

Publication(s)

1. Ji, D., Zhang, M., Qin, E., Zhang, L., Xu, J., Wang, Y., **Cheng, G.**, Wang, F., and Lau, G. (2020) Letter to the Editor: Obesity, Diabetes, Non-Alcoholic Fatty Liver Disease and Metabolic Dysfunction Associated Fatty Liver Disease Are Proinflammatory Hypercoagulable States Associated with Severe Disease and Thrombosis in Covid-19. *Metabolism* **115**, 154437 [2019 IF = 6.159]
2. Wang, C., Chen, L., Zhang, M., Yang, Y., and **Wong, G.** (2020) PDmethDB: A Curated Parkinson's Disease Associated Methylation Information Database. *Comput Struct Biotechnol J* **18**, 3745-3749 [2019 IF = 6.018]
3. Zhong, B. L., Zhou, D. Y., He, M. F., Li, Y., Li, W. T., Ng, C. H., **Xiang, Y. T.**, and Chiu, H. F. (2020) Mental Health Problems, Needs, and Service Use among People Living within and Outside Wuhan during the COVID-19 Epidemic in China. *Ann Transl Med* **8** (21), 1392 [2019 IF = 3.297]
4. Lu, R., Liu, N., Feng, X., Feng, Y., Zhang, S., Wu, Y., Jia, T., Yang, X., **Lee, L. T. O.**, and Sun, L. (2020) An Association Study between MiR-146a and INSR Gene Polymorphisms and Hypertensive Disorders of Pregnancy in Northeastern Han Chinese Population. *Placenta* **104**, 94-101 [2019 IF = 3.177]
5. Zeng, L. N., Zong, Q. Q., Yang, Y., Zhang, L., Xiang, Y. F., Ng, C. H., Chen, L. G., and **Xiang, Y. T.** (2020) Gender Difference in the Prevalence of Insomnia: A Meta-Analysis of Observational Studies. *Front Psychiatry* **11** [5yr IF = 3.359]

BCAT Meeting

In the BCAT meeting on 16 December, Prof. Hanming SHEN shared an overall introduction of the ongoing research work at his new lab in FHS and his previous lab in the National University of Singapore. He presented several ongoing projects related to the following two main directions of his research: (i) Novel regulatory mechanisms in mitophagy and (ii) Exploring glucose metabolism for novel targeted therapy in cancer. Moreover, he presented the progress and difficulties in establishing his new lab at FHS in 2020 during the pandemic period. Prof. Shen also had an active discussion with the faculty members after his presentation and he welcomes all types of collaborations within FHS.

PhD Oral Defence

PhD Oral Defences by Yaojun JU of Prof. Kin TAM's group, Roma Pradeep BORKAR of Prof. Ren-he XU's group and Linjing SHEN of Prof. Gary WONG's group

Ms. Yaojun JU supervised by Prof. Kin TAM, Ms. Roma Pradeep BORKAR supervised by Prof. Ren-he XU and Ms. Linjing SHEN supervised by Prof. Gary WONG completed their PhD oral defences on 16 and 17 December. Their thesis titles are "Novel Multi-targeting Compounds for the Treatment of Alzheimer's Disease", "Human ESC-derived MSCs Enhance Fat Engraftment by Promoting Adipocyte Reaggregation, Secreting CCL2 and Mobilizing Macrophages" and "TDP-1/TDP-43 Potentiates Human α -synuclein (HASN) Neurodegeneration in *Caenorhabditis elegans*" respectively.



Ms. Ju introduced that Alzheimer's disease (AD) is a multifactorial neurodegenerative disorder and she hypothesized that multi-target agent may be helpful for the AD treatment. Then she has synthesized the novel pyridinium/isoquinolinium derivatives to inhibit ChEs and A β aggregation. She has modified a MALDI TOF MS based method for A β aggregation inhibitors evaluation and she found that 9Q/9R showed promising dual inhibitory effect on ChEs and A β aggregation with acceptable toxicity in vitro. Both the

compounds were able to penetrate the BBB and enhance the cerebral acetylcholine level 3 \times Tg-AD mice. She reported that following the one-month treatment with 9Q/9R, cognitive deficits, amyloid burden, amyloidogenic APP processing, synaptic loss, neuroinflammation, and tauopathy in 3 \times Tg-AD mice were significantly ameliorated. Therefore, she concluded that the multifunctional role of 9Q/9R suggested the use of multi-target compound could be a potential approach to treat AD.

Ms. Borkar claimed that mesenchymal stem cells (MSCs) derived from somatic tissues have been used to promote lipotransfer but the effect of lipotransfer remains vague. Thus she has differentiated the human embryonic stem cells, into MSCs (EMSCs), and transplanted human lipoaspirates together with EMSCs or PBS into mice to address these questions. She found that EMSCs promoted aggregation of the injected aspirates within 24h of the transplantation. The EMSC containing grafts were larger, less fibrotic than the control grafts. Some EMSCs differentiated into vascular cells and adipocytes. RNA sequencing revealed that the upregulation of CCL2 in the EMSC-containing grafts was more than the controls. CCL2 knockout reduced the macrophage infiltration in grafts and abolished the remodeling. She concluded that EMSCs promoted fat engraftment via tissue reconstitution, angiogenesis, and the migration of macrophage stimulated by CCL2 signaling.



Ms. Shen shared that TAR DNA binding protein (TDP-43) is a DNA/RNA binding protein involved in the amyotrophic lateral sclerosis and frontal temporal lobe dementia via the formation of protein aggregates. Human α -synuclein (HASN) elicits the dopaminergic neuron degeneration via the protein aggregation in the Parkinson's disease (PD). α -synuclein aggregates are also found in TDP-43 lesions and colocalize in Lewy Body Dementia. She has investigated the effects of the genetic deletion and overexpression

of TDP-43 (tdp-1, the *Caenorhabditis elegans* ortholog of human TDP-43) in transgenic *Caenorhabditis elegans* overexpressing HASNWT/A53T pan-neuronally (HASNWT/A53T OX) to better understand the interactions of TDP-43 and α -synuclein. Through the experiment, she has proved that TDP-43/TDP-1 potentiated the HASN neurodegeneration in *Caenorhabditis elegans*. She has also screened some genes, miRNAs and piRNAs as the potential biomarkers or therapeutic targets for PD associated neurodegenerative disorders.

| DEC / JAN | | | | |
|--|--|---|---|--|
| Mon | Tue | Wed | Thu | Fri |
| 21 Holiday- Winter Solstice | 22 Holiday- Compensatory rest day of Winter Solstice | 23 | 24 Holiday- Christmas Eve | 25 Holiday- Christmas Day |
| 28 The 3rd Macau Stem Cell Symposium 2020 Time: 14:30-18:00 Venue: E12-G004 and Zoom | 29 | 30 | 31 Holiday (afternoon)- New Year's Eve | January 2021 1 Holiday- New Year's Day |
| 4 | 5 | 6 BCAT Meeting Speaker: Prof. Gang LI Time: 17:00-18:00 Venue: E12-G004 | 7 FHS Postdoc/ Student Seminar Session: Data science Host: Prof. San Ming WANG and Prof. Douglas ZHANG Time: 17:00-18:00 Venue: N22-G002 and Zoom | 8 |

