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Publication(s)

 Ren, Z., Zhong, H., Song, C., Deng, C., Hsieh, H. T., Liu, W., and Chen, G. (2020) Insulin Promotes Mitochondrial Respiration and Survival through PI3K/AKT/GSK3 Pathway in Human Embryonic Stem Cells. *Stem Cell Rep* [5yr IF = 6.625]

FHS Community Story

FHS Professors Presents in the Nursing Conference

Prof. Renhe XU, Prof. San Ming WANG and Ms. Yuan YANG, representative of Prof. Yutao XIANG, were recently invited to take part in the conference "Health and epidemic prevention - New Knowledge for Nursing" of the Macao Portuguese-Chinese Nurses Association on 14 November. They gave talks for their research works in the conference: Prof. Xu introduced UM and FHS, as well as the human embryonic stem cells and its medical applications, Prof. Wang talked about the cancer-mutation screening in the Macao population, while Ms. Yang shared the mental health issues in the pandemic environment. They exchanged opinions with the audiences and were in touch with the leaderships of Macao Government and Macao hospital. Prof. Wang said that the conference gave an opportunity to FHS for connecting with and assimilating into the Macao medical community.



BCAT Meeting

In the BCAT Meeting on 18 November, Prof. Edwin CHEUNG presented two ongoing prostate cancer projects from his lab. For the first project, he talked about how they used a proteomics approach called rapid immunoprecipitation mass spectrometry of endogenous proteins (RIME) to identify many previously uncharacterized protein interactors of the androgen receptor (AR). He elaborated their findings on one of these factors. He showed this factor co-localizes with AR globally and enhanced the AR-mediated transcription program by facilitating the binding of AR to chromatin. He provided detailed evidence that this factor stabilizes AR from Skp2-mediated ubiquitination and proteasomal degradation. He also showed this factor is essential for PCa cell proliferation *in vitro* and in a xenograft model, in part by inducing cell cycle arrest and apoptosis. Finally, using publicly available clinical information, his lab identified a gene signature regulated by this novel AR cofactor that predicts prostate cancer disease-free survival.



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In the second project, Prof. Cheung described his lab's recent discovery of a novel androgen-regulated process using single-cell transcriptome analysis. He showed that this process is highly dysregulated in prostate cancer. He also showed that a gene signature identified from this biological process is essential for cancer proliferation and disease prognosis. Finally, he concluded that prostate tumor growth could be reduced by pharmacologically targeting this process.

Seminar Series

The Application of Multiplex Electrochemiluminescence Immunoassay in Oncology Research



Dr. Xiaotian HE and Dr. Wenming LIU, Asia Pac Field Application Scientists of Meso Scale Diagnostics, LLC., presented "The Application of Multiplex Electrochemiluminescence Immunoassay in Oncology Research" on 17 November.

In the seminar, they introduced the important biomarkers such as PD-L1 (epitope 1), PD-L2, GM-CSF, Granzyme A, Granzyme B, IFN- γ , IL-2 and TNF- α , and their detections in the tumor research. They presented the methods and mechanisms of the MSD ultrasensitive multi-factor electrochemiluminescence analysis

technology which can provide tumor biomarkers with ultra-high sensitivity, wide linear range, multi-factor simultaneous detection, and high reproducibility. Moreover, they shared the latest cases of tumor research from several units, and shared the cutting-edge immune analysis solutions with the topics focused on cancer biomarkers & cancer biological drug detection, using MSD to improve the overall level of immunoassay in laboratory and the advantages of electrochemiluminescence.

PhD Oral Defence PhD Oral Defence by Zhili REN of Prof. Guokai CHEN's group



Ms. Zhili REN supervised by Prof. Guokai CHEN completed her PhD oral defence on 19 November. Her thesis title is "Rapid Regulation of Insulin on Mitochondrial Respiration and Cardiac Differentiation Induced by Ion Channel Modulation from Human Pluripotent Stem Cells".

Ms. Ren introduced that human pluripotent stem cells (hPSCs) are capable of unlimited proliferation which can maintain the ability to differentiate into all cell types and hold great promises for both basic research and clinical applications. Self-renewal and

pluripotency of hPSCs are intimately controlled by the cellular signal transduction, such as insulin, FGF and TGFβ signaling. Therefore, she has had deeper insights into the signal transduction and cellular responses for the application purposes. Her study focused on three directions in hPSCs: 1) the impact of insulin signaling on energy metabolism, 2) cardiac differentiation by ion channel modulation and 3) venom-based peptides in self-renewal regulation to broaden the understanding of signal transduction in hPSC maintenance and differentiation to further facilitate the biomedical applications.





NOV / DEC				
Mon	Tue	Wed	Thu	Fri
23	24	25	26 FHS Postdoc/ Student Seminar Session: Cancer Research Host: Prof. Tzu-Ming LIU and Prof. Kathy Qian LUO Time: 17:00-18:00 Venue: N22-G002 and Zoom	27
30	DEC 1	2 BCAT Meeting Speaker: Prof. Guokai CHEN Time: 17:00-18:00 Venue: E12-G004	Qualifying Exam Haibo PENG Supervisor: Prof. Ren-he XU Time: 14:30 Venue: N22-3042	4
7	8 Holiday- Feast of Immaculate Conception	9	10 <u>FHS Postdoc/ Student</u> <u>Session: Chemistry</u> Host: Prof. Yunlu DAI and Prof. Xuanjun ZHANG Time: 17:00-18:00 Venue: N22-G002 and Zoom	11
14	15	16 BCAT Meeting Speaker: Prof. Hanming SHEN Time: 17:00-18:00 Venue: E12-G004	17	18

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