

ACADEMIC ACTIVITIES

Publication(s) of the week

1. Xu, S., Yu, S., Dong, D., and **Lee, L. T. O.** (2019) G Protein-Coupled Estrogen Receptor: A Potential Therapeutic Target in Cancer. *Front Endocrinol (Lausanne)* **10**, 725 [IF=3.634]
2. Li, W., Yang, Y., Hong, L., An, F. R., Ungvari, G. S., Ng, C. H., and **Xiang, Y. T.** (2019) Prevalence of Aggression in Patients with Schizophrenia: A Systematic Review and Meta-Analysis of Observational Studies. *Asian J Psychiatr* **47**, 101846 [IF=1.932]
3. Lu, L., Lok, K. I., Zhang, L., Hu, A., Ungvari, G. S., Bressington, D. T., Cheung, T., An, F. R., and **Xiang, Y. T.** (2019) Prevalence of Verbal and Physical Workplace Violence against Nurses in Psychiatric Hospitals in China. *Arch Psychiatr Nurs* **33**, 68-72 [IF=1.668]

UM holds the Ceremony for the Conferment of Honorary

UM held the Ceremony for the Conferment of Honorary and Higher Degrees 2019 on 9 November. During the ceremony, the University conferred honorary doctorates on Prof. Dennis Yuk Ming LO in recognition of his outstanding achievements and significant contributions to social development and education.

Prof. Chuxia DENG delivered a citation for Prof. LO in the ceremony. Part of the citation read: 'During his medical training at the University of Oxford, Prof. LO paid attention to the fact that amniocentesis was a rather risky conventional method of prenatal diagnosis. This was because the method came with a 0.5 % rate of miscarriage. In his search for an alternative, he began studying the feasibility of non-invasive prenatal testing. He discovered a natural basic parameter for prenatal testing, and successfully transferred his findings from DNA analysis to clinical application. In other words, he applied the research of non-invasive prenatal diagnosis to a clinical setting, thereby making a significant breakthrough in medicine. Both the discovery and the non-invasive method for prenatal diagnosis were swiftly and widely adopted in over 90 countries, benefiting tens of millions of expecting mothers. In 2017, Prof. LO was once again ranked as the top 20 translational researchers by *Nature Biotechnology*, a prestigious international scientific journal, and was among the top five on the list.'



UM awards graduation certificates to 21 FHS postgraduates and Ms. Yifan LIU of FHS delivers the graduation speech



In the Ceremony for the Conferment of Honorary and Higher Degrees 2019 on 9 November, 800 graduates received their graduation certificates, including 21 FHS PhD graduates. One of the FHS graduates, Ms. Yifan LIU, represented all the UM graduates to deliver a speech to thank the professors and family members, especially parents, for their support. Ms. LIU has published six articles in *Nature Communications*, *Oncogene*, and *Cancer Letters* as first author or co-author. She said that compared with undergraduate studies, postgraduate studies focus more on specialised knowledge and skills in several disciplines. She shared her dream that she desired to be a scientist and to achieve an impact that would make a visible difference to cancer research and the world.

UM and University of Lisbon to Initiate Collaboration in Medical Sciences

Prof. Renhe XU joined the delegation led by Rector Yonghua SONG to visit the University of Lisbon (ULisboa) in Portugal. During the visit, Rector Song and ULisboa Rector António da Cruz Serra signed a strategic collaboration agreement, aiming to initiate collaboration in clinical medicine, public health, dental science, and psychiatry between UM and ULisboa. Rector António da Cruz Serra also expressed hope that UM and ULisboa would jointly establish an international medical school in the future. UM is now ranked among the top 1 % in Essential Sciences Indicators (ESI) rankings in Clinical Medicine.



BCAT Meeting –Prof. Wenhua ZHENG

In the BCAT meeting on 13 November, Prof. Wenhua ZHENG presented his recent research on “Neuronprotective Effect of Artemisinin and its Implication on the Prevention and Treatment of Alzheimer’s Disease (AD)”.

Prof. ZHENG discovered that artemisinin has a good neuroprotective effect when they screened neuroprotective drugs with a library of active ingredient of Traditional Chinese Medicine. Artemisinin is cheap, safe and is able to pass the blood-brain barrier. This discovery opens the window of new artemisinin therapeutic indications for central nervous system diseases, which has important significance and practical value. He found that artemisinin and several of its analogues promoted the survival of various nerve cells. The Western blot analysis indicated that artemisinin/artemether stimulated phosphorylation/activation of ERK, AMPK and CREB while the inhibition of the ERK/AMPK signaling pathways by either ERK pathway inhibitor PD98059 or AMPK inhibitor Compound C or reduced the expression of ERK/AMPK with siRNA blocked the protective effect of artemisinin/artemether. Similar effect was also obtained in other neuronal cells and primary cultured neurons. Prof. ZHENG believed that these findings suggested that artemisinin/artemether is a potential neuroprotective agent that inhibits various toxin-induced cell death by activating signaling pathways such as ERK/AMPK/autophagy. Moreover, Prof. ZHENG and his team have recently found that artemisinin and several of its analogues significantly improved cognitive impairment and reversed various pathological changes in AD mice. Artemisinin and its analogues reduced neuronal deaths, β -amyloid ($A\beta$) plaques and neurofibrillary tangles (Tau hyperphosphorylation), increased neuronal regeneration and cholinergic function, inhibited inflammatory response and over-activation of glial cells. These results demonstrated that artemisinin and its derivatives can improve the various symptoms and pathological changes of AD through neuroprotection, anti-oxidant, reducing amyloidogenesis/tau hyperphosphorylation and anti-inflammatory effects, and may be a multi-target new type anti-AD medicine. Prof. ZHENG concluded that these findings support the potential application of artemisinin and its derivatives on the prevention and treatment of neurodegenerative diseases such as AD.

Seminar Series

Ovarian Cancer in an Era of Precision Medicine: From Mechanisms to Opportunities for New Diagnosis and Therapy – Prof. Benjamin K. TSANG



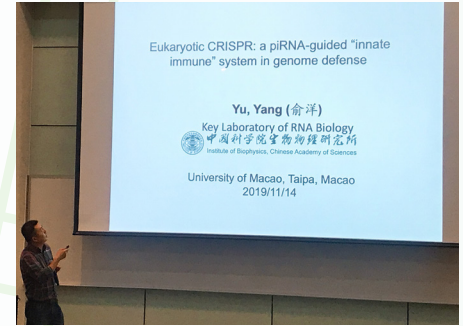
Prof. Benjamin K. TSANG, Director of Reproductive Biology Unit and Professor of Obstetrics & Gynecology and Cellular & Molecular Medicine of University of Ottawa, presented “Ovarian Cancer in an Era of Precision Medicine: From Mechanisms to Opportunities for New Diagnosis and Therapy” on 12 November.

Prof. TSANG pointed out that ovarian cancer (OVCA) is the most lethal gynecological cancer, due to late diagnosis, recurrence and chemoresistance mainly. Although combined cytoreductive surgery and chemotherapy is a successful treatment modality initially, chemoresistance remains a major hurdle for long-term therapeutic success. OVCA is considered a cold tumor and has poor immune cell infiltration, rendering immunotherapy ineffective to date. Based on this, Prof. TSANG elaborated on the role of plasma gelsolin (pGSN), a calcium-dependent actin-binding protein, in the molecular and cellular basis of chemoresistance in OVCA. He presented that pGSN secretion is involved in exosome-mediated signaling in the ovarian tumor microenvironment, resulting in subtype-specific T cell anergy, apoptosis and chemoresistance. The clinical significance of his studies is pGSN could serve as a new biomarker for diagnosis of stage 1 cancer, in the prognostication in residual disease and a possible target for immunomodulation in chemoresistant OVCA patients.

Seminar Series

A Pandas Complex Adapted for piRNA-guided Transcriptional Silencing and Heterochromatin Formation – Prof. Yang YU

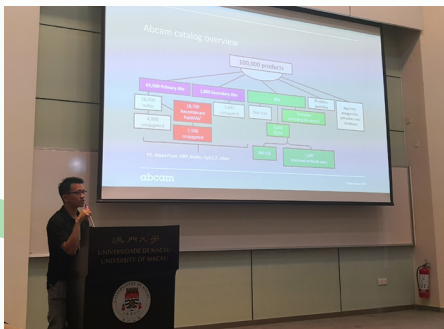
Prof. Yang YU, Principal Investigator of the Key Laboratory of RNA Biology, Institute of Biophysics, Chinese Academy of Sciences, presented “A Pandas Complex Adapted for piRNA-guided Transcriptional Silencing and Heterochromatin Formation” on 14 November.



Prof. YU claimed that the repression of transposons by the Piwi-interacting RNA (piRNA) pathway is essential to protect animal germ cells. He introduced that Panoramix enforces transcriptional silencing by binding to the target-engaged Piwi-piRNA complex in *Drosophila*, although the precise mechanisms by which this occurs remain elusive. Prof. YU presented his research that Panoramix functions together with a germline specific paralogue of a nuclear export factor, dNxf2, and its cofactor dNxt1 (p15), to suppress transposon expression. He found that the transposon RNA binding protein dNxf2 is required for animal fertility and Panx-mediated silencing. Transient tethering of dNxf2 to nascent transcripts leads to their nuclear retention. The NTF2 domain of dNxf2 competed off dNxf1 (TAP) from nucleoporins, a process required for proper RNA export. Thus, dNxf2 functions in a Pandas (Panoramix-dNxf2 dependent TAP/p15 silencing) complex, which counteracted the canonical RNA exporting machinery and restricts transposons to the nuclear peripheries. Prof. YU considered that their findings may have broader implications for understanding how RNA metabolism modulates heterochromatin formation.

Technical Seminar Series

ELISA Principles and Troubleshooting – Abcam (Hong Kong) Limited



Mr. Michael WONG, Senior Scientific Support Specialist of Abcam (Hong Kong) Limited, presented “ELISA Principles and Troubleshooting” on 13 November.

Mr. WONG shared his scientific experience of ELISA applications. He provided guidelines to students who are planning to work on ELISA, and helped students troubleshoot their experiments. He also introduced the principles of ELISA, the method of ELISA analysis and the tips of ELISA troubleshooting.

Seminar Series

Gene Editing Approaches for Correcting Genetic Airway Diseases – Prof. Jim HU

Prof. Jim HU, Professor of Departments of Laboratory Medicine and Pathobiology, and Pediatrics in University of Toronto, and Senior Scientist of Hospital for Sick Children in Toronto, presented “Gene Editing Approaches for Correcting Genetic Airway Diseases” on 15 November.

Prof. HU claimed that genetic airway diseases, such as cystic fibrosis (CF) lung disorder, are attractive targets for gene therapy because airways are accessible to gene delivery. However, he found that more than two decades of CF lung gene therapy research demonstrated only challenges to its clinical applications, including physical and immune barriers to gene delivery, and the lack of sustained therapeutic gene expression. The additional problem for CF gene therapy is the large size of the transgene that requires a vector with a large DNA delivery capacity. Therefore, Prof. HU and his team have made progress in developing novel vectors and delivery methods to achieve efficient gene delivery to airways of small and large animal models. Moreover, their group has recently demonstrated that the gene editing tools, TALENs and CRISPR-Cas9 systems which provide solutions to achieve site-specific gene integration and can be delivered to cultured cells together with donor DNA (a therapeutic gene) using a single helper-dependent adenoviral (HD-Ad) vector. The HD-Ad vectors were derived from adenovirus but all viral coding sequences have been removed. Therefore, HD-Ad vectors have a large DNA carrying capacity (up to 37 kb) with improved safety. Using CF lung disease as a model, Prof. YU and his team have demonstrated that both TALENs and CRISPR-Cas9 gene editing tools can be used for effective gene correction in cultured mutant cells. This finding indicated the potential of the tools to be used *in vivo* for permanent gene correction in organs or tissues where target cells turn over, such as in lung airways.

Prof. YU pointed out that the genes encoding TALENs or CRISPR-Cas9 system and the donor DNA are carried in the same vector, following donor DNA integration, the vector genome integrity is compromised, leading to elimination of TALEN or CRISPR Cas9 expression. Thus, their research showed the feasibility of site-specific gene-targeting without undesirable expression of the gene editing tools, providing a safer way for site-specific gene correction.



Admission Talk in Hou Kong Middle School

Prof. Leo LEE delivered an admission talk to the Secondary 5 students of Hou Kong Middle School on 11 November. Prof. LEE introduced the history of the faculty, academic development, research achievement, the curriculum structure of the programmes, career prospects and the different learning opportunities offered by the Faculty in the admission talk. The students showed their interests in the causes of cancer. Prof. LEE encouraged them to further their studies in biomedical sciences and contribute to the health of mankind and the society.

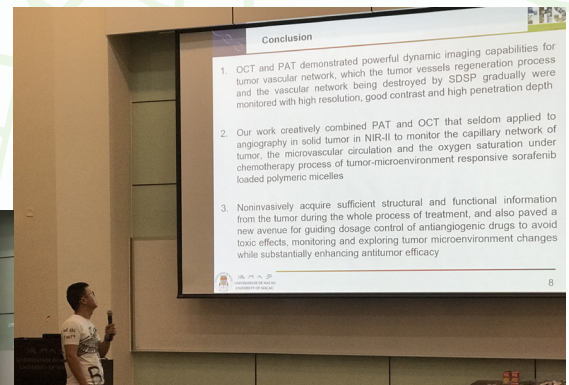


STUDENT ACTIVITY

FHS Postdoc Student Seminar - Presented by Prof. Zhen YUAN's group and Prof. Greta Seng Peng MOK's group

On 14 November, Mr. Mengze XU of Prof. Zhen YUAN's group presented "Visualize Tumor Microenvironment in NIR-II Window to Direct Dose-control Chemotherapy based on Redox Responsive Polymeric Micelles under Photoacoustic Imaging and Optical Coherence Tomography" and Mr. İlker Özşahin of Prof. Greta Seng Peng MOK's group presented "Performance Evaluation of Adaptive Multi-Pinhole Collimators for SPECT".

The next seminar will be held on 28 November, and presented by the group members of Prof. Yunlu DAI and Prof. Xuanjun ZHANG.



November				
Mon	Tues	Wed	Thurs	Fri
18	19	20	21	22
	<p>Oral Defense Jie LIU Supervisor : Prof. Qi ZHAO Time: 11:00 Venue: N6-G010</p> <p>Oral Defense Nana AI Supervisor : Prof. Wei GE Time: 15:00 Venue: N6-G010</p>			
25	26	27	28	29
<p>Seminar Series Translation Research of Alzheimer's Disease: From Basic Study to Long-term Care Speaker: Prof. Yuan-Han YANG Host: Prof. Wenhua ZHENG Time: 09:00 - 10:00 Venue: E12-G003</p>		<p>Seminar Series Constitutive Androstane Receptor (CAR) Activation and Regulatory Mechanisms Speaker: Dr. Masahiko NEGISHI Host: Garry WONG Time: 11:00 - 12:00 Venue: N22-G002</p> <p>Oral Defense Jingyun TAN Supervisor : Prof. Xuanjun ZHANG Time: 15:00 Venue: N6-2022</p> <p>B-CAT Meeting #21 Speaker: Dr. Kaeling TAN Time: 17:00 Venue: E12-G004</p>	<p>Oral Defense Gang FENG Supervisor : Prof. Xuanjun ZHANG Time: 10:00 Venue: N6-G010</p> <p>FHS Postdoc/ Student Seminar Field: Chemistry Host: Prof. Yunlu DAI and Prof. Xuanjun ZHANG Time: 17:00-18:00 Venue: N22-G002</p>	
(December) 2	3	4	5	6