

ACADEMIC ACTIVITIES

Publications of the week

1. Wang, Q., Tan, Q., Xu, W., Kuang, L., Zhang, B., Wang, Z., Ni, Z., Su, N., Jin, M., Li, C., Jiang, W., Huang, J., Li, F., Zhu, Y., Chen, H., Du, X., Chen, D., Deng, C., Qi, H., Xie, Y., and Chen, L. (2018) Postnatal deletion of Alk5 gene in meniscal cartilage accelerates age-dependent meniscal degeneration in mice. *J Cell Physiol*
2. Yan, L., Zheng, D., and Xu, R. H. (2018) Critical Role of Tumor Necrosis Factor Signaling in Mesenchymal Stem Cell-Based Therapy for Autoimmune and Inflammatory Diseases. *Front Immunol* **9**, 1658
3. Zou, J., Zhang, W., Zhang, H., Zhang, X. D., Peng, B., and Zheng, J. (2018) Studies on Aminoglycoside Susceptibility Identified a Novel Function of KsgA to Secure Translational Fidelity during Antibiotic Stress. *Antimicrob Agents Chemother*
4. Divate, M., and Cheung, E. (2018) GUAVA: A Graphical User Interface for the Analysis and Visualization of ATAC-seq Data. *Front Genet* **9**, 250
5. Dong, M., Zhu, X. M., Zheng, W., Li, X. H., Ng, C. H., Ungvari, G. S., and Xiang, Y. T. (2018) Electroconvulsive therapy for older adult patients with major depressive disorder: a systematic review of randomized controlled trials. *Psychogeriatrics*

Oral Defense

PhD Oral Defense by Chenyin WANG of Prof. Garry WONG's group



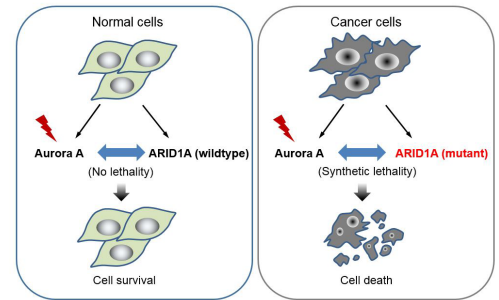
Ms. Chenyin WANG, supervised by Prof. Garry WONG, completed her PhD Oral Defense on 8 August 2018 (Wednesday). The title of her thesis is "Development and analysis of a double transgenic *Caenorhabditis elegans* model of Alzheimer's Disease".

The project focuses on generating a double transgenic *C. elegans* model of Alzheimer's Disease to advance our understanding of the molecular basis of the disease and point towards new potential therapeutic targets.

FHS Highlight

FHS research breakthrough in precision medicine: discovery of new target for cancer treatment

Prof. Joong Sup SHIM's laboratory of FHS has achieved a significant breakthrough in cancer research by discovering a new target for the treatment of the colorectal cancer by the application of the genetic theory of "synthetic lethality". The related finding has been published in *Nature Communications*, titled "Targeting AURKA-CDC25C axis to induce synthetic lethality in ARID1A-deficient colorectal cancer cells".



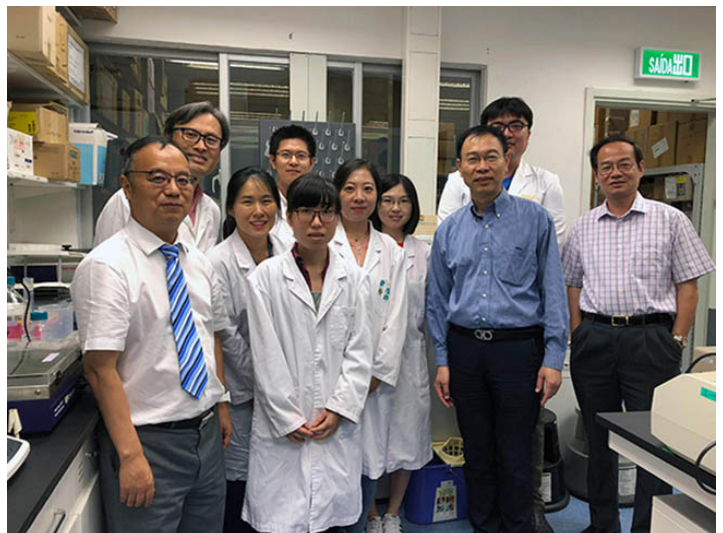
Cancer driving mutations can be roughly categorized into two major groups: tumour oncogene mutations and tumour suppressor mutations. Current cancer targeted therapy focuses primarily on inhibiting tumour oncogene as it is simple and straight forward to inhibit cancer growth. However, it has been a major clinical challenge to deal with tumour suppressor mutations as they cannot be targeted by drugs. It is of utmost importance to identify druggable targets for the tumour suppressor mutations.

Synthetic lethality is a genetic interaction between two (or more) genes where a single gene deficiency is tolerable for cell viability, whereas deficiencies in both genes lead to cell death. This old genetic concept has been the most successful approach to target cancers with tumour suppressor mutations.

ARID1A is a component which is frequently mutated in a variety of cancers including colorectal cancer. Prof. Shim's group has used a high-throughput screening approach to identify synthetic lethal partners of an emerging tumour suppressor gene, ARID1A, in genetically-engineered colorectal cancer cell lines. The team has recently identified a tumour protein Aurora kinase A as a synthetic lethality partner of ARID1A and deduced the mechanism of their interactions. They further showed that the pharmacological inhibitors of Aurora kinase A have a strong anticancer activity in a variety of colorectal cancer cells that carry ARID1A mutations *in vitro* and *in vivo*. This study demonstrated for the first time that ARID1A has a synthetic lethality interaction with Aurora kinase A and that the pharmacological targeting of Aurora kinase A represents a novel strategy for treating colorectal cancer cells carrying ARID1A mutations. Furthermore, this study has opened up a new avenue for the targeted therapy for a variety of cancers with mutations in ARID1A or SWI/SNF complex.

The authors of this study include Changjie Wu, Junfang Lyu, Eun Ju Yang, Yifan Liu, and Baoyuan Zhang, all of them are PhD students and a research assistant of the FHS. The research project was mainly supported by MYRG and partly by FDCT grant.

Rector Song visited Prof. SHIM's laboratory on a tour led by Prof. Chuxia DENG to congratulate the team on their recent success.



FHS News

UM-ZU Biomedical Summer Camp 2018

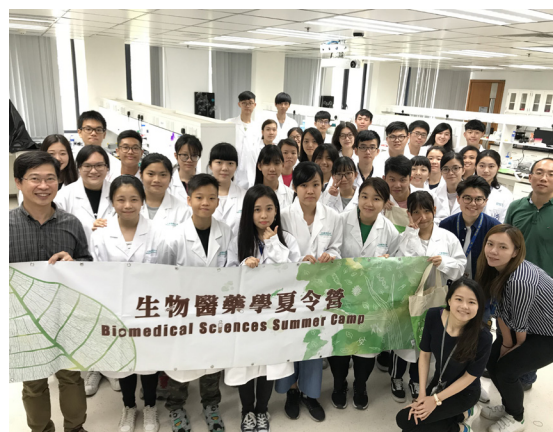
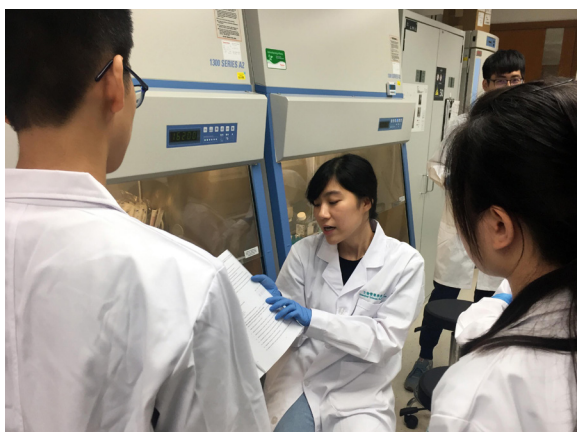
A delegate of 26 students from the School of Medicine, Zhejiang University visited FHS for the Biomedical Summer Camp from 5 to 11 August. During this trip, the visiting students and the FHS students had a chance to exchange knowledge and experience. The trip included lectures from FHS professors, benchtop biomedical experiments, UM campus tour and a heritage exploration of Macau tour. During the sharing session, the students from Zhejiang University shared that they were impressed by both the glamorous side and the historical side of Macau and the mixture of Eastern and Western cultures. Students expressed that they were grateful for this opportunity to see more parts of the world. On the other hand, the FHS students were also grateful and expressed that they look forward to future knowledge exchange opportunities. At the closing ceremony, Rector Song delivered a speech encouraging all students in their future endeavors.



FHS NEWS

Biomedical Sciences Summer Camp 2018- Camp 2

The second session of the annual Biomedical Sciences Summer Camp came to a conclusion on 8 August. The summer camp is a programme for local highschool students to better understand biomedical sciences and gain hands-on experience so as to peak their interest in science. Thirty local high school students participated in this session that commenced on 6 August. The students learned and performed experiments such as DNA fingerprinting, cell transfection, DNA transformation and bioinformatics laboratory.



Research Assistant Yorn Leung won “Best Poster Award” at the 8th Asia Pacific Worm Meeting

Research assistant Ka Lai Yorn LEUNG from Prof. Garry WONG's team won the “Best Poster Award” at the 8th Asia Pacific Worm Meeting held from 9 to 12 July in Seoul, Korea.

The title of the poster was “A sensitive and convenient fluorescent based method to study xenobiotic transformation in *Caenorhabditis elegans*”. The poster describes the use of the 1mm long round worm to study chemical transformation of a drug in a living animal using simple, inexpensive, and sensitive microscopic techniques.



The bi-annual meeting is a gathering of worm researchers from throughout the world. This year's meeting convened with over 230 participants including 2006 Nobel laureate Andrew FIRE.

FHS NEWS

FHS alumnus joins Macau local pharmaceutical industry

Ms. Beatrice, LEI Pui lan is an outstanding alumnus of FHS who graduated with a Biomedical Sciences Bachelor of Science degree in 2018. She conducted her final project with the supervision from Prof. Leo LEE. She won the Best Undergraduate Poster Award in the Graduate Student Research Symposium in 2018.



Beatrice is the first FHS alumnus who joined the Quality Control department of Hovione PharmaScience as a permanent staff. Hovione is the only GMP pharmaceutical manufacturer in Macau. Since 2014, FHS has established good communication and connection with Hovione through the organization of site visits as part of the final year elective course “Drug Discovery and Development” run by Prof. Kin TAM. Beatrice performed exceptionally well in the course and has thoroughly enjoyed the site visit.

This year, Hovione participated in the UM career fair for the first time. This greatly facilitated the recruitment of the outstanding students from the University.



AUGUST				
Mon	Tues	Wed	Thurs	Fri
13 Summer Laboratory Work Experience Programme (Phase V)	14 PhD Oral Defense Mr. Zheng YANG Time: 10:00 Venue: N6-G010	15 Seminar Series Metabolomics and antibiotic-resistant bacteria Prof. Xuanxian PENG Time: 10:00-11:00 Venue: E12-G004 PG New Student Orientation Time: 10:30-12:00 Venue: E12-G003 UG New Student Orientation Time: 14:30-16:00 Venue: E12-G003	16	17
20 Seminar Series The molecular mechanisms behind female germ cell development and their implications for treating female infertility Prof. Kui Liu Time: 14:30-15:30 Venue: E12-G003	21 New Student Welcome Reception Venue: E12 Learning Common	22	23	24
27	28 Seminar Series The Promises and Challenges of Non-coding RNA Studies in Neurodegenerative Diseases Prof. Hermona SOREQ Time: 11:00-12:00 Venue: E12-G004	29 B-CAT Meeting #24 Prof. Xiaoling XU Time: 17:00 Venue: E12-G004	30	31

Academic movement

Prof. Yunlu DAI is going to join FHS as Assistant Professor on 16 Aug 2018.

Prof. Lijun DI and **Prof. Henry KWOK** are advanced to Associate Professors from 16 Aug 2018