout mouse model of endothelin-1 to study neural injury and protection and blood brain barrier maintenance, RGC, HK\$ 705,000, 1998-2001
15. S.K. Chung as Project PI (K.S.E. Cheah, PI and Coordinator): Understanding gene function and molecular basis of disease using transgenic and gene targeting technology, RGC central allocation HK\$ 250,000 out of total of 5.5M, Sept, 1999-2003
16. S.K. Chung: The mechanisms of erectile dysfunction associated with diabetes, CRCG, HK\$ 72,000, 1999-2000
17. S.K. Chung: The role of aldose reductase in biosynthesis of tetrahydrobiopterin, an essential cofactor for nitric oxide synthase and other neurotransmitter enzymes, CRCG, HK\$ 120,000, 2000-2001
18. S.K. Chung: Role of endothelial and astrocytic ET-1 in the pathogenesis of diabetic retinopathy, a major cause of blindness in man, RGC HK\$ 1,097,100, Nov, 2000-Mar., 2005
19. S.K. Chung: Branchial mesodermal ET-1 expression on the survival of ectomesenchymal cells for craniofacial formation, CRCG, HK\$ 60,000, 2001-2002
20. S.K. Chung as Project PI (Prof. K. Cheah, PI and Coordinator): Genomic approaches to uncover functionally relevant signaling, RGC central allocation no funding out of 3M, 2002 – 2005
21. S.K. Chung: Characterization of endothelin-1 gene manipulated mice for ischemic stroke, A leading cause of death and disability, RGC, HK\$ 2,090,000, 2002-2006
22. S.K. Chung: Merit and incentive awards in 2003/904 RGC CERG allocation exercise for Faculty and Department, Merit Award HK\$12,500, 2003

23. S.K. Chung: Molecular mechanisms of dementia associated with aging-related diseases, Alzheimer's and multi-infarct, RGC, HK\$ 1,356,000, 2003-2006, Merit Award HK\$ 37,500
24. S.K. Chung: Genetic approaches to understand the pathogenesis of diabetic neuropathy: common, debilitating disease, RGC, HK\$ 1,669,500, Jan, 2005-2007, Merit Award HK\$ 50,000
25. S.K. Chung as Project Co-I and Deputy coordinator of Animal models (Director, Prof. Nancy Ip, HKUST): Molecular neuroscience: basic research and drug discovery, Area of Excellence, 2002-2007, HK\$ 2,535,988 out of 25M (from 2002-March 2006, further funding on yearly bases until 2007)
26. S.K. Chung and S.M. Chung: Contributions of Aldose Reductase to Oxidative Stress, Pfizer, Inc, USA, HK\$ 336,960, 2002 - 2003
27. S.K. Chung and S.M. Chung: Implication of Aldose reductase activation in the pathogenesis of diabetic neuropathy and effects of aldose reductase inhibitor, Sanwa Co., Japan, HK\$ 792,300, 2002 – 2004
28. S.K. Chung and P. Vanhoutte: Epac project from Biopharmaceutical Development Center, HKU/Hybrigenic, France, HK\$ 560,000 Sept, 2004 - Aug. 2006
29. S.K. Chung: To determine the efficacy of aldose reductase inhibitor (ARI) in treatment of ischemic brain injury by comparing ARI treated to AR-deficient mice, Sanwa Kagaku Kenkyusho Co., Ltd, Japan, HK\$ 488,000, Dec., 2005 – Nov., 2006
30. S.K. Chung as Project PI (with Prof. Karen Lam, Director, A.XU and S.M. Chung): An *in vivo* evaluation platform for assessing the anti-diabetic potential of traditional chinese medicine, Hong Kong Jockey Club Institute of Chinese Medicine Ltd., HK\$ 664,000 out of 4,827,815, Mar., 2007 – Feb., 2009 (withdrawn in Mar. 2007 due to Jockey Club administrative reasons)
31. S.K. Chung, Joint Studies by HKU and TA Therapeutics, HKUST: To determine the efficacy of two compounds in treatment of ischemic brain injury, TA Therapeutics, HKUST, HK\$ 633,000 Mar, 2006 – Feb., 2007
32. S.K. Chung (PI) and Prof. P. Vanhoutte: Conditional knockout of tissue factor for understanding its role in cardiovascular function, BDC, HKU, HK\$ 288,000, Dec., 2005 – Nov., 2006
33. S.K. Chung: S.K. Chung (Director, Prof. Nancy Ip, HKUST) Molecular neuroscience: basic research and drug discovery, Deputy coordinator of Animal models, Area of Excellence, HK\$ 300,000, April 1– Sept. 30, 2006
34. S.K. Chung (PI) and S.M. Chung, To determine the efficacy of aldose reductase inhibitor in treatment of non-diabetic retinal ischemia/reperfusion induced damage by comparing ARI treated to AR-deficient mice, Sanwa Kagaku Kenkyusho Co., Ltd, Japan, HK\$ 693,744, Dec. 1, 2006 – Nov. 30, 2007
35. S.K. Chung, Conditional knockout of osmotic responsive element binding protein, OREBP/NFAT5/TonEBP, to study its role in brain edema and infarct after ischemic stroke: a leading cause of mortality and morbidity, HK\$ 1,374,300, Jan. 1, 2007 – Dec. 31, 2009
36. S.K. Chung, S.K. Chung (PI) and Prof. P. Vanhoutte: Conditional knockout of tissue factor for understanding its role in cardiovascular function, BDC, HKU, HK\$ 185,660, Dec., 2007 – May, 2008
37. S.K. Chung: S.K. Chung (Director, Prof. Nancy Ip, HKUST) Molecular neuroscience: basic research and drug discovery, Deputy coordinator of Animal models, Area of Excellence, HK\$ 1,740,000 (580,000/yr, based on output), Sept. 1, 2007 – Aug 30, 2010

38. S.K. Chung (PI) and S.M. Chung, To determine the efficacy of aldose reductase inhibit in Alzheimer's disease, Sanwa Kagaku Kenkyusho Co., Ltd, Japan, HK\$ 700,000, Dec. 1, 2007 – May 30, 2009
39. S.K. Chung, Inactivation of cAMP-regulated guanine nucleotide exchange factors for defining its in vivo role in diabetes mellitus 106,000 03/2008 to 07/03/2009
40. S.K. Chung, GRF Incentive Awards to Principal Investigator (09-10), HKU, 30,000, 2009
41. S.K. Chung, Donation from the Li Ka Shing Foundation: Strategic Research Theme-Healthy Aging, 40,000, Nov, 2009
42. URC/CRCG - Conference Grants, Targeted Disruption of Exchange Protein Directly Activated by Cyclic-AMP 1 in Mice Leads to Altered Islet Architecture and Reduced  $\beta$ -cell Distribution of GLUT-2, 16,500, 2009
43. S.K. Chung and K.S.L. Lam, Role of Epac1 in glucose- and GLP-1 stimulated insulin secretion by making use of Epac1-deficient ES cell-derived beta cells and isolated GFP-positive beta cells with Epac1 deletion (IISP Proposal # 36689), HK\$ 760,917, Merck Sharp & Dohme ("MSD"), Nov, 2009- Oct, 2011
44. S.K. Chung, Start Domain-Containing Protein 13, STARD13, RhoA GTPase-activating protein in painful neuropathy: common and debilitating complication of diabetes, CRCG, 93,000, 2010
45. S.K. Chung, Role of STARD13m Rho GTPase actiating protein, in blood brain barrier maintenance, infarct and dementia associated with brain injury, GRF 2010-2011, Fundable but not funded by GRF, GRF Incentive Award,25,000 2010-2011
46. S.K. Chung, Travel Grants for NSFC/RGC JRS Role of transcription factor NFAT5 target gene aldose reductase in inflammation, edema and oxidative stress after spinal cord injury, NSFC/RGC Joint Research Scheme 2011/2012: Travel Grant, 4,500, 2011
47. S.K. Chung, Role of Epac1, cAMP-regulated guanine nucleotide exchange factor 1, in blood brain barrier maintenance, infarct and neurological deficits during ischemia/reperfusion injury, HK\$1,060,726, Jan.1, 2009 to Jun 30, 2012
48. S.K. Chung, Role of STARD13, Rho GTPase activating protein, in blood-brain barrier maintenance, infarct and dementia associated with brain injury, Seed Funding Programme for Bas, 58,000, May 15, 2011 – Apr 14, 2012
49. S.K. Chung, Role of transcription factor NFAT5 target gene aldose reductase in inflammation, edema and oxidative stress after spinal cord injury, NSFC/RGC Joint Research Scheme 2011/2012, Short-listed but not funded
50. S.K. Chung, The role of exchange protein directly activated by cAMP Epac in diabetic painless and painful neuropathy, Seed Funding Programme for Basic Research, HKU URC, HK\$ 95,500, July, 2012 – June, 2013
51. S.K. Chung, Molecular basis for diabetes-induced painless and painful neuropathy, and inability to structurally and functionally recover after peripheral nerve injury, HK GRF RGC, HK\$ 1,200,000, Sept. 1, 2012 - Aug. 30, 2015
52. S.K. Chung as PI(coordinator Prof. Nancy Ip), Stem Cell Strategy for Nervous System Disorders, Theme-Based Research Scheme, HK\$1,460,000 (out of 5yr funding of 2,900,000 to SKC) on-cost (from Sept 1, 2012 to Aug. 31, 2013) out of total HK\$60.839M, Sept, 2012 – Aug. 30, 2017
53. S.K. Chung as Investigator (Prof. Aimin Xu and Karen Lam, Directors), Partner State Key Laboratory on Pharmaceutical Biotechnology, July 1, 2013 – Jun 30, 2018
54. S.K. Chung, PI, To determine the role of exchange proteins directly activated by cAMP (Epac) in the gut microbiota-mediated metabolic syndrome, Health and Medical Research Fund, 02131826, HK\$ 997,000, July 2015 – 2017

55. S.K. Chung, PI, To determine the role of exchange protein directly activated by cAMP in the blood-retinal barrier and pathogenesis of diabetic retinopathy, Health and Medical Research Fund, 13142231, HK\$947,000, July 2016 – 2018
56. S.K. Chung, PI, Interaction between activated aldose reductase, non-enzymatic glycation, PKC and hexoamine pathways for the pathogenesis of diabetic complications, Health and Medical Research Fund, 13142221, HK\$967,000, July 2016 – 2018
57. SK Chung (co-I), Nancy Ip (PI and Coordinator)...., Cellular mechanisms of synaptic functions and plasticity in health and neurodegenerative diseases, RGC Area of Excellence (AoE), HK\$77.516M to Prof. Nancy Ip (Coordinator, PI).... , SK Chung & Dr KO Lai (HKU co-Is), HK\$ 2,134,000, April, 2017-Mar, 2025
58. SK Chung, To discuss the collaborative research at the capacity of “Visiting Professor at PLA Institute of Neurosciences, The Fourth Military Medical University”, Travel grant to China, 12,482, 2017
59. Wai Ho Tang and SK Chong (co-PI), Guangdong and Hong Kong Joint Innovation Field of Scientific and Technological Cooperation Project. Project number: 2017A050506008. The role and mechanism of platelet transfer by miRNA-143/145 on diabetic vascular disease”, May 2017 to Apr 2019 Total cost: \$1,000,000 (RMB), Direct cost to HKU: 100,000 (RMB).
60. CRF, Billy Chow (PI), ...SK Chung (co-PI), Role of secretin in cardiovascular pathological development and secretin functional analogs as anti-hypertensive agents, application submitted, Jan, 2018
61. TRS, Nancy Ip (PI), ..., SK Chung (co-PI), A stem cell approach to dissect the molecular basis of neurodegeneration, application submitted, 2018
62. Billy Chow (PI)... SK Chung (co-I), Brain aging, Alzheimer’s disease and organ crosstalk, 2018
63. SK Chung (PI), NSFC, Endothelin-1 and tanshinone IIA, Chinese RMB 540,000, Jan 2018 to Dec 31, 2021
64. 省部共建中医湿证国家重点实验室项目 “基于差异蛋白组学探讨湿邪致缺血性中风的生物学机制” 申报合作框架协议书, 600,000 Yuen, 2021

#### **CURRENT GRANT (as co-Investigator)**

1. Annie Kung (S.K. Chung): The production of a transgenic mouse model of autoimmune thyroiditis and the study of induction of tolerance to an organ specific autoantigen in transgenic mice expressing thyroid peroxidase in the thymus, RGC, HK\$ 623,000, 1994
2. P.T. Chung and S.K. Chung: To study the protective role of insulin-like growth factor-I in neural degeneration using transgenic mouse model, RGC, HK\$ 631,000, 1995-1997
3. A.C. Y. Lo and S. K. Chung: Targeted over-expression of endothelin-1 in astrocytes as a transgenic model to investigate its role in brain injury and blood-brain barrier function, HKU 7240/97M, 338/089/0010, 10201722.26733.43700.324.01, RGC, HK\$ 1,211,360, 1997–2000
4. A.C. Y. Lo and S. K. Chung: Transactivation of endothelin-1 in the testis by cre/loxP system to study its role in testicular microcirculation and function, CRCG, HK\$ 120,000, 1998-2000
5. P.T. Cheung and S.K. Chung: Interaction between endothelial and astroglial cells in hyperbilirubinaemia: role of cytokines and insulin-like growth factor-I and modulation by hypoxic-ischaemia, CRCG, HK\$ 106,000, 1998-2000

6. H. Yip and S.K. Chung: Expression of neurotrophin trk receptors and trk receptor mRNAs in the developing and adult rat retina, CRCG, HK\$ 96,000, 1998-2000
7. K.W. Chan, C.K. Cho and S.K. Chung, Growth and functions of human kidney tubular cells and transgenic mouse kidneys affected by mutated adult polycystic kidney disease gene, PKD1, RGC, HK\$ 980,300, 1998-2001
8. P.T. Cheung and S.K. Chung, A transgenic mouse model for a human hereditary neurodegenerative disorder of motor neuron, spinal and bulbar muscular atrophy, caused by trinucleotide CAG repeat expansion in the androgen receptor gene, RGC, HK\$ 1,072,000, 1998-2001
9. Annie Kung and S.K. Chung, The production of a transgenic mouse model of autoimmune thyroiditis and the study of induction of tolerance to an organ specific autoantigen in transgenic mice expressing thyroid peroxidase in the thymus, RGC, HK\$ 705,000, 1998 – 2001
10. Karen Lam, S.M. Chung and S.K. Chung, Interaction between the polyol pathway and non-enzymatic glycation in the pathogenesis of diabetic nephropathy, RGC, HK\$ 705,000, 1998 - 2001
11. A.C.Y. Lo and S.K. Chung: The rescue of ET-1 deficient astrocytes from H/I induced cell death by co-culturing with ET-1 over-expressing astrocytes, CRCG, HK\$ 120,000, 2000-2002
12. K.S.E. Cheah and S.K. Chung: Understanding gene function and molecular bases of disease using transgenic and gene targeting technology, RGC Central Allocation, HK\$ 5,500,000, 1999
13. D.K.Y. Shum and S.K. Chung: The role of chondroitin 6-sulfotransferase in post-traumatic regeneration of peripheral nerves, RGC, HK\$ 841,500, 2001
14. K.S.E. Cheah and S.K. Chung: Genomic approaches to uncover functionally relevant signaling pathways in craniofacial development, RGC, HK\$ 5,000,000, 2002
15. S.S.M. Chung and S.K. Chung: Mechanism of Nogo-A inhibition of axonal regeneration, NSFC/RGC, HK\$ 770,982, 2002
16. R. Chang and S.K. Chung: Development of double-stranded RNA-dependent protein kinase (PKR) specially in neurons over-expressed transgenic mice. Significance of PKR signaling pathway in neurodegeneration and Alzheimer's disease, CRCG, HK\$ 120,000, 2002
17. D.Y. Jin, I. Ng and S.K. Chung: Functional of a novel liver-enriched transcription factor of the bZIP family characterization, RGC, HK\$ 1,786,000, 2002 – 2005
18. K.M. Yao, S.K. Chung, M.K. Thomas and J.F. Habener: Investigating the role of a secreted protein spin-1 in regulation of pancreas beta-cell growth and differentiation, RGC, HK\$ 816,000, 2002 – 2005
19. K.S.E. Cheah and S.K. Chung: Understanding gene function and molecular bases of disease using transgenic and gene targeting technology, RGC Central Allocation, HK\$ 3,000,000, 2003
20. S.M. Chung, S.K. Chung and Ju Gong: Mechanism of nogo inhibition of axon regeneration, NSFC/RGC, HK\$ 800,00, 2003-2006
21. R. Chang and S.K. Chung: Caspase-3 as an upstream signaling molecule for translational control in neuronal apoptosis: implications of [beta]-amyloid peptides-induced neuronal apoptosis, RGC fundable but not funded, HK\$ 30,000, 2003
22. H. Yip and S.K. Chung: In vivo gene transfer of the catalytic subunit of telomerase protects retinal ganglion cells against axotomy-induced cell death, CRCG, HK\$ 80,000, 2005

23. B.K.C. Chow, Y.S. Chan and S.K. Chung: Secretin: a putative neurosecretory hormone that regulates water homeostasis in the hypothalamus-pituitary-adrenal axis, RGC, HK\$ 1,721,828, 2005 – 2008
24. A. Xu and S.K. Chung: Inflammation in adipose tissue as a novel mechanism that link obesity with insulin resistance and type 2 diabetes, CRCG, HK\$120,000, 2006
25. A.K.M. Lam and S.K. Chung: Investigating the role of Epac in the differentiation of mouse and human embryonic stem cells into insulin-producing cells, Small Project Funding, HK\$65,000, 2006
26. H.K.F. Yip and S.K. Chung: The interaction of Id2, bHLH and retinoblastoma proteins in the neurogenesis of zebrafish retina, CRCG, HK\$80,000, 2006
27. Aimin Xu, K. Lam and S.K. Chung: Hypoxia inducible factor 1 $\alpha$  as a mediator of obesity-induced chronic inflammation, aberrant production of adipokines and insulin resistance, RGC, HK\$ 843,500, 2006 - 2009
28. Aimin Xu, Yu Wang, Yu Huang and S.K. Chung: APPL1 as a Novel Modulator of Endothelial Nitric Oxide Production and Endothelium-dependent Vasodilation, RGC, HK\$1,258,228, 2007 (30 months)
29. A.W.C. Kung and S.K. Chung: Analysis of Na<sup>+</sup>/myo-inositol cotransporter (SMIT1) as a regulator of bone growth and bone mass, CRCG, HK\$100,000, 2007
30. K.F. So and S.K. Chung: The role of endothelin-1 in chronic ocular hypertension and retinal ischemia-reperfusion, CRCG, HK\$50,000, 2007
31. Jiangang Shen, S.K. Chung, KF So, Jim Liu, Dang Yang: Interactions of Reactive Nitrogen Species, Caveolins and Matrix Metalloproteinases: A Novel Signal Mechanism in Disruption of Blood Brain Barrier during Ischemic Stroke, GRF, HK\$1,191,369, 2008
32. K.F So, A. Lo and S.K. Chung: RAGE (receptor for advanced glycation end products), Abeta (beta-amyloid peptide) and ET-1 (endothelin-1) – probing their effects in glaucoma with transgenic mice over-expressing ET-1 in endothelial or glial cells, GRF, 2008 – 2011
33. Jiangang Shen and SK Chung: Elucidating caveolin-1 as a negative modulating protein for proliferation of neural stem/progenitor cells and neural differentiation in post-ischemic brain. HK GRF HK\$1,084,600, 2010 -2013
34. Andras Perl (PI) and SK Chung (as collaborator) : Pathogenesis and treatment of liver disease in transaldolase deficiency Period: 7/1/2010 - 6/30/2015 Total direct cost: \$1,250,000 NIH R01 DK078922
35. Jian Jiangang (PI) and SK Chung Molecular regulations of antioxidant therapy for preventing thrombolysis-induced blood brain barrier disruption and hemorrhagic transformation in acute ischemic stroke. HK GRF HK\$890,000, 2011-2014
36. CW. Chung (PI) and SK Chung: The role of astrocytic ET-1 in neuropathic pain: A study using astrocytic specific ET-1 over-expressing mice (GET-1), HK GRF HK\$ 750,000, 2012-2015
37. Billy Chow (PI) and SK Chung: Strategic research of hormones and their receptors in the water homeostatic axis: from molecular mechanisms to anti-hypertensive drug design, RGC CRF 2012 -2015, 5.63M
38. Jian Jiangang and SK Chung, Elucidating effects of APPL2 on regulating proliferation and cell fate decision of neural stem/progenitor cells through activating Notch signaling pathway. RGC GRF grant No. 777313, Hong Kong, HK\$779,429; 2014.1-2016.12

39. BKC Chow (PI) and SK Chung: Secretin in mouse cerebellar Purkinje cells is responsible for regulating motor coordination and learning, HKU 765113M HK\$ 1,385,652; 2013
40. Prof. PKY Chiu (PI) and SK Chung: Is endothelin-1 signaling a therapeutic target to reduce osteoarthritis? An experimental study, GRF 17105314, HK\$647,475, 2014
41. DURAIRAJAN S S Kumar An in vivo investigation of the therapeutic effects of modified Huang-Lian-Jie-Du-Tang and its combination with a Western drug memantine in Alzheimer's disease, HMRF 904,000.00 5 Feb 2014 - 4 Mar 2016
42. BKC Chow (PI) and SK Chung: Nuclear factor of activated T-cells 5 (NFAT5) plays a key role in regulating secretin and secretin receptor in the kidney for renal osmoprotection against osmotic stress, GRF 17112014, 940,955, 2014
43. YP Ching (PI) and SK Chung: Functional characterization of the roles of NIMA-related kinase, Nek2 in liver cancer development and metastasis, GRF 17105114, HK\$1,060,000, 2015
44. DURAIRAJAN S S Kumar: Neuropharmacological and Chemical-genetic Approaches to Investigate the Therapeutic Effects of Yuanhu Zhitong Prescription in Treating Alzheimer's Disease, 883,995.80 15 Aug 2015 to 31 Aug 2017
45. Prof. J Shen (PI) and SK Chung: Exploring HMGB1 signaling as molecular target in peroxynitrite-mediated blood brain barrier disruption and hemorrhage transformation in ischemia-reperfused brain with delayed thrombolytic therapy, GRF 17102915, HK\$731,487, 2015
46. Prof. Jg Shen (PI) and SK Chung: Elucidating effects of APPL2 on regulating proliferation and cell fate decision of neural stem/progenitor cells through activating Notch signaling pathway, RGC GRF grant No. 777313, Hong Kong, HK\$779,429; 2014.1-2016.12
47. Siva Sundara Kumar Durairajan: Potential repositioning of antiepileptics drug for the treatment of Alzheimer's disease: Role of Qingyangshen, gabapentin or their combination in neurogenesis and disease modification, HRMF, 1,195,400, Aug 2015 – Aug 31, 2017
48. Prof LI Min: Potential repositioning of antiepileptics drug for the treatment of Alzheimer's disease: Role of Qingyangshen, gabapentin or their combination in neurogenesis and disease modification, HMRF 1,195,400.00 1 Jun 2016 31 May 2018
49. Dr. CL Ng (PI), KH Chan and SK Chung: Small molecule of Adiponectin receptor agonist, AdipoRon - a potential therapeutic medication for Alzheimer's disease, HRMF 03143856, 956,608, 2016 - 2018
50. Dr. KH Chan (PI), Dr. CL Ng and SK Chung: Investigation of adiponectin gene therapy in an animal model of Alzheimer's disease, HRMF 03143886, HK\$1,136,960, 2016 - 2018
51. Dr. Amy Lo (PI) and SK Chung: Alleviation of early high mortality and aggravated brain pathology by lutein in a genetic type I diabetic mouse model after experimental stroke, HRMF 03142256, HK\$1,197,160, Aug 1, 2016 – July 31, 2018
52. Dr. Fanny Chui-fun Ip, KM Chan, C-M Ho, SK Chung, WY Fu, KY Fu: Optimizing the combinational use of the active chemical components in a TCM formula using a novel computational approach for neuroprotection and stroke treatment, ITF 1,384,600, Jun 1, 2016-Nov 30, 2017

53. Dr. Wen Chunyi, ....., SK Chung(co-I), Osteoarthritis-induced neurodegeneration: from molecular pathomechanism towards therapeutics (Pending)
54. Dr. Wen Chunyi,.....SK Chung (co-I), Peripheral elevated endothelin-1 in knee osteoarthritis: A modifiable risk factor for dementia? (pending)
55. Dr. Wen Chunyi... SK Chung (co-I), selective blockade of endothelin receptors for rescue of osteoarthritis: A pre-clinical study. RGC, ECS 500,000, 2017 to 2019
56. Dr. Xiao, Cheng... SK Chung (co-I), AR-NOX-ROS, NSFC, RMB Chinese, 250,000, Jan 2018- Dec 2019
57. Dr LO Amy Cheuk Yin and SK Chung, Investigating the therapeutic effects of the anti-inflammatory neuropeptide alpha-melanocyte stimulating hormone ( $\alpha$ -MSH) in experimental diabetic stroke, pending 2021

### **INVITED LECTURES:**

1. Invited lecture, Department of Physiology, Northwestern University, Evanston, Chicago, Il, USA, 1986
2. Combined method of *in situ* hybridization with retrograde tract tracing, Third International Symposium under the Auspice of both Sun Yat-sen University and Southern Illinois University, School of Medicine, Guangzhou, China, 1991
3. Invited lecture, Department of Physiology, Sun Yat-sen Universtiy, China, 1991
4. Invited lecture, Department of Biochemistry, The University of Hong Kong, Hong Kong, China, 1991
5. Invited lecture, Department of Medicine, The University of Hong Kong, Hong Kong, China, 1991
6. Invited lecture, Department of Anatomy, The Chinese University of Hong Kong, Hong Kong, China, 1991
7. *In situ* hybridization combined with retrograde tract tracing, Molecular Biology in Neuroscience Workshop at the 1992 Joint Meeting of the Hong Kong Society of Neurosciences and Hong Kong Neurological Society, Hong Kong, China, 1992
8. Transgenic mouse models to study the molecular basis of diabetic neuropathy, Second Stanford International Neuroscience Symposium entitled "Gene Expression in the Central Nervous System", Beijing, China, 1993
9. Invited lecture, Department of Molecular Neurobiology, University of Cornell Medical College, White Plains, NY, USA, 1993
10. Invited lecture on the molecular biology techniques for the IBRO Postdoctoral Training Workshop, The Chinese University of Hong Kong, Hong Kong, China, 1994
11. Invited lecture "Transgenic mouse models to study diabetic complications", The University of Illinois, College of Medicine at Chicago, Chicago, Il, U.S.A., 1995
12. Invited lecture "Transgenic mouse models to study diabetic complications", Northwestern University Medical School, Chicago, Il., USA, 1995
13. Invited lecture "The use of transgenic mouse models to understand the etiology of diabetic complication", Neuropathology Research Conference, Veterans Administration Hospital and University of California, San Diego, USA, 1995
14. Guest Lecturer, Molecular embryology and transgenic technology, Faculty of Medicine, The University of Hong Kong, Hong Kong, China, 1996

15. Invited lecture at Sun Yat-sen University, Guangzhou, China, March 15, 1996
16. Invited lecture at Basic Medical Sciences Faculty, The Chinese University of Hong Kong, Hong Kong, China, 1997
17. Invited lecture (fully funded) at Gyeongsang Nat'l University Hospital, Chinju, Korea, June 19, 1998
18. Invited lecture "Transgenic/knockout mouse models to study the molecular mechanisms of diabetic complications", The University of Illinois, Chicago, Il., U.S.A., July 19, 1999
19. Scientific Symposium on "Erectile Dysfunction", Kowloon Shangri La, Hong Kong, Jan 20, 2000
20. Invited lecture at Tohoku University, Sept 28, 2000
21. Invited lecture (fully funded) at International Seminar on Diabetic Neuropathy in Tohoku. Sendai, Japan, Sept. 30, 2000
22. Invited lecture at Symposium on Vasoactive Peptide. The University of Hong Kong, January 17, 2001
23. Invited lecture at Second International Huaxia Congress of Endocrinology, Hong Kong, Dec. 14-17, 2001
24. Invited lecture (fully funded) at International Seminar on Diabetic Neuropathy in Tohoku Sendai, Japan, Mar. 23, 2002
25. 1<sup>st</sup> International Symposium on Diabetic Complications: Diabetic Neuropathy, Marriott Hotel, Hong Kong, May 11, 2002
26. Invited lecture (partially funded) "Endothelin-1 in hypoxic/ischemic brain injury" Department of Anatomy and Cell Biology, University of Illinois at Chicago, Chicago, Illinois, U.S.A., Aug. 19, 2002
27. Invited lecture (fully funded) "Role of endothelin-1 in brain: cell survival and death. The 3<sup>rd</sup> FAONS Congress, Sept. 28 – Oct. 1, 2002, Seoul, Korea
28. "Implications of the AR gene in peripheral nerve integrity and its environmental insults in diabetes" at the International Symposium on Diabetic Peripheral Neuropathy and NeuroDiab Meeting, Saint Malo, France, Aug. 30-Sept. 2, 2003
29. "Characterization of endothelin-1 Gene manipulated mice for ischemic stroke, a leading cause of death and disability", Frontiers in Biomedical Research, The University of Hong Kong, Hong Kong, Dec. 12, 2003
30. Invited lecture (fully funded) "Role of polyol pathway in diabetic neuropathy", Fukuoka, Japan, Mar., 13, 2004
31. Invited lecture in Symposium on "Neural plasticity, development and repair" Hong Kong, April 22, 2004
32. Invited lecture (partially funded) "Characterization of endothelin-1 gene manipulated mice for ischemic stroke, a leading cause of death and disability", Seoul National University, College of Medicine, Korea, Mar., 8, 2004
33. Invited lecture (fully funded) "Role of polyol pathway enzymes in the pathogenesis of diabetic complications revisited", at Research Seminar of Korean Diabetes Association, Seoul, Korea, June 22, 2006
34. Distinguished invited Speaker (fully funded) "Targeting of diabetic neuropathy: the role of aldose reductase, AGE and oxidative stress", at 21<sup>st</sup> Annual Meeting of Japanese Society of Diabetic Complications, Oct. 5-8, 2006
35. Special lecture for School of Brain Function, Dec. 11-13, 2006, "The use of Thy1.2-YFP transgenic reporter mice for understanding the nerve development and degeneration", The University of Hong Kong, Chinese University of Hong Kong, HKUST and Baptist

36. Invited lecture “Molecular genetics of diabetic microangiopathy” at Fourth International Huaxia Congress of Endocrinology, Hong Kong Dec. 15-18, 2006
37. Invited lecture “Role of aldose reductase in diabetic and ischemic retinopathy” at Association for Ocular Pharmacology and therapeutics, Hong Kong, Feb. 9-11, 2007
38. Invited lecture (fully funded) at KRICT-SEVERANCE JOINT SYMPOSIUM ON DISCOVERING TARGETS IN ENDOCRINOLOGIC & METABOLIC DISORDERS, Seoul, Korea, Apr. 6, 2007 in Seoul, Korea
39. Invited lecture “Transgenic, Knockout and Pharmacological Approaches for Diabetic/ischemic Complications: Pathogenesis and Drug Discovery” Croucher Advanced Study Institute for Recent Advances in Diabetes and its complications (Prof. S.M. Chung, Director), September 3-7, 2007
40. Invited lecture (fully funded from HKU) “Transgenic and knockout mouse models for nerve development and degeneration”. Institute of Neurosciences, The Fourth Military Medical University, April 3, 2008
41. Discussant “Consensus meeting on indices of neuropathy in animal models of diabetes”, a satellite program Sept. 2 - 4, 2008 for Neurodiab meeting in Orvieto, Italy, denied due to medical teaching schedule
42. Invited lecture (fully funded) “stem cell research of the beta cell” Seoul, Korea, Asia Incretin & Islet Biology Meeting, Oct 18-19, 2008
43. Invited plenary lecture (fully funded) “Transgenic and knockout mouse models for diabetic and ischemic complications”. 5<sup>th</sup> Huaxia Congress of Endocrinology, Taipei, Taiwan, Dec. 4-9, 2008
44. Invited lecture (fully funded) “Asia Islet Biology & Incretin Symposium (AIBIS)” Seoul, Korea, Aug. 1-2, 2009
45. Invited lecture (fully funded) “Asia Islet Biology & Incretin Symposium (AIBIS)” Kyoto, Japan, July 31- Aug2, 2010
46. Invited lecture (fully funded) “The 3<sup>rd</sup> Biennial Symposium on Brain and Mind in the Asia and Pacific (BMAP), Seoul, Korea, Aug 23-25, 2010
47. Invited lecture (fully funded) at 8<sup>th</sup> International Diabetes Federation Western Pacific Region Congress, BEXCO, Busan, Korea, Oct. 17 to Oct 20, 2010
48. Invited lecture at Brain, Behavior and Mind 2010, Hong Kong (decline due to overlapping invitation to overseas meeting)
49. Invited lecture (fully funded) at “The 6<sup>th</sup> Huaxia International Congress of Endocrinology” Shanghai, China, “Role of Epac: from mouse embryonic stem cells to beta cells”, Dec 10 – 12, 2010
50. Invited discussant at Xiangshan Meeting, April 8-9, 2011 at The University of Hong Kong, Hong Kong
51. Invited lecture (fully funded) at “International Conference on Genetics, Development and Health” Shanghai, China, May 28 – 29, 2011
52. To participate (fully funded) in “Asia Islet Biology & Incretin Symposium (AIBIS)” Kyoto, Japan, July 31- Aug2, 2011
53. To deliver KC Wong Lecture (fully funded), invited by President Daiming Fan, The Fourth Military Medical University, Xian, Hong Kong, June 13 – 17, 2011
54. Invited lecture (fully funded) for “Ruijin Endocrine Forum”, Shanghai Institute of Endocrinology and Metabolic Diseases and Shanghai Rui-Jin Hospital, Shanghai, China, July 26, 2011
55. Invited talk (fully funded) at “The 2nd International Symposium on Diabetes, Obesity and Cardiovascular Diseases” Hyatt Regency Hong Kong Sha Tin and Hong Kong Science and Technology Park, Hong Kong, China, September 23 - 25, 2011

56. Invited “COOL” lecture (fully funded) at Inje University College of Medicine, Busan, Korea, “Genetically Manipulated Mouse Models for Human Diseases: Diabetes and its Complications”, October 19, 2011
57. Delivered Special lecture (fully funded) at 14<sup>th</sup> Korean Society of Biochemistry and Molecular Biology meeting & BEST MISO, Busan, Korea, “Genetically Manipulated Mouse Models for Human Diseases: Diabetes and its Complications”, Oct. 20 – 21, 2011
58. Delivered plenary speech (fully funded) for the 5<sup>th</sup> International Conference of the Asian Society Against Dementia (ASAD), Hong Kong Academy of Medicine, 5-6 November 2011
59. Invited talk for Pain Genetics Symposium: From Basic Science to Clinical Applications, The University of Hong Kong, Hong Kong, “Molecular Basis for Painful and Painless Neuropathy”, June 9, 2012
60. [Invited talk](#) (fully funded) [at](#) Symposium on “Therapeutic Modalities to Correct Mitochondrial Dysfunction-KSMCB Mitochondrial section and KSMRM joint symposium at 25<sup>th</sup> Spring Congress of [Korean Diabetes Association](#), Hotel Inter-Burgo, [Daegu, Korea](#), “ [May 10, 2012](#)”
61. [Invited talk](#) (fully funded) [at](#) Cardiovascular and Metabolic Disease Center, [Inje University college of Medicine, Busan, Korea](#), “Diabetes and Alzheimer’s disease” [May 14, 2012](#)
- ~~60-62.~~ [Invited talk](#) (fully funded) [at](#) Center for Endocrin and Metabolic Diseases, [Chungnam National University Hospital, Daejeon, Korea](#), “Genetically manipulated mouse models for human diseases: diabetes and its complications”, [May 9, 2012](#)
- ~~61-63.~~ Delivered plenary speech (fully funded) for the 6<sup>th</sup> International Conference of the Asian Society Against Dementia (ASAD) and 17<sup>th</sup> Malaysian Conference on Psychological Medicine, Sheraton Imperial Kuala Lumpur Hotel, “Genetically Manipulated Mouse Models for Human Diseases: Vascular Complications and Dementia”, June 14 to 16, 2012
- ~~62-64.~~ Invited talk (fully funded) at Ceremony of the 20<sup>th</sup> Anniversary of the Founding of the PLA Institute of Neuroscience & International Conference on Central Nervous System Disorder, Xian, China, “Role of aldose reductase in nervous system disorders using genetic and pharmacological manipulations”, Sept. 18 – 20, 2012
- ~~63-65.~~ Invited to give a lecture at the 25<sup>th</sup> Anniversary Scientific Meeting and the 2<sup>nd</sup> scientific Meeting of the Laboratory and Clinical Research Institute for Pain, June 1, 2013
- ~~64-66.~~ Invited to give a lecture at Korean Diabetes Regional meeting in Muju Resort at Chonbuk province, August 30, 2013
- ~~65-67.~~ Invited lecture at Kyoungpook National University Hospital, Daegu, Korea, Aug. 31, 2013
- ~~66-68.~~ Invited lecture, 2013 Korea University Research Festival for One Health, Korea University, Seoul, Korea, Oct 21-23, 2013
- ~~67-69.~~ Invited lecture, The University of Hong Kong and University of Liverpool Symposium, Hong Kong, April 8 to 11<sup>th</sup>, 2014.
- ~~68-70.~~ HKU Promotional Talk at Seoul National University, Ewha University, Korea University for Graduate Program, The University of Hong Kong, Mar. 24 to 26<sup>th</sup>, 2014
- ~~69-71.~~ Invited lecture at The 2014 Conference and neurological diseases synaptic transmission and plasticity International Forum, Wuhan, China,

- June 27 – 30, 2014 (2014 神经疾病大会暨突触传递与可塑性国际高峰论坛, 中国, 武汉, 2014 年 6 月 27-30 日, 会议日程安排 ([www.2014stpd.com](http://www.2014stpd.com)))
- ~~70-72.~~ The 2nd International Anniversary KBRI Symposium at KBRI( Korea Brain Research Institute) in Daegu,Korea on 10th November,2014.
- ~~71-73.~~ HKU Promotional Talk at Seoul National University, Ewha University, Korea University for Graduate Program, The University of Hong Kong, Mar., 2015
- ~~72-74.~~ Korean Diabetes Association Annual meeting, Apr, 2015
- ~~73-75.~~ Chinese Society for Anatomical Science Annual meeting, Aug 8, 2015
- ~~74-76.~~ “Advances in the Understanding of Post Stroke Dementia”. HBHA Center, HK, Mar. 11, 2016
- ~~75-77.~~ "Molecular basis for diabetes-associated metabolic defect in the nervous system: Painful and Painless Neuropathy" The 7<sup>th</sup> Asia Pacific International Congress of Anatomist meeting held in National University of Singapore, Singapore, March 17 to March 20, 2016
- ~~76-78.~~ "Polyol Pathway and related factors in Glucose Toxicity and Ischemia/reperfusion Injury in the Nervous Tissues", The 12<sup>th</sup> International Conference on Brain Metabolism and Energy Metabolism, May 2016
- ~~77-79.~~ Guangzhou Medical University, Histology lecture on Respiratory System, 2016
- ~~78-80.~~ Inner Mongolia Medical University, July 2016
- ~~79-81.~~ "Deletion of Exchange Protein Directly Activated by cAMP 2 (Epac2) Leads to Impaired Adult Neurogenesis, Depressive-Like Behavior and Cognitive Deficit", Cardiovascular and Metabolic Disease Center, Inje University, Busan, Korea, July 19, 2016
- ~~80-82.~~ “Multi-talented Aldose Reductase: Gene Regulation, Physiological Function and Dysfunction leading to pathological conditions”, 66<sup>th</sup> Annual Meeting Korean Association of Anatomists, Korea, Oct. 19 – 21, 2016
- ~~81-83.~~ “The reform of histology education: then as student, and now as teacher”, The 4<sup>th</sup> International Anatomical Sciences and Cell Biology Conference, Hong Kong, Dec 4 – 6<sup>th</sup>, 2016.
- ~~82-84.~~ “Simplified CLARITY tissue-clearing technology and 3D confocal microscopy imaging to understand the role of epac1 in pancreatic beta cells”, Asia Islet Biology & Incretin Symposium" (AIBIS -2017), March 3-4, 2017, Seoul, South Korea. (invited but could not attend due to teaching crash)
- ~~83-85.~~ "Research & Postgraduate Education @The University of Hong Kong" at Kyungpook National University, Medical Campus, Daegu, Korea, May 8, 2017
- ~~84-86.~~ "Research & Postgraduate Education @ The University of Hong Kong" at Kyungpook National University, Main Campus, Daegu, Korea, May 8, 2017
- ~~85-87.~~ "Research & Postgraduate Education @ The University of Hong Kong" at KAIST, Daejeon, Korea, May 10, 2017
- ~~86-88.~~ "Research & Postgraduate Education @ The University of Hong Kong" at Inje University, Busan, Korea, May 11, 2017
- ~~87-89.~~ “Transgenic and Knockout Mouse Models for Vascular Mechanisms in Neurodegenerative Disorders” Cognitive Dysfunction in Brain Diseases, Gordon Research Conference, Translational Cognitive Neuroscience section, June 13, 2017
- ~~88-90.~~ “Steroidogenic Acute Regulatory protein (StAR)-related lipid transfer (START) Domain-containing protein 13 (STARD13), Rho GTPase-Activating Protein: Mutant Mice as a Model for Drug Discovery?”, 2017 KORUS (Korean Russian) Marine Effective Compounds Open Wellness (KORUS-MEOW) Symposium, Busan, Korea, June 28 -29, 2017

- ~~89-91.~~ Cool Lecture at Cardiovascular and metabolic Disease Center, “Deletion of Exchange Protein Directly Activated by cAMP 2 (Epac2) Leads to Impaired Adult Neurogenesis, Depressive-Like Behavior and Cognitive Deficit”, July 19, 2016
- ~~90-92.~~ “Deletion of Exchange Protein Directly Activated by cAMP 2 (Epac2) Leads to Impaired Adult Neurogenesis, Depressive-Like Behavior and Cognitive Deficit” International Symposium on Morphological Science, July 24, 2017 (invited but could attend due to personal issue)
- ~~91-93.~~ March 20, 2018, Deletion of exchange protein directly activated by cAMP 2 leads to impaired adult neurogenesis, depressive behavior and cognitive deficit, Xian, China
- ~~92-94.~~ June 5, 2018, 24<sup>th</sup> Integrating Science for Bio-Health Innovation and 15<sup>th</sup> FAOBMB Congress, Korea
- ~~93-95.~~ August 3, 2018, 2018 Asia Islet Biology and Incretin Symposium, Korea
- ~~94-96.~~ October 28, 2018, Symposium on Cancer and Metabolism at 8<sup>th</sup> Asia Pacific International Congress of Anatomists, Korea
- ~~95-97.~~ October 11-13, 2019, 2019 Asia Trails Conference (responsible for Walking and Brain Health), Busan, Korea

#### **SYMPOSIUM/WORKSHOP AND SESSION LEADERSHIP:**

1. Organized Workshop and Satellite Symposium on Molecular Biology in Neuroscience, sponsored by annual meeting for Hong Kong Society for Neuroscience, October 10, 1992
2. Organized Satellite Symposium for Gene Expression in the CNS, sponsored by Institute of Molecular Biology and The School of Research, The University of Hong Kong and Stanford University, October 26, 1993
3. Organized the international workshop on the Basic Molecular Biology for Neuroscientist, in part for the Postdoctoral Training Workshop organized by the Hong Kong Society of Neurosciences sponsored by International Brain Research Organization, Institute of Molecular Biology, HKU, April, 1994
4. In 1994, an International workshop sponsored by the International Brain Research Organization entitled “Basic Molecular Biology for Neuroscientist” was held at the Institute of Molecular Biology for Postdoctoral fellows from Korea, Malaysia, China, Vietnam, Singapore, etc. Dr. S.K. Chung also delivered a lecture on molecular biology techniques for this workshop.
5. In 1995, Dr. S.K. Chung (with Dr. D. Shum, Biochemistry) organized the Hong Kong Society of Neurosciences Meeting held in the University of Hong Kong. Invited speakers from U.K., U.S.A., Korea, Taiwan and China participated at this meeting. A special evening mini-symposium on “PCR applications for neuroscience” was also organized.
6. In 1996, participated in teaching for the course on “Molecular Embryology and Transgenic Technology”.
7. In 1997, participated in workshop entitled “Workshop on the Use of Transgenic/Knockout Models in the Mouse to Study Gene Function in Complex Biological Systems”.
8. In 1997, invited lecture for “In situ hybridization: Applications in gene expression studies and in clinical diagnosis”.
9. Asian Pacific Symposium on Neural Regeneration (1998)
10. Organizing committee, Inaugural Symposium of Centre of Endocrinology and Diabetes (1998)

11. Molecular Laboratory Research Course for Clinical Endocrinologists (May 18 - 21, 2000)
12. School of Brain Function (Dec 4-17, 2000), The University of Hong Kong
13. Annual Hong Kong Neuroscience meeting and FAONS Symposium (Dec, 2000), The University of Hong Kong
14. School of Brain Function (Dec 4-15, 2001), The University of Hong Kong
15. 1<sup>st</sup> International Symposium on Diabetic Complications: Diabetic Neuropathy, May 11, 2002, Marriott Hotel, Hong Kong
16. School of Brain Function (Dec 2-4, 2002), The University of Hong Kong
17. Members of organizing committee (Prof. Nancy Ip, Director) Croucher Advanced Study Institute, Molecular Neuroscience, HKUST, 2002
18. Symposium Co-Chair “Development, Degeneration and Regeneration at The third FAONS and Korean Society for Brain and Neural Sciences, Sept. 28 –Oct. 1, 2002, Olympia Hotel, Seoul, Korea.
19. School of Brain Function, Dec 2-4, 2002, (Prof. Y.S. Chan, Director), The University of Hong Kong, Chinese University of Hong Kong, HKUST and Baptist
20. Chair a Scientific Session of Centre of Human Reproduction and Centre of Human Development and Birth Defects in Frontiers in Biomedical Research, HKU 2002
21. Members of organizing committee (Prof. Nancy Ip, Director) Croucher Advanced Study Institute, Mini-symposium “Molecular Neuroscience: Technology Applications”, HKUST, March 5, 2003
22. Members of organizing committee (Chair, Dr. A. Stadlin), Asia Pacific Neurochemistry Society meeting, Hong Kong, Feb. 4 – 7, 2004
23. Symposium on “Regulation of cerebrovascular blood flow and stroke”, at the APSN meeting, Feb. 4, 2004
24. School of Brain Function, Apr. 20 - 27, 2004, (Prof. Y.S. Chan, Director), The University of Hong Kong, Chinese University of Hong Kong, HKUST and Baptist
25. School of Brain Function, Dec. 2- 9, 2005, (Prof. Y.S. Chan, Director), The University of Hong Kong, Chinese University of Hong Kong, HKUST and Baptist
26. First International Spinal Cord Injury Treatment and Trials Symposium, The University of Hong Kong, Dec. 17 – 20, 2005, Serve as a Chair of Session on “Experimental Chronic Therapies”
27. International Symposium on Healthy Aging: A Global Challenge for the 21<sup>st</sup> Century, Sheraton Hong Kong Hotel and Towers, Tsim Sha Tsui, Hong Kong, Mar. 4 – 5, 2006, Organizing committee and Session Chair for “Cell Therapy and Tissue Engineering”.
28. 11<sup>th</sup> Research Postgraduate Symposium, The University of Hong Kong, Dec., 7, 2006, Serve as a Session Chair for “Healthy Aging”.
29. School of Brain Function, Dec. 11-13, 2006, (Prof. Y.S. Chan, Director), The University of Hong Kong, Chinese University of Hong Kong, HKUST and Baptist
30. Croucher Advanced Study Institute for Recent Advances in Diabetes and its complications (Prof. S.M. Chung, Director), September 3-7, 2007
31. Croucher Advanced Study Institute for Recent Advances in Diabetes and its complications (Prof. S.M. Chung, Director), April, 2009
32. Anatomy Postgraduate Symposium, The University of Hong Kong, June, 2009, Serve as a Chair
33. Chairpersons for the scientific meetings of Research Centre of Heart, Brain, Hormone & Healthy Aging in the FRONTIERS IN BIOMEDICAL RESEARCH, HKU, Dec. 4, 2009

34. Alzheimer's Disease Conference: from public health to therapeutic insights, organized by HBHA center, HKU, May 2010
35. Anatomy Postgraduate Symposium, The University of Hong Kong, June, 2010, Serve as a Chair
36. Invited Chair for scientific session at 8<sup>th</sup> International Diabetes Federation Western Pacific Region Congress, BEXCO, Busan, Korea, Oct. 17 to Oct 20, 2010
37. Invited to Chair Session as Judicator for Poster presentation at 27<sup>th</sup> annual general meeting, Hong Kong Society of Endocrinology, Metabolism and Reproduction, Nov., 21, 2010, Hong Kong
38. Croucher Advance Study Institute for Recent Advances in Diabetes and its complications (Director), April 29, 2011: Mitochondrial stress in Diabetes and Aging
39. Anatomy Postgraduate Symposium, The University of Hong Kong, June, 2011, Serve as a Chair
40. Anatomy Postgraduate Symposium, The University of Hong Kong, June, 2012, Serve as a Chair
41. Invited to serve as the judge for Best Oral Presentations" at the 6<sup>th</sup> International Conference of the Asian Society Against Dementia (ASAD) and 17<sup>th</sup> Malaysian Conference on Psychological Medicine, Sheraton Imperial Kuala Lumpur Hotel, June 14 – 16, 2012
42. Invited to chair a Symposium in the Joint Scientific Conference of HKSAN and HK Biophysics Association, June 12-14, 2014
43. Invitation to judge abstracts to The 7<sup>th</sup> AASD Scientific Meeting and Annual Scientific Meeting of the Hong Kong Society of Endocrinology, Metabolism and Reproduction, 21-22 November 2015, Hong Kong
44. Serve as Organizing Committee member for The 4<sup>th</sup> International Anatomical Sciences and Cell Biology Conference, Hong Kong, Dec 4 – 6<sup>th</sup>, 2016.
45. Serve as Organizing Committee member for 2017 KORUS (Korean Russian) Marine Effective Compounds Open Wellness (KORUS-MEOW) Symposium, Busan, Korea, June 28 -29, 2017
46. Invited as International advisor for 8<sup>th</sup> Asia Pacific International Congress of Anatomists)

### **SERVICES FOR RESEARCH LABORATORY FACILITIES:**

#### **Service for transgenic and knockout mice:**

All necessary facilities for generation of transgenic and knockout mouse models and cryopreservation of embryos from the important transgenic and knockout mouse models are fully setup: Recombinant DNA, *in vitro* embryo culturing, microinjection of transgene into pronuclei, oviduct implantation of embryos, various pipet preparation, analysis of transgene expression by PCR, Southern, Northern, dot, slot and Western blots, RNase Protection Assay, *in situ* hybridization, bioassays to score phenotype of transgenic mice using anatomical, biochemical and physiological methods, culturing of morula to blastocyst, microinjection of embryonic stem cells to blastocyst, uterine transfer of blastocyst, freezing of embryos at 8-cells stage and re-derivation of embryos to adult mice, etc.

In addition, various facilities for phenotyping the mice are also available: histological, biochemical and molecular biological techniques, subcellular fractionation, isolation of protein and nucleic acids, enzyme extraction and assays, spectrophotometry, gel electrophoresis for protein and nucleic acids, immunocytochemistry, *in situ* hybridization, various probe preparation for *in situ* hyb. and Southern, Northern and 1-D and 2-D Western

blots, electrophysiological techniques, such as multiunit recording for EMG and reflex, blood pressure measurement and etc.

We provide the service to the members of HKU staff to inseminate molecular biological techniques to the existing researchers in the HKU community. We can generate the single and binary/conditional transgenic and knockout mouse models. We have collaborated with the local (Hong Kong and Sun Yat-sen University, China) scientists and with international scientists. We have collaborated with some of the departments at HKU including *Medicine, Pediatric, Biochemistry, Anatomy, Physiology, Pathology, Zoology, and Microbiology* which lead to CGCG, RGC and RCA/RGC grant proposals, which were all successful. In addition, we have been providing our expertise in Genetically Engineered Animal Models for Area of Excellence programs for drug discovery, *Chemical Biology, HKU and Molecular Neuroscience, HKUST*. Our recent work in collaboration with Professor Billy Chow in Zoology entitled “Phenotypes developed in secretin receptor-null mice indicated a role of secretin in regulating renal water reabsorption” is accepted by high impact journal, MCB, suggesting the successful transfer of knockout mouse technology and collaboration. In addition, we have collaborated with Professor Irene Ng to generate the Deleted in Liver Cancer 2 (DLC2) gene knockout mice and published two papers in internationally peered journals. We also collaborated with Professor Karen Lam and Dr. A. Xu and generated three transgenic mouse lines (pAL-hAR tg, AP2/P-HIF1- $\alpha$ -DN; AP2/P-JNK-DN) which lead to successful HK GRF grants and high impact factor papers. We have also created NES-OREBP-DN, 0.9ET-cre, Epac1 KO, and Floxed TF KO. We also provided a service to cryopreserve embryos of important Tg/KO mouse lines. We are also providing many of our genetically manipulated lines of animals to local and overseas scientists and made collaborative links.

**Transgenic and knockout mice provided to other researchers:**

GET-1 and TET-1 Tg to Prof. KF So, HKU; GET-1 Tg mice to K.H. Chan, HKU; GET-1 Tg mice to Lyle Ostrow, Johns Hopkins, USA; NFAT5 KO mice to Ben Ko, CUHK, HK; TET-1 Tg mice to Prof. Paul Vanhoutte, HKU; TET-1 Tg mice to Dr. Aimin Xu, HKU; Thy1.2-YFP to Dr. G. McAlonan, HKU; Thy1.2-YFP mice Dr. SY Chan, HKU; AR KO and Thy 1.2-YFP to Dr. Lin Bin; AR KO and GET-1 to Dr. Amy Lo, HKU GET-1 to Dr. CW Cheung, HKU; GET-1;APP mutant to A. Law, HKU; TET-1 Tg to A. Law, HKU; AR KO mice to Dr. Yang, Xiamen; AR KO and Thy1-YFP to Dr. Jian Wang and Prof. Ju Gong, Xian; AR KO to M Pu, Beijing (pending); AR KO to Andras Perl, New York, USA; AR KO to Dr. N. Man, HKU; AR KO to Prof. S Yagihashi, Japan; AR KO to Dr. Naruse Keiko, Japan; AR KO to Prof. M. Petrashi, USA; SDH mutant mice to M. Petrashi, USA; Epac1 KO mice to Prof. MH Song, Korea (pending); NFAT5 KO mice to Prof. Jin Han, Busan, Korea (pending); Smit Ko mice to Annie Kung, HKU; Floxed TF KO to Dr. Alexander Akhmedov, HKU; NCAM Tg mice to Prof. Melitta Schachner AR KO; db/db to Dr. Mina Kim, HKU

**The following are successful grants from collaborative/service projects:**

1. Annie Kung (S.K. Chung): The production of a transgenic mouse model of autoimmune thyroiditis and the study of induction of tolerance to an organ specific autoantigen in transgenic mice expressing thyroid peroxidase in the thymus, RGC, 623,000, 1994
2. P.T. Chung and S.K. Chung: To study the protective role of insulin-like growth factor-I in neural degeneration using transgenic mouse model, RGC, HK\$ 631,000, 1995-1997

3. A.C. Y. Lo and S. K. Chung: Targeted over-expression of endothelin-1 in astrocytes as a transgenic model to investigate its role in brain injury and blood-brain barrier function, HKU 7240/97M, 338/089/0010, 10201722.26733.43700.324.01, RGC, HK\$ 1,211,360, 1997–2000
4. A.C. Y. Lo and S. K. Chung: Transactivation of endothelin-1 in the testis by cre/loxP system to study its role in testicular microcirculation and function, CRCG, HK\$ 120,000, 1998-2000
5. P.T. Cheung and S.K. Chung: Interaction between endothelial and astroglial cells in hyperbilirubinaemia: role of cytokines and insulin-like growth factor-I and modulation by hypoxic-ischaemia, CRCG, HK\$ 106,000, 1998-2000
6. H.Yip and S.K. Chung: Expression of neurotrophin trk receptors and trk receptor mRNAs in the developing and adult rat retina, CRCG, HK\$ 96,000, 1998-2000
7. K.W. Chan, C.K. Cho and S.K. Chung, Growth and functions of human kidney tubular cells and transgenic mouse kidneys affected by mutated adult polycystic kidney disease gene, PKD1, RGC, HK\$ 980,300, 1998-2001
8. P.T. Cheung and S.K. Chung, A transgenic mouse model for a human hereditary neurodegenerative disorder of motor neuron, spinal and bulbar muscular atrophy, caused by trinucleotide CAG repeat expansion in the androgen receptor gene, RGC, HK\$ 1,072,000, 1998-2001
9. Annie Kung and S.K. Chung, The production of a transgenic mouse model of autoimmune thyroiditis and the study of induction of tolerance to an organ specific autoantigen in transgenic mice expressing thyroid peroxidase in the thymus, RGC, HK\$ 705,000, 1998 – 2001
10. Karen Lam, S.M. Chung and S.K. Chung, Interaction between the polyol pathway and non-enzymatic glycation in the pathogenesis of diabetic nephropathy, RGC, HK\$ 705,000, 1998 - 2001
11. S.K. Chung (K.S.E. Cheah, PI): Understanding gene function and molecular basis of disease using transgenic and gene targeting technology, RGC central allocation, HK\$ 5.5M, Sept, 1999-2003
12. A.C.Y. Lo and S.K. Chung: The rescue of ET-1 deficient astrocytes from H/I induced cell death by co-culturing with ET-1 over-expressing astrocytes, CRCG, HK\$ 120,000, 2000-2002
13. R. Chang and S.K. Chung: Development of double-stranded RNA-dependent protein kinase (PKR) specially in neurons over-expressed transgenic mice. Significance of PKR signaling pathway in neurodegeneration and Alzheimer's disease, CRCG, HK\$ 120,000, 2002
14. S.K. Chung (Prof. K. Cheah, PI): Genomic approaches to uncover functionally relevant signaling, RGC, RCA, HK\$ 3,000,000, 2002 – 2005
15. D.Y. Jin, I. Ng and S.K. Chung, Functional of a novel liver-enriched transcription factor of the bZIP family characterization, RGC, HK\$ 1,786,000, 2002 – 2005
16. K.M. Yao, S.K. Chung, M.K. Thomas and J.F. Habener, Investigating the role of a secreted protein spin-1 in regulation of pancreas beta-cell growth and differentiation, RGC, HK\$ 816,000, 2002 – 2005
17. S.M. Chung, S.K. Chung and Ju Gong: Mechanism of nogo inhibition of axon regeneration, NSFC/RGC, HK\$ 800,000, 2003-2006
18. R. Chang and S.K. Chung: Caspase-3 as an upstream signaling molecule for translational control in neuronal apoptosis: implications of [beta]-amyloid peptides-induced neuronal apoptosis, RGC fundable but not funded HK\$ 30,000, 2003

19. H. Yip and S.K. Chung: In vivo gene transfer of the catalytic subunit of telomerase protects retinal ganglion cells against axotomy-induced cell death,CRCG, HK\$ 80,000, 2005
20. B.K.C. Chow, Y.S. Chan and S.K. Chung: Secretin: a putative neurosecretory hormone that regulates water homeostasis in the hypothalamus-pituitary-adrenal axis, RGC, HK\$ 1,721,828, 2005
21. A. Xu and Chung SK: Inflammation in adipose tissue as a novel mechanism that link obesity with insulin resistance and type 2 diabetes
22. Aimin Xu, K. Lam and S.K. Chung: Hypoxia inducible factor 1 $\alpha$  as a mediator of obesity-induced chronic inflammation, aberrant production of adipokines and insulin resistance HK\$ 843,500, 2006
23. Aimin Xu, Yu Wang, Yu Huang and S.K. Chung: APPL1 as a Novel Modulator of Endothelial Nitric Oxide Production and Endothelium-dependent Vasodilation, RGC, HK\$1,258,228, 2007 (30 months)
24. A.W.C. Kung and S.K. Chung: Analysis of Na<sup>+</sup>/myo-inositol cotransporter (SMIT1) as a regulator of bone growth and bone mass, CRCG, HK\$100,000, 2007
25. K.F. So and S.K. Chung: The role of endothelin-1 in chronic ocular hypertension and retinal ischemia-reperfusion, CRCG, HK\$50,000, 2007
26. K.F So, A. Lo and S.K. Chung: RAGE (receptor for advanced glycation end products), Abeta (beta-amyloid peptide) and ET-1 (endothelin-1) – probing their effects in glaucoma with transgenic mice over-expressing ET-1 in endothelial or glial cells, GRF, 2008 – 2011
27. A. Chen and SK Chung, Study of the role of polyol pathway activation the impaired nerve regeneration in diabetes, CRCG, 43,602, 2008
28. Shen, JG, S.K. Chung, KF So, Jim Liu, Dang Yang: Interactions of Reactive Nitrogen Species, Caveolins and Matrix Metalloproteinases: A Novel Signal Mechanism in Disruption of Blood Brain Barrier during Ischemic Stroke, GRF, HK\$1,191,369, 2008
29. P Yeung and SK Chung, The Effectiveness of Vasopressin V1 receptor antagonist , SR49059, and V2 Receptor Antagonist, OPC-31260, on Cerebral Edema Formation in Endothelin-1-Overexpressed Mice, CRCG, 54,502, 2008
30. Shen JG: Caveolin-1 as a target protein for drug discovery to promote proliferation and differentiation of neural stem/progenitor cells in post-stroke treatment, 2009
31. M. Kim, PL Khong, SK Chung: MRI detection of glycogen in vivo in diabetic mice, CRCG, 66,667, 2009
32. A. Lo and Chung SK: Oxidative stress and neuronal dysfunction in retinopathy of prematurity, CRCG, 70,000, 2009
33. Shen JG and Chung SK: Elucidating caveolin-1 as a negative modulating protein for proliferation of neural stem/progenitor cells and neural differentiation in post-ischemic brain. HK GRF HK\$1,084,600, 2010
34. Andras Perl and SK Chung (as collaborator) : Pathogenesis and treatment of liver disease in transaldolase deficiency Period: 7/1/2010 - 6/30/2015 Total direct cost: \$1,250,000 NIH R01 DK078922

35. Shen JG and Chung SK Molecular regulations of antioxidant therapy for preventing thrombolysis-induced blood brain barrier disruption and hemorrhagic transformation in acute ischemic stroke. HK GRF HK\$890,000
36. CW. Chung and SK Chung: The role of astrocytic ET-1 in neuropathic pain: A study using astrocytic specific ET-1 over-expressing mice (GET-1), HK GRF HK\$ 750,000, 2010-2013
37. Billy Chow (Project coordinator): Strategic research of hormones and their receptors in the water homeostatic axis: from molecular mechanisms to anti-hypertensive drug design, RGC CRF 2011 - 2014, 5.63Million
38. Shen JG and Chung SK: Elucidating peroxynitrite as a cellular signaling molecule for regulating proliferation and neuronal differentiation of neural stem/progenitor cells under hypoxic and ischemic conditions, HK GRF, HK\$ 1,010,000, 2012

Our **transgenic and knockout** mice are provided to other researchers globally including **HK, China, USA, Korea and Japan** and contributed to opening up the new research field for old proteins and enzymes. One such example is the **aldose reductase**, which is discovered in 1956 and thought to be involved in diabetic complications) gene knockout mice, which were used by numerous scientist worldwide and discovered its role in numerous disease conditions (at least 25 published papers, see below). Other mice are also being actively used and numerous papers are being published.

**Providing our aldose reductase (AR) knockout mice (corresponding author, SK Chung), which were generated using my RGC grant lead to opening the new field for AR (25 manuscripts and papers that I am aware of):**

1. Z. Oaks, R. Hanczko, M. Beckford, S.K. Chung, S.K. Landas, J.M. Asara, A. Perl, The transaldolase-aldose reductase axis controls mitochondrial oxidative stress and progression from cirrhosis to hepatocarcinogenesis by acting as a rheostat of sugar-phosphate recycling and NADPH output by the pentose phosphate pathway, submitted to Nature Medicine.
2. **Aldose reductase interacts with AKT1 to augment hepatic AKT/mTOR signaling and promote hepatocarcinogenesis, J-X Zhao, Y-W Yuan, C-F Cai, D-Y Shen, M-L Chen, F Ye, Y-J Mi, Q-C Luo, W-Y Cai, W Zhang, Y Long, Y Zeng, G-D Ye and S-Y Yang, Oncotarget. 2017; 8:66987-67000. <https://doi.org/10.18632/oncotarget.17791>**
3. **AR regulates microglia/macrophages polarization through the cAMP response element-binding protein after spinal cord injury in mice (Zhang...Wang J, Mol Neurobiol, 2016**
4. **AR inhibition prevents endotoxin-induced inflammatory responses in retinal microglia (Chang...Petrash J, IOVS, 2014)**
5. **Inhibition of AR attenuate hepatic ischemia-reperfusion injury through reducing inflammatory response, Li et al., Ann. Surg, 2014)**
6. **Diabetes-induced impairment in visual function in mice: contributions of p38MAPK, rage, leukocytes, and AR (Lee et et al., ...Kern TS, IOVS, 2014)**
7. **AR regulates microglia/macrophages polarization through the cAMP response element-binding protein after spinal cord injury in mice (Zhang...Wang J, Mol Neurobiol, 2016**
8. **AR-deficient mice develop nephrogenic diabetes insipidus (Ho HT, Chung Sk et al., Mol Cell Biol 2000)**

9. **AR-deficiency prevented diabetes-induced renal abnormalities (ECM accumulation, PKC and TGF- $\beta$ 1 activation, glomerular hypertrophy, and urine albumin excretion)**
10. **AR inhibition alleviate hyperglycemic effects on human retinal pigment epithelial cells (Chang .. Petrash, *Chemico-Biological Interactions*, 2015)**
11. **AR protects against early atherosclerotic lesion formation in apolipoprotein E-null mice (Srivastava Sanjay et al, *Circulation Res.*, 2009)**
12. **AR-deficiency in mice prevents azoxymethane-induced colonic preneoplastic aberrant crypt foci formation (Tammali R,...Srivastava Satish K, *Carcinogenesis*, 2009)**
13. **AR deficiency reduced vascular changes in neonatal mouse retina in oxygen induced retinopathy (Zhong JF et al,...SK Chung & Lo, *Amy, IOVS*, 2012)**
14. **Deletion of AR from mice inhibits diabetes-induced retinal capillary degeneration and superoxide generation (Tang et al., ...Kern TS, *PLoSone*, 2013)**
15. **AR regulates miR-200a-3p/141-3p to coordinate Keap1-Nrf2, Tgfb1/2 and Zeb1/2 signaling in renal mesangial cells and the renal cortex of diabetic mice (Wei J et al,... Yang, JY, *Free Rad Biol and med*, 2014)**
16. **Genetic deficiency of AR counteracts the development of diabetic nephropathy in C57BL/6 mice (Liu H, et al,... Yang JY, *Diabetologia*, 2011)**
17. **AR deficiency protects from autoimmune- and endotoxin-induced uveitis in mice**
18. **Role of polyol pathway in acute kidney injury caused by hindlimb ischemia in mice (Yagihashi et al,..Chung S, *J Pathol*, 2010)**
19. **AR regulate hepatic peroxisome proliferator-activated receptor alpha phosphorylation and activity to impact lipid homeostatis, Qui et al,..Chung SK.. *JBC*, 2008**
20. **Synergistic effect of osmotic and oxidative stress in slow-developing cataract formation, Chan, et al, Chung, S, *Exp Eye Res*, 2008**
21. **Gene deletion and pharmacological inhibition of AR protect against retinal ischemic injury, *Exp Eye Res*, 2007**
22. **Deletion of AR leads to protection against cerebral ischemic injury, Lo et al,..Chung S, *JCBFM*, 2007**
23. **AR-deficiency alleviated diabetes-induced NCV deficits, depletion of GSH, and sural nerve fiber loss) [Ho et al., *Diabetes* 2006]**
24. **Genetic restoration of AR to the collecting tubules restores maturation of the urine concentrating mechanism, Yang et al, Chung S, *Am J Physiol Renal Physiol*, 2006**
25. **Ho HT, Chung SK (corresponding author), Law JW, Ko BC, Tam SC, Brooks HL, Knepper MA, Chung SSM: Aldose reductase-deficient mice develop nephrogenic diabetes insipidus. *Mol Cell Biol* 20: 5840-5846, 2000. (IF: 7.822, times cited: 16, 22/261 in *Biochemistry and Molecular Biology*)**

#### **EVIDENCE OF APPLIED RESEARCH:**

In addition, to the basic science related grants, I have been participating in Applied Research by securing Biotech contract research grants from Pfizer, USA and Sanwa, Japan; Hybrigenic, France/HKU; TA Therapeutic Ltd. (a joint venture between Geron Corporation, U.S.A. and Biotechnology Research Corporation, HKUST); Hong Kong

Jockey Club Institute of Chinese Medicine Ltd. I am also involved in Area of Excellence Program (directed by Prof. Nancy Ip, HKUST) in Molecular Neuroscience: Drug Discovery for Stroke and Alzheimer's disease. For Area of Excellence program we provide the surgical and genetic mouse models for stroke and Alzheimer's Diseases for TCM- or chemically-derived drug screening. We are well setup for transient reperfusion of middle cerebral artery occlusion models and genetically manipulated mouse models of Stroke and Alzheimer's Disease as follow: cell-type specific over-expression/knockout of endothelin-1 and mutant APP yeast artificial chromosome transgenic mice (acquired) with PS-1 mutant mice (acquired) and Tg Hu/MoAPP plus PS1 (acquired). Also, we tested several potential drugs for assessing the effects of these drugs on relative cerebral blood flow by Laser-Doppler flowmetry, arterial blood pressure, absolute cerebral blood flow; assess cerebrovasculature assessment, determination of integrity of blood brain barrier, behavioral assessments, histological and morphometric analysis. Using these stroke models we collected the interesting data on Tanshinone and other compounds effects on the stroke damage and neurological deficits and the data are presented in internationally peered journal. The progress of our Animal Model group research for the AoE project was determined to be satisfactory by the scientific advisory board of the AoE. In addition, I have secured a contract research with the TA therapeutic for screening two compounds for treatment of stroke. In addition, I have been invited to be one of the inventor on the patent based on our animal work for the use of novel compounds (provided by the AoE program coordinated by HKUST) against stroke injury (see below in Patent section).

Based on our basic science research in the area of transgenic and knockout mouse models of diabetic neuropathy, we were able to attract grants from the Biotech companies like Pfizer, USA and Sanwa, Japan for testing the efficacy of existing aldose reductase (AR) inhibitors in treatment of diabetic neuropathy by comparing them to AR knockout mice. Our recent data on the use of AR inhibitor in protection against cerebral ischemic/reperfusion injury lead to filing a patent (see below in Patent section). In addition, a patent on the use of ARI in protection against retinal ischemic/reperfusion injury was approved. In addition, I have been invited by the drug companies (Ono Pharmaceutical Co., Ltd.) to deliver lectures as an expert in the area of AR and diabetic neuropathy. Recently, we have developed a non-invasive investigation of diabetic neuropathy over long-term in live transgenic animals and will appear in *Diabetes*.

Recently, we have been focusing on the signalling pathway downstream to GLP-1 in pancreatic beta cells using epac1 KO ES cell differentiation to beta cells in vitro. This projected attracted funding from Merck & Co, Inc for two yrs ending in Nov, 2011.

#### **COMMUNITY SERVICE:**

Organized 5 Public Lectures funded by Mr. and Mrs. Brian and Sophia Leung for Hong Kong/University of Illinois Foundation (Organizing committee: Prof. Po Chung, Prof. Kwok Leung, Prof. Tai-Chin Lo)

#### **KNOWLEDGE TRANSFER TO PUBLIC BY MEDIA COVERAGE OF OUR RESEARCH AND INTEREST:**

1. Ming Pao Newspaper
2. Sun Pao Newspaper
3. Korean MBC Documentary

For the graduate school, I will be involved in Outreach Program and scheduled to visit 4 universities in Korea to promote HKU postgraduate and HK postgraduate fellowship program:

1. May 16, 2018: Chung Nam University, Daejeon
2. May 17, 2018: Hannam University, Daejeon
3. May 18, 2018: Hongik University, Seoul
4. May 21, 2018: Soongil University, Seoul
5. May 23, 2018: Gachon University, Incheon

### **LIST OF RESEARCH PAPERS:**

#### **Full papers:**

1. Cohen RS, **Chung SK**, Pfaff DW: Alteration by estrogen of the nucleoli in nerve cells of the rat hypothalamus, **Cell Tissue Res.**; 235(3): 485-489, 1984 (IF: 2.670, times cited: 42, 72/155 in Cell Biology)
2. **Chung SK**, Cohen RS, Pfaff DW: Ultrastructure and enzyme digestion of nucleoli and associated structures in hypothalamic nerve cells viewed in resinless sections. **Biol Cell.**; 51(1):23-33, 1984 (IF: 2.233, times cited: 11, 88/155 in Cell Biology)
3. Cohen RS, **Chung SK**, Pfaff DW: Immunocytochemical localization of actin in dendritic spines of the cerebral cortex using colloidal gold as a probe. **Cell Mol Neurobiol** 5(3): 271-84, 1985 (IF: 1.970, times cited: 66, 116/198 in Neurosciences)
4. **Chung SK**, Pfaff DW, Cohen RS: Estrogen-induced alterations in synaptic morphology in the midbrain central gray. **Exp Brain Res.** 69: 522-530, 1988 (IF: 2.389, times cited: 62, 91/198 in Neurosciences)
5. **Chung SK**, McVary KT, McKenna, KE: Sexual reflexes in male and female rats. **Neurosci. Lett.** 94: 343-348, 1988, This paper was covered in New York Times. (IF: 2.019, times cited: 39, 113/198 in Neurosciences)
6. **Chung SK**, Pfaff DW, Cohen RS: Projection of ventromedial hypothalamic neurons to the midbrain central gray: an ultrastructural study. **Neuroscience** 38: 395-407, 1990 (IF: 3.456, times cited: 7, 51/198 in Neurosciences)
7. **Chung SK**, Cohen RS, Pfaff DW: Transneuronal degeneration in midbrain central gray following chemical lesions in VMN: a qualitative and quantitative study. **Neuroscience** 38: 409-426, 1990 (IF: 3.456, times cited: 9, 51/198 in Neurosciences)
8. Kawata M, McCabe JT, **Chung SK**, Dutt A, Sano Y, Pfaff DW: The effect of progesterone on oxytocin messenger RNA in hypothalamic neurons of estrogen treated female rats studied with in situ hybridization histochemistry. **Biomedical Research** 12: 405-415, 1991 (IF: 0.390, times cited: 9, 66/71 in Medicine, Research & Experimental)
9. McKenna KE, **Chung SK**: Neurophysiological mechanism of sexual climax in male and female rats. McKenna KE, Chung SK, McVary KT: A model for the study of sexual function in anesthetized male and female rats **American J. of Physiology** 261 (5): R1276-R1285, 1991 (IF: 4.354, times cited: 89, 7/74 in Physiology)

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SQ Zhang, KKL Yung, **SK Chung**, and SM Chung, Aldo-keto reductase mediated cytotoxicity of 2-deoxyglucose as a novel anticancer mechanism, submitted

Z. Zeng, L Xia, X. Fan, A. Ostriker, Y. Timur, M Su, Y. Xie, R Liu, KA Martin, **SK Chung**, J Hwa and WH Tang, Activated platelets release particles containing miR-143/145 and 233

G-L Bian, C-Y Yu, L Liu, C Fang, K Chen, P Ren, Q zhang, F-F Liu, K Zhang, Q Xue, J Xiang, J Song, Y Zhao, W-T Wu, **SK Chung**, R-X Sun, G Ju and Jian Wang, Spns2 exports SIP to tranactivate EGFR signaling to induce eyelid closure in the developing rat, submitted

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#### **PATENT APPLICATION:**

1. **Sookja Kim Chung**, Stephen Chung and Chihiro Hibi, Preventive or therapeutic agent for cerebral ischemic injury or cerebral ischemia reperfusion in stroke, Filed on Aug 30, 2007, **Patent No. 000144577**
2. **Sookja Kim Chung**, Stephen Chung and Chihiro Hibi, Protective agent for retinal nerve or optic nerve, **Patent Application 20100216856, 08/26/2010**
3. Ip, Nancy Y, Ip, Fanny Chui Fun, Hu, Yueqing, Han, Yifan, **Chung, Sookja Kim** Heterodimers and methods of using them, **United States Patent 7605265**, Oct 20, 2009
4. **Sookja Kim Chung**, Stephen Chung and Chihiro Hibi, Protective agent for retinal nerve or optic nerve, **European Patent Application, 13155114.5-1464, 23.04.13**

Sookja Kim Chung and Philip So: 3D printing of microneedles: 201910278559.3

**Licensing of aldose reductase-deficient Schwann cell line (IKARS1)** in collaboration with Prof. Kazunori Sango, Japan to Applied Biological Materials Inc. (“**Licensee**”), with offices located at 1-3671 Viking Way Richmond, B.C.V6V 2J5 Canada.

#### **Information on the Patents by Inventor Sookja Kim Chung**

Sookja Kim Chung has filed for patents to protect the following inventions. This listing includes patent applications that are pending as well as patents that have already been granted by the United States Patent and Trademark Office (USPTO).

Protective agent for retinal nerve or optic nerve

Patent number: 8536212

Abstract: The present invention provides a protective agent for retinal nerve or optic nerve which exerts its effect through a different mechanism from that of conventional therapeutic agents and can be taken for long periods. The present invention is the protective agent for retinal nerve or optic nerve which comprises a compound with aldose reductase inhibiting

activity such as the compound represented by the following general formula as an active ingredient. A preferable compound thereof is (2S,4S)-6-fluoro-2?,5?-dioxospiro[chroman-4,4?-imidazolidine]-2-carboxamide: wherein X represents a halogen atom or a hydrogen atom, R1 and R2 independently represent a hydrogen atom or an optionally substituted C1 to C6 alkyl group, or R1 and R2, together with a nitrogen atom bound thereto, or optionally another nitrogen atom or an oxygen atom, are combined to form a 5- to 6-membered heterocycle.

Type: Grant

Filed: January 30, 2008

Date of Patent: September 17, 2013

Assignee: Sanwa Kagaku Kenkyusho Co., Ltd.

Inventors: Sookja Kim Chung, Stephen Chung, Chihiro Hibi

#### PROTECTIVE AGENT FOR RETINAL NERVE OR OPTIC NERVE

Publication number: 20100216856

Abstract: The present invention provides a protective agent for retinal nerve or optic nerve which exerts its effect through a different mechanism from that of conventional therapeutic agents and can be taken for long periods. The present invention is the protective agent for retinal nerve or optic nerve which comprises a compound with aldose reductase inhibiting activity such as the compound represented by the following general formula as an active ingredient. A preferable compound thereof is (2S,4S)-6-fluoro-2?,5?-dioxospiro[chroman-4,4?-imidazolidine]-2-carboxamide: wherein X represents a halogen atom or a hydrogen atom, R1 and R2 independently represent a hydrogen atom or an optionally substituted C1 to C6 alkyl group, or R1 and R2, together with a nitrogen atom bound thereto, or optionally another nitrogen atom or an oxygen atom, are combined to form a 5- to 6-membered heterocycle.

Type: Application

Filed: January 30, 2008

Publication date: August 26, 2010

Applicant: SANWA KAGAKU KENKYUSHO CO., LTD.

Inventors: Sookja Kim Chung, Stephen Chung, Chihiro Hibi

#### Heterodimers and methods of using them

Patent number: 7605265

Abstract: Novel heterodimers of tetrahydroacridines and tetrahydroquinolinones are disclosed. The heterodimers are capable of acting as both acetylcholinesterase inhibitors and N-methyl-D-aspartate (NMDA) receptor antagonists. The heterodimers may be used to improve cognitive defects via treatment or prevention in both humans and non-humans.

Type: Grant

Filed: January 22, 2007

Date of Patent: October 20, 2009

Assignee: Biotechnology Research Corporation Ltd.

Inventors: Nancy Y Ip, Fanny Chui Fun Ip, Yueqing Hu, Yifan Han, Sookja Kim Chung

#### PREVENTIVE OR THERAPEUTIC AGENT FOR CEREBRAL ISCHEMIC INJURY OR CEREBRAL ISCHEMIA REPERFUSION IN STROKE

Publication number: 20090076105

Abstract: The present invention provides a preventive or therapeutic agent for cerebral ischemic injury or cerebral ischemic reperfusion injury in stroke such as cerebral infarction and cerebral hemorrhage which exerts its effect through a different mechanism from that of conventional therapeutic agents and can be taken for along period. The present invention is a preventive or therapeutic agent for cerebral ischemic injury or cerebral ischemic reperfusion

injury in stroke which contains 6-fluoro-2',5'-dioxospiro[chroman-4,4'-imidazolidine]-2-carboxamide as an active ingredient. A particularly preferable compound is an optically resolved (2S,4S)-form of fidarestat.

Type: Application

Filed: August 20, 2008

Publication date: March 19, 2009

Applicant: SANWA KAGAKU KENKYUSHO CO., LTD.

Inventors: Sookja Kim CHUNG, Stephen CHUNG, Chihiro HIBI

Heterodimers and Methods of Using Them

Publication number: 20080176308

Abstract: Novel heterodimers of tetrahydroacridines and tetrahydroquinolinones are disclosed. The heterodimers are capable of acting as both acetylcholinesterase inhibitors and N-methyl-D-aspartate (NMDA) receptor antagonists. The heterodimers may be used to improve cognitive defects via treatment or prevention in both humans and non-humans.

Type: Application

Filed: January 22, 2007

Publication date: July 24, 2008

Applicant: BIOTECHNOLOGY RESEARCH CORPORATION LIMITED

Inventors: Nancy Y. IP, Fanny Chui Fun IP, Yueqing Hu, Yifan Han, Sookja Kim Chung