

## **Sookja Kim Chung, Ph.D**

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Macao University of Science and Technology  
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### **EDUCATION :**

- 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, Medical Faculty, Macao University of Science and Technology  
2018-2019: Professor, Beijing Normal University-Hong Kong Baptist University, United International College  
2015 - 2018: Professor, School of Biomedical Sciences (Merging of Anatomy, Physiology and Biochemistry), The University of Hong Kong  
2006–2015: Professor, Department of Anatomy, The University of Hong Kong  
2005–2006: Associate Professor, Department of Anatomy, The University of Hong Kong  
1998- 2005: Honorary Associate Professor, Department of Anatomy, The University of Hong Kong  
1992–2005: Investigator, Institute of Molecular Biology, May, 2001 substantiated, The University of Hong Kong  
1991-1998: Honorary Lecturer, Department of Anatomy, The University of Hong Kong  
1991-1992: Research Officer, Institute of Molecular Biology, The University of Hong Kong  
1988-1991: Winston Foundation Fellow, Laboratory of Neurobiology and Behavior, The Rockefeller University, New York, USA  
1987-1988: NIH Postdoctoral Fellow, Department of physiology, Northwestern University Medical Center, Chicago, USA,  
1982-1987 Research and teaching assistant, Department of Anatomy and Cell Biology, Health Sciences Center, University of Illinois at Chicago, Chicago, IL, USA

## **OTHER ACADEMIC APPOINTMENTS:**

- 2007-Present: Visiting Professor, The Airforce Medical University (previously called The Fourth Military Medical University)
- 2018-Present: Honorary Professor, School of Biomedical Sciences, HKU
- 2019-Present: Honorary Professor, Beijing Normal-HKBU UIC, China
- 2017-Present: Honorary Professor, Chungnam National University Medical School, Korea
- 2007-2018: Honorary Professor, Dept Ophthalmology, The University of Hong Kong
- 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, Program Director 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 AWARD:**

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

## **PROFESSIONAL AFFILIATIONS:**

- 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:**

*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; Editorial board member for Metabolic Brain Disease; member of the Life Sciences Endothelin Special Editorial Advisory Board for the Proceedings of the Thirteenth International Conference on Endothelin (ET-13).*

## **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 Sci; 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*

### **GRANTS REVIEWER FOR:**

NIDDK (USA), NIH (USA); Wellcome Trust (UK); The HK Research Grant Council GRF; Croucher Foundation (Hong Kong) (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:**

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 - 2016: Department of Anatomy Faculty of Medicine (Participated in teaching and examination for Histology and Gross Anatomy and Problem Based Learning tutoring to Medical students; Histology to Medical, Traditional Chinese Medicine, Nursing, Bioengineering, Pharmacy students)  
2016- 2018: School of Biomedical Sciences, Faculty of Medicine (Organ system that integrate anatomy, biochemistry, and physiology)

### **UNDERGRADUATE AND POSTGRADUATE TEACHING ADMINISTRATION:**

1. Member and Chairman of Departmental Research Postgraduate Committee

2. Chair of Anatomy Departmental Postgraduate Symposium
4. Coordinator for Postgraduate Journal Club
5. Coordinator for Current Topics in Morphological Science
6. Departmental representative for Master of Medical Science Program
7. Coordinator for Histology
8. Recruit students from top Korean Universities for Graduate Programs in the Faculty of Medicine.
9. Serve as a reviewer for teaching assessment.
10. Invited to discuss the Anatomy teaching at the 4<sup>th</sup> International Anatomical Sciences and Cell Biology Conference, Hong Kong, Dec 4 – 6<sup>th</sup>, 2016.

### **SUPERVISOR OF HIGH SCHOOL AND UNDERGRADUATE RESEARCH INTERNSHIPS:**

To provide research experience to younger students who aspire to be scientists I mentored several research interns in the past 10 years, including 1 high school students, 8 medical students, and 4 undergraduate students

### **PRINCIPAL SUPERVISOR OF POSTGRADUATE STUDENTS:**

34 PhD and MPhil students

### **CO-SUPERVISOR OF POSTGRADUATE STUDENTS:**

37 PhD and MPhil students

### **PRIZES AND AWARDS RECEIVED BY POSTGRADUATE STUDENTS AND POSTDOCTORAL FELLOWS (for whom I served as principal supervisor):**

27 Local and International conference presentation awards

### **MPhil/PhD THESIS EXAMINERS COMMITTEE:**

Served as internal examiner: 45

Served as external Examiner: 12

Served as chairman of examination committees: 44

### **RESEARCH FUNDING AS PRINCIPAL INVESTIGATOR:**

In the past 25 years I have obtained 46 research grants from the University of Hong Kong, Hong Kong Research Grant Council, National Science Foundation of China, Guangdong-Hong Kong Collaborative Grants, and pharmaceutical companies totalling HKD 29,954,000.

## **HONG KONG RGC AREAS OF EXCELLENT AND THEME-BASED PROJECT AS CO-PI**

I served as co-Principal Investigator in 6 Areas of Excellent and Theme-base Research Projects, with my part of funding totalling HKD8,930,000.

## **RESEARCH GRANTS AS CO-INVESTIGATOR**

In the past 25 years I served as co-investigator in 56 research projects.

## **CURRENT RESEARCH GRANTS**

1. 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
2. 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
3. SK Chung, Travel grant to discuss collaborative research with the Fourth Military Medical University, Xian, China HKD12,482
4. Wai Ho Tang and SK Chung (co-PI), Guangdong and Hong Kong Joint Innovation Field of Scientific and Technological Cooperation Project. The role and mechanism of platelet transfer by miRNA-143/145 on diabetic vascular disease”, May 2017 to Apr 2019 Total cost: RMB1,000,000
5. SK Chung (PI), NSFC, Endothelin-1 and tanshinone IIA, Chinese RMB 540,000, Jan 2018 to Dec 31, 2021
6. Cheng Xiao (PI) and SK Chung (NSFC): RMB 250,000, Jan 2018 to Dec 31, 2021

## **INVITED LECTURES:**

97 local and international invited lectures

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

Served as chairman or group leader in 86 local and international symposiums and workshops

## **LIST OF PUBLICATIONS:**

143 full papers in ISI listed international journals  
3 book chapters  
4 invited review articles

## 10 REPRESENTATIVE PUBLICATIONS: 2013 to 2018

Zeng Z, Xia L, Fan X, Ostriker AC, Yarovsky T, Su M, Zhang Y, Peng X, Xie Y, Pi L, Gu X, **Chung SK**, Martin KA, Liu R, Hwa J, Tang WH. Platelet-derived miR-223 promotes a phenotypic switch in arterial injury repair. **J Clin Invest.** 2019 Mar 1;129(3):1372-1386. doi: 10.1172/JCI124508. Epub 2019 Feb 18. PubMed PMID: 30645204; PubMed Central PMCID: PMC6391113.

Bian G, Yu C, Liu L, Fang C, Chen K, Ren P, Zhang Q, Liu F, Zhang K, Xue Q, Xiang J, Guo H, Song J, Zhao Y, Wu W, **Chung SK**, Sun R, Ju G, Wang J. Sphingosine 1-phosphate stimulates eyelid closure in the developing rat by stimulating EGFR signaling. **Sci Signal.** 2018 Oct 23;11(553). pii: eaat1470. doi: 10.1126/scisignal.aat1470. PubMed PMID: 30352949.

He J, Xia M, Yeung PKK, Li J, Li Z, Chung KK, **Chung SK**, Xia J. PICK1 inhibits the E3 ubiquitin ligase activity of Parkin and reduces its neuronal protective effect. **Proc Natl Acad Sci U S A.** 2018 Jul 24;115(30):E7193-E7201. doi: 10.1073/pnas.1716506115. Epub 2018 Jul 9. PubMed PMID: 29987020; PubMed Central PMCID: PMC6064985.

Zhang SQ, Yung KK, **Chung SK**, Chung SS. Aldo-keto reductases-mediated cytotoxicity of 2-deoxyglucose: A novel anticancer mechanism. **Cancer Sci.** 2018 Jun;109(6):1970-1980. doi: 10.1111/cas.13604. Epub 2018 May 3. PubMed PMID: 29617059; PubMed Central PMCID: PMC5989857

Liu XB, Lo CM, Cheng Q, Ng KT, Shao Y, Li CX, **Chung SK**, Ng IOL, Yu J, Man K. Oval Cells Contribute to Fibrogenesis of Marginal Liver Grafts under Stepwise Regulation of Aldose Reductase and Notch Signaling. **Theranostics.** 2017 Oct 24;7(19):4879-4893. doi: 10.7150/thno.20085. eCollection 2017. PubMed PMID: 29187911; PubMed Central PMCID: PMC5706107.

Xu WW, Li B, Guan XY, **Chung SK**, Wang Y, Yip YL, Law SY, Chan KT, Lee NP, Chan KW, Xu LY, Li EM, Tsao SW, He QY, Cheung AL. Cancer cell-secreted IGF2 instigates fibroblasts and bone marrow-derived vascular progenitor cells to promote cancer progression. **Nat Commun.** 2017 Feb 10;8:14399. doi: 10.1038/ncomms14399. PubMed PMID: 28186102; PubMed Central PMCID: PMC5309924.

Patrick K.K.Yeung, Angela K.W.Lai, Hyo JinSon, XuZhang,, Stephen S.M.Chung & **S K Chung**, Aldose reductase deficiency leads to oxidative stress-induced dopaminergic neuronal loss and autophagic abnormality in an animal model of Parkinson's disease., **Neurobiol Aging.** 2017 Feb;50:119-133. <https://doi.org/10.1016/j.neurobiolaging.2016.11.008>

L Zhou, S L Ma, P K K Yeung, Y H Wong, K W K Tsim, K F So, L C W Lam, & **S K Chung**, Anxiety and depression with neurogenesis defects in exchange protein directly activated by cAMP 2-deficient mice are ameliorated by a selective serotonin reuptake inhibitor, Prozac., **Translational Psychiatry** (2016) 6, doi:10.1038/tp.2016.129, <https://www.nature.com/articles/tp2016129.pdf>

Victor KL Hung, Patrick KK Yeung, Angela KW Lai, Maggie CY Ho, Amy CY Lo, Kevin C Chan, Ed XK Wu, Stephen SM Chung, Chi W Cheung, **Sookja K Chung**, Selective Astrocytic Endothelin-1 Overexpression Contributes to Dementia Associated with Ischemic Stroke by Exaggerating Astrocyte-Derived Amyloid Secretion . **J Cereb Blood Flow Metab.** 35(10):1687-96, 2015, <http://journals.sagepub.com/doi/pdf/10.1038/jcbfm.2015.109>

Kai AK, Lam AK, Chen Y, Tai AC, Zhang X, Lai AK, Yeung PK, Tam S, Wang J, Lam KS, Vanhoutte PM, Bos JL, Chung SS, Xu A, **Chung SK.**, Exchange protein activated by cAMP 1 (Epac1)-deficient mice develop  $\beta$ -cell dysfunction and metabolic syndrome. **FASEB J.** 2013 Oct;27(10):4122-35. doi: 10.1096/fj.13-230433. Epub 2013 Jun 27. <http://www.fasebj.org/content/27/10/4122.short>

#### **PATENTS OBTAINED:**

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

**Licensing of AR-deficient Schwann cell line (IKARS1) in collaboration with Prof. Kazunori Sango, Japan**