

Curriculum Vitae

NAME: Ching-Chi Chiu, PhD (邱清旗)



CONTACT INFORMATION

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EDUCATION AND PROFESSIONAL POSITION

2005.09~2009.12 Ph.D. Graduate Program in Molecular Biology and Biochemistry, Chang Gung University, Taiwan
2003.09~2005.06 M.S. Graduate Institute of Medical Biotechnology and Laboratory Science, Chang Gung University, Taiwan
1999.09~2003.06 B.S. Department of Medical Laboratory and Biotechnology, Chung Shan Medical University, Taiwan

ACADEMIC AND PROFESSIONAL APPOINTMENTS

2015.02~present | Associate Research Fellow,
Neuroscience Research Center, Chang Gung Memorial Hospital, Taiwan
2020.08~present | Adjunct Assistant Professor,
Chang Gung University, Taiwan
2016.06~present | Adjunct Assistant Professor,
Chang Gung University of Science and Technology, Taiwan
2013.02~2015.02 | Postdoctoral Fellow,
Neuroscience research center, Chang Gung Memorial Hospital, Taiwan
2011.09~2012.12 | Postdoctoral Fellow,
Cancer Molecular Diagnostics Laboratory, Chang Gung Memorial Hospital, Taiwan
2010.08~2011.07 | Second Lieutenant,
Compulsory Military Service, Taiwan

2010.04~2010.08 | Postdoctoral Fellow,

Graduate Institute of Medical Biotechnology and Laboratory Science, Chang Gung University, Taiwan

2007.09~2009.09 | Teaching assistant,

Department of Biochemistry, Chang Gung University, Taiwan

2005.09~2010.06 | Research assistant,

Department of Medical Biotechnology and Laboratory Science, Chang Gung University

PAPER PUBLICATION

1. Wang HL, Yeh TH, Huang YZ, Weng YH, Chen RS, Wei KC, Lu CS, Liu YC, Shen YM, Chen CL, Chen YJ, Hsu CC, Chiu CH, Lin YW, **Chiu CC*** (*Corresponding author). Functional variant rs7972240 within Rab35 gene promoter is associated with increased risk of Parkinson's disease. *Neurobiology of Aging*. 2020 (Submission) IF= 4.347, Ranking= 10/51; 19.60% (Geriatrics & Gerontology).
2. **Chiu CC**, Weng YH, Huang YZ, Chen RS, Liu YC, Yeh TH, Lu CS, Lin YW, Chen YJ, Hsu CC, Chiu CH, Wang YT, Chen WS, Liu SY, Wang HL. (D620N) VPS35 causes the impairment of Wnt/ β -catenin signaling cascade and mitochondrial dysfunction in a PARK17 knockin mouse model. *Cell Death Dis*. 2020 Nov 30;11(11):1018. doi: 10.1038/s41419-020-03228-9. IF= 6.304, Ranking= 40/195; 20.51% (Cell Biology).
3. Liu YC, Wang HL, Huang YZ, Weng YH, Chen RS, Tsai WC, Yeh TH, Lu CS, Chen YL, Lin YW, Chen YJ, Hsu CC, Chiu CH, **Chiu CC*** (*Corresponding author). Alda-1, an activator of ALDH2, ameliorates Achilles tendinopathy in cellular and mouse models. *Biochem Pharmacol*. 2020 Mar 16;113:919. doi:10.1016/j.bcp.2020.113919. IF= 4.960, Ranking= 26/270; 9.815% (Pharmacology & Pharmacy).
4. Wang HL, Lu CS, Yeh TH, Shen YM, Weng YH, Huang YZ, Chen RS, Liu YC, Cheng YC, Chang HC, Chen YL, Chen YJ, Lin YW, Hsu CC, **Chiu CC*** (*Corresponding author). Combined assessment of serum alpha-synuclein and Rab35 is a better biomarker for Parkinson's disease. *J Clin Neurol*. 2019 Oct;15(4):488-495. IF= 2.439, Ranking= 112/204; 54.90% (Clinical Neurology).
5. **Chiu CC**, Yeh TH, Chen RS, Chen HC, Huang YZ, Weng YH, Cheng YC, Liu YC, Cheng AJ, Lu YC, Chen YJ, Lin YW, Hsu CC, Chen YL, Lu CS, Wang HL. Upregulated expression of microRNA-204-5p leads to the death of dopaminergic cells by targeting DYRK1A-mediated apoptotic signaling cascade. *Front Cell Neurosci*. 2019 Sep 13; 13:399. IF=3.921, Ranking= 91/271; 33.40% (Neuroscience).
6. **Chiu CC**, Wang HL, Weng YH, Chen RS, Chen CM, Yeh TH, Lu CS, Chen YJ, Liu YC, Huang YZ and Chang KH. Generation of induced pluripotent stem cells from a young-onset Parkinson's disease patient carrying the compound heterozygous PLA2G6

- p.D331Y/p.M358IfsX mutations. *Stem Cell Res.* 2019 Oct; 40:101552. IF= 4.489, Ranking= 27/156; 16.987% (Biotechnology & Applied microbiology).
7. **Chiu CC**, Lu CS, Weng YH, Chen YL, Huang YZ, Chen RS, Cheng YC, Huang YC, Liu YC, Lai SC, Lin KJ, Lin YW, Chen YJ, Chen CL, Yeh TH, Wang HL. PARK14 (D331Y) PLA2G6 causes early-onset degeneration of substantia nigra dopaminergic neurons by inducing mitochondrial dysfunction, ER stress, mitophagy impairment and transcriptional dysregulation in a knockin mouse model. *Mol Neurobiol.* 2019 Jun;56(6):3835-3853. IF= 4.500, Ranking= 65/272; 23.897% (Neuroscience); 59/366; 16.12% (Neuroscience & Behavior).
 8. Yeh TH, Liu HF, Li YW, Lu CS, Shih HY, **Chiu CC**, Lin SJ, Huang YC, Cheng YC. C9orf72 is essential for neurodevelopment and motility mediated by Cyclin G1. *Exp Neurol.* 2018 Mar 6;304: 114-124. IF= 4.691, Ranking= 59/271; 21.587% (Neuroscience); 36/365 (Neuroscience & Behavior).
 9. **Chiu CC**, Yeh TH, Lu CS, Huang YC, Cheng YC, Huang YZ, Weng YH, Liu YC, Lai SC, Chen YL, Chen YJ, Chen CL, Chen HY, Lin YW, Wang HL. PARK14 PLA2G6 mutants are defective in preventing rotenone-induced mitochondrial dysfunction, ROS generation and activation of mitochondrial apoptotic pathway. *Oncotarget.* 2017 Sep 15;8(45):79046-79060. Ranking=62/321 (Oncology).
 10. Huang YC, Lin SJ, Shih HY, Chou CH, Chu HH, **Chiu CC**, Yuh CH, Yeh TH, Cheng YC. Epigenetic regulation of NOTCH1 and NOTCH3 by KMT2A inhibits glioma proliferation. *Oncotarget.* 2017 Jun 27;8(38):63110-63120. Ranking=62/321 (Oncology).
 11. **Chiu CC**, Yeh TH, Lai SC, Huang YC, Chen YJ, Chen CL, Wang HL, Lu CS. Increased Rab35 expression is a potential biomarker and implicated in the pathogenesis of Parkinson's disease. *Oncotarget.* 2016 Aug 23;7(34):54215-54227. Ranking=62/321 (Oncology).
 12. Cheng YC, Huang YC, Yeh TH, Shih HY, Lin CY, Lin SJ, **Chiu CC**, Huang CW, Jiang YJ. Deltex1 is inhibited by the Notch-Hairy/E(Spl) signaling pathway and induces neuronal and glial differentiation. *Neural Dev.* 2015 Dec 30;10:28. IF= 2.630; 40.244% Ranking= 17/41 (Developmental Biology); 167/271, 61.439% (Neuroscience).
 13. Chou AH, Chen YL, **Chiu CC**, Yuan SJ, Weng YH, Yeh TH, Lin YL, Fang JM, Wang HL. T1-11 and JMF1907 ameliorate polyglutamine-expanded ataxin-3-induced neurodegeneration, transcriptional dysregulation and ataxic symptom in the SCA3 transgenic mouse. *Neuropharmacology.* 2015 Aug 6;99:308-317. IF= 4.431, 43/271; 15.87% (Pharmacology & Pharmacy). 68/272; 25% (Neuroscience)
 14. **Chiu CC**, Yeh TH, Lai SC, Wu-Chou YH, Chen CH, Mochly-Rosen D, Huang YC, Chen YJ, Chen CL, Chang YM, Wang HL, Lu CS. Neuroprotective effects of aldehyde dehydrogenase 2 activation in rotenone-induced cellular and animal models of

- parkinsonism. *Exp Neurol.* 2015 Jan; 263:244-53. IF= 4.691, Ranking=60/267, 21.59% (Neuroscience); 36/365 (Neuroscience & Behavior).
15. Huang YC, Shih HY, Lin SJ, **Chiu CC**, Ma TL, Yeh TH, Cheng YC. The epigenetic factor Kmt2a/Mll1 regulates neural progenitor proliferation and neuronal and glial differentiation. *Dev Neurobiol.* 2015 May;75(5):452-62. IF= 3.935, Ranking= 8/41 (Developmental Biology); 89/271, 18.293% (Neuroscience).
 16. **Chiu CC**, Lee LY, Li YC, Chen YJ, Lu YC, Li YL, Wang HM, Chang JT, Cheng AJ. Grp78 as a therapeutic target for refractory head-neck cancer with CD24(-)CD44(+) stemness phenotype. *Cancer Gene Ther.* 2013 Nov;20(11):606-15. IF= 4.534, Ranking= 25/156; 15.705% (Biotechnology & Applied microbiology).
 17. Chen YJ, Lee LY, Chao YK, Chang JT, Lu YC, Li HF, **Chiu CC**, Li YC, Li YL, Chiou JF, Cheng AJ. DSG3 facilitates cancer cell growth and invasion through the DSG3-plakoglobin-TCF/LEF-Myc/cyclin D1/MMP signaling pathway. *PLoS One.* 2013 May 30;8(5): e64088. IF= 2.740, Ranking= 27/71; 37.324% (Multidisciplinary Sciences).
 18. **Chiu CC**, Lin CY, Lee LY, Chen YJ, Lu YC, Wang HM, Liao CT, Chang JT, Cheng AJ. Molecular chaperones as a common set of proteins that regulate the invasion phenotype of head and neck cancer. *Clin Cancer Res.* 2011 Jul 15; 17(14):4629-41. IF= 10.107, Ranking= 17/244; 6.762% (Oncology).
 19. Lin TY, Chang JT, Wang HM, Chan SH, **Chiu CC**, Lin CY, Fan KH, Liao CT, Chen IH, Liu TZ, Li HF, Cheng AJ. Proteomics of the radioresistant phenotype in head-and-neck cancer: Gp96 as a novel prediction marker and sensitizing target for radiotherapy. *Int J Radiat Oncol Biol Phys.* 2010 Sep 1;78(1):246-56. IF= 5.859, Ranking= 10/133; 7.143 (Radiology, nuclear medicine and imaging).
 20. Chang JT, Kuo TF, Chen YJ, **Chiu CC**, Lu YC, Li HF, Shen CR, Cheng AJ. Highly potent and specific siRNAs against E6 or E7 genes of HPV16- or HPV18-infected cervical cancers. *Cancer Gene Ther.* 2010 Dec;17(12):827-36. IF= 4.534, Ranking= 25/156; 15.705% (Biotechnology & Applied microbiology).
 21. Lin CY, Chen WH, Liao CT, Chen IH, **Chiu CC**, Wang HM, Yen TC, Lee LY, Chang JT, Cheng AJ. Positive association of glucose-regulated protein 78 during oral cancer progression and the prognostic value in oral precancerous lesions. *Head Neck.* 2010 Aug; 32(8):1028-39. IF= 2.538, Ranking= 9/42; 20.238% (Otorhinolaryngology).
 22. Kang CJ, Chen YJ, Liao CT, Wang HM, Chang JT, Lin CY, Lee LY, Wang TH, Yen TC, Shen CR, Chen IH, **Chiu CC**, Cheng AJ. Transcriptome profiling and network pathway analysis of genes associated with invasive phenotype in oral cancer. *Cancer Lett.* 2009 Nov 1;284 (2):131-40. Epub 2009 May 19. IF= 7.360, Ranking= 30/244, 12.09 % (Oncology).
 23. **Chiu CC**, Lin CY, Lee LY, Chen YJ, Kuo TF, Chang JT, Liao CT, Wang HM, Yen TC, Shen CR, Liao SK, Cheng AJ. Glucose-regulated protein 78 regulates multiple

malignant phenotypes in head and neck cancer and may serve as a molecular target of therapeutic intervention. *Mol Cancer Ther.* 2008 Sep; 7(9):2788-97. IF= 5.615, Ranking= 50/244, 20.287% (Oncology).

24. Chen YJ, Chang JT, Liao CT, Wang HM, Yen TC, **Chiu CC**, Lu YC, Li HF, Cheng AJ. Head and neck cancer in the betel quid chewing area: recent advances in molecular carcinogenesis. *Cancer Sci.* 2008 Aug;99(8):1507-14. IF= 4.966, Ranking= 65/244, 26.434% (Oncology).
25. Chen YJ, Chang JT, Lee L, Wang HM, Liao CT, **Chiu CC**, Chen PJ, Cheng AJ. DSG3 is overexpressed in head neck cancer and is a potential molecular target for inhibition of oncogenesis. *Oncogene.* 2007 Jan 18;26(3):467-76. IF= 7.971, Ranking= 26/244, 10.451% (Oncology).

JOURNAL REVIEWER

1. Biochemical Pharmacology
2. NeuroMolecular Medicine
3. CNS & Neurological Disorders - Drug Targets
4. Drug Design, Development and Therapy

RESEARCH FIELDS/SKILLS

1. Omics research (genomics, proteomics or metabolomics) and microRNA analysis: Genetic study of neurodegenerative disease by using next-generation sequencing (NGS), microarray and RNA sequencing. Proteomic biomarker of neurodegenerative disease by using iTRAQ-based proteomic analysis. The metabolic profiling of neurodegenerative disease by using chemical isotope labeling LC-MS.
2. Transgenic animal model, CRISPR animal model and animal behavior study: Generation of Parkinson's disease knockin and knockout mice model, CRISPR mice model (Ongoing project: CRISPR Rab knockout mice) and mouse behavioral analysis.
3. Human induced pluripotent stem cells (iPSCs)-derived dopaminergic neurons: iPSC model of Parkinson's disease.
4. Molecular Biology: Cancer stem cells (CSC) analysis, primary neuronal culture, protein analysis (western blot, confocal microscopy, antibody generation, ELISA, IHC, flow cytometry and sorting), protein-protein interaction (IP and EMSA) and Southern blot.

PATENT

1. Early-onset Parkinson's disease model: (D331Y) PLA2G6 knockin model, platform and method for drug screening, and kit of detection 早發型帕金森病(D331Y) PLA2G6 突變基因嵌入模式與藥物篩選平台和方法(中華民國專利 I695891; 2019

- 年 2 月美國專利申請中)
2. Specific Grp78 expression- inhibition RNAi sequence, medicine thereof and method thereof - a method for head and neck cancer. United States Patent. (Patent #: US 7,825,100 B2) (Patent date: Nov 2, 2010)
 3. Specific Grp78 expression- inhibition RNAi sequence, medicine thereof and method thereof - specific Grp78-RNAi sequence. United States Patent. (Patent #: US 7,829,695 B2) (Patent date: Nov 9, 2010)
 4. 專一性抑制葡萄糖調節蛋白 78(Grp78) 表現之 RNA 干擾(RNAi)序列、抑制藥劑及抑制方法. 中華民國專利 (I-371285) (Patent date: 2012.9.1-2028.01.10)

GRANTS

Ministry of Science and Technology Grant

As PI:

1. Mechanistic study and disease-modifying therapeutics of Parkinson's disease: Lessons from PARK14 (2020.08.01~2023.7.31; MOST109-2314-B-182A-072-MY3).
2. Exploring the role of Rab35 in the pathogenesis of Parkinson's disease and other neurodegenerative diseases. (2017.8.1~2020.7.31; MOST 106-2314-B-182A-012-MY3)
3. Development of molecular biomarkers for Parkinson's disease and related neurodegenerative disorders. (2016.1.1~2016.10.31; MOST 105-2314-B-182A-003-)
4. College Student Research Creativity Award: Extracellular matrix regulates signaling transduction of mammary epithelial cells through NF- κ B signaling (2002.07.01~2003.02.28, NSC 91-2815-C-040-012-B); 細胞外間質調節胰島素在乳腺上皮細胞的訊息傳遞—NF- κ B 所扮演的角色(大專學生研究計畫, 2002.07.01~2003.02.28, NSC 91-2815-C-040-012-B)

As co-PI:

1. Identify the metabolomic markers of neurodegeneration in Parkinson's disease: A prospective and longitudinal study of metabolomic profiling in patients with Parkinson's disease and healthy aging subjects. (2020.8.1~2021.7.31; MOST109-2314-B-182A-087-)
2. 以前瞻性縱向追蹤研究帕金森病患者與健康老人的代謝體，探討與帕金森病退化有關的代謝標記(2019.8.1~2020.11.30; MOST 108-2314-B-182A-046-).
3. Investigation on molecular pathogenic mechanisms of PARK14: using in vitro model and establishing PLA2G6 knockin mouse model. (2016.8.1~2019.7.31; MOST 104-2314-B-182A-035-)
4. Investigation on molecular pathogenic mechanisms and therapy for PARK14 using PLA2G6 knockin mouse model. (2015.8.1~2016.7.31, MOST 105-2314-B-038-092-MY3).

Chang Gung Medical Foundation

As PI:

1. Role of ATP13A2 mutations in the pathogenesis of Parkinson's disease (as PI, 2020.7.1-2022.6.30; CMRPG3K0951)
2. Investigation of the pathogenic mechanism of PARK14 in Parkinson's disease: using patient-specific induced pluripotent stem cells and metabolomic-based approaches. (2019.7.1~2022.6.30; CMRPG3J0761)
3. Investigation of pathological mediators of mitochondrial dysfunction, endoplasmic reticulum (ER) stress and oxidative stress in Parkinson's disease. (2016.10.1~2019.9.30, CMRPG3F1821)

As co-PI:

1. Translational research on Parkinson's disease and related disorders: innovation of biomarkers, pathogenic mechanisms, and therapeutic approaches (2015.10.1~2016.9.30, CMRPG3C1481).

AWARDS

1. Outstanding Research Paper Award in Dec 2020, Chang Gung Memorial Hospital, Taiwan (長庚醫院優秀論文).
2. Ta-You Wu Memorial Award in Sep 2020, MOST (吳大猷先生紀念獎)
3. Outstanding Research Paper Award in May 2020, Chang Gung Memorial Hospital, Taiwan (長庚醫院優秀論文).
4. Outstanding Research Paper Award in June 2019, Chang Gung Memorial Hospital, Taiwan (長庚醫院優秀論文).
5. 2018 Society for Neuroscience (SfN)-Merck Travel Award
6. Outstanding Research Paper Award in May 2018, Chang Gung Memorial Hospital, Taiwan (長庚醫院優秀論文).
7. Outstanding Research Paper Award in August 2016, Chang Gung Memorial Hospital, Taiwan (長庚醫院優秀論文).
8. Second place prize at the 2rd Annual Contest of Master Thesis.
9. College Student Research Creativity Award (2002 NSC)

MEDICAL TECHNOLOGIST LICENSURE

1. Medical technologist licensure, Taiwan
2. Emergency medical technician (EMT-1), Taiwan

INTERNATIONAL MEETING/POSTER

1. 5th Asia Microbiome Conference. 2021. 16 Jan. Academia Sinica, Taipei, Taiwan.

2. **Chiu CC**, Yeh TH, Wang HL. Investigation of the role of RAB39B in the pathogenesis of Parkinson's disease. The Annual meeting of Society for neuroscience 2018, San Diego, CA, USA.
3. **Chiu CC**, Yeh TH, Wang HL. Increased Rab35 expression is a potential biomarker and implicated in the pathogenesis of Parkinson's disease. The Annual meeting of Society for neuroscience 2016, San Diego, CA, USA.
4. Yeh TH, **Chiu CC**, Wang HL, Huang CL, Chang HC, Lu CS. Characterization of PINK1 knockin mouse model for Parkinson's Disease. 2015 MDS 19th International Congress of Parkinson's disease and Movement Disorders.
5. Lu CS, Lai SC, Yeh TH, **Chiu CC**, Chang HC. G6PD gene mutations may be a risk factor for Parkinson's disease. 2014 MDS 18th International Congress of Parkinson's disease and Movement Disorders.
6. Yeh TH, Cheng YC, **Chiu CC**, Wang HL, Huang CL, Chang HC, Lu CS. The functional role of PRRT2 in the pathogenesis of paroxysmal dyskinesias. 2014 MDS 18th International Congress of Parkinson's disease and Movement Disorders.
7. Lai SC, Yeh TH, **Chiu CC**, Wang HL, Huang CL, Chang HC, Lu CS. The pathogenic mechanism of PLA2G6 mutations in Parkinson's Disease. 2014 MDS 18th International Congress of Parkinson's disease and Movement Disorders.
8. Yeh TH, **Chiu CC**, Wang HL, Lai SC, H-C Chang, C-S Lu. The role of aldehyde dehydrogenase on the pathogenic mechanism of Parkinson's disease. 2013 MDS 17th International Congress of Parkinson's disease and Movement Disorders.
9. **Chiu CC**, Yeh TH, Wang HL, Lu CS. Identifying the transcription regulatory region and factors of C9orf72 gene. The Annual meeting of Society for neuroscience 2013, San Diego, CA, USA.
10. **Chiu CC** and Cheng AJ. Differential proteomic profiling identifies Head and Neck Squamous Cell Carcinoma invasion genes: GANAB is important regulator in HNSCC invasion. The AACR Annual meeting 2010, Washington, DC, USA
11. **Chiu CC** and Cheng AJ. Negatively regulatory function of HSP60 in the invasion of Hhead and Neck Cancer. The AACR Annual meeting 2009, Denver, CL, USA
12. **Chiu CC** and Cheng AJ. Gp96 positively regulates cell growth, invasion and participates the carcinogenesis of oral cancer. The AACR Annual meeting 2008, San Diego, CA, USA
13. **Chiu CC** and Cheng AJ. Grp78 is over-expressed in head neck cancer and is a potential molecular target for inhibition of oncogenesis. The AACR Annual meeting 2007, Los Angles, CA, USA

PROFESSIONAL SOCIETY MEMBERSHIPS

1. Associate Member of the American Association for Cancer Research
(2003~present)
2. Associate Member of the Society for Neuroscience (2013~present)