Issue 8 2025

ZJU MEDICINE

SHOWCASING THE BEST OF ZHEJIANG UNIVERSITY SCHOOL OF MEDICINE

Building a Bridge for Translational Medicine: Dialogue with SUN Yi

Fighting Cancer with "Toxins"

A New Weapon Against Advanced Liver Cancer

AI in Medical Education:

"Qizhen Medical AI" 2.0 Launched

ZUSM at A Glance

Zhejiang University School of Medicine (ZUSM), founded in 1912, is one of China's best and oldest higher medical education institutions. Located in Hangzhou – one of China's most picturesque cities – ZUSM is organized across the School of Basic Medical Sciences, School of Brain Science & Brain Medicine, School of Public Health, School of Nursing, 7 clinical medical schools (School of Clinical Medicine, School of Obstetrics and Gynecology, School of Pediatrics, School of Stomatology) and a healthcare partnership network composed of 8 affiliated hospitals, numerous non-directly affiliated hospitals and cooperative hospitals.

It is home to more than 38,000 faculty members and over 7,900 students.

ZUSM believes that every global partner is unique and each project is irreplaceable. We collaborate with global partners for a better response to future medical challenges and strive to build a healthier future for all.

浙江大學 医学院
SCHOOL OF MEDICINE
ZHEJIANG UNIVERSITY

CONTENTS

SUN Yi: Build a "Bridge" for Efficient Transformation from Basic to Clinical Practice

SUN Yi

Qiushi Chair Professor, Zhejiang University
Founding Dean at the Institute of Translational Medicine, Zhejiang University,
Fellow of the American Association for the Advancement of Science (AAAS).

You have studied and worked abroad for nearly 30 years. What motivated you to work at Zhejiang University?

I was educated in China, and Zhejiang University is my alma mater, so I felt a strong sense of responsibility to return and contribute to my home country. Moreover, China is currently making significant investments in research and development, achieving remarkable progress across numerous scientific fields. China needs leaders with international vision, experience, and connections to help sustain this momentum. Finally, I think that this leadership position not only allows me to give back but also presents new challenges that will enrich my personal and professional experience.

You have made significant innovative breakthroughs in the field of cancer research. Could you please share with us your research focus and the latest achievements of your team?

In 1999, I successfully cloned the SAG/RBX2 gene, which encodes a dual E3 ligase for Cullin RING ligases (CRLs) and neddylation. Over the past 25 years, my team has been deeply engaged in research on the CRLs-neddylation pathway and has obtained a series of groundbreaking results with significant scientific and clinical translational value. First, we clarified how SAG-CRLs act as tumor-promoting factors and highlighted the crucial role of SAG-CRLs and the protein neddylation pathway as promising targets for cancer treatment. Second, we launched drug development efforts that led to the discovery of several small-molecule inhibitors targeting CRLs-neddylation, offering new avenues for targeted cancer therapies.

More recently, our research uncovered that the neddylation E2 enzyme UBE2F promotes Kras mutant-driven pancreatic cancer by targeting the tumor suppressor DIRAS2 for degradation (***Developmental Cell***, 2024). We also developed HA-9104, a small-molecule inhibitor of UBE2F, which displayed strong anti-cancer effects (***Signal Transduction and Targeted Therapy***, 2022). These findings have brought new hope to patients with pancreatic and other types of aggressive cancer, attracting significant attention from patients and their families.

As the founding dean of the Institute of Translational Medicine, what do you see as the biggest hurdles that must be overcome to effectively translate laboratory research into clinical practice?

Translational research is much easier said than done. It is a long, dedicated process, accompanied by constant challenges and failures. A basic scientist focuses on understanding the causes and underlying mechanisms of diseases, which forms the foundation for potential clinical translation. In contrast, a physician-scientist often starts with a clinical problem and works backward to uncover its cause and the mechanism of a given disease. Not every scientific breakthrough leads to immediate clinical application, but basic science remains the essential groundwork for translational applications.

The bottleneck lies in linking these fundamental discoveries to practical clinical use, such as early disease diagnosis, precision medicine, and diverse therapeutic approaches. This complex process involves multiple stages, including target identification and validation, preclinical studies, clinical trials, and approval by regulatory agencies. Therefore, this demands interdisciplinary collaboration, sustained funding, and outstanding translational strategies.

Translational medicine begins with the questions of how medical researchers genuinely benefit patients, how to effectively translate laboratory findings from the bench to the bedside, and how to improve clinical diagnosis and treatment through basic research.

For more information
Contact us: ***yisun@zju.edu.cn***

MA Daqing: Soothe Pain, Awaken Hope

MA Daqing

Qiushi Chair Professor at Zhejiang University
Member of Academia Europaea (MAE)
Fellow of the Royal College of Anaesthetists (FRCA)
Tenured Chair Professor of Anaesthesia, Imperial College London
Macintosh Professor
BOC Chair Professor

> ***Anesthesiologists are like walking a tightrope on a cliff edge, requiring precise judgment of every moment of change.***

What motivated you to launch your career as an anesthesiologist? What attracted you the most about occupying this "unnoticed" position in the operating room?

When I was an intern, an elderly patient told me, shortly after he came round following surgery: "Doctor, it was like a sound sleep with nothing else happening, but I know it was you who saw me through that period."

The value of an anesthesiologist lies not in being noticed, but in the fact that "when everything goes smoothly, we seem unimportant; but whenever a crisis occurs, we must be the most reliable person present". This profession's invisible but indispensable role during an operation is precisely what attracts me the most.

Many people assume that anesthesia is merely about "giving an injection to make a patient fall asleep," but it plays a crucial role during an operation. According to the situation, what professional information do you most want to share with patients and their families?

"Surgery cures diseases, while anesthesia saves lives." It can be said that the birth of anesthesia has facilitated the development of surgery. Anesthesia is never one mere injection. It is both a science and an art that requires the continuous, meticulous monitoring and regulation of patients' vital signs, such as their heart rate, blood pressure, blood oxygen, respiration, circulation, and metabolism, to ensure their safety during an operation.

With the development of artificial intelligence and precision medicine, what fundamental transformation do you predict will occur in the field of anesthesiology?

1. Intelligent Preoperative Assistance for Anesthesia Risk Assessment. By analyzing large amounts of medical data, AI can help anesthesiologists undertake more comprehensive preoperative evaluations.
2. Intelligent Intraoperative Precision Anesthesia. AI can analyze patients' medical records, physiological data, and other information, and consider factors such as their individual differences and intraoperative requirements, to provide medical staff with more accurate diagnostic suggestions and a basis for anesthesia-related decision-making.
3. Intelligent Postoperative Anesthesia Management. By utilizing AI technology, anesthesiologists can ensure that a patient will transition smoothly from an unconscious state to spontaneous breathing and consciousness, preventing delayed recovery or emergence agitation. Furthermore, it enables timely detection, intervention, and the reduction of complications after the operation. AI can also assist medical staff with postoperative management by optimizing the analgesia program based on the patient's pain level and response.

For young scholars who aspire to pursue a career in anesthesiology and critical care medicine research, what advice and insights can you share?

On the one hand, it is important to focus on clinical problems and translational research. This requires the integration of clinical observation, theoretical knowledge, and research methods to transform complex practical problems into verifiable scientific research hypotheses. We can leverage multi-modal data sharing platforms (such as large AI models) to conduct research in our specific field.

On the other hand, it is also important to strengthen interdisciplinary collaboration, thus promoting communication and cooperation between experts and scholars in different disciplines. For example, it would be possible to jointly formulate training schemes, integrate the curriculum content, and organize interdisciplinary special workshops.

For more information
Contact us: ***d.ma@imperial.ac.uk***

HBPD INT: A Leading International Academic Journal in the Fields of Hepatobiliary and Pancreatic Diseases

Hepatobiliary & Pancreatic Diseases International (CN 33-1391/R, ISSN 1499-3872), founded in 2002, is the first English-language academic journal of China dedicated to hepatobiliary and pancreatic diseases. It is hosted by the First Affiliated Hospital, Zhejiang University School of Medicine, and published by Zhejiang University Press. The journal, which is published bimonthly with each issue comprising 128 pages, aims to showcase global clinical expertise and outstanding research achievements in the fields of hepatobiliary and pancreatic diseases, fostering disciplinary advancement and international collaboration. It becomes a platform and link for the exchange of academic achievements between clinicians and medical researchers around the world.

Key Achievements

· Indexed and abstracted in SCI-E, IM/MEDLINE, CA, EM, Scopus, and CSCD, et al.

· JCR Impact Factor of 4.4 (Q1, Clarivate Analytics 2024), ranking 28th among 147 global journals in Gastroenterology & Hepatology, and ranking top in the Chinese mainland.

· Selected for the "Excellence Action Plan for China Science and Technology Journals" in 2019 and 2024, respectively.

· Selected as one of “China's Most Internationally Influential Academic Journals” for nine consecutive years.

· Awarded the Zhejiang Shuren Publishing Award in 2021.

· Granted the "China Science and Technology Journals International Impact Enhancement Project" (Category D) in 2013.

·Repeatedly honored as "China’s Most Internationally Influential Academic Journal", "Outstanding Journal of East China", and recipient of multiple Zhejiang Provincial Excellence Awards in science and technology publishing.

International Editorial Board

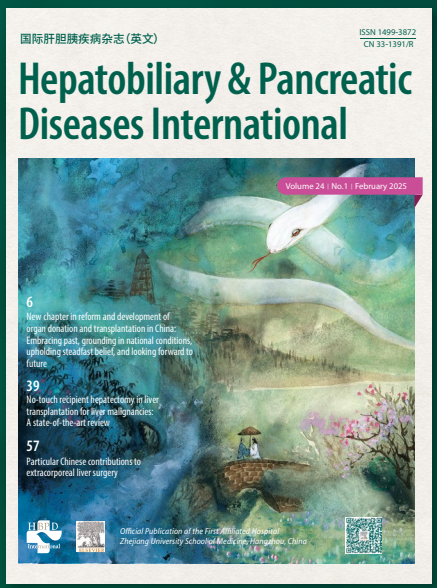
Chief editor, academician Zheng Shu-Sen, is a pioneer in liver transplantation and multi-organ transplantation in China. He has made outstanding achievements in organ transplantation and hepatobiliary and pancreatic surgery. The editorial board consists of 136 top-tier experts from over 20 countries, with international members accounting for 56%. There are also 12 academicians from the Chinese Academy of Sciences and the Chinese Academy of Engineering. The journal maintains high standards with a clear mission to become a world-class medical specialty journal.

Scope of Coverage

The journal publishes peer-reviewed original papers, reviews and editorials concerned with clinical practice and research in the fields of hepatobiliary and pancreatic diseases. Papers cover the medical, surgical, radiological, pathological, biochemical, physiological and histological aspects of the subject areas under the headings Liver, Biliary, Pancreas, Transplantation, Research, Special Reports, Editorials, Review Articles, New Techniques, Clinical Images, Viewpoints and Letters to the Editor.

We also welcome high-quality submissions, including but not limited to:

· High-evidence clinical studies
· Systematic reviews
· Cutting-edge therapeutic innovations
· Translational and basic research
· AI and digital surgical technologies



Submission

Full-text

For more information
Contact us: ***hbpdint@126.com***
hbpdje@zju.edu.cn

Center for Medical Research and Innovation in Digestive System Tumors, Ministry of Education

The Center for Medical Research and Innovation in Digestive System Tumors, Ministry of Education (hereinafter referred to as "the Center") is a high-level scientific and technological innovation platform that integrates medical services, education, and research. By leveraging multidisciplinary research teams and a synergistic medicine-pharmaceutical approach, the Center adopts a closed-loop research model of "clinical problem identification – basic mechanistic research – therapeutic strategy development – clinical evidence validation." Guided by clinical needs for treating malignant tumors of the digestive system, the Center is committed to developing original theories of tumor biology based on characteristics that are specific to Chinese patients, thereby advancing innovative diagnostic and therapeutic methods. Through undertaking an in-depth exploration of the biological features of the digestive system malignancies that are prevalent in China, the Center aims to identify novel therapeutic targets, develop innovative drugs, and pioneer new clinical treatment strategies that are grounded in original theories and emerging technologies, thereby establishing a framework with Chinese characteristics to support basic research on digestive system tumor medicine and pharmaceuticals.

Based on harnessing China's extensive clinical and bioinformatics resources, the Center's major research directions include: the AI-driven big data mining of clinical and biological information, pathogenesis and drug target discovery, drug mechanism and intervention strategy research, novel clinical treatment protocols and evidence-based validation. Through these four pillars, the Center fosters the deep integration of clinical data and bioinformation, a strong alignment between clinical needs and basic scientific theory, and coordinated innovation from laboratory discovery to clinical application. It also supports a seamless transition from translational research to evidence-based clinical practice. Additionally, the Center is constructing a cross-disciplinary innovation platform that unites strengths from the fields of clinical medicine, basic medicine, pharmacy, information science, and materials science.

Under the unified leadership and strategic planning of Zhejiang University, the Center will align itself with the frontiers of global science and technology, address major national health priorities, and concentrate on key areas of research on digestive system tumor medicine and pharmaceuticals. It aims to cultivate world-class scholars related to the fields of oncology and pharmaceutical innovation, and build a globally leading interdisciplinary platform to support basic research and innovation in cancer medicine. The Center is committed to developing a "China paradigm" for integrated innovation in oncology medicine—one that contributes Chinese solutions to the question of how to improve the clinical cure rates. It strives to become a driving force in global oncology research, a powerhouse for major scientific breakthroughs, and a new engine for high-level talent development, aspiring to be "star-chasers" on the world's stage of innovation.

For more information
Contact us: ***kongxiangxing@zju.edu.cn***

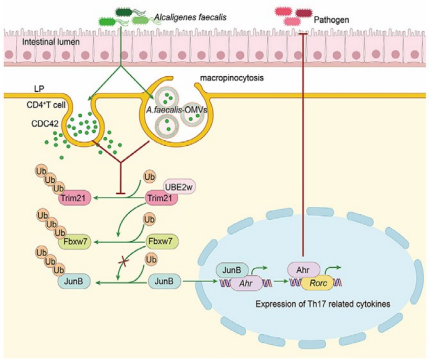
The Key Role of Alcaligenes Faecalis and Its Outer Membrane Vesicles in Inducing Physiological Intestinal Th17 cell

On April 10, 2025, the team led by CAI Zhijian and SHEN Yingying published a study titled "Alcaligenes faecalis induces intestinal T helper 17 cells by promoting E3 ubiquitin ligase Trim21-mediated E3 ubiquitin ligase Fbxw7 degradation" in the journal ***Immunity,*** identifying a novel bacterium that induces intestinal Th17 cell generation.

The team's research revealed that the E3 ubiquitin ligase Fbxw7 inhibited Th17 cell differentiation by degrading JunB, thereby reducing JunB-mediated transcription of the aryl hydrocarbon receptor (Ahr) gene, and ultimately suppressing AhR-mediated transcription of Rorc, the gene encoding the key Th17 cell transcription factor RORγt. Notably, Fbxw7 levels were specifically downregulated in $CD4^+$ T cells derived from the intestinal lamina propria and mesenteric lymph nodes. This observation prompted the investigation into the role of the gut microbiota in regulating Fbxw7 levels in $CD4^+$ T cells. As anticipated, lysates of the gut microbiota directly suppressed Fbxw7 levels in $CD4^+$ T cells. Through gut microbiota 16S rRNA sequencing, and germ-free mouse colonization experiments, the team discovered that Alcaligenes faecalis (A. faecalis) is a primary bacterium inducing intestinal Th17 cells. Further research demonstrated that protein components of A. faecalis were endocytosed by $CD4^+$ T cells in a small GTPase CDC42-dependent manner. This internalization prevented the E3 ubiquitin ligase Trim21 from binding to its cognate E2 ubiquitin-conjugating enzyme, thereby inhibiting Trim21 autoubiquitination and degradation, leading to the accumulation of Trim21 protein intracellularly. Subsequently, Trim21 promoted the ubiquitination and degradation of Fbxw7. Additionally, outer membrane vesicles (OMVs) secreted by A. faecalis entered $CD4^+$ T cells via macropinocytosis, independently of CDC42, and also promoted Th17 cell differentiation through the Trim21-Fbxw7 axis.

Shen et al. show that A. faecalis induces intestinal Th17 cells under physiological conditions. A. faecalis proteins endocytosed by $CD4^+$ T cells via CDC42 or OMVs prevent Trim21 self-ubiquitination degradation. Then, Trim21 enhances JunB-induced Ahr transcription and subsequent AhR-induced Rorc transcription by inhibiting Fbxw7-mediated JunB degradation, causing Th17 cell generation.

A. faecalis is ubiquitous in the human living environment. Fecal testing conducted by the team revealed a detection rate of 86% (86/100) for A. faecalis in adult stool samples, compared to 0% (0/100) for SFB. This finding strongly suggests that the view of SFB as the primary inducer of intestinal Th17 cells may represent a physiological paradox. Compared to SFB, A. faecalis provides a more plausible explanation for the enrichment



of Th17 cells observed in the intestines of individuals across diverse ethnicities, ages, genders, and dietary habits.

In summary, this study elucidates the critical mechanism by which the gut microbiota induces intestinal Th17 cell generation via the Trim21-Fbxw7 axis. It not only offers a more scientifically grounded explanation for how the gut microbiota drives Th17 cell enrichment in the intestines of the majority of the human population but also provides the first report of gut microbiota directly regulating intrinsic molecules within $CD4^+$ T cells to determine their differentiation fate. Furthermore, the research introduces the novel concept that gut microbiota can communicate with $CD4^+$ T cells via OMVs to maintain intestinal immune homeostasis.

For more information
Contact us: ***caizj@zju.edu.cn***

A Simpler Way to Treat Heart Disease? New Study from Zhejiang University May Reshape Care

In a groundbreaking study published on March 31, 2025, in the prestigious medical journal ***The Lancet***, a team from the Second Affiliated Hospital of Zhejiang University School of Medicine and Seoul National University Hospital introduced a novel approach to a leading cause of heart disease worldwide. The study, known as FLAVOUR II, offers fresh insights into improving the way doctors make treatment decisions for patients with coronary artery disease, potentially transforming clinical practice.

Led by cardiologists WANG Jian'an and HU Xinyang, the study compared two different methods for treatment in patients with significant coronary artery stenosis: the invasive intravascular ultrasound (IVUS) and an artificial intelligence-powered, imaging-based physiologic assessment called AngioFFR.

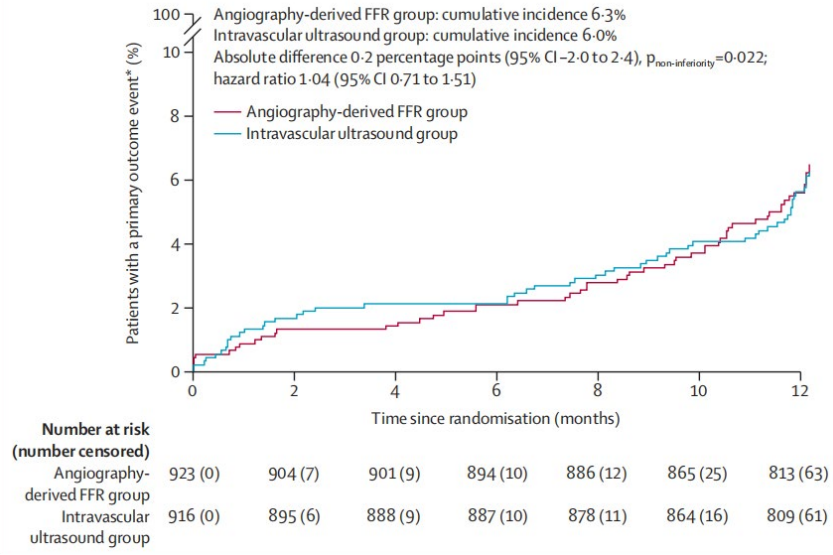
Coronary artery disease occurs when the arteries supplying blood to the heart become narrowed or blocked, often due to plaque buildup. This can lead to dangerous conditions like chest pain (angina) or even heart attacks. For years, doctors have relied on fractional flow reserve (FFR) to assess how well blood flows through the coronary arteries. While FFR's clinical value is widely known, the global adoption in clinical practice remains low because it requires invasive procedures, including the insertion of guidewires and medication to dilate blood vessels.

AngioFFR, in contrast, entails only standard coronary angiography — essentially a specialized X-ray of the blood vessels. The FLAVOUR II study revealed that for patients with non-complex coronary artery disease, PCI (Percutaneous Coronary Intervention) guided by AngioFFR was not only as safe and effective as intravascular ultrasound (IVUS), but it also had the added benefit of reducing the need for stent implantations — metal mesh tubes used to keep arteries open.

This non-invasive method represents a win-win situation for doctors and patients alike. It simplifies decision-making in coronary interventions, providing a safer and more efficient way to assess coronary artery stenosis without the need for complex, invasive procedures. With fewer risks involved, patients can benefit from more personalized, effective treatments with less recovery time.

The FLAVOUR research team isn't stopping here. A new trial, FLAVOUR III, is underway to explore whether combining AngioFFR with IVUS could further optimize outcomes for patients with coronary artery disease.

With previous studies featured in ***The New England Journal of Medicine*** and now ***The Lancet***, the FLAVOUR series of studies continues to shed light on the future of heart disease treatment, offering new hope for millions of people with coronary artery disease worldwide.



For more information
Contact us: ***wja@zju.edu.cn***

PI3Kβ Functions as a Protein Kinase to Promote Cellular Protein O-GlcNAcylation and Acetyl-CoA Production for Tumor Growth

Phosphatidylinositol 3-kinase (PI3K) is aberrantly activated in numerous malignancies and closely associated with tumorigenesis and progression. Class I PI3K comprises a family of heterodimeric lipid kinases consisting of the catalytic subunit (p110) and the regulatory subunit (p85). Activated PI3K at the plasma membrane phosphorylates its phospholipid substrate phosphatidylinositol 4,5-bisphosphate (PI(4,5)P_2) to produce phosphatidylinositol 3,4,5-trisphosphate (PI(3,4,5)P_3), the second messenger that recruits and activates downstream effector proteins, such as Ak strain transforming (AKT), consequently promoting cell growth, proliferation, migration, invasion, survival, immune evasion, and drug and radiation resistance of cancer cells. However, whether PI3K has any functions independent of PI(4,5)P_2 phosphorylation and PI(3,4,5)P_3 production, which are critical for tumor development, remains to be further clarified.

On March 24, 2025, Professor LU Zhimin's team at Zhejiang Key Laboratory of Pancreatic Disease, The First Affiliated Hospital, Zhejiang Key Laboratory of Frontier Medical Research on Cancer Metabolism, Institute of Translational Medicine, Zhejiang University School of Medicine, published a research paper titled "PI3Kβ functions as a protein kinase to promote cellular protein O-GlcNAcylation and acetyl-CoA production for tumor growth" in ***Molecular Cell***. This study uncovered a novel mechanism by which PI3Kβ regulates tumor metabolism and epigenetic modifications through its non-canonical protein kinase function.

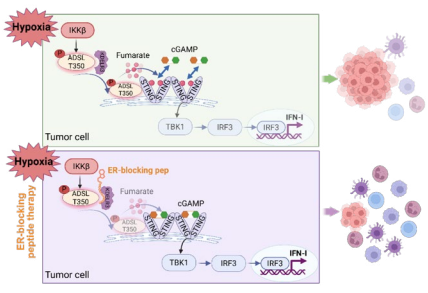
O-linked β-D-N-acetylglucosamine (O-GlcNAc) transferase (OGT) is the only enzyme that O-GlcNAcylates intracellular proteins at serine/threonine residues. High glucose supplementation results in the translocation of hexokinase 1 (HK1) from mitochondria to the cytosol in glioblastoma cells, where HK1 phosphorylates OGT at Y889 via its non-canonical protein kinase activity. This phosphorylation recruits the p85α regulatory subunit of PI3Kβ, driving the specific binding between PI3Kβ and OGT. Importantly, PI3Kβ functions as a protein kinase to phosphorylate OGT at T985, enhancing OGT catalytic activity and total cellular protein O-GlcNAcylation. Activated OGT subsequently O-GlcNAcylates ATP-citrate synthase (ACLY) at T639 and S667, leading to ACLY activation-dependent acetyl-coenzyme A (CoA) production to increase fatty acid levels and histone H3 acetylation for gene transcription. Intervention in PI3Kβ-mediated OGT phosphorylation and ACLY O-GlcNAcylation inhibits glioblastoma cell proliferation, fatty acid synthesis, histone H3 acetylation, and tumor growth in xenografts. Furthermore, combined treatment with PI3Kβ and OGT inhibitors exhibits additive tumor growth inhibition. In addition, the mutually correlated OGT T985 and OGT Y889 phosphorylation in human glioblastoma specimens is negatively associated with the survival of glioblastoma patients. These findings underscore the critical role of PI3K in governing protein O-GlcNAcylation, fatty acid metabolism, and chromatin modification through its protein kinase activity and provide instrumental insight into the roles of PI3K in tumor progression.

In conclusion, this study demonstrates that PI3K possesses non-canonical functions independent of the classical PIP_3 signaling, promoting fatty acid metabolism and epigenetic modifications in GBM cells through its protein kinase activity. These findings not only reconstruct the traditional understanding of the function of PI3K, but also reveal a novel mechanism for regulating tumor metabolism and gene transcription, providing a new theoretical framework for understanding the complex role of PI3K in tumors and laying an important foundation for developing precise therapeutic strategies targeting the new functions of PI3K.

For more information
Contact us: ***zhiminlu@zju.edu.cn***

Molecular Mechanism Underlying ADSL-Mediated Regulation of the cGAS-STING Pathway in Breast Cancer Immune Escape

As a master regulator of innate immunity, STING governs antitumor immunity by coordinating type I interferon production, immune cell recruitment, and antigen presentation. However, emerging studies reveal that tumor-intrinsic oncogenic pathways and metabolic adaptations actively impair STING activation, thereby reducing tumor immunogenicity and promoting immune escape—a phenomenon that substantially compromises the therapeutic efficacy of STING agonists in clinical oncology. Despite these advances, the precise molecular mechanisms underlying cGAS-STING pathway suppression in highly aggressive malignancies remain poorly characterized. Bridging this knowledge gap, we propose that dissecting the interplay between tumor metabolic plasticity and innate immune dysregulation could unveil novel therapeutic vulnerabilities, paving the way for next-generation immunotherapies targeting immunosuppressive tumor microenvironments.



On March 3, 2025, a research team led by Investigator XU Daqian from the Zhejiang University Translational Medicine Institute / The First Affiliated Hospital, Zhejiang University School of Medicine, published an article entitled "ADSL-generated fumarate binds and inhibits STING to promote tumour immune evasion" online in ***Nature Cell Biology***. This study elucidated the molecular mechanism by which fumarate, a metabolite of the purine nucleotide metabolic enzyme ADSL, binds to and inhibits STING activation. It further revealed the functional link between nucleotide metabolic reprogramming in tumor cells and immune evasion.

This report demonstrated that normal and breast cancer cells respond differently to hypoxia, with STING highly activated in normal mammary epithelial cells but not in breast cancer cells. Mechanistically, adenylosuccinate lyase (ADSL), a key metabolic enzyme in de novo purine synthesis, which aligns with the production of fumarate, is highly expressed in breast cancer tissues and is phosphorylated at T350 by hypoxia-activated IKKβ. Phosphorylated ADSL interacts with STING at the endoplasmic reticulum (ER) through association with KDEL ER protein retention receptor 3 (KDELR3). Consequently, ADSL-produced fumarate binds to STING T263, which is the site of cGAMP binding in the catalytic domain, leading to the inhibition of cGAMP binding to STING, STING activation, and subsequent IRF3-dependent cytokine gene expression. Abrogation of the ADSL-STING association promotes STING activation and T cell and NK cell infiltration and blunts tumor growth. Importantly, a combination treatment with an ADSL ER translocation-blocking peptide and anti-PD-1 antibody induces an additive inhibitory effect on tumor growth accompanying with substantially increasing T cell infiltration and granzyme B expression. In addition, ADSL T350 phosphorylation levels are inversely correlated with levels of STING activation and degree of cytotoxic immune cell infiltration in breast cancer samples and predict poor prognosis of breast cancer patients.

These findings reveal a previously unknown mechanism underlying the distinct regulation of the cGAS-STING pathway in normal and breast cancer cells, highlight a pivotal role of the metabolite fumarate in inhibiting STING activation, and provide a molecular basis for demoting breast tumor cell immune evasion and improving immune checkpoint therapy by targeting ADSL-moonlighting function-mediated STING inhibition.

For more information
Contact us: ***xudaqian@zju.edu.cn***

Oncolytic Virus Therapy Revolutionizes Advanced Liver Cancer Treatment

Oncolytic viruses, as promising and effective therapeutic cancer vaccines, are ushering in a new era for advanced hepatocellular carcinoma (HCC). The latest research achievement regarding the study of the novel oncolytic virus vaccine, VG 161, applied in advanced HCC patients, conducted by the First Affiliated Hospital, Zhejiang University School of Medicine (FAHZU), has been published in ***Nature***.

Hepatocellular carcinoma is considered as one of the most malignant tumors with a poor prognosis. The most intractable problem is post-operative tumor recurrence, and a low overall survival rate (i.e., the 5-year survival rate of patients remaining at 18%). Common symptoms during the onset of early liver cancers can be subtle and non-specific, including abdominal pain, fatigue, weight loss, etc. As these symptoms are often overlooked, many patients have progressed to the late stage when diagnosed, reaching beyond the point where the surgery option is viable.

Advanced HCC has a relatively poor prognosis, with survival rates varying depending on the stage and treatment options. Although targeted therapy and immunotherapy have achieved certain progress, the problem of drug resistance following multiple rounds of treatment further complicates treatment options. Myriads of patients are facing the dilemma of limited feasible treatment, emphasizing the urgency for developing novel therapeutically viable strategies for HCC patients in clinical practice.

The research team led by Professor LIANG Tingbo from the Department of Hepatobiliary and Pancreatic Surgery of FAHZU successfully developed the first world-class 3rd generation of oncolytic virus vaccine, VG161, resolving one of the most intractable problems occurring in advanced HCC treatment — the drug resistance, and achieving a quantum leap in curing recurrent and refractory neoplasms. The research results were published in the journal ***Nature*** on 20th March of Beijing time, titled "Oncolytic virus VG161 in refractory hepatocellular carcinoma", witnessing a top-notch leading research in the field of oncolytic virus vaccines.

Breaking through the dilemma: limited curative options

The key limitation of targeted therapy, immunotherapy, or even combination therapy is that cancer cells can be intrinsically irresponsive or acquire resistance following multiple rounds of treatment, causing treatment failure and poor survival. As the cancer cells acquire the ability to break free from the shackles of drugs and regain growth momentum, it leads to further metastasis and liver failure in patients. It may also cause serious complications such as ascites, jaundice, and hepatic encephalopathy, significantly compromising the survival and quality of life.

"Conventional HCC treatments are limited to the first- and second-line options, whereas there is a lack of standardized strategies for third-line treatment. Once patients develop drug resistance against the available drugs, they are very likely to fall into the dilemma of 'no cure'," explained Professor LIANG Tingbo, emphasizing the need for novel therapies.

Oncolytic viruses are a type of anti-cancer agent in immunotherapy. As an emerging new star in the anti-cancer therapeutics, the versatility of OV vaccines is achieved by genetic modifications by manipulating the vector with an installation of cancer cell directional GPS, and exogenous helpers. With such manipulations, the viruses can selectively infect malignancies and kill tumor cells without damaging normal tissues. Meanwhile, it activates the immune system, revealing systemic anti-tumor efficacies.

"Oncolytic viruses are able to carry and express multiple exogenous genes, enhancing the local immunity and inhibiting immune escape, thereby maximizing the cytotoxic effect of vaccines." Dr. SHEN Yinan stated his inspiration, on the basis of which the team started to explore the underlying huge potential and the versatility of oncolytic viruses to treat liver cancers.

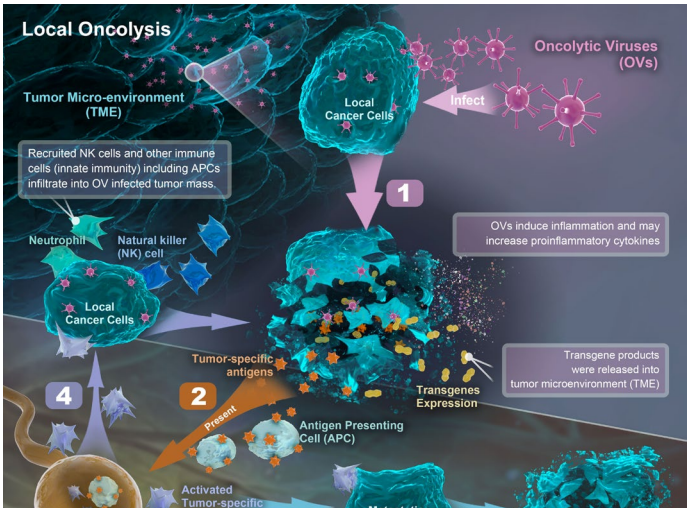
New hope for advanced HCC curing options

Over many years, the research team led by Professor LIANG Tingbo has been committed to building and gradually expanding the innovative transformation platform on the construction of novel oncolytic viruses. Scientists integrate laboratory research and clinical resources to promote drug development and clinical transformation of oncolytic viruses.

Researchers applied the oncolytic virus therapy to the treatment of third-line HCC patients who are suffering from relapsed and refractory liver cancers. For this purpose, a novel oncolytic virus VG161 carrying multiple immune stimulatory factors has been designed and administered to the patients, achieving astonishing therapeutic efficacies.

The VG161 viruses profoundly activate both adaptive and innate immune responses by expressing IL-12 and IL-15, and immune checkpoint blockade peptides, which activates systemic anti-tumor immunity and reverses the situation of immune escape of cancer cells in the meantime. The research achievement has been recognized as a "breakthrough therapy" by China's National Medical Products Administration.

"At present, a new generation of oncolytic viruses characterized by the expression of multiple immune stimulatory factors is constantly emerging, and it is possible to become another major breakthrough after immune checkpoint inhibitor drugs, and VG161 is one of them." Professor LIANG explained that immunotherapy is the 3rd round of revolutionary change in cancer treatment. As one of the most significant directions of tumor immunotherapy strategies, oncolytic viruses possess enormous potential for curing advanced tumors. Theoretically speaking, the



oncolytic virus vaccines are able to prevent recurrence, and patients are expected to be finally cured.

The results of the study showed that the objective response rate (ORR) of VG161 as a third-line drug for the treatment of liver cancer reached 17.65%, and the overall survival (OS) reached 9.4 months. The overall efficacy was comparable to the standard second-line treatment regimen, achieving an important breakthrough.

Sandwich therapy

Clinically, around 90% of HCC cases develop from chronic hepatitis B, and most patients are administered long-term oral anti-HBV drugs. Whether anti-HBV drugs will affect the efficacy of oncolytic viruses is a common concern of patients and clinicians.

Through in vivo and in vitro tests, researchers confirmed that oral anti-HBV drugs exerted no effect on the replication and efficacy of VG161. "Our finding has dispelled the doubts that have been deeply buried in the hearts of HCC patients and physicians," Dr. SHEN Yinan said.

It is gratifying that the team found that the median overall survival of the subjects who received immunotherapy for more than 3 months before enrollment was significantly extended from 9.4 months to 17.3 months after receiving VG161 treatment.

Since the time of subject out, they continued to use the original standard systemic regimen that was already resistant, and their survival was surprisingly further extended. This not only suggests that VG161 may reverse liver cancer resistance to a certain extent, but also brings a new "sandwich therapy" regimen for the treatment of refractory HCC cases. All in all, VG161 is the key factor in "sandwich" therapy.

Professor Liang firmly believes this research opens a new era for stubborn and aggressive malignancies by reversing the situations of drug resistance and impaired immunity in patients. He also demonstrated the promising potential of oncolytic viruses as a novel tumor immunotherapy, and expects the vaccines to bring hope to more patients suffering from advanced cancers in the near future.

For more information
Contact us: ***shen_yinan@zju.edu.cn***

Double Lung Transplant Recipient Completes 1,500 km Cycling Journey, Redefining Life's Limits

WANG Yuanqing, a 52-year-old former soldier and end-stage lung disease survivor, has defied medical odds by cycling over 1,500 kilometers from Shenyang to Hangzhou just two years after undergoing a life-saving double lung transplant. His 25-day journey, completed on May 3, stands as a testament to resilience and the transformative power of modern medicine.

For 16 years, WANG battled severe pulmonary conditions, including emphysema, bronchiectasis, and pulmonary hypertension, which left him dependent on oxygen machines. At his worst, he required round-the-clock oxygen support, with power outages forcing emergency hospital visits. In 2022, a successful double lung transplant at the First Affiliated Hospital, Zhejiang University School of Medicine (FAHZU), led by Dr. HAN Weili's team, gave him a new lease on life.

Post-surgery, WANG embraced rigorous rehabilitation, gradually transitioning from short walks to long-distance cycling. "Every pedal stroke felt like saying goodbye to my old self," he said. Determined to challenge stereotypes about transplant recipients, he embarked on his cross-country ride despite concerns from family and doctors.

"Transplant patients have weakened immunity. Prolonged exertion risks infection or rejection," cautioned Dr. HAN. WANG, however, meticulously followed medical protocols: carrying anti-rejection medications, adhering to a strict drug regimen (five daily doses), and scheduling regular check-ups. His 20-pound luggage included emergency supplies, symbolizing both his physical and mental preparedness.

Upon arriving in Hangzhou, WANG presented flowers to Dr. HAN's team, declaring, "I wanted to show that transplant recipients can not only reclaim normal lives but thrive. Medicine creates miracles, but we must also fight to be part of them."

His journey, blending grit and gratitude, has inspired patients nationwide. As WANG removed his helmet at the hospital gates, he embodied a simple truth: with unwavering belief, even the most fragile lives can soar.

For more information
Contact us: ***zjhzhwldoc@163.com***

Singer TANK from the Island of Taiwan Receives Asia's First Heart-Liver Transplant Surgery at SAHZU

Singer TANK (Lv Jianzhong) from the island of Taiwan, was on the verge of death due to familial hypertrophic cardiomyopathy complicated by liver failure. At the Second Affiliated Hospital, Zhejiang University School of Medicine (SAHZU), he successfully underwent Asia's first simultaneous heart and liver transplantation for familial hypertrophic cardiomyopathy complicated by liver failure and was discharged from the hospital on April 7, 2025.

Professor Wang Weilin, President of SAHZU and Director of the Transplant Center, was also the chief surgeon for TANK. "Our Transplant Center enjoys a profound historical legacy and heritage, demonstrating internationally leading technical strength and innovation capabilities in the field of organ and multi-organ transplantation. A few years ago, SAHZU successfully completed China's first simultaneous liver and double-lung transplantation, with the patient hiking up Mount Tai three years post-surgery. Today, the 'simultaneous heart-liver transplantation' is another exploration of advanced and sophisticated surgeries by our center, holding significant importance in the field of organ transplantation", said Prof. Wang.

At the end of March 2024, TANK visited SAHZU for the 1st time. At that time, his physical condition, especially his heart and liver function, was already in a dire state. After a comprehensive examination, TANK was diagnosed with multiple severe conditions, including hypertrophic cardiomyopathy, decompensated liver cirrhosis, and heart failure. Doctors at SAHZU learned that TANK had previously visited several large comprehensive hospitals on both sides of the Taiwan Strait with a pacemaker but had not received a definitive treatment. The progression of his heart disease had gradually overwhelmed his liver.
Faced with such a complex medical condition, specialists from the transplantation center, comprehensive ICU, anesthesia and surgery department, general practice, radiology, ultrasound, and other departments gathered together. After repeated evaluations, they concluded that TANK's hereditary hypertrophic cardiomyopathy had led to congestive liver cirrhosis, with concurrent heart and liver failure. Traditional single-organ transplantation could not address the root cause, and they unanimously decided that only a "simultaneous heart-liver transplantation" could cure his condition and save his life.
In the following days, TANK persistently received conservative treatment at the hospital while actively communicating with doctors, hoping for a turnaround in his condition. On November 21, 2024, he finally received organs from a donor who had suffered from severe traumatic brain injury, leading to brain death. TANK underwent the "simultaneous heart-liver transplantation" at SAHZU with the collaborative efforts of Prof. Wang Weilin's liver transplantation team, Prof. Dong Aiqiang's heart transplantation team, Prof. Yan Min's anesthesia team, Prof. Huang Man's intensive care team, and the nursing team.

The surgery lasted 12 hours and was ultimately successful after arduous efforts. TANK finally received a healthy heart and liver and was transferred to the general ICU for further treatment. Now, TANK is recovering well. He told us, "I've never felt my heart beat so strongly before!"

For more information
Contact us: ***wam@zju.edu.cn***

Multiple Pediatric Patients Successfully Discontinue Immunosuppressants

In October 2024, a major breakthrough in the treatment of systemic lupus erythematosus (SLE) at the National Clinical Research Center for Child Health and Disorders, the National Children's Regional Medical Center, and the Children's Hospital Zhejiang University School of Medicine (hereinafter referred to as "ZCH") attracted widespread attention. All 24 of the pediatric patients who were enrolled in the clinical trial of autologous CAR-T therapy for SLE achieved symptom remission.

In June 2025, ZCH reported further progress: the project team has launched a new clinical research program using CAR-NK cell therapy for pediatric SLE. To date, seventeen children have successfully received CAR-NK cell treatment, with the process proceeding smoothly and a complete absence of adverse reactions. All seven children have now discontinued immunosuppressive medications.

"Both CAR-T and CAR-NK are novel cellular immunotherapies based on chimeric antigen receptor (CAR) technology. While autologous CAR-T therapy requires peripheral blood collection, CAR-NK therapy is more convenient, offering an off-the-shelf option for immediate application. In terms of efficacy, both target B lymphocytes. The clinical trial of CAR-NK therapy for SLE aims to explore new possibilities and new hope," commented Professor Mao Jianhua, Director of the Urology & Nephrology Department.

"Every time my daughter looked in the mirror, she seemed disheartened. I knew she wanted to go to school and socialize like her classmates, but ever since she got sick, she hasn't even wanted to step outside…" Thirteen-year-old Xiaoya (pseudonym) from Guangxi was diagnosed with SLE two years ago and had been suffering from stubborn facial and limb rashes, recurring mouth ulcers, and joint pain. Despite long-term treatment with corticosteroids (prednisone), mycophenolate mofetil, and tacrolimus, her skin condition showed little improvement, and hair loss became a major source of anxiety for her during her adolescence.

Upon learning about the CAR-NK clinical trial at ZCH, Xiaoya's mother, Ms. Li, took her daughter all the way to Hangzhou. After an evaluation, Xiaoya was successfully enrolled in the trial.

Her treatment went smoothly, with no adverse reactions following the infusion. Xiaoya has now not taken any immunosuppressants for over a month, and her steroid dosage has been reduced to 10mg per day. Her rashes are gradually subsiding.

"The infusion went so smoothly, with no adverse reactions. We never thought she'd be able to stop taking immunosuppressants, but now she has, and her rashes are slowly improving. "This is a huge step forward for us!"

cried Xiaoya's mother, with emotion. The ZCH medical team will continue to monitor Xiaoya's recovery and adjust any follow-up care accordingly.

"From autologous CAR-T cell therapy to allogeneic CAR-T cell therapy, and now CAR-NK treatment, we are continuously exploring innovative technologies to overcome pediatric SLE," Professor Mao Jianhua stated. "Looking ahead, our team may pursue other CAR-based therapies to help patients receive more targeted treatment options. We hope that this innovative approach can offer new treatment solutions to more children with refractory SLE."

For more information
Contact us: ***chxczx@zju.edu.cn***

Leading Doctors Are Coming to Teach the Core Courses This New Semester!

For the "Histology and Embryology" class in the spring semester, renowned reproductive medicine specialist, HUANG Hefeng, who is also an Academician of the Chinese Academy of Sciences and Dean of Zhejiang University School of Medicine, returned to the classroom and delivered the first lecture of the new semester to the 2024 intake of clinical medicine students. She integrated fundamental classical theories with vivid clinical case studies to guide the students on how to explore the mechanisms of disease occurrence and development from the earliest life stages.

"This semester's basic medical courses will be co-taught by many famous clinical doctors. During the preparatory phase, we engaged in in-depth exchanges and discussions. We hope to stimulate the students' interest in professional knowledge by teaching the latest clinical cases and technologies, which will lay a solid foundation for the future clinical courses," commented Academician HUANG Hefeng.

Academician HUANG Hefeng stated that, in order to continuously reform the model of cultivating top-tier innovative medical talents, Zhejiang University School of Medicine has further deepened the integration of basic knowledge and clinical teaching this semester. In addition, more renowned clinicians have been invited to teach the core medical courses to assist the undergraduates in mastering professional knowledge more effectively.

During the spring and summer semesters, the School also involved several renowned clinicians in the teaching of five basic medical courses, including Systematic Anatomy, Histology and Embryology, Digestive and Endocrine System I, Cardiovascular, Respiratory, Hematologic and Urinary Systems I, and Nervous, Psychiatric, and Motor Systems I. These experts include Academician ZHENG Shusen, Academician HUANG Hefeng, Professor LIANG Tingbo from the First Affiliated Hospital of Zhejiang University School of Medicine, Professor WANG Weilin from the Second Affiliated Hospital of Zhejiang University School of Medicine, Professor CAI Xiujun from Sir Run Run Shaw Hospital Zhejiang University School of Medicine, Professor LU Weiguo from the Women's Hospital, Zhejiang University School of Medicine, Professor SHU Qiang from the Children's Hospital of Zhejiang University School of Medicine, and Professor LI Tao from the Affiliated Mental Health Center, Zhejiang University School of Medicine.

Through cooperation with the clinical departments of affiliated hospitals, the School has now built a high-level basic-clinical teaching team to teach seven core basic medical courses. The teachers and clinicians engage in in-depth discussions and learn from each other, based on the teaching syllabus: the basic teachers contribute effective teaching methods based on their experience, while the clinicians explain the clinical relevance and latest applications of the teaching content. The team also actively practices "problem-based tutorials" and "clinical application-oriented TBL" to promote an in-depth dialogue and reflective learning, further cultivating the students' critical thinking.

The Launch of the Qizhen Zhiyi AI Education Platform 2.0

In the context where generative artificial intelligence is accelerating the transformation of education, large language model technology is rapidly evolving, from general language generation to specialized domains. As a field that is characterized by high specialization, intensive knowledge, and complex scenarios, medical education places higher demands in relation to the comprehension, reasoning, and domain-specific expertise of intelligent technology. Traditional AI systems often function merely as tools in the sphere of medical education, lacking contextual understanding and the integration of systematic knowledge, and thus falling short in supporting the learning and assessment of complex tasks.

To address the key issue, Zhejiang University School of Medicine, in collaboration with Zhejiang University Institute of Computing Innovation, has been developing a domain-specific large language model (LLM), designed for medical education, since 2023. The project explores a new, agent-driven paradigm, aiming to provide intelligent support for the whole process of basic and clinical medicine education.

On May 11, 2025, Zhejiang University School of Medicine officially released its independently developed "Qizhen Zhiyi AI Education Platform 2.0". As an upgraded version of the platform launched in 2024, it integrates advanced general-purpose LLMs such as DeepSeek and Qwen, authoritative medical knowledge bases, and clinical data, thereby forming a cutting-edge medical LLM.

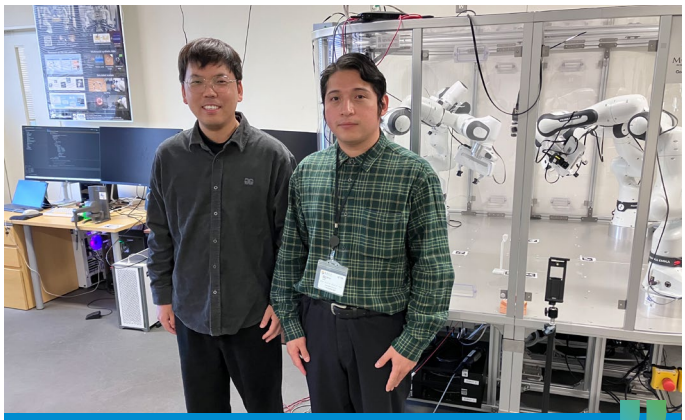
Version 2.0 not only contributes to comprehensive innovation and a functional expansion of the original, but also establishes a hierarchical, scenario-based intelligent teaching system that is driven by a progressive "Competency Graph". It primarily introduces three intelligent modules: discussion, laboratory, and clinical courses, providing a systematic solution for the integration of "AI + Medical Education."

For example, "Q-Rescue Intelligent First-aid Training System" addresses the inadequacy of practical first-aid training in traditional teaching by leveraging hundreds of thousands of real-world clinical cases and an expert decision tree, which has been collaboratively developed by over ten experts and has covered over 50 neurological disorders and over 300 standardized decision nodes. The system introduces an AI agent to simulate clinical first-aid diagnosis and treatment scenarios. It employs a dual-track interactive framework, "Patient Agent + Expert Agent", to support dynamic pathway selection and real-time assessment feedback, thereby achieving the integration of standardized medical education and personalized training. It strengthens the students' clinical diagnosis and treatment reasoning, and remarkably enhances their clinical adaptability and decision-making abilities.

Simply put, students can be immersed in simulated rescue scenarios through the LLM in class, while the system analyzes and evaluates their performance. For instance, in a simulated case of acute ischemic stroke, the agent can randomly select a case (e.g., a patient with right-sided hemiplegia 2.5 hours after onset) for the simulation. The students are required to complete the entire process, which includes medical history taking, physical examination, laboratory and imaging tests, diagnosis and treatment decisions, and physician-patient communication.

Following the simulation, the agent generates a comprehensive feedback report based on decision tree evaluation criteria, identifying problems such as students' failure to inquire about recent surgeries or trauma during the history-taking process, inaccurate limb movement scoring during a physical examination, or omissions of crucial information during the physician-patient communication. It then pushes targeted learning materials to address their knowledge gaps (e.g., relevant clinical guidelines, standardized physical examination videos and evaluation rubrics, and examples of intravenous thrombolysis communication). The students can also put questions to the AI assistant embedded within the agent while they learn. Meanwhile, the instructors receive the students' learning reports in real time, thereby allowing the course teachers to reinforce relevant knowledge points during subsequent teaching sessions.

Experience Sharing in Top Global Universities through a Joint Ph.D. Program



Wu Hao
Ph.D. Student, 2021, Department of Surgery
Visiting Institution: University of California, Los Angeles (UCLA)
Research Topic: The Role of YAP in the Mechanism of Liver Ischemia-Reperfusion Injury

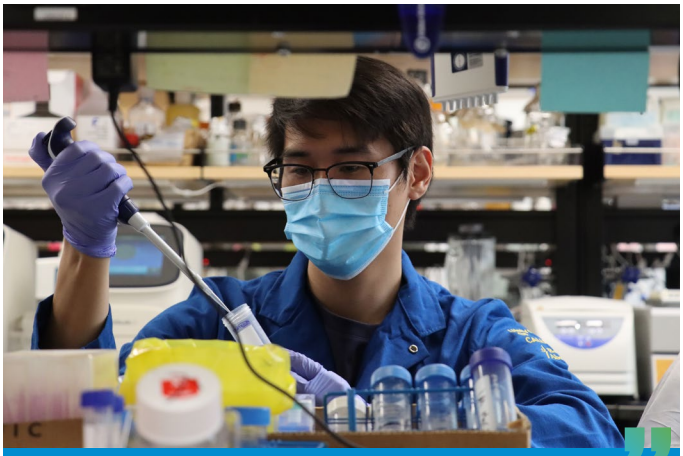
The laboratory holds a monthly Journal Club, which significantly enhanced both my language and critical scientific thinking skills. It also accustomed me to communicating and cooperating with clarity and accuracy in this international scientific research environment. During my research, I met a surgeon from Kyoto University, Japan, who visited our laboratory as a postdoctoral researcher. He guided me on the operation training of rat and mouse liver transplantation models. Through this experience, I realized that there exist clear differences between Chinese and Japanese researchers in terms of the understanding and operation of the same liver transplantation model. Following in-depth communication with this surgeon during experiments, I not only mastered more rigorous, standardized experimental operations but also broadened my understanding of the different approaches that are adopted with regard to the transnational medical education systems and scientific research thinking styles of our two countries.

In terms of research achievements, I actively participated in the design and implementation of our project. In May 2024, I presented phased results at the annual congress of the International Liver Transplantation Society (ILTS). The following month, in June, I shared new findings at the American Transplant Congress (ATC), which attracted extensive attention and recognition from my international peers.

This exchange study at UCLA not only deepened my understanding of the international cutting-edge medical research system but also profoundly influenced my research philosophy and career direction. Through working with researchers from different countries, I gradually formed a more rigorous, systematic, and critical research mind, learned to re-examine research issues from an interdisciplinary, cross-cultural perspective, and enhanced my comprehensive ability to solve complex problems.

Meanwhile, studying abroad has also cultivated my independence and adaptability. In terms of both facing scientific research challenges and adapting to life amid cultural differences, I have learned to respond proactively, with an open, inclusive mindset. The friendships that I have made with people from around the world, along with our shared adventures, have become invaluable treasures in my life.

In the future, I hope to apply my international perspective and comprehensive qualities gained during this experience to medical research and clinical practice, continue to advance in my research field, and contribute to promoting innovation and development in this field.



Gao Wei
Ph.D. Student, 2023, Department of Surgery
Visiting Institution: The University of Tokyo
Research Topic: Heterogeneous Medical Image Fusion Processing and Robot-Assisted Surgery

Over the past six months, it has been my honor to study as an exchange student at the Department of Neurosurgery and the Interdisciplinary Laboratory of Medicine and Engineering at the University of Tokyo Hospital. As my first overseas research experience, it was not only a precious opportunity but also a life test.

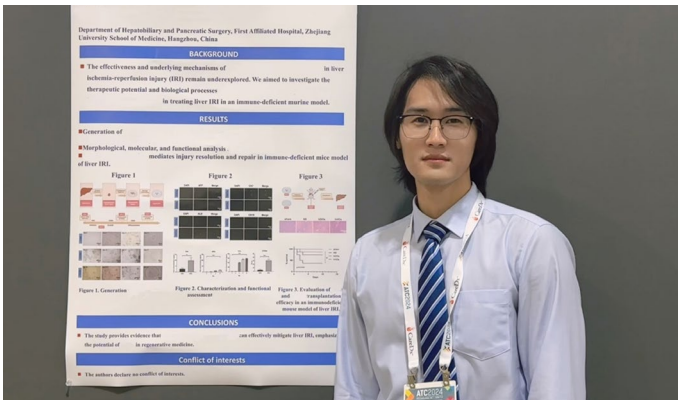
Upon my arrival in Japan, the differences in living habits, together with the language barrier, posed a dual challenge for me. Far from my hometown and its cuisine, I began to explore and improve my cookery skills. Also, I tried hard to fit into a department which was unfamiliar to me. The first two months were often overshadowed by loneliness, but through continuous self-adjustment, I finally overcame my culture shock.

As I gradually adapted to the rhythm of local life, I started to engage more deeply in medical research. The innovative team in the Department of Neurosurgery made a deep impression on me. Composed of clinicians, engineers, and researchers, this interdisciplinary team is committed to developing Japan's domestic surgical navigation system, with neuro-navigation technology as the core research direction. The team's independently developed GRID system is already capable of undertaking the automated processing of preoperative images and simulation of surgical paths. Prior to surgery, each patient needs to undergo a comprehensive examination, to produce impressively complete and precise imaging data. Once the required data have been gathered, junior doctors will manually outline the fine structures, such as the cranial nerves, that are difficult for the system to identify. These annotations are reviewed and confirmed by senior physicians, after which the system generates a simulated surgical plan. Whenever technical problems occur, the engineering team can always respond to and solve them in a timely manner. Notably, these manually annotated anatomical structure data will continue to serve as machine learning materials to be fed back into the system upgrade.

The team's dedication to detail is reflected in every step of the process. They repeatedly discuss any technical difficulties during the image processing and preview the risks of each stage of the operation during preoperative, department-wide discussions. They also revise the simulation plan based on actual surgical findings of their postoperative reviews. It is this seemingly "rigid" daily routine and consistent craftsmanship that have enabled the GRID system gradually to secure an important position in Japan's medical market.

During the visit, I was particularly honored to attend the 83rd Annual Meeting of the Japanese Neurosurgical Society. During this meeting, I was deeply touched by the meticulousness of my Japanese peers' preoperative evaluation and rigorous attitude toward conducting operations. The academic reports of many experts also proved insightful and inspiring. During the regular lab meetings, I delivered systematic presentations on my research on robot-assisted surgery for cerebral hemorrhage during my doctoral studies. My work aroused strong interest among my classmates and gained recognition from both Professor Saito and Professor Shono concerning its clinical application value.

Looking forward, I will continue to deepen my research on robot-assisted surgery for cerebral hemorrhage, and strive to develop into a neurosurgeon with a strong research capability.



Medical Prowess, Athletic Glory — 2025 Zhejiang University School of Medicine Athletics

SPORTS MEETING

SPORTS MEETING

Visit to International Leading Universities by ZUSM Delegation

In April 2025, a delegation led by Prof. Li Xiaoming, Vice President of Zhejiang University, visited Malaysia. Prof. Li signed an inter-university student exchange agreement with Prof. Hasniza Zaman Huri, Vice-Chancellor of the University of Malaya. He also communicated with Mr. Zhao Changtao, Education Counselor at the Chinese Embassy in Malaysia, to gain insights into local higher education, and visited Xiamen University, Malaysia Campus to gather information about cross-border education practices.

In April 2025, a delegation led by Prof. Li Xiaoming, Vice President of Zhejiang University, visited Australia. Prof. Li signed both inter-university and school-level MOUs with Monash University and explored the possibility of developing joint medical programs in the future.

The delegation reached a consensus with the University of Melbourne on clinical clerkships, medical education research, and neuroscience collaboration. A student exchange agreement was also signed with the University of Sydney.

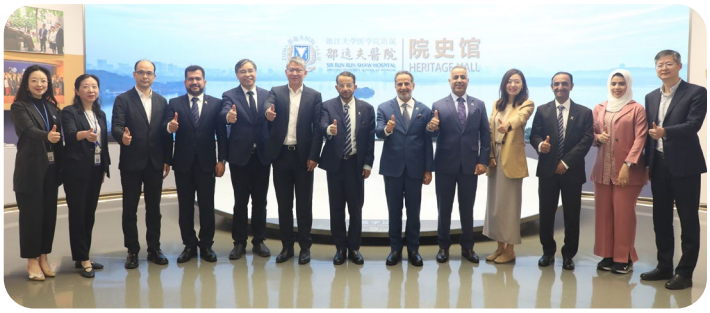
In April 2025, a delegation led by Prof. Li Xiaoming, Vice President of Zhejiang University, visited Hong Kong, China. Prof. Li visited the LKS Faculty of Medicine at the University of Hong Kong and its affiliated hospitals.

In March 2025, a delegation led by Prof. Ke Yuehai and Prof. Wang Di, Vice Deans of the School of Medicine, Zhejiang University visited the Faculty of Medical and Health Sciences at the University of Auckland.

ZUSM Signed a MOU with the Faculty of Medicine Ramathibodi Hospital of Mahidol University in Thailand

On March 12, 2025, Pairoj Boonkongcheun, the executive vice dean of the School of Medicine at Ramattepodi Hospital of Mahidol University in Thailand, led a delegation of leaders and management personnel from the School of Medicine and the affiliated hospital to visit. Both sides signed a Memorandum of Cooperation between the medical schools of the two universities and officially established a long-term cooperative relationship.

Visit to SRRSH by the Embassy of the Sultanate of Oman in China and the MCMSS Hospital Director



On April 28, 2025, H.E. Nasser Al Busaidi, Ambassador of the Sultanate of Oman in China, together with H.E. Ady Hilal Al Maawali, chair of MCMSS, led a delegation of medical experts to visit Sir Run Run Shaw Hospital, Zhejiang University School of Medicine (SRRSH).

Visit to ZUSM by Nanyang Technological University Delegation

On June 4, a delegation from Nanyang Technological University, Singapore, led by Professor Joseph Sung, Vice President of NTU and Dean of the LKC School of Medicine, visited the School of Medicine, Zhejiang University. The two sides held meetings to promote future collaboration.

ZHANG Yangda: Hoping for More Time

Zhang Yangda, who was born on January 5, 1929, is a professor and chief physician. He graduated from Zhejiang University School of Medicine in 1954 and later served as Director of the Department of Neurology at the Second Affiliated Hospital, as well as Chair of the Neurology Teaching and Research Section, both at the Zhejiang University School of Medicine. He was a recipient of the State Council's Special Government Allowance. Zhang also served as the first and second chair of the Neurology Branch of the Zhejiang Medical Association and chair of the Neurorehabilitation Branch of the Zhejiang Association of Rehabilitation Medicine. He was honored with the Lifetime Achievement Award and Outstanding Contribution Award by the Zhejiang Medical Association. His research on the clearance pattern of spontaneous subarachnoid hemorrhage (SAH) received the provincial award for Best Scientific Paper. He is also the author of *Clinical Cerebrovascular Disease and Clinical Epileptology*.

Details Make a Good Doctor

Zhang Yangda has developed a profound understanding that details make a good doctor.

One such detail is his habit of arriving at the clinic half an hour early, out of compassion for patients who are travelling from afar.

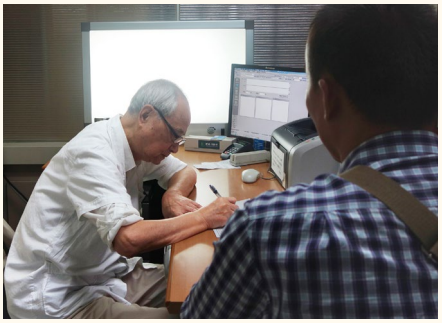
On October 8, 2013, the first weekday after the National Day holiday, Zhang Yangda was hosting his specialist clinic.

It was a cold, rainy morning. Due to the impact of Typhoon Fitow, Hangzhou's main urban area had been hit by rain for two days, since October 6, with an average precipitation level of 264 millimeters, according to the local meteorological department. Still, the weather didn't prevent Zhang from arriving at the clinic half an hour early, just as he always did.
Many patients and their accompanying family members were moved and thanked him sincerely. He replied, "Knowing you've come all this way, I'd feel sorry to make you wait."

A patient of Zhang left the following comment: "We brought our child to see Dr. Zhang yesterday. We got the last walk-in slot, as there aren't many appointments at the specialist clinic. At around 12:30 PM, Dr. Zhang thought there were no more patients and was about to leave, but when he noticed us waiting, he quickly returned. He was very approachable and spoke kindly, reassuring us that there was no need to worry. He carefully reviewed our child's medication dosage and adjusted it decisively, drawing on his years of clinical experience. That's exactly why we decided to see him. Dr. Zhang also thoughtfully informed us that he would be unavailable next month and advised us to consult another doctor, if needed. He wrote down both the original and adjusted dosages clearly in the medical record, with neat handwriting that was easy to read. Although the consultation was brief, we truly sensed his high degree of medical ethics. His kindness and professionalism warmed our hearts. We sincerely hope that he continues to practice medicine for many more years so more people can benefit."
Zhang Yangda was deeply moved that his patients noticed such subtle details during his consultations, and it gave him much to reflect on.

Slow and Meticulous Work Leads to Fine Treatment

Some say that Zhang Yangda sees patients slowly. That is because the longer he has practiced, the more he believes that every detail matters. The more thoroughly he asks questions,



the more confident he feels that he is making the right decisions and providing proper care. That's why he sticks to his approach: taking time, being meticulous, and treating patients properly. So, when someone joked, "Dr. Zhang, are you slow now because you're getting old?" he laughingly replied, "Yes, I'm getting old, but my mind isn't becoming less sharp. As long as I'm in the clinic, I'm responsible for every patient I see. As doctors, we can't afford to overlook any detail."

Zhang says that he was deeply influenced by older generations of doctors who meticulously practiced what they preached.

He recalls, "Shortly after I began practicing, I accompanied a professor on his ward rounds. One patient said, 'I had a good appetite today and ate two bowls of rice.' It sounded mundane, but the professor immediately asked, 'How big are the bowls?'

He later explained: 'At first glance, eating two bowls of rice seems like a good sign; but, if the patient has diabetes and those bowls are large, that extra intake could cause a dangerous spike in blood sugar. If the doctor doesn't ask, it's the patient who suffers.'"

Many patients have already seen several doctors before they arrive at Zhang Yangda's specialist clinic. Their medical records often span several pages and are densely filled with handwritten notes. Nevertheless, Zhang always asks them to remove their shoes and socks and lie on the examination bed. He then conducts a physical examination himself using a percussion hammer—one of the most fundamental physical examinations in neurology, which is used to assess reflexes through direct contact with the patient's eyes, arms, and lower limbs.

That's why his consultations take a long time. In a four-hour morning clinic, he typically sees about 20 patients, spending around 20 minutes with each person.

"As doctors, we are like angels in white," he says, "but also warriors. And the clinic is our battlefield. Only by seeing the patients in person can we treat them better."

A Kind Doctor with Careful Words

Besides his meticulous treatment, another hallmark of Zhang Yangda's practice is that he never jumps to conclusions. He often shares a particular case with his students to emphasize the importance of seeing things from the patient's perspective, avoiding casual diagnoses, and never making claims unless they are based on solid evidence.

Throughout his clinical career, Zhang has opposed the prescription of multiple medications at once. When patients take drugs for their heart, bones, and liver simultaneously, their body can become overwhelmed and, so, potentially, develop new complications.

His prescribing principle is clear: If oral medication works, no injections; if an intramuscular injection suffices, no intravenous drips.

Does prescribing the right medicine guarantee a complete cure, though? Not necessarily.

In 1956, a young dancer was admitted to the ward. One afternoon, immediately before a performance, she suddenly was unable to move her legs, collapsed heavily, and could not stand up. A young doctor bluntly said, "It could be spinal cord compression." Another doctor objected, "If that were the case, she wouldn't be able to urinate, but her urination's normal."

That night, Zhang Yangda was on duty when a nurse informed him that the dancer could no longer urinate, had a severely distended abdomen, and needed catheterization.

Zhang guessed that, after hearing the other doctors talking, the girl had been negatively affected psychologically and had become anxious, since her spinal cord was intact.

To soothe her emotions, Zhang invited a senior professor to reassure her confidently that nothing was seriously wrong—her spinal cord was fine, and her leg weakness was due to temporary nervousness. He explained that, with supportive rehabilitation, she would gradually recover.

This time, the girl accepted these comments, improved daily, and finally returned to the stage.

Zhang often described this case to his students, not because it was a difficult one, but to impress upon them the importance of seeing things from the patient's perspective, avoiding casual diagnoses, and never making claims that were not based on solid evidence.

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Editorial office
Zhejiang University School of Medicine
866 Yuhangtang Road, Hangzhou 310058
P.R. China.
T: +86-571-88208100
F: +86-571-88208022
E: global_zusm@zju.edu.cn
www.cmm.zju.edu.cn/cmmenglish