

周士傑 兼任助理教授

Shih-Jie Chou, Ph.D., Assistant Research Fellow

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QUALIFICATIONS/ADVISORS

B. S.	(2000-2004)	Life Science, National Dong-Hwa University/Taiwan
M. S.	(2004-2007)	Biotechnology, National Dong-Hwa University/Taiwan
Ph. D.	(2010-2016)	Pharmacology, National Yang-Ming University/Taiwan

Undergraduate Advisor	Prof. Kuo-Chih Lin (National Dong-Hwa University)
Graduate School Advisor	Prof. Ruey-Yi Chang (National Dong-Hwa University)
Graduate School Advisors	Prof. Shih-Hwa Chiou (National Yang-Ming University)
Postdoctoral Advisors	Prof. Shih-Hwa Chiou (National Yang-Ming University) Prof. Hsian-Rong Tseng (UCLA)

APPOINTMENTS

08/2019-	Assistant Research Fellow, Department of Medical Research Taipei Veterans General Hospital
04/2018-07/2019	Visiting Scholar, Department of Molecular and Medical Pharmacology David Geffen School of Medicine at UCLA
07/2016-03/2018	Postdoctoral Researcher, Institute of Pharmacology National Yang-Ming University, Taiwan

AWARDS/HONORS

2014	Scholarship of Biotechnology Education Fund, TTY Biopharm
2016	Scholarship of Biotechnology Education Fund, TTY Biopharm
2016	Outstanding Dissertation Finalist, National Yang-Ming University, Taiwan

AREAS OF RESEARCH INTEREST

My research interests are to develop gene-editing technologies as enabling knowledge for facilitating the advancement of patient-specific disease model and therapeutics, as well as cell-based therapy.

PUBLICATIONS

* Equal contribution

17. Peng Yang, * **Shih-Jie Chou**, * Jindian Li, Wenqiao Hui, Wenfei Liu, Na Sun, Ryan Y. Zhang, Yazhen Zhu, Matthew Smalley, Jiayuan Chen, Zulema Romero, Dahai Liu, Zunfu Ke, Chang Zou, Chin-Fa Lee, Steve J. Jonas, Qian Ban,† Paul S. Weiss,† Donald B. Kohn,† Kai Chen,† Shih-Hwa Chiou,† and Hsian-Rong

Tseng.† Supramolecular Nanosubstrate-Mediated Delivery System Enables CRISPR/Cas9 Knockin of Hemoglobin Beta Gene for Hemoglobinopathies. *Science Advances* 2020, in press.

16. Na Sun, Yi-Te Lee, Ryan Y. Zhang, Rueihung Kao, Pai-Chi Teng, Yingying Yang, Peng Yang, Jasmine J. Wang, Matthew Smalley, Pin-Jung Chen, Minhyung Kim, **Shih-Jie Chou**, Lirong Bao, Jing Wang, Xinyue Zhang, Dongping Qi, Juvelyn Palomique, Nicolas Nissen, Steven-Huy B. Han, Saeed Sadeghi, Richard S. Finn, Sammy Saab, Ronald W. Busuttill, Daniela Markovic, David Elashoff, Hsiao-hua Yu, Huiying Li, Anthony P. Heaney, Edwin Posadas, Sungyong You, Ju Dong Yang, Renjun Pei, Vatche G. Agopian, Hsian-Rong Tseng, and Yazhen Zhu. Purification of HCC-specific extracellular vesicles on nanosubstrates - towards early detection of HCC by digital scoring. *Nature Communication* 2020, in press.
15. Chen CF, Chien CH, Yang YP, **Chou SJ**, Wang ML, Huo TI, Lin CC. Role of Dipeptidyl Peptidase 4 Inhibitors in Diabetic Patients with Coronavirus-19 Infection. *J Chin Med Assoc.* 2020 Apr 27.
14. Tu YF, Chien CS, Yarmishyn AA, Lin YY, Luo YH, Lin YT, Lai WY, Yang DM, **Chou SJ**, Yang YP, Wang ML, Chiou SH. A Review of SARS-CoV-2 and the Ongoing Clinical Trials. *Int J Mol Sci.* 2020 Apr 10;21(7). pii: E2657.
13. Yang TC, Yarmishyn AA, Yang YP, Lu PC, **Chou SJ**, Wang ML, Lin TC, Hwang DK, Chou YB, Chen SJ, Yu WK, Wang AG, Hsu CC, Chiou SH. Mitochondrial transport mediates survival of retinal ganglion cells in affected LHON patients. *Hum Mol Genet.* 2020 Apr 10. pii: ddaa063.
12. **Chou SJ***, Yang P*, Ban Q, Yang YP, Wang ML, Chien CS, Chen SJ, Sun N, Zhu Y, Liu H, Hui W, Lin TC, Wang F, Zhang RY, Nguyen VQ, Liu W, Chen M, Jonas SJ, Weiss PS, Tseng HR, Chiou SH. Dual Supramolecular Nanoparticle Vectors Enable CRISPR/Cas9-Mediated Knockin of Retinoschisin 1 Gene—A Potential Nonviral Therapeutic Solution for X-Linked Juvenile Retinoschisis. *Adv Sci (Weinh).* 2020 Apr 16;7(10):1903432.
11. Tsai PH, Chien Y, Wang ML, Hsu CH, Laurent B, **Chou SJ**, Chang WC, Chien CS, Li HY, Lee HC, Huo TI, Hung JH, Chen CH, Chiou SH. Ash2l interacts with Oct4-stemness circuitry to promote super-enhancer-driven pluripotency network. *Nucleic Acids Res.* 2019 Nov 4;47(19):10115-10133.
10. Song HY, Chien CS, Yarmishyn AA, **Chou SJ**, Yang YP, Wang ML, Wang CY, Leu HB, Yu WC, Chang YL, Chiou SH. Generation of GLA-Knockout Human Embryonic Stem Cell Lines to Model Autophagic Dysfunction and Exosome Secretion in Fabry Disease-Associated Hypertrophic Cardiomyopathy. *Cells.* 2019 Apr 8;8(4). pii: E327.
9. Dong J, Zhang RY, Sun N, Smalley M, Wu Z, Zhou A, **Chou SJ**, Jan YJ, Yang P, Bao L, Qi D, Tang X, Tseng P, Hua Y, Xu D, Kao R, Meng M, Zheng X, Liu Y, Vagner T, Chai X, Zhou D, Li M, Chiou SH, Zheng G, Di Vizio D, Agopian VG, Posadas E, Jonas SJ, Ju SP, Weiss PS, Zhao M, Tseng HR, Zhu Y. Bio-Inspired NanoVilli Chips for Enhanced Capture of Tumor-Derived Extracellular Vesicles: Toward Non-Invasive Detection of Gene Alterations in Non-Small Cell Lung Cancer. *ACS Appl Mater Interfaces.* 2019 Apr 17;11(15):13973-13983.
8. **Chou SJ**, Ko YL, Yang YH, Yarmishyn AA, Wu YT, Chen CT, Lee HC, Wei YH, Chiou SH. Generation of two isogenic human induced pluripotent stem cell lines from a 15 year-old female patient with MERRF syndrome and A8344G mutation of mitochondrial DNA. *Stem Cell Res.* 2018 Jul;30:201-205.
7. Chien Y, **Chou SJ**, Chang YL, Leu HB, Yang YP, Tsai PH, Lai YH, Chen KH, Chang WC, Sung SH, Yu WC. Inhibition of Arachidonate 12/15-Lipoxygenase Improves α -Galactosidase Efficacy in iPSC-Derived Cardiomyocytes from Fabry Patients. *Int J Mol Sci.* 2018 May 16;19(5). pii: E1480.
6. **Chou SJ**, Yu WC, Chang YL, Chen WY, Chang WC, Chien Y, Yen JC, Liu YY, Chen SJ, Wang CY, Chen YH, Niu DM, Lin SJ, Chen JW, Chiou SH, Leu HB. Energy utilization of induced pluripotent stem cell-derived cardiomyocyte in Fabry disease. *Int J Cardiol.* 2017 Jan 5. pii: S0167-5273(17)30028-1.
5. Tseng WL*, **Chou SJ***, Chiang HC, Wang ML, Chien CS, Chen KH, Leu HB, Wang CY, Chang YL, Liu YY, Jong YJ, Lin SZ, Chiou SH, Yu WC, Lin SJ. Imbalanced Production of Reactive Oxygen Species and Mitochondrial Antioxidant-SOD2 in Fabry Disease-specific Human Induced Pluripotent Stem

- Cell-differentiated Vascular Endothelial Cells. *Cell Transplant*. 2016 Dec 6.
4. Chien Y, Chien CS, Chiang HC, Huang WL, **Chou SJ**, Chang WC, Chang YL, Leu HB, Chen KH, Wang KL, Lai YH, Liu YY, Lu KH, Li HY, Sung YJ, Jong YJ, Chen YJ, Chen CH, Yu WC. Interleukin-18 deteriorates Fabry cardiomyopathy and contributes to the development of left ventricular hypertrophy in Fabry patients with GLA IVS4+919 G>A mutation. *Oncotarget*. 2016 Dec 27; 7(52):87161-87179.
 3. **Chou SJ**, Tseng WL, Chen CT, Lai YF, Chien CS, Chang YL, Lee HC, Wei YH, Chiou SH. Impaired ROS Scavenging System in Human Induced Pluripotent Stem Cells Generated from Patients with MERRF Syndrome. *Sci Rep*. 2016 Mar 30;6:23661.
 2. Tsai PH, Chien Y, Chuang JH, **Chou SJ**, Chien CH, Lai YH, Li HY, Ko YL, Chang YL, Wang CY, Liu YY, Lee HC, Yang CH, Tsai TF, Lee YY, Chiou SH. Dysregulation of Mitochondrial Functions and Osteogenic Differentiation in Cisd2-Deficient Murine Induced Pluripotent Stem Cells. *Stem Cells Dev*. 2015 Nov 1;24(21):2561-76.
 1. Chiou SH, Jiang BH, Yu YL, **Chou SJ**, Tsai PH, Chang WC, Chen LK, Chen LH, Chien Y, Chiou GY. Poly(ADP-ribose) polymerase 1 regulates nuclear reprogramming and promotes iPSC generation without c-Myc. *J Exp Med*. 2013 Jan 14;210(1):85-98.

Conference Participation

- 06/2019 International Society for Stem Cell Research 2019 (ISSCR 2019), Los Angeles, USA
- 06/2016 International Society for Stem Cell Research 2016 (ISSCR 2016), San Francisco, USA
Poster presentation: N-Acetylcysteine Rescue Mitochondrial Dysfunction in MERRF-hiPSC-Derived Cardiomyocyte
- 09/2015 Taiwan Society for Mitochondrial Research Medicine (TSMRM 2015), Taipei, Taiwan
Poster presentation: Impaired ROS Scavenging System in Human Induced Pluripotent Stem Cells Generated from Patients with MERRF Syndrome
- 06/2014 International Society for Stem Cell Research 2016 (ISSCR 2014), Vancouver, Canada
Poster presentation: Enhancing Mobilization of Menopausal Endometrium-Derived iPSC Differentiated Hepatocytes and Liver Regeneration by Injectable HGF Releasing Hydrogel in Fulminant Hepatic Failure
- 06/2013 International Society for Stem Cell Research 2013 (ISSCR 2013), Boston, USA
Poster presentation: Induced Pluripotent Stem Cells Reduce Airway Hyperresponsiveness and Allergic Reaction in Ovalbumin-Sensitized Mice
- 06/2012 International Society for Stem Cell Research 2012 (ISSCR 2012), Yokohama, Japan
Overexpression of PGC-1 by Adenoviral Vector Promoted Adipogenic Differentiation in Induced Pluripotent Stem Cells

Patents

- UC 2020-171 Dual Supramolecular Nanoparticle Vectors Enable CRISPR/Cas9-Mediated Knockin of Retinoschisin 1 Gene – a Potential Non-Viral Therapeutic Solution for X-Linked Juvenile Retinoschisis