Publication(s)

1. Valero, C., Colabardini, A. C., Chiaratto, J., Pardeshi, L., de Castro, P. A., Ferreira Filho, J. A., Silva, L. P., Rocha, M. C., Malavazi, I., Costa, J. H., Fill, T., Barros, M. H., Wong, S. S. W., Aimanianda, V., **Wong, K. H.**, and Goldman, G. H. (2020) Aspergillus Fumigatus Transcription Factors Involved in the Caspofungin Paradoxical Effect. ***Mbio*** **11** (3) **[5yr IF=7.27]**

2. Shen, L., Wang, C., Chen, L., Leung, K. L., Lo, E., Lakso, M., and **Wong, G.** (2020) TDP-1/TDP-43 Potentiates Human Alpha-Synuclein (Hasn) Neurodegeneration in Caenorhabditis Elegans. ***Biochim Biophys Acta Mol Basis Dis***, 165876 **[5yr IF=5.54]**

3. Yeung, L., Anderson, J. M. L., Wee, J. L., Demaria, M. C., Finsterbusch, M., Liu, Y. S., Hall, P., Smith, B. C., Dankers, W., Elgass, K. D., Wicks, I. P., **Kwok, H. F.**, Wright, M. D., and Hickey, M. J. (2020) Leukocyte Tetraspanin CD53 Restrains Alpha3 Integrin Mobilization and Facilitates Cytoskeletal Remodeling and Transmigration in Mice. ***J Immunol*** **[5yr IF=5.066]**

4. Zhao, W., Chen, X., Zhang, Q., Du, B., Deng, X., Ji, F., **Xiang, Y. T.**, Wang, C., Dong, Q., Chen, C., and Li, J. (2020) Effect of ZNF804A Gene Polymorphism (rs1344706) on the Plasticity of the Functional Coupling between the Right Dorsolateral Prefrontal Cortex and the Contralateral Hippocampal Formation. ***Neuroimage Clin*** **27**, 102279 **[5yr IF=4.833]**

BCAT MEETING

Presented by Prof. Leo LEE

In the first part of the BCAT meeting on 17 June, Prof. Leo LEE presented a project entitled “Metabolic Reprogramming of Ovarian Cancer Involves ACSL1 Metastasis Stimulation through Upregulation Protein Myristoylation”. In this project, his research group used shotgun proteomic approach and metabolite analysis to identify the protein and lipid profile changes in an isogenic ovarian cancer model involving highly metastatic (HM) and non-metastatic (NM). The data suggested that FA metabolic reprograming occurs during ovarian cancer metastasis and leads to a significant change in lipid composition. Metabolite analysis confirmed HM cells had relatively short FA chains (C14:0; myristic acid, MA). The lipid profiles of the ACSL1 overexpressing NM cells increased the amount of phospholipids with a MA chain and made the overall lipid profile more similar to that of the HM cells. More importantly, the expression of ACSL1 consistently enhances the cell viability, spheroid formation *in vitroly*, as well as the cancer progression in xenograft model. Indeed, the expression of ACSL1 in NM cells also activates the AMPK and Src pathways via protein myristoylation. The activation of AMPK pathways in turn enhanced the FA beta-oxidation (FAO) in cancer cells. ACSL1 inhibitor, Triacsin C, is able to reverse the AMPK activation and reduce the metastatic properties of ovarian cancer cells further confirmed the role of ACSL1. In conclusion, this study revealed ACSL1 as a critical factor during ovarian cancer metastasis by regulating FA metabolism via myristoylation.

In the second part, Prof. Lee presented another topic about the use of amphiphilic dendrimer (AD) to deliver small RNA to regulate the equilibrium of renin-angiotensin system (RAS). RAS plays an important role in cancer progression and metastasis. In cancer cells, this equilibrium is maintained by two counteracting receptors: angiotensin receptor type 1 (AGTR1) and MAS proto-oncogene (MAS1). AGTR1 signaling has a strong relationship with the proliferation and metastasis, whereas MAS1 has been shown to counteract the AGTR1-mediated signaling pathway. Alteration of the RAS equilibrium by manipulating these receptor level could therefore provide a new therapeutic strategy

for cancer therapy. In this report, using AD to deliver small RNA, his research group successfully activates the expression of MAS1 by small activating RNA (saRNA) and knock-down AGTR1 by small interference RNA (siRNA). This shift of the RAS equilibrium inhibited the cancer cell migration and increased the ER stress in cancer spheroid, and shapely reduced the tumorigenesis in the xenograft model. This work not only demonstrated a new non-viral method to regulate G protein-coupled receptor, but also showed a glimmer for the future application of using nanotechnology to regain the control of physiological homeostasis from pathological condition.

PhD Oral Defence

PhD Oral Defence by Mengqiao CUI of Prof. Hongjie ZHANG's group

Ms. Mengqiao CUI supervised by Prof. Hongjie ZHANG completed her PhD oral defence on 18 June. Her thesis title is "A Model of Hereditary Sensory and Autonomic Neuropathy Type 1 Reveals a Role of Glycosphingolipids in Neuronal Polarity".

Ms. Cui reported that Hereditary sensory neuropathy type 1 (HSAN1) is a rare autosomal dominantly inherited neuropathy, clinically characterized by a loss of distal peripheral sensory and motoneuronal function. She claimed that the molecular pathogenesis of HSAN1 remains controversial and thus she established a *C. elegans* model of HSAN1 by generating a disease-related mutation at the *C. elegans* genomic locus. She introduced that the homozygous mutants are larval lethal with epithelial polarity defect and the heterozygotes as well as the overexpression transgenic animals exhibited similar neuronal defects with human patients. She copied the neuronal defects in animals with defective downstream sphingolipid biosynthetic enzymes and the result suggested that the HSAN1 pathogenesis is caused by limiting the production of complex sphingolipids, including glucosylceramide. She concluded that the genetic interactions suggest that the neuronal polarity phenotype could be caused by glycosphingolipid-dependent defects in polarized vesicular trafficking.

UPCOMING

Jun / Jul 2020

Mon	Tue	Wed	Thu	Fri
22 **Oral Defence** Qingyu ZHANG Supervisor : Prof. Leo LEE Time: 15:00 Venue: N6-2022	**23**	**24**	**25** **Holiday** **Tuen Ng Festival**	**26**
29	**30** **Oral Defence** Chang CHEN Supervisor : Prof. Douglas ZHANG Time: 15:00 Venue: N6-2022	**Jul 1** **Oral Defence** Menglei ZHANG Supervisor : Prof. Gary WONG Time: 10:00 Venue: N6-2022 **BCAT Meeting** Speaker: Dr. Li WANG Time: 17:00-18:00 Venue: E12-G004	**2** **Oral Defence** Wenwang RAO Supervisor : Prof. Yutao XIANG Time: 10:00 Venue: N6-2022	**3**
6	**7**	**8**	**9** **FHS Postdoc/ Student Seminar** Field: Stem Cell Host: Prof.Ren-He XU and Prof. Guokai CHEN Time: 17:00-18:00 Venue: N22-G002 and Zoom	**10**
13	**14**	**15** **BCAT Meeting** Speaker: Prof. Xuanjun ZHANG Time: 17:00-18:00 Venue: E12-G004	**16**	**17**

For more information or submission of articles to be featured, please contact Ms. Mathilde CHEANG at mathildec@um.edu.mo or 8822 4909.