

Publication

1. Shen, L. J., Wang, C. L., Chen, L., and **Wong, G.** (2021) Dysregulation of MicroRNAs and PIWI-Interacting RNAs in a Caenorhabditis Elegans Parkinson's Disease Model Overexpressing Human Alpha-Synuclein and Influence of Tdp-1. *Front Neurosci* **15**, 600462 [5yr IF = 4.229]
2. Ding, Z., Dou, X., Wang, C., Feng, G., Xie, J., and **Zhang, X.** (2021) Ratiometric pH Sensing by FRET-Based Hybrid Semiconducting Polymer Dots in Living Cells. *Nanotechnology* [5yr IF = 3.551]

1 BCAT Meeting

Dr. Zihui WENG presented his latest research in the BCAT meeting on 31 March. He introduced that hepatocellular carcinomas (HCCs) together with intrahepatic cholangiocarcinomas (CCs), assorted as liver cancer, are among the top common cancers with high death rate and worse prognosis. His study was based on the transcriptomic analysis of The Cancer Genome Atlas (TCGA) dataset and the investigation of the significantly expressed gene in HCC was shed as an oncofetal gene. Immunoglobulin Superfamily Member 3 (IGSF3), a novel marker for a subtype of HCC enriched with hepatic progenitor-like feature and with poor survival outcome. He also reported that being an immunoglobulin-like membrane protein, IGSF3 expressed in normal embryogenesis, hepatoblasts, hepatic progenitor cells, human fetal liver and epithelial stem cells, but absent in the healthy adult hepatocytes. IGSF3 was found to be significantly upregulated in human HCCs specimens with genomic copy number gain, of which IGSF3 occurred in around 15% of primary HCC tumour tissues (55/364) with

a positive correlation to its mRNA expression ($R = 0.337$; $P < 0.0001$). Bioinformatics analysis showed that the expression of IGSF3 in HCC was associated with the significant survival outcome that IGSF3 might be served as an independent prognostic factor. IGSF3-ectopic introduction into human HCC cell lines for gain- and loss-of-function studies in *in vitro* and *in vivo* models demonstrated that the aberrant activation of IGSF3 in HCC could promote cell proliferation, tumour formation, migration, invasion, self-renewal and skewed tumour grade towards poorly- to undifferentiation. Moreover, gene-set enrichment analysis of clinical HCC specimens indicated that the expression of IGSF3 correlated with the expression of stemness-related genes Oct4 and Sox2, HCC CSC markers Sall4, CD133, CD47, EpCAM, CD24, bipotential hepatic progenitor/poorly differentiated HCC markers Sox9 and CK19, typical cancer hallmarks FOXM1, TCF3, CA9 and BMI1. High expression of IGSF3 was also accompanied by the decreased expression of tumour suppressor genes of Acox2, TSC2, and well-

differentiated HCC markers of Arg-1 and G6PC.

Dr. Weng concluded that mechanistically, IGSF3 could promote HCC via NRas-activated signaling pathways with elevated

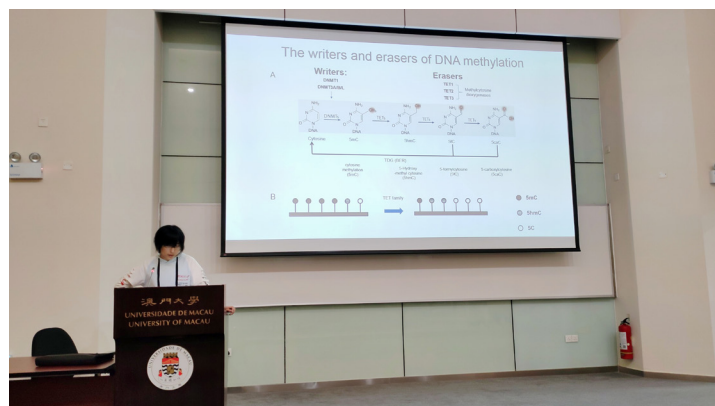
levels of MEK/ERK and PI3K/AKT. IGSF3 expression in HCC can serve as an indicator of novel subtype with stemness feature and may therefore provide a potential novel target for diagnostic and therapeutic benefits.

2 FHS Postdoc Student Seminar

Presented by Prof. Ruiyu XIE's group and Prof. Gang LI's group

On 1 April, Ms. Jie KE of Prof. Ruiyu XIE's group presented "Cooperation of TET Dioxygenase and Pioneer Transcription Factor FOXA2 in Pancreatic Endocrine Cell Differentiation" and Mr. Weibo ZHANG of Prof. Gang LI's group presented "TET2 Regulates Gene Transcription through Liquid-Liquid Phase Separation".

The next seminar will be held on 15 April, and presented by the group members of Prof. Henry KWOK and Prof. Kin TAM via Zoom again.

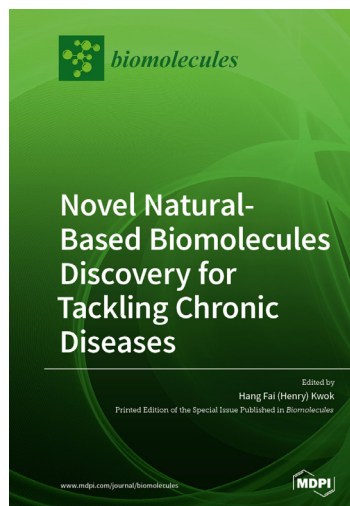


3 NEWS

Prof. Henry KWOK Publishes A Book

Prof. Henry KWOK has recently published a book titled "Novel Natural-based Biomolecules Discovery for Tackling Chronic Diseases" with MDPI. Let's go through the book via:

<https://www.mdpi.com/books/pdfview/book/3541p>



UPCOMING EVENTS

April	
Mon 5 Holiday Compensatory rest day for the Day before Easter	12
Tue 6 Holiday Compensatory rest day for Cheng Ming Festival	13
Wed 7	14 <u>BCAT Meeting</u> Speaker: Prof. Ren-He XU Time: 17:00-18:00 Venue: E12-G004
Thu 8	15 <u>FHS Postdoc/ Student Seminar</u> Session: Stem Cell Biology Host: Prof. Henry KWOK and Prof. Kin TAM Time: 17:00-18:00 Venue: N22-G002 and Zoom
Fri 9	16