

# 2026第二届中韩药学研讨会

2026 The 2<sup>nd</sup> China-Korea Joint Pharmaceutical Academic Symposium

协同创新，引领中韩药学新突破

Co-Innovating for Breakthroughs in China-Korea Pharmacy

## 会议主题

在当前全球医药科技迅猛发展的背景下，中韩两国在药学领域的合作日益紧密。第二届中韩药学研讨会旨在通过深入交流与合作，共同推动两国药学研究和产业的发展。会议将围绕疾病发生机制、新靶标发现与验证、药物研发、生物医药技术的创新与突破等前沿方向展开多方面讨论，分享最新研究成果和前沿技术，为两国专家学者、药学从业人员提供交流平台。同时就双方共同关心的课题签订合作协议，加速科研成果转化，为两国国民的健康和福祉做出贡献。希望通过此次会议，双方能够进一步深化合作，共同开创中韩两国药学发展新未来。

## 组织机构

### 承办单位:

中国药科大学国际交流合作处，中国药科大学多靶标天然药物全国重点实验室

## 组委会

会议名誉主席：王广基，Chong-Su Cho

会议主席：郝海平

执行主席：姜虎林

会议秘书处：邢磊，周天娇，王译，庞涛

2026年10月29日 中国·南京

# 2026第二届中韩药学研讨会

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## THEME

In the context of the rapid development of global pharmaceutical technology, the cooperation between China and South Korea in the field of pharmacy is becoming increasingly close. This 2<sup>nd</sup> China-Korea Joint Pharmaceutical Academic Symposium aims to promote the development of pharmacy research and industry in both countries through in-depth exchanges and cooperation. The conference will focus on disease mechanisms, new target discovery and validation, drug research and development, as well as innovation and breakthroughs in biomedical technologies, sharing the latest research findings and cutting-edge technologies, and providing a platform for exchanges between experts, scholars, and pharmaceutical practitioners from both countries. To accelerate the transformation of research results, and promote the health and well-being of both nations' peoples, both sides will sign cooperation agreements. It is hoped that through this conference, both sides can further deepen their cooperation and jointly create a new future for China-Korea pharmacy.

## ORGANIZER

### Organizers:

Office of International Exchange & Cooperation, China Pharmaceutical University

State Key Laboratory of Natural Medicines, China Pharmaceutical University

## COMMITTEE

**Honorary Chairpersons:** Guangji Wang, Chong-Su Cho

**Conference Chairperson:** Haiping Hao

**Executive Chairperson:** Hu-Lin Jiang

**Conference Secretariat:** Lei Xing, Tian-Jiao Zhou, Yi Wang, Tao Pang

**October 29, 2026 Nanjing·China**



## AGENDA

### October 29, 2026

| Time        | Activity / Expert                                                                                                                                                                                      | Chair / Moderator                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 8:30–8:50   | Opening Remarks                                                                                                                                                                                        | Hequan Yao<br>(China Pharmaceutical University)                                                   |
|             | Haiping Hao (China Pharmaceutical University)                                                                                                                                                          |                                                                                                   |
|             | Chong-Su Cho (Seoul National University)                                                                                                                                                               |                                                                                                   |
|             | Wanliang Lu (Peking University)                                                                                                                                                                        |                                                                                                   |
|             | Cheong-Weon Cho (Chungnam National University)                                                                                                                                                         |                                                                                                   |
| 8:50–9:00   | Group Photo                                                                                                                                                                                            |                                                                                                   |
| 9:00–9:20   | Tryptanthrin-loaded Liposomal Lotion for Atopic Dermatitis<br>Cheong-Weon Cho (Chungnam National University)                                                                                           | Xian Wu Cheng<br>(Yanbian University Hospital)<br><br>Chong-Su Cho<br>(Seoul National University) |
| 9:20–9:40   | Targeting Prolactin Receptor to Treat Neuroinflammatory Diseases<br>Rui-Ping Xiao (Peking University)                                                                                                  |                                                                                                   |
| 9:40–10:00  | Design and Development of Cell Recognition/Functionally Controllable Biomaterials and Application to Regenerative Medicine and Medical Engineering<br>Toshihiro Akaike (Tokyo Institute of Technology) |                                                                                                   |
| 10:00–10:20 | Ultra-pH-sensitive (UPS) Nanotechnology for Precise Organelle-targeted Drug Delivery<br>Yiguang Wang (Peking University)                                                                               |                                                                                                   |
| 10:20–10:40 | Tea Break                                                                                                                                                                                              |                                                                                                   |
| 10:40–11:00 | From Within: Harnessing Proteins’ Inherent Potential with Protein Nanocluster Technology in Cancer Therapy<br>Jae-Young Lee (Seoul National University)                                                | Wanliang Lu<br>(Peking University)<br><br>Jee-Heon Jeong<br>(Sungkyunkwan University)             |
| 11:00–11:20 | From mRNA Cancer Vaccines to in vivo CAR-T: Delivery-driven Innovation and Clinical Translation<br>Xiangrong Song (Sichuan University)                                                                 |                                                                                                   |
| 11:20–11:40 | Lumen-to-target Nanoplatfoms for Localized Therapy of Gastrointestinal Diseases<br>Jin-Wook Yoo (Pusan National University)                                                                            |                                                                                                   |
| 11:40–12:00 | Cytosolic Protein/peptide Delivery Platforms<br>Lichen Yin (Soochow University)                                                                                                                        |                                                                                                   |
| 12:00–13:30 | Lunch                                                                                                                                                                                                  |                                                                                                   |

AGENDA

|             |                                                                                                                                                                                               |                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 13:30–13:50 | Binary Mineral Nanoparticles Enable Intravascular Delivery of Metal Ions to Tumors for Metalloimmunotherapy<br>Jong Oh Kim (Yeungnam University)                                              | Wei Wu<br>(Fudan University)<br><br>Yu Seok Youn<br>(Sungkyunkwan University)                       |
| 13:50–14:10 | In vivo CAR-macrophages Stimulate Comprehensive Tumoricidal Immunity in Multiple Malignancies<br>Xinyi Jiang (Shandong University)                                                            |                                                                                                     |
| 14:10–14:30 | Photoactive Nanodelivery Platforms for ROS-mediated Cancer Treatment<br>Yu Seok Youn (Sungkyunkwan University)                                                                                |                                                                                                     |
| 14:30–14:50 | PEGylated Lipid and Pre-existing anti-PEG Antibodies<br>Changyou Zhan (Fudan University)                                                                                                      |                                                                                                     |
| 14:50–15:10 | Engineering Human Serum Albumin-A Multifunctional Brain Shuttle for Next-generation Alzheimer’s Disease Therapy<br>Sangkil Lee (Chung-Ang University)                                         | Huile Gao<br>(Sichuan University)                                                                   |
| 15:10–15:30 | cGAMP-mediated Nucleic Acid Immunity: Mechanisms and Therapeutic Targeting<br>Yibei Xiao (China Pharmaceutical University)                                                                    |                                                                                                     |
| 15:30–15:50 | Tea Break                                                                                                                                                                                     |                                                                                                     |
| 15:50–16:10 | Rational Engineering of Drug-specific Polymer Carriers through Modular Synthesis and Artificial Intelligence-guided Prediction for Precision Delivery<br>Duhyeong Hwang (Keimyung University) | Ran Mo<br>(China Pharmaceutical University)                                                         |
| 16:10–16:30 | Functional Enhancement of Mesenchymal Stem Cells through Surface Engineering and Heterospheroid Technology for Advanced Cellular Therapy<br>Jee-Heon Jeong (Sungkyunkwan University)          |                                                                                                     |
| 16:30–16:50 | Endothelial-derived Factor, Clusterin, Regulated Hemostatic Equilibrium by Stabilizing VWF Multimers<br>Pin Li (China Pharmaceutical University)                                              | Jin-Wook Yoo<br>(Pusan National University)<br><br>Cong Luo<br>(Shenyang Pharmaceutical University) |
| 16:50–17:10 | Formulation Development and Stabilization Strategies for Therapeutic Proteins: Overcoming Aggregation and Degradation Pathways<br>Seong Hoon Jeong (Yonsei University)                        |                                                                                                     |
| 17:10–17:30 | Drug Delivery Systems Based on Engineered Living Biological Carriers<br>Jinhui Wu (Nanjing University)                                                                                        |                                                                                                     |



## AGENDA

|             |                                                                                                                                                                   |                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 17:30–17:50 | Beyond Conventional in vitro–in vivo Correlation: Linking Formulation Composition to Pharmacokinetics and Pharmacodynamics<br>Soyoung Shin (Chung-Ang University) | Jin-Wook Yoo<br>(Pusan National University)<br><br>Cong Luo<br>(Shenyang Pharmaceutical University) |
| 17:50–18:15 | Journal Promotion                                                                                                                                                 |                                                                                                     |
|             | Exploration<br>Promotion Speaker: Panpan Yang                                                                                                                     | Xiaoxuan Liu<br>(China Pharmaceutical University)                                                   |
|             | Acta Pharmaceutica Sinica B<br>Promotion Speaker: Yin Liu                                                                                                         |                                                                                                     |
|             | Chinese Chemical Letters<br>Promotion Speaker: Huanfang Guo                                                                                                       |                                                                                                     |
|             | Targetome<br>Promotional Video - Leadership Introduction                                                                                                          |                                                                                                     |
|             | Chinese Journal of Natural Medicines<br>Promotional Video - Leadership Introduction                                                                               |                                                                                                     |
| 18:15–18:30 | Closing Remarks                                                                                                                                                   |                                                                                                     |
|             | Wanliang Lu (Peking University)                                                                                                                                   | Hu-Lin Jiang<br>(China Pharmaceutical University)                                                   |
|             | Cheong-Weon Cho (Chungnam National University)                                                                                                                    |                                                                                                     |
| 18:30       | Banquet                                                                                                                                                           |                                                                                                     |

## Conference Chairperson



**Haiping Hao**

China Pharmaceutical University

Haiping Hao is the President of China Pharmaceutical University, where he also serves as a Professor and Doctoral Supervisor. He is a member of the 14<sup>th</sup> National Committee of the Chinese People's Political Consultative Conference (CPPCC) and Vice Chair of the Jiangsu Provincial Committee of the China Democratic League. He is a recipient of the National Science Fund for Distinguished Young Scholars (2013), a Distinguished Professor under the Ministry of Education's "Changjiang Scholars Program" (2014), and a grantee of the National Science Fund for Excellent Young Scholars (Category A). He serves as Secretary-General of the Pharmacy Discipline Review Group of the Academic Degrees Committee of the State Council and as Deputy Director of the State Key Laboratory of Multi-Target Natural Drugs. He received his Ph.D. from China Pharmaceutical University in 2006 and was a visiting scholar at the U.S. National Cancer Institute from 2012 to 2013.

His research focuses on metabolic regulation and drug target discovery. He has proposed the "target group" (target-set) concept and the theory of metabolic biomimetics, and has established a technical system for target-group discovery and (combination) drug development. His work centers on the targets of key metabolic signaling molecules such as bile acids and tryptophan, and has elucidated the mechanisms of microbiota-host mutualistic symbiosis and their physiological and pathological significance. He has also established a methodological system for studying the in vivo processes of complex components of natural medicines and a "reverse pharmacokinetics" research paradigm. He has successfully identified 5 drug targets and developed 7 original drug candidates. He has led more than 20 major projects, including National Key R&D Program special projects, Major Science and Technology Projects for Major New Drug Creation, National Natural Science Foundation Innovative Research Group projects, and Ministry of Education Discipline Breakthrough Pilot projects. He has published more than 190 SCI papers as first or corresponding author in journals such as Nat Methods, Cell Metab, Nat Commun, Sci Adv, Trends Pharmacol Sci, and Anal Chem, with over 300 publications in total. His honors include two National Science and Technology Progress Second Prizes (ranked third and fourth), four provincial/ministerial first prizes (including the 2021 Jiangsu Provincial Science and Technology First Prize as first-ranked contributor), the National Innovation Competition Award, the Tan Jiazhen Life Science Award, the 19<sup>th</sup> China Pharmaceutical Development Award · Special Contribution Award, and the Jiangsu Youth Science and Technology Outstanding Contribution Award.



## Executive Chairperson



**Hu-Lin Jiang**

China Pharmaceutical University

Hu-Lin Jiang is a Leading Academic Talent in Drug Innovation at China Pharmaceutical University, a doctoral supervisor and a recipient of the Jiangsu Provincial Outstanding Youth Fund. He has long been engaged in research on intelligent drug delivery systems and their druggability. He has presided over more than 10 projects, including the Key International (Regional) Cooperation and Exchange Program of the National Natural Science Foundation of China, the General Program, the National Key Research and Development Program of the Ministry of Science and Technology, and the Independent Deployment Research Project of Lingang National Laboratory. He has published over 200 research papers, including in Nat Biomed Eng, Nat Commun, Sci Adv, Adv Mater, etc., which have been cited more than 12,400 times with an H-index of 61. He has filed 52 patent applications, including 5 PCT patents, and has been granted 24 invention patents, 5 of which have been successfully transferred. He serves as a Standing Member of the Endocrine and Immunity Professional Committee of the Jiangsu Society for Immunology, a Member of the Bioparticle Professional Committee of the Chinese Society of Particuology. He was recognized as a Leader of the Outstanding Scientific and Technological Innovation Team of Jiangsu Higher Education Institutions, received the First Prize of the Jiangsu Medical Science and Technology Award and the Jiangsu Pharmaceutical Science and Technology Outstanding Young Scholar Award.

**Time: October 29, 2026, 8:30-8:50**  
**Chairs: Hequan Yao**



**Hequan Yao**

China Pharmaceutical University

Hequan Yao is Vice President of China Pharmaceutical University and Professor at the State Key Laboratory of Multi-Target Natural Drugs, as well as Professor at the School of Pharmacy and the School of Chemistry, Doctoral Supervisor, and Head of the Jiangsu Provincial University Excellent Science and Technology Innovation Team. He received his B.S. and M.S. degrees from China Pharmaceutical University in 1998 and 2001, respectively, and his Ph.D. in Organic Chemistry from the Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences in 2004. From 2004 to 2007, he conducted postdoctoral research at the Stanford University School of Medicine. He joined the Department of Medicinal Chemistry, School of Pharmacy, China Pharmaceutical University in early 2008 and has since carried out independent research. He was selected for the Ministry of Education's New Century Excellent Talents Support Program in 2009, received the Fok Ying-Tung Fund (Basic Research Project) from the Ministry of Education in 2010, and was a core member of a Ministry of Education Innovation Team in 2011. He has led more than 10 national and provincial/ministerial projects, including the National Science and Technology Major Projects for Major New Drug Creation under the “11<sup>th</sup> Five-Year Plan” and “13<sup>th</sup> Five-Year Plan”, General Projects of the National Natural Science Foundation of China, and the Jiangsu Provincial University Excellent Science and Technology Innovation Team. He has published more than 200 SCI papers in journals such as Nat Commun, J Am Chem Soc, Angew Chem Int Ed, PNAS, Sci Adv, ACS Catal, and J Med Chem.

His research interests include the total synthesis, structural modification, and biological evaluation of bioactive natural products, as well as methodology for catalytic organic reactions directed toward the synthesis of bioactive molecules.



**Time: October 29, 2026, 9:00-10:20**  
**Chairs: Xian Wu Cheng, Chong-Su Cho**



**Xian Wu Cheng**

Yanbian University Hospital

Full Professor and Chairman for the Cardiovascular Medical Center, Yanbian University Hospital, China. Dr. Cheng received his medical degree from the Medical College of Yanbian University in 1989 and his doctoral degree from the Nagoya University Graduate School of Medicine in 2004. He was a Professor of Nagoya University and Kyung Hee University from 2016-2018. He published numerous scientific papers (Circulation, Circ Res, Nat Med, Nat Commun, JACC, EHJ, Hypertension, and ATVB. etc.). He also contributes many scientific journals as An International Associate Editor (Circulation Journal) and Editorial members (Life Science, Journal of Clinical Hypertension, Korean Circulation Journal, Yensei Medical Journal, Journal of Atherosclerosis and Thrombosis, Clinical and Experimental Pharmacology and Physiology, etc.).



**Chong-Su Cho**

Seoul National University

Chong-Su Cho is a Research Associate at the Research Institute for Agriculture and Life Sciences, Seoul National University after retirement in 2010 at Seoul National University. He worked as a professor at Chonnam National University of Korea from 1979 to 1998. He worked as a professor at Seoul National University from 1988 to 2010. He received his bachelor's degree from the Department of Sericulture at Seoul National University in February 1970, master's degree from the Department of Polymer Engineering at Tokyo Agriculture and Technology in March 1976, and a Ph.D. degree from the Department of Polymer Engineering, Tokyo Institute of Technology in March 1979. He worked with Prof. A. Hoffman at the University of Washington as a post-doctor from 1982 to 1983. He worked with Prof. S.W. Kim at the University of Utah as a post-doctor from 1983 to 1984 and worked with him as a Research Associate from 1991 to 1992. His research interests are drug delivery systems, gene delivery, agricultural biotechnology, tissue engineering, and microbiology. Professor Cho has received numerous awards such as the Korean Industry-Academy Cooperation Award in 1994, Fellow of the Korean Academy of Science and Technology in 2004, Fellow of the International Union of Societies for Biomaterials Science and Engineering in 2004, Korean Science and Technology Minister Research Award in 1990, and 2009, Korean Polymer Society Sangam Award in 2001, Korean Health and Welfare Outstanding Research Award in 2004, International Controlled Release Society Outstanding Pharmaceutical Paper Award in 2007, Korean National Academy Award in 2009, Korean Government Nokjo Medal in 2010, Korean Tissue Engineering and Regenerative Medicine Award in 2019. He has published 591 peer-reviewed scientific papers including reviews (citation number: about 24,000 and h-index:80), 43 book chapters, and received 52 patents. He served as the president of the Korean Chitosan and Chitin Society from 2007 to 2008, president of Korean Tissue Engineering and Regenerative Medicine in 2008, vice president of the Korean Biomaterials Society from 2006 to 2007 and vice president of the Korean Stem Cell Society in 2009. He has served as a Handling Editor in Biomaterials from 2014 to 2022 and Editor-in-Chief in Tissue Engineering and Regenerative Medicine from 2015-2020 and from 2021 as a Senior Editor.

## Speaker Profiles



### Cheong-Weon Cho

Chungnam National University

- 2026 – present Korean Society of Pharmaceutical Sciences and Technology, President
- 2006 – present Chungnam National University, Daejeon, Korea, Professor
- 2002 – 2006 CJ Pharmaceutical Company, Icheon, Korea, Senior researcher
- 2000 – 2002 University of Health Science of Colorado, Denver, USA, Post-Doc
- 1997 – 2000 Korea Research Institute of Bioscience and Biotechnology, Daejeon, Korea, Post-Doc
- 1993 – 1996 College of Pharmacy, Chonnam National University, Ph.D

#### Title: Tryptanthrin-loaded Liposomal Lotion for Atopic Dermatitis

**Abstract:** Atopic dermatitis is a chronic inflammatory skin disease characterized by dry skin, itching, and recurrent eczematous lesions. Although current therapeutic strategies are effective, their use is often limited due to adverse effects. Therefore, the development of safer and more effective alternatives is required. Tryptanthrin is a yellow-gold alkaloid compound with anti-atopic and various pharmacological activities. However, its poor aqueous solubility results in low topical bioavailability. A tryptanthrin-loaded liposomal lotion was developed using a design of experiments approach to improve topical delivery. The optimized formulation showed enhanced physicochemical stability and moisturizing properties, as well as improved drug release compared to free tryptanthrin. In human keratinocyte cells, the liposomal lotion exhibited lower cytotoxicity than the free tryptanthrin and demonstrated higher skin residual. In the DNCB-induced atopic dermatitis mouse model, the tryptanthrin-loaded liposomal lotion produced therapeutic effects comparable to or greater than those of 1.0 % hydrocortisone, without inducing adverse effects such as skin atrophy. Overall, the tryptanthrin-loaded liposomal lotion is presented as a promising and safe strategy for the topical treatment of atopic dermatitis.

#### References:

1. Han NR, Moon PD, Kim HM, Jeong HJ. Tryptanthrin ameliorates atopic dermatitis through down-regulation of TSLP. Arch Biochem Biophys. 2014;542:14-20.
2. Ashtikar M, Nagarsekar K, Fahr A. Transdermal delivery from liposomal formulations—evolution of the technology over the last three decades. J Control Release. 2016;242:126-140.

## Speaker Profiles



**Rui-Ping Xiao**

Peking University

Professor Rui-Ping Xiao is a Chair Professor and the founding dean of the College of Future Technology at Peking University, and the founding dean of School of Pharmacy at Southeast University. She serves as an Associate Editor of the New England Journal of Medicine. She is appointed as a distinguished professor under the Yangtze River Scholars Program by the Ministry of Education of China and has been awarded the National Science Fund for Distinguished Young Scholars. Professor Xiao is a Member of the Academic Advisory Committee of the Chinese Academy of Medical Sciences. She is a Fellow of the American Society for Clinical Investigation (ASCI) and a Fellow of the International Society for Heart Research (ISHR). She also serves an Executive Council Member of the Biophysical Society of China, and Council Member of the Chinese Association for Laboratory Animal Sciences.

### **Title: Targeting Prolactin Receptor to Treat Neuroinflammatory Diseases**

**Abstract:** Neuroinflammation serves both as a protective response to injury and a key driver of neurological disease progression. Prolactin (PRL) signaling modulates inflammation, and its receptors (PRLR) are highly expressed on peripheral sensory neurons, contributing to pain sensitization. We have identified aberrant activation of PRL signaling as a core mechanism in the pathogenesis of endometriosis, leading to the development of HMI-115, the world's first therapeutic antibody targeting PRLR. In a global, multicenter, randomized, double-blind, controlled Phase II clinical trial for endometriosis, HMI-115 demonstrated a favorable safety profile and significantly alleviated endometriosis-associated dysmenorrhea and non-menstrual pelvic pain, without impacting menstrual cycles or major sex hormone levels. It has received Breakthrough Therapy designation from China NMPA and Fast Track qualification from the US FDA, and Phase III trials are ongoing. Promising results have also been observed in the treatment of migraine and rosacea.

### **References:**

1. Shi FD and Yong VW. Neuroinflammation across neurological diseases. *Science*, 2025, 388(6753):eadx0043.
2. Bernard V, Young J, Binart N. Prolactin - a pleiotropic factor in health and disease. *Nat Rev Endocrinol*, 2019,15(6):356-365.
3. Wang R, Xu S, Cui Q, Chen X, Wang X, Liu J, Liu J, Xin Y, Shen H, Lv F, Zhu L, Hu X, Xiao RP; Single-cell RNA sequencing identifies the prolactin receptor as a therapeutic target in adenomyosis. *Signal Transduct Target Ther*, 2025,10(1):258.
4. Zhu L, Chen ZJ, Liu H, Wang G, Dynowski K, Zhang S, Wang L, Wang W, Gan X, Hou S, Guo R, Zhang X, Ruan H, Xu H, Zhao S, Zhang Y, Liu C, Zhu Y, Liu H, Xu B, Fang S, Tu S, Hu X, Chen X, Xiao RP; Safety and efficacy of subcutaneous injection with HMI-115 versus placebo in endometriosis-associated pain in premenopausal women: a multicentre, double-blind, randomised, proof-of-concept phase 2 trial. *Lancet Obstet Gynaecol Womens Health*, 2025,1:e174–e188.

## Speaker Profiles



**Toshihiro Akaike**

Institute of Science Tokyo (Former Tokyo Institute of Technology)

### EDUCATION

1969 – 1975 Department of Synthetic Chemistry, Graduate School of Engineering, The University of Tokyo (Ph.D in Engineering, The university of Tokyo)

1965 – 1969 Department of Synthetic Chemistry, Faculty of Engineering, The University of Tokyo

### ACADEMIC ACTIVITIES

2010 – present Professor, Frontier Research Organization, Tokyo Institute of Technology

2000 – 2002 Professor, Graduate School of Medicine, Shinshu University

1999 – 2010 Professor, Graduate School of Life Science and Technology, Tokyo Institute of Technology

1990 – 1999 Professor, Department of Life Science and Technology, Tokyo Institute of Technology

1980 – 1990 Assistant Professor, Department of Life Science and Technology, Tokyo Institute of Technology

1975 – 1980 Assistant, The Heart Institute of Japan, Tokyo Women's Medical University

**Title: Design and Development of Cell Recognition/functionally Controllable Biomaterials and Application to Regenerative Medicine and Medical Engineering**

**Abstract:** On the basis of specific cell-recognizable biomaterial design, we have been focusing on the design of generally and chemically engineered biomaterials for the maintenance of stem cells and induction of differentiation into specific cell types. Stem and progenitor cells are highly expected candidate for regenerative medicine because of their ability to differentiate into various cell types for organ replacement. There are many researchers to find an optimal condition for induction of cell differentiation by the combination of growth factors/cytokines and natural extracellular matrices; however, few studies succeeded to design novel biomaterials that mimic growth factor signaling or adhesion molecule. Furthermore, establishment of xeno-free or chemically defined culture conditions is necessary for the clinical applications and engineered biomaterials could be great candidates to realize these conditions. We designed novel functional biomaterials in so-called sugar matrix engineering and cadherin matrix engineering which support functions such as adhesion, proliferation and differentiation of stem cells; especially application for the differentiation of ES/iPS cells into hepatocyte and neural cells for clinical diseases.

## Speaker Profiles



**Yiguang Wang**

Peking University

Professor Yiguang Wang is a Distinguished Professor at Peking University School of Pharmaceutical Sciences and serves as the vice dean for research and academic affairs. His research focuses on smart nanomedicine for disease diagnosis and treatment. He has authored over 70 papers in prestigious journals, including *Nat. Mater.*, *Nat. Nanotechnol.*, *Nat. Commun.*, *J. Am. Chem. Soc.*, etc. Prof. Wang has been funded with prestigious grants including the National Science Fund for Distinguished Young Scholars, the National Science Fund for Excellent Young Scholars, and the Beijing Science Fund for Distinguished Young Scholars. He has been honored with the Youyou Tu Youth Scholar Award, the Bayer Investigator Award. He serves as the associated editor of *Nano Letters*.

### **Title: Ultra-pH-sensitive (UPS) Nanotechnology for Precise Organelle-Targeted Drug Delivery**

**Abstract:** Cancer is a diverse set of diseases with highly heterogeneous genotypes and phenotypes. The complexed tumor microenvironment (TME) compromises the antitumor efficacy of nanomedicines, resulting in a slightly improved therapeutic response as compared with their parent free drug, although most mitigate the adverse effect in clinic. It has been demonstrated that the design and evaluation of traditional nanomedicines focused on their macroscopic distribution in tumor tissues, lacking responsive drug delivery strategies and suitable pharmacokinetics methods. Thus, there is a lack of deep understanding of drug delivery mechanism at multi-scales (e.g. tissue, cell, organelle, and sub-organelle), making it difficult to guide the rational design of efficient nanomedicines. Recently, we developed a novel ultra-pH-sensitive (UPS) nanotechnology based on the cooperative self-assembly of ionizable block copolymers. We further expanded this nanotechnology to a combinatorial library of UPS nanomedicines that composed of three modules: (i) a stimuli-responsive module for the sensing and remodeling of the complex tumor microenvironment; (ii) on-demand release module for precise organelle-targeted delivery of therapeutics *in vivo*; (iii) multi-drug module for the synergistic efficacy of combined therapy. The UPS drug delivery nanotechnology has been exploited for binary reporting of endosome maturation, amplification of tumor microenvironment signals, precise drug delivery, immunotherapy, and nanobiology, etc. We also developed an innovative imaging technology to quantitatively evaluate the transportation and microdistribution of cancer nanomedicines at the tumor tissues, cell, organelle, and target levels. This cooperative nanotechnology provides a potential pharmaceutical platform to advance the fundamental research and clinical translation of nanomedicines.

### **References:**

1. Chen BL<sup>†,\*</sup>, Wan FJ<sup>†</sup>, Zhang Q\*, Wang YG\*. In situ generated vaccine-like pyroptosome for personalized cancer immunotherapy. *Nat. Mater.* 2026, 25, 856-867.
2. Liu JX<sup>†</sup>, Yan Y<sup>†</sup>, Chen BL\*, Wang YG\*. Lysosome-mitochondria cascade targeting nanoparticle drives robust pyroptosis for cancer immunotherapy. *J. Am. Chem. Soc.* 2024, 146, 34568-34582.
3. Chen BL, You FP\*, Zhang Q\*, Wang YG\*. A pyroptosis nanotuner for cancer therapy. *Nat. Nanotechnol.* 2022, 17, 788-798.

**Time: October 29, 2026, 10:40-12:00**  
**Chairs: Wanliang Lu, Jee-Heon Jeong**



**Wanliang Lu**

Peking University

Wanliang Lu is a tenured full professor and doctoral supervisor at Peking University, the Deputy Director of the Beijing Key Laboratory of Advanced Pharmaceutical Preparation, and the Director of the Pharmaceutics Professional Committee of the Chinese Pharmaceutical Association (CPA). He was former Vice Dean of the School of Pharmaceutical Sciences at Peking University and the Chair of the China Local Chapter of Controlled Release Society (CRS). His research involves in tumor drug resistance, liposome, and gene recombinant preparation in the field of biopharmaceutics. He received awards included the year 2009 and the year 2012 First Award of Natural Science of the Ministry of Education, and the year 2019 Second Prize of Natural Science of the Ministry of Education.



**Jee-Heon Jeong**

Sungkyunkwan University

Professor Jee-Heon Jeong is a Professor at the Department of Precision Medicine, School of Medicine, Sungkyunkwan University, Korea. He earned his Ph.D. in Pharmaceutical Sciences from Seoul National University in 2013, specializing in surface camouflage and genetically engineered pancreatic islet transplantation for diabetes treatment. Professor Jeong's research focuses on advanced drug delivery systems, MSC (mesenchymal stem cell) therapy, and islet transplantation. His contributions include the development of stem cell spheroids with enhanced therapeutic efficacy and sustained-release microsphere systems for improving MSC delivery in inflammatory diseases and regenerative medicine. He has published over 150 peer-reviewed papers in leading journals and an H-index of 43. As an Associate Editor of the Journal of Pharmaceutical Investigation and an editorial board member for the Journal of Controlled Release, International Journal of Stem Cells, and Pharmaceutics, Professor Jeong actively contributes to the scientific community.

## Speaker Profiles



**Jae-Young Lee**

Seoul National University

Dr. Jae-Young Lee is an Associate Professor of Bioengineering and Drug Delivery Systems at College of Pharmacy, Seoul National University. He leads a lab focused on protein-based nanocluster systems, with research interests in biomaterial-based nano-platforms for cancer drug delivery and imaging, along with functional protein expression for therapeutic applications. Dr. Lee actively participates in professional organizations, including the Pharmaceutical Society of Korea and the Korean Local Chapter of the Controlled Release Society. He also serves as an Associate Editor for the Journal of Pharmaceutical Investigation and as an Editorial Board Member for the Journal of Controlled Release and Drug Delivery and Translational Research.

**Title: From Within: Harnessing Proteins' Inherent Potential with Protein Nanocluster Technology in Cancer Therapy**

**Abstract:** With the remarkable advancements in nanomedicine, new therapeutic modalities for cancer have been added to the oncological armamentarium. However, despite rapid progress in this field, the number of FDA-approved nanomedicines remains limited. A key challenge stems from the residual toxicity often associated with nanoparticle designs that rely on the conventional enhanced permeability and retention (EPR) effect. To address this issue, the focus must shift towards developing nanoparticles that either bypass the EPR effect or minimize toxicity, even in cases of prolonged retention within the body. Protein-based nanoparticles offer a promising solution, leveraging protein-binding mechanisms for efficient drug delivery while providing additional functionalities unique to proteins. However, traditional protein nanoparticles have faced significant challenges, including irreversible protein denaturation and off-target accumulation, often caused by the use of high concentrations of organic solvents, elevated temperatures, or cross-linking agents during production. Our research presents protein nanoclusters formed by triggering the reversible self-assembly of proteins via the adsorption of hydrophobic anticancer drugs onto proteins. We will also discuss instances where the albumin and hemoglobin nanoclusters facilitated effective cancer treatments.

**References:**

1. Hypoxia-alleviating hemoglobin nanoclusters for sensitizing chemo-photodynamic therapy of cervical cancer. *Chem Eng J*, 457:141224, 2023
2. Enhancement of the therapeutic efficacy of the MAP regimen using thiamine pyrophosphate-decorated albumin nanoclusters in osteosarcoma treatment. *Bioeng Transl Med*, e10472, 2022

## Speaker Profiles



### Xiangrong Song

Sichuan University

Xiangrong Song is a full professor at Sichuan University and a pharmaceutical scientist at National Key Laboratory of Biotherapy. She is also a faculty member in the Department of Critical Care Medicine, Frontiers Science Center for Disease-related Molecular Network, West China Hospital. She received her Ph.D. degree from Sichuan University in 2008. Dr. Song became a full professor at Sichuan University in 2015. From 2016 to 2018, as a visiting professor, she studied immunology and nanomedicine at Dana-Farber Cancer Institute and Brigham and Women's Hospital, Harvard Medical School.

Dr. Song lab has been focusing on the R&D of mRNA therapeutics based on the novel targeting delivery nano-systems for more than 15 years. The novel nano-adjuvant (WGa01) she led has already received emergency use authorization (EUA) in China in 2023, while one first-in-class mRNA tumor therapeutic vaccine against Epstein-Barr virus she headed has been launched in Hainan in China in 2026. Moreover, 8 mRNA drug candidates have entered clinical trials after the approval by the U.S. FDA and China NMPA. She has authored more than 70 papers published in Nat Nanotechnol, Circulation, Nat Comm, Sci Adv, Adv Mat, Adv Funct Mat, etc. as a corresponding author. She is also an inventor of more than 130 issued/pending patents worldwide. The technologies that Dr. Song has developed formed the basis for the launch of the biotechnology company called WestGene Biopharma which is translating.

**Title: From mRNA Cancer Vaccines to in vivo CAR-T: Delivery-Driven Innovation and Clinical Translation**

#### Abstract:

- Overview of mRNA therapeutics
- The underlying technologies for mRNA drug innovation: the rational design and clinical translation of lipid nanoparticles (LNP)
- To share the perspectives on optimizing mRNA tumor vaccines or in vivo CAR-T cell therapy and the interim clinical data
- To discuss key considerations for clinical development strategies and combination opportunities in the evolving immunotherapy landscape

#### References:

1. Chen Y<sup>#</sup> and Song X\*, et al. An immunoenhancer-engineered mRNA vaccine for Epstein-Barr virus-associated malignancies. Sig Transduct Target Ther 2026
2. Duan X<sup>#</sup> and Song X\*, et al. Reprogramming mRNA delivery tropism via nitrogen-to-sulfur substitution in ionizable lipids. Adv Mat 2026
3. Zhang Y<sup>#</sup> and Song X\*, et al. A novel dual-targeting strategy of nanobody-driven protein corona modulation for glioma therapy. Acta Pharm Sin B 2025



## Speaker Profiles



**Jin-Wook Yoo**

Pusan National University

### Education and Professional experience

|                |                                                                            |
|----------------|----------------------------------------------------------------------------|
| 1995 – 2001    | B.S. in School of Pharmacy, Pusan National University                      |
| 2001 – 2003    | M.S. in School of Pharmacy, Pusan National University                      |
| 2003 – 2008    | Ph.D. in Pharmaceutical Sciences, University of Missouri, Kansas City, USA |
| 2008 – 2011    | Postdoctoral scholar, Department of Chemical Engineering, UCSB, USA        |
| 2011 – 2012    | Professor, College of Pharmacy, Chosun University                          |
| 2012 – present | Professor, College of Pharmacy, Pusan National University                  |

### Academic Activities

- Director, the Research Institute for Drug Development, Pusan National University
- Chair, Academic Committee, The Pharmaceutical Society of Korea
- Vice Chair, Academic Committee, The Korean Pharmaceutical Society
- Expert Member, Central Pharmaceutical Affairs Committee, Ministry of Food and Drug Safety (MFDS)

### Title: Lumen-to-target Nanoplatfoms for Localized Therapy of Gastrointestinal Diseases

**Abstract:** This presentation introduces innovative lumen-to-target nanoplatfoms designed to overcome biological barriers for the precision local therapy of gastrointestinal diseases. By delivering therapeutics directly from the GI lumen to lesion sites, these strategies bypass systemic circulation to maximize efficacy while eliminating off-target toxicity. Sophisticated delivery cascades and pathomicroenvironment-activated systems tailored for *Helicobacter pylori*-infected ulcers, ulcerative colitis, and colorectal cancer are discussed. Key approaches include reversible shielding strategies using on-site sol-gel-sol transitions and targeting accessible receptors at the colorectal lumen-tumor interface for deep tissue penetration. Collectively, these advanced nanomedicines provide a robust framework for overcoming the limitations of conventional systemic administration in managing GI disorders.

## Speaker Profiles



**Lichen Yin**

Soochow University

Dr. Yin is a Professor in the Institute of Functional Nano & Soft Materials (FUNSOM), Soochow University. His research interest is focused on the engineering of polymeric and/or bio-inspired nanomaterials that can overcome multiple physiological barriers and deliver biomacromolecular drugs such as nucleic acids, proteins, and peptides. He has published over 200 peer-reviewed papers, with a total citation of 11000 and an H-index of 60. He is the recipient of the National Science Fund for Distinguished Young Scholars of China, and is serving as the Associate Editor for Journal of Controlled Release and Biomaterials Science.

### Title: Cytosolic Protein/peptide Delivery Platforms

**Abstract:** Protein/peptide therapeutics targeting the intracellular machinery holds great potentials for disease treatment. However, effective cytosolic delivery carriers/strategies are still highly lacking. Herein, we first developed a series of pro-proteins reversibly endowed with negative surface charges, thus realizing efficient nano-assembly with polycations, robust cytosolic delivery, and trigger-responsive, traceless restoration of protein functions intracellularly. With the attempt to deliver native proteins, we engineered phenylboronic acid-embedded, hyperbranched poly( $\beta$ -amino ester)s that can encapsulate proteins with diverse molecular weights and isoelectric points via N-B coordination and feature highly efficient cytosolic delivery. Such a universal platform works efficiently for enzymes, toxins, antibodies, and CRISPR-Cas9 ribonucleoproteins. Then, we developed a unique carrier-free cytosolic protein delivery platform based on reversible tagging of proteins with L-type amino acid transporter 1 (LAT1) substrate, and demonstrated its high efficiency and universality in mediating endocytosis-independent and cancer-selective cytosolic protein delivery. Moreover, we developed an artificial receptor-mediated, carrier-free platform for cancer-selective cytosolic protein/peptide delivery. Tumor cell membranes were metabolically labeled with azido sugar to display abundant azide groups, and DBCO-decorated proteins/peptide were then directly delivered into the cytosol through biorthogonal click reaction, bypassing endocytosis and endolysosomal entrapment. This strategy circumvents the bottlenecks of low native receptor density and low tumor selectivity. These versatile protein delivery platforms render powerful tools for biological research and protein pharmaceuticals.

### References:

1. X. Liu<sup>#</sup>, Z. Zhao<sup>#</sup>, F. Wu, Y. Chen, L. Yin\*. Adv Mater, 2022, 34, 2108116.
2. Z. Zhao<sup>#</sup>, X. Liu<sup>#</sup>, M. Hou, R. Zhou, F. Wu, J. Yan, W. Li, Y. Zheng, Q. Zhong, Y. Chen, L. Yin\*. Adv Mater, 2022, 34, 2110560.
3. X. Liu<sup>#</sup>, Z. Zhao<sup>#</sup>, W. Li, N. Liu, Q. Yang, L. Yin\*. Angew Chem Int Ed, 2023, 62, e202307664.
4. X. Liu<sup>#</sup>, Z. Zhao<sup>#</sup>, W. Li<sup>#</sup>, M. Ren, H. Zhang, D. Cao, Y. Wang, H. Yang, Y. Li, M. Zhu, L. Xie\*, L. Yin\*. Adv Mater, 2025, 37, 2412366.
5. H. Zhang<sup>#</sup>, Y. Li<sup>#</sup>, Y. Feng, K. Cai, Z. Zhao, J. Cheng\*, X. Liu\*, L. Yin\*. Nat Commun, 2026, revised.



**Time: October 29, 2026, 13:30-14:50**

**Chairs: Wei Wu, Yu Seok Youn**



**Wei Wu**

Fudan University

Dr. Wei Wu earned his Bachelor's and Master's degrees in Science and Medicine from the School of Pharmacy at the Second Military Medical University. He later obtained his PhD in 1999 from the School of Pharmacy, West China University of Medical Sciences. In 2000, he joined the School of Pharmacy at Fudan University, where he currently serves as a full professor in the Department of Pharmaceutics. He once held the position of Vice Dean of the school.

Dr. Wu has been honored with several distinguished awards, including "New Century Excellent Teachers" by the Ministry of Education, "Shanghai Excellent Discipline Leaders," "Shanghai Twilight Scholar," and "Shanghai Excellent Young Teachers of Universities." He also serves as an expert in drug evaluation for the State Drug Administration (SDA).

Currently, Dr. Wu holds key editorial roles in several prestigious journals: he is Vice Editor-in-Chief of *Acta Pharmaceutica Sinica B*, Section Editor-in-Chief of *Pharmaceutics*, and Associate Editor for *Chinese Chemical Letters* and *Journal of Drug Delivery Science and Technology*. In addition, he serves on the editorial boards of numerous international journals, such as *AAPS PharmSciTech*, *Archives of Pharmacal Research*, *Asian Journal of Pharmaceutical Sciences*, *Current Drug Delivery*, *Drug Delivery*, *Drug Delivery Letters*, *International Journal of Pharmaceutics (X)*, *Pharmaceutical Research*, and *Processes*. He has also contributed as a Guest Editor for special issues in *Acta Pharmaceutica Sinica B*, *Advanced Drug Delivery Reviews*, *International Journal of Pharmaceutics*, *Pharmaceutical Research*, and *Pharmaceutics*.

His research focuses on the biological fate of drug carrier systems, oral nanoparticulate drug delivery systems, novel dosage forms, and innovative pharmaceutical technologies. To date, Dr. Wu has published more than 300 peer-reviewed articles in the fields of pharmaceutics and nanomedicine.



**Yu Seok Youn**

Sungkyunkwan University

2026. 01 – present Fellow, The Korean Academy of Science and Technology (KAST)  
2026. 01 – present Secretary General of Korean Society of Pharmaceutical Sciences and Technology (KSPST)  
2024. 01 – present Associate Editor, *Journal of Controlled Release*  
2017. 01 – 2022.12 Editor (Pharmaceutics section), *Archives of Pharmacal Research*  
2006. 07 – 2007.08 Post-doctoral fellow, Department of pharmaceutics and pharmaceutical chemistry, University of Utah  
2001.01 – 2024. 02 Ph.D., School of Pharmacy, Sungkyunkwan University (SKKU)

## Speaker Profiles



**Jong Oh Kim**

Yeungnam University

Dr. Jong Oh Kim is a professor at the College of Pharmacy and director of the Global Center of Excellence for AMR RNA Nanovaccine Development at Yeungnam University, Republic of Korea. He received his Bachelor of Pharmacy and Master degrees in Pharmaceutics from the College of Pharmacy, Yeungnam University in 1997 and 2000, respectively. After working at the Dong-A Pharmaceutical Research Lab for 7 years, he joined the Ph.D. program at the University of Nebraska Medical Center (UNMC), Omaha, NE, USA. In 2010, he received his Ph.D. degree from UNMC and obtained postdoctoral training at the Center for Drug Delivery and Nanomedicine at UNMC. In 2011, he joined the faculty of the College of Pharmacy at Yeungnam University. Currently, he serves as an Associate Editor for the Journal of Controlled Release and an Editor for the Journal of Pharmaceutical Investigation. His main research interests focus on cancer immunotherapy using hybrid nanomaterials, as well as the advanced development of RNA nanovaccines to overcome antimicrobial resistance.

### **Title: Binary Mineral Nanoparticles Enable Intravascular Delivery of Metal Ions to Tumors for Metalloimmunotherapy**

**Abstract:** Although disruptions in metal ion homeostasis leading to severe cellular damage and regulated cell death are a promising strategy for cancer immunotherapy, challenges in overloading these ions to tumor cells without premature release have limited their therapeutic applications. In this study, we develop binary mineral nanoparticles incorporating both  $\text{Ca}^{2+}$  and  $\text{Na}^{+}$  ions to enhance the cytotoxic effects of ion interference in cancer immunotherapy. Engineered using a microfluidic system for uniform size distribution and scalability, these nanoparticles exhibit pH-sensitive ion release. Systemically administered, they preferentially accumulate in tumors, elevating intracellular  $\text{Ca}^{2+}$  and  $\text{Na}^{+}$  levels and inducing immunogenic cell death without calcium channel activators or other small-molecule inducers. Our binary mineral nanoparticles significantly enhance antitumor immunity, especially when combined with an immune checkpoint inhibitor, leading to long-term immunity and inhibition of metastasis. This nanotechnology-enabled synergistic delivery of  $\text{Ca}^{2+}$  and  $\text{Na}^{+}$  ions represents a promising adjunct to existing metalloimmunotherapy strategies for cancer eradication.

### **References:**

1. BL Nguyen et al., Binary Mineral Nanoparticles Enable Intravascular Delivery of Metal Ions to Tumors for Metalloimmunotherapy. *Nature Communications*, 2026, 17, 1556, 1-21.
2. ND Le et al., Antiangiogenic Therapeutic mRNA Delivery Using Lung-Selective Polymeric Nanomedicine for Lung Cancer Treatment. *ACS Nano*, 2024, 18, 8392-8410.

## Speaker Profiles



**Xinyi Jiang**

Shandong University

Xinyi Jiang obtained his Ph.D. from Fudan University in 2012 and served as the postdoctoral researcher at Stanford University during 2013 to 2017. Dr. Jiang is now a full professor at Shandong University. Dr. Jiang has published over 50 original research papers in prestigious journals such as Nature Biotechnology, Nature Cancer, Nature Nanotechnology, Science Translational Medicine, PNAS, Science Advanced and etc. Dr. Jiang is an Editorial Board member of Scientific Reports, Asian Journal of Pharmaceutical Sciences, and etc. He is also a youth member of the Chinese Pharmaceutical Association Committee and a member of the China Particle Society-Bioparticle Professional Committee. In the last 5 years, he has presided many a project including the National Natural Science Foundation of China Research, Funds for Shandong Provincial Key Research and Development Program (Major Scientific and Technological Innovation Project), Fundamental Research Funds of Shandong Province and Fund of Stanford University, and participated in 2 research project of NIH RO1 Research Fund in the United States. As the Project leader, he completed one of the Alliance for Cancer Gene Therapy (ACGT) funds. Dr. Jiang's research is now focusing on Nucleic acid drug delivery, nanomedicine and tissue regeneration.

**Title: In vivo CAR-macrophages Stimulate Comprehensive Tumoricidal Immunity in Multiple Malignancies**

**Abstract:** Macrophages are widely distributed in various tissues and play pivotal roles in the pathogenesis of numerous diseases. Accordingly, modulating macrophage function and plasticity represents an effective therapeutic strategy for these disorders. Engineered chimeric antigen receptors (CARs) constitute a novel modality of immune cell therapy. CAR-modified macrophages are capable of phagocytosing specific target cells, presenting antigens, and remodeling the immune microenvironment. The in situ programming strategy streamlines the conventional therapeutic paradigm of CAR-macrophage-mediated immunotherapy (encompassing autologous cell isolation, ex vivo engineering, and systemic reinfusion), circumventing potential risks associated with systemic reinfusion of CAR macrophages. The in situ programming strategy for phagocytosis-enhanced CAR macrophages broadens the application prospects of CAR-based immune cell therapy.

### References:

1. Jing Zhang<sup>#</sup>, Chen Chen<sup>#</sup>, et al., Xinyi Jiang\*. Immunostimulant hydrogel for the inhibition of malignant glioma relapse post-resection. Nature Nanotechnology, 2021, 16, 538–548.
2. Xiaotian Zhao, et al., Xinyi Jiang\*. A logic-gated tri-specific engager enhances macrophage killing of cancer cells in solid tumors. Nature Biotechnology, 2026, DOI:10.1038/s41587-026-03057-9.
3. Yulin Zhang, et al., Xinyi Jiang\*. Engineered probiotics recruit CAR macrophages and establish immune memory to eradicate heterogeneous glioblastoma in mice. Cell Host & Microbe, 2026, DOI:10.1016/j.chom.2025.12.014.
4. Weiqiang Jing<sup>#</sup>, Maosen Han<sup>#</sup>, et al., Xinyi Jiang\*. An in-situ engineered chimeric IL-2 receptor potentiates the tumoricidal activity of proinflammatory CAR macrophage in renal cell carcinoma, Nature Cancer, 2025, 6, 838-853.
5. Zhenguo Wu, et al., Xinyi Jiang\*. Engineered CAR-monocytes coordinate fibrosis clearance and cardiac regeneration following myocardial infarction. Cell Stem Cell, 2026, DOI:10.1016/j.stem.2026.04.003.

## Speaker Profiles



**Yu Seok Youn**

Sungkyunkwan University

2026. 01 – present Fellow, The Korean Academy of Science and Technology (KAST)  
2026. 01 – present Secretary General of Korean Society of Pharmaceutical Sciences and Technology (KSPST)  
2024. 01 – present Associate Editor, Journal of Controlled Release  
2017. 01 – 2022. 12 Editor (Pharmaceutics section), Archives of Pharmacal Research  
2006. 07 – 2007. 08 Post-doctoral fellow, Department of pharmaceutics and pharmaceutical chemistry, University of Utah  
2001.01 – 2024. 02 Ph.D., School of Pharmacy, Sungkyunkwan University (SKKU)

### Title: Photoactive Nanodelivery Platforms for ROS-Mediated Cancer Treatment

**Abstract:** Reactive oxygen species (ROS) act as a concentration-dependent double-edged sword in cancer. Low to moderate ROS levels promote tumor growth, angiogenesis, and metastasis, whereas excessive ROS overwhelms antioxidant defenses and induces oxidative damage, mitochondrial dysfunction, apoptosis, and ferroptosis. ROS also modulate tumor-associated macrophages and the tumor immune microenvironment. This presentation highlights photoactive nanoparticle platforms that integrate photodynamic, photothermal, and chemodynamic therapies for synergistic cancer treatment. Upconversion nanoparticles convert near-infrared light into ultraviolet or visible emissions, enabling deep-tissue activation of photosensitizers and catalytic components. Oxygen-delivering hemoglobin microgels, virus-mimetic gold nanorods, and iron-loaded nanocarriers further enhance ROS generation and therapeutic efficacy. Targeting strategies using folate ligands or biomimetic membrane coatings improve tumor selectivity and stability. These multifunctional platforms offer promising approaches to overcome hypoxia, insufficient ROS production, and treatment resistance in aggressive solid tumors.

### References:

1. Le XT, Nguyen NT, Lee WT, Yang Y, Choi HG, Youn YS\*. Peroxidase-Mimicking Iron-Based Single-Atom Upconversion Photocatalyst for Enhancing Chemodynamic Therapy. *Adv. Funct. Mater.* 2024;34(34):2401893.
2. Kim H, Yoon J, Kim HK, Lee WT, Nguyen NT, Le XT, Lee EH, Lee ES, Oh KT, Choi HG, Youn YS\*. Upconverting nanoparticle-containing erythrocyte-sized hemoglobin microgels that generate heat, oxygen and reactive oxygen species for suppressing hypoxic tumors. *Bioact. Mater.* 2023;22:112-126.

## Speaker Profiles



**Changyou Zhan**

Fudan University

Dr. Changyou Zhan is a distinguished Professor of pharmacology at School of Basic Medical Sciences, Fudan University. He obtained his Ph.D. in Pharmaceutics from Fudan University in 2010. His recent research focuses on understanding the in vivo delivery process of lipid-based therapeutics. Dr. Zhan has published >150 peer-review scientific papers with citation by >9800 times (H-index 56). His scientific achievements have been honored by scientific awards in China and the international, including, the Youth Science Award of MOE of China (2022), National Outstanding Youth Funds of NSFC (2021), Natural Science Award of MOE of China (2016), Natural Science Award of Shanghai City (2016), Postdoctoral Fellow Award of American Association of Pharmaceutical Scientists (2013) and National Outstanding Doctoral Dissertation Award of China (2012).

### Title: PEGylated Lipid and Pre-existing anti-PEG Antibodies

**Abstract:** Polyethylene glycol (PEG) has been extensively utilized in food, cosmetics, and pharmaceutical fields, especially in the realm of nanomedicines, where it serves as a pivotal excipient for extending the nanoparticles circulation half-life. Contrary to its historical perception as non-immunogenic, pre-existing anti-PEG antibodies have been widely detected in human who even have never been exposed to PEGylated therapeutics, which considered to be associated with serious side effects of PEGylated nanomedicines including infusion reactions and other hypersensitive reactions. Herein, we elucidated the prevalence and distribution characteristics of pre-existing anti-PEG antibodies in human blood samples, and investigated its binding with PEG. Pre-existing anti-PEG IgM were found to primarily recognize the PEG terminus, especially methoxy, which is the only PEG terminus contained in currently marketed PEGylated nanomedicines. While hydroxy PEG (OH-PEG) significantly evaded binding with pre-existing anti-PEG IgM among most clinical samples from three hospitals. Noteworthy, substituting OH-PEG for MeO-PEG significantly mitigated complement activation of lipid nanoparticle (LNP) caused by pre-existing anti-PEG IgM, thereby markedly enhancing stability and reducing mRNA leakage in human serum. Additionally, LNP modified with OH-PEG exhibited reduced immunogenicity, which was crucial for repeated drug administrations. The present work elucidated the crucial role of OH-PEG in evading human pre-existing anti-PEG antibodies, and discovered that the current pre-clinical studies inadequately simulated the biological effects of clinical pre-existing anti-PEG antibodies on such formulations through interspecies study, which had a profound impact on clinical translation of PEGylated nanomedicines.

### References:

1. Pan F<sup>#</sup>, Xu Q<sup>#</sup>, Tian K<sup>#</sup>, Luo G, Qi Y, Ma Y, Ying T, Qian J, Yang Z\*, Zhan C\*, Jiang K\*. Anti-PEG Single-Chain Variable-Fragment Antibody-Assisted In Vivo Process Decoding of PEGylated Nanomedicines. *ACS Nano* 2026, 20 (31), 22215-22232.
2. Ding T<sup>#</sup>, Fu J<sup>#</sup>, Yang M, Zhang Z, Ma Y, Wu E, Guo Z, Lin S, Wang S, Liu X, Wang W, Wang B\*, Li G\*, Zhan C\*. Hydroxyl-Terminated Polyethylene Glycol Evades Human Pre-existing Anti-polyethylene Glycol Antibodies. *ACS Nano* 2026, 20, 24, 17780-17794.
3. Fu J<sup>#</sup>, Ding T<sup>#</sup>,\*, Li G, Wu E, Wei A, Liu M, Wang B\*, Zhan C\*. Standardizing pre-existing anti-PEG antibody detection: A key to clarifying their binding features and clinical relevance. *J Pharm Anal* 2026, 16(9): 101609.

**Time: October 29, 2026, 14:50-16:30**  
**Chairs: Huile Gao, Ran Mo**



**Huile Gao**

Sichuan University

Dr. Huile Gao received the B.S. and Ph.D. degrees from School of Pharmacy, Fudan University. Then he joined the West China School of Pharmacy, Sichuan University.

Dr. Gao's research interests focus on the design, synthesis, characterization and evaluation of stimuli responsive nanomaterials for drug delivery to improve treatment and diagnosis of human diseases especially tumor and brain diseases.

He is highly cited scientist (Clarivate Analytics), the highly cited Chinese researcher (Scopus), and has published over 190 peer-reviewed articles with an H-index of 85. He was awarded as Young Pharmaceutics Scientist by Chinese Pharmaceutical Association. He is now serving as Executive Associate Editor of Acta Pharmaceutica Sinica B, Military Medical Research and Brain-X, and Editorial Board Member of International Journal of Pharmaceutics, Expert Opinion on Drug Delivery, etc.



**Ran Mo**

China Pharmaceutical University

Ran Mo is a professor at China Pharmaceutical University. He is the recipient of the National Science Fund for Distinguished Young Scholars and National High-Level Young Talent. He also holds concurrent positions including Member of the Nano-Oncology Committee of Chinese Anti-Cancer Association, Youth Committee Member of the Pharmaceutics Committee of Chinese Pharmaceutical Association, and Vice Chair of the Endocrinology and Immunology Committee of Jiangsu Immunological Society. His research focuses on functional biomaterials, micro/nanoformulations, sustained and controlled-release preparations, cellular and biomimicking drug delivery systems. He has published more than 50 papers in journals including Nature Nanotechnology, Nature Communications, Science Advances. He has filed 12 invention patents, among which 7 have been granted and 2 licensed. He has been selected for the National High-Level Young Talent Program, Jiangsu 333 High-Level Talent Training Program (Tier 2), Jiangsu Shuangchuang Talent, Jiangsu Shuangchuang Team, Distinguished Professor of Jiangsu Province, and Young Talent Support Project of China Association for Science and Technology. His academic honors include the Fok Ying Tung Higher Education Young Scientist Award from the Ministry of Education and the Top 100 Excellent Academic Papers Award of Jiangsu Provincial Natural Science.

## Speaker Profiles



**Sangkil Lee**

Chung-Ang University

|                     |                                                                   |
|---------------------|-------------------------------------------------------------------|
| 1999. 03 – 2003. 02 | Ph.D. College of Pharmacy, CHUNG-ANG Univ.                        |
| 1997. 03 – 1999. 02 | M.S. College of Pharmacy, CHUNG-ANG Univ.                         |
| 1993. 03 – 1997. 02 | B.S. College of Pharmacy, CHUNG-ANG Univ.                         |
| 2022. 03 – Present  | Full Professor College of Pharmacy, CHUNG-ANG Univ.               |
| 2012. 03 – 2022. 02 | Assist/Assoc/Full Professor / College of Pharmacy, KEIMYUNG Univ. |
| 2011. 01 – 2012.02  | Assistant Professor / College of Pharmacy, INJE Univ.             |
| 2007. 03 – 2010. 12 | Assistant Professor / Dep. Pharm. Eng., INJE Univ.                |
| 2003. 04 – 2007. 02 | Chief Research Scientist / DAEWOONG Bio-Research Institute        |

**Title: Engineering Human Serum Albumin-A Multifunctional Brain Shuttle for Next-Generation Alzheimer's Disease Therapy**

**Abstract:** Alzheimer's disease (AD) is a progressive neurodegenerative disorder characterized by amyloid- $\beta$  (A $\beta$ ) aggregation, neuroinflammation, and cognitive impairment. Effective treatment remains challenging because of the restrictive blood-brain barrier (BBB) and limited brain delivery of therapeutics. Human serum albumin (HSA) has emerged as a promising platform owing to its excellent biocompatibility, prolonged circulation, intrinsic A $\beta$ -binding capacity, and endogenous BBB transport. Furthermore, HSA can directly inhibit A $\beta$  aggregation, making it an attractive multifunctional platform for AD therapy. This presentation highlights our recent advances in albumin engineering for AD treatment. An HSA-3-amino-1-propanesulfonic acid (HSA-TPS) conjugate was developed to enhance brain delivery and inhibit A $\beta$  aggregation, resulting in reduced oxidative stress, improved BBB permeability, and cognitive recovery in an A $\beta$ <sub>1-42</sub>-induced AD model. We also developed cannabidiol-loaded native HSA nanoparticles (CBD-nHSA-NPs) to overcome the poor solubility and limited brain delivery of cannabidiol. The optimized nanoparticles showed high drug encapsulation, sustained release, enhanced BBB transport, and greater inhibition of A $\beta$  aggregation, neuronal toxicity, and neuroinflammation than free CBD. Together, these studies demonstrate that albumin engineering transforms HSA into a multifunctional brain-targeting platform for next-generation Alzheimer's disease therapeutics.

**References:**

1. Poly (lactic-co-glycolic acid)-3-amino-1-propane sulfonic acid conjugates: A promising strategy to prevent biofilm formation of fluconazole-resistant *Candida albicans*, *Chemical Engineering Journal*, 525, 170732 (2025).
2. Human serum albumin-3-amino-1-propanesulfonic acid conjugate inhibits amyloid- $\beta$  aggregation and mitigates cognitive decline in Alzheimer's disease, *Journal of Controlled Release*, 379, 390-408 (2025).
3. Revolutionizing Alzheimer's treatment: Harnessing human serum albumin for targeted drug delivery and therapy advancements, *Ageing Research Review*, 99 102379 (2024).

## Speaker Profiles



### Yibei Xiao

China Pharmaceutical University

Professor Yibei Xiao is the deputy of the Department of Pharmacology at China Pharmaceutical University. He received a doctorate from the University of Lübeck, Germany in 2014 and conducted postdoctoral research at Cornell University between 2014-2018. His lab mainly works on the mechanisms of nucleic acids immunity and the discovery of drugs that regulate nucleic acids immunity. As the corresponding or first author, he published several papers on Science, Nature, Cell, Mol Cell and Nat Chem Biol.

#### **Title: cGAMP-Mediated Nucleic Acid Immunity: Mechanisms and Therapeutic Targeting**

**Abstract:** Organisms have evolved sophisticated mechanisms to detect and eliminate foreign nucleic acids. Recent years have witnessed the discovery of numerous novel nucleic acid immunity systems. This talk will focus on the mechanisms of several newly identified immunity systems mediated by cyclic guanosine monophosphate–adenosine monophosphate (cGAMP; also known as cyclic GMP-AMP), as well as on therapeutic strategies targeting nucleic acid immunity.

#### **References:**

1. Antiviral signaling of a type III CRISPR-associated deaminase, Science, 2024, 387, 6736.
2. Auto-inhibition and activation of a short Argonaute-associated TIR-APAZ defense system, Nature Chemical Biology, 2024, 20, 512–520.
3. Structural basis for Cas9-directed spacer acquisition in type II-A CRISPR-Cas systems, Molecular Cell, 2026, In press.
4. How type II CRISPR–Cas establish immunity through Cas1–Cas2-mediated spacer integration, Nature, 2017, 550, 137–141.

## Speaker Profiles



### Duhyeong Hwang

Keimyung University

Assistant Professor, College of Pharmacy, Keimyung University (2023–present)

Former Assistant Professor, Dankook University (2022–2023)

Postdoctoral Research Associate, Eshelman School of Pharmacy, UNC Chapel Hill (2020–2022)

Ph.D., Pharmaceutical Sciences, Eshelman School of Pharmacy, UNC Chapel Hill (2015–2020), Advisor: Alexander V. Kabanov

Senior Researcher, Dongwha Pharmaceutical CO., LTD. (2011–2014)

Bachelor & Master in Pharmacy, College of Pharmacy, Yeungnam University (2005–2011)

Research interests: design of polymer- and lipid-based drug delivery systems, organ-targeted drug delivery, machine learning and deep learning in pharmaceutics

### Title: Rational Engineering of Drug-specific Polymer Carriers through Modular Synthesis and Artificial Intelligence-guided Prediction for Precision Delivery

**Abstract:** Matching drug delivery carriers to the physicochemical demands of individual drugs offers a compelling route toward improving therapeutic outcomes while managing off-target toxicity. Yet formulation development in the drug delivery field has long relied on trial-and-error optimization-based approach that is resource-intensive, time-consuming, and often disconnected from clinical translation. Here, we address this bottleneck by constructing drug-specific polymers through modular polymerization platforms, in which the polymer structure and physicochemical properties can be systematically adjusted to match the characteristics of each target compound. Polymeric formulations prepared in this manner outperformed conventional counterparts, with delivery efficiency substantiated across a panel of in vitro assays and in vivo models. To move beyond experimental optimization, we further established an artificial intelligence (AI) framework capable of learning potential polymer–drug interactions and capturing formulation characteristics, which showed the capacity to predict polymeric formulation properties. Taken together, the integration of modular polymer engineering, formulation performance validation, and data-driven AI prediction offers a foundation for programmable delivery vehicles and points toward applicable and intelligent platforms for precision therapeutic delivery.

### References:

1. Hwang, Duhyeong, Jacob D. Ramsey, and Alexander V. Kabanov. "Polymeric micelles for the delivery of poorly soluble drugs: From nanoformulation to clinical approval." *Advanced drug delivery reviews* 156 (2020): 80–118.
2. Lim, Chaemin, et al. "High-dose paclitaxel and its combination with CSF1R inhibitor in polymeric micelles for chemoimmunotherapy of triple negative breast cancer." *Nano Today* 51 (2023): 101884.
3. Song, Younghun, et al. "Interpretable Two-Stage Machine Learning for Early and Full Drug Release Prediction in PLGA Microspheres." *Pharmaceutics* 19.5 (2026): 767.

## Speaker Profiles



**Jee-Heon Jeong**

Sungkyunkwan University

Professor Jee-Heon Jeong is a Professor at the Department of Precision Medicine, School of Medicine, Sungkyunkwan University, Korea. He earned his Ph.D. in Pharmaceutical Sciences from Seoul National University in 2013, specializing in surface camouflage and genetically engineered pancreatic islet transplantation for diabetes treatment. Professor Jeong's research focuses on advanced drug delivery systems, MSC (mesenchymal stem cell) therapy, and islet transplantation. His contributions include the development of stem cell spheroids with enhanced therapeutic efficacy and sustained-release microsphere systems for improving MSC delivery in inflammatory diseases and regenerative medicine. He has published over 150 peer-reviewed papers in leading journals and an H-index of 43. As an Associate Editor of the Journal of Pharmaceutical Investigation and an editorial board member for the Journal of Controlled Release, International Journal of Stem Cells, and Pharmaceutics, Professor Jeong actively contributes to the scientific community.

**Title: Functional Enhancement of Mesenchymal Stem Cells through Surface Engineering and Heterospheroid Technology for Advanced Cellular Therapy**

**Abstract:** Mesenchymal stem cells (MSCs) hold strong promise for regenerative and immunomodulatory therapy, yet clinical translation remains limited by poor post-transplantation survival and inconsistent potency. Our laboratory addresses these limitations through two complementary, non-genetic engineering strategies: surface modification and heterospheroid engineering. Surface camouflage and biomimetic coating technologies—originally developed for islet transplantation—shield transplanted MSCs from immune recognition and inflammatory clearance while preserving their secretory function. In parallel, heterospheroids, in which MSCs are co-assembled with other cell types into three-dimensional aggregates, better recapitulate native tissue microenvironments, enhancing cell-cell crosstalk and post-transplantation retention. Across disease-relevant models, both strategies markedly improve MSC survival and therapeutic efficacy. The talk will close with a brief outlook on our newest extension—an off-the-shelf, engineered nonliving stem cell strategy—for storage-stable cell therapeutics.

### References:

1. Engineering of hybrid spheroids of mesenchymal stem cells and drug depots for immunomodulating effect in islet xenotransplantation, *Science Advances* 8 (34), eabn8614 (2022)
2. Surface-Triggered In Situ Gelation for Tunable Conformal Hydrogel Coating of Therapeutic Cells and Biomedical Devices, *Advanced Functional Materials* 31 (21), 2010169 (2021)
3. Heterospheroid formation improves therapeutic efficacy of mesenchymal stem cells in murine colitis through immunomodulation and epithelial regeneration, *Biomaterials* 271, 120752 (2021)



**Time: October 29, 2026, 16:30-17:50**

**Chairs: Jin-Wook Yoo, Cong Luo**



**Jin-Wook Yoo**

Pusan National University

**Education and Professional experience**

- 1995 – 2001 B.S. in School of Pharmacy, Pusan National University
- 2001 – 2003 M.S. in School of Pharmacy, Pusan National University
- 2003 – 2008 Ph.D. in Pharmaceutical Sciences, University of Missouri, Kansas City, USA
- 2008 – 2011 Postdoctoral scholar, Department of Chemical Engineering, UCSB, USA
- 2011 – 2012 Professor, College of Pharmacy, Chosun University
- 2012 – present Professor, College of Pharmacy, Pusan National University

**Academic Activities**

- Director, the Research Institute for Drug Development, Pusan National University
- Chair, Academic Committee, The Pharmaceutical Society of Korea
- Vice Chair, Academic Committee, The Korean Pharmaceutical Society
- Expert Member, Central Pharmaceutical Affairs Committee, Ministry of Food and Drug Safety (MFDS)



**Cong Luo**

Shenyang Pharmaceutical University

Professor Cong Luo is a Professor at Shenyang Pharmaceutical University and Dean of the Wuya College of Innovation. He also serves as Deputy Director of the International Cooperation Laboratory of the Ministry of Education, Director of the Liaoning Provincial International Cooperation Laboratory, and Head of the Nanobiomedicine Discipline. In recent years, Prof. Luo has published more than 90 SCI-indexed papers in leading journals, including Nature Materials, Nature Communications, and Cell Reports Medicine, with over 6,000 citations. Nine of his papers have been recognized as ESI Highly Cited Papers and two as ESI Hot Papers. He has filed more than 30 invention patents, of which 18 have been granted, and two of his key patented technologies have each achieved technology-transfer contracts exceeding RMB 10 million. He has led 15 research projects, including a Key International Cooperation Project of the National Natural Science Foundation of China and subprojects of the National Key R&D Program of China. Prof. Luo has received numerous honors, including the Fok Ying Tung Education Foundation Young Scientist Award, First Prize of the Liaoning Provincial Natural Science Award, the Liaoning Youth Science and Technology Award, and the Outstanding Science and Technology Worker Award of Liaoning Province. He serves as a member of the Nanomedicine Professional Committee of the Chinese Pharmaceutical Association and a young member of its Pharmaceutics Professional Committee. Since 2020, he has been continuously listed among the World's Top 2% Scientists released by Stanford University and was named a 2025 Clarivate Highly Cited Researcher.

## Speaker Profiles



**Pin Li**

China Pharmaceutical University

Dr. Li earned a Ph.D. in Cell Biology from Peking University and completed postdoctoral training at the University of California, San Diego. Her research focuses on vascular endothelial cells, endothelial secretomics, intercellular interactions, and the pathogenic mechanisms of vascular injury-related diseases, including cerebral stroke, aging, Parkinson's disease, and diabetic complications. She has published in Blood, Nature Communications, Journal of Experimental Medicine, PNAS, and EMBO Molecular Medicine, and is a co-inventor on two international patents. She was selected for the National Program for High-level Young Talents in 2022 and serves on committees of the Chinese Society of Pathophysiology and the Chinese Physiological Society.

### **Title: Endothelial-derived Factor, Clusterin, Regulated Hemostatic Equilibrium by Stabilizing VWF Multimers**

**Abstract:** The coagulation-anticoagulation balance is tightly regulated by endothelial-derived factors, which have not been clearly defined. Here, we report that clusterin, a component of Weibel-Palade bodies (WPBs), plays a crucial role in maintaining hemostatic equilibrium by stabilizing von Willebrand factor (VWF) multimers in plasma. Clusterin was identified by proteomic analysis as a component of the endothelial secretome under both chemical and physical conditions and demonstrated as a WPB component via immunostaining and cotransfection assays. Notably, a significant reduction of clusterin protein level was observed in plasma from patients with type 2A von Willebrand disease. Furthermore, loss of clusterin in mice led to hemorrhagic diathesis and impaired thrombosis, accompanied by reduced high molecular weight (HMW) VWF levels. These defects were rescued by exogenous clusterin administration, underscoring its therapeutic potential. Mechanistically, clusterin binds to the D4N domain of VWF, which competitively inhibits ADAMTS13-mediated proteolysis under shear stress, and thereby preserves HMW VWF multimers essential for hemostasis. This study redefines WPBs as hubs for regulatory proteins and establishes clusterin as a key modulator of VWF multimer quality, offering a paradigm shift in targeting coagulation dysfunction through multimer stabilization rather than protein replacement. Our findings bridge a critical gap in understanding endothelial-driven coagulation homeostasis and suggest a potential therapeutic strategy targeting VWF multimer quality for bleeding disorder diseases.

### **References:**

Ziqi Qiao, et al. Pin Li. Clusterin maintains hemostatic equilibrium by stabilizing VWF multimers in plasma, Blood, 2026

## Speaker Profiles



**Seong Hoon Jeong**

Yonsei University

Professor Jeong received his Ph.D. at Industrial & Physical Pharmacy from Purdue University, 2005 under the guidance of Prof. Kinam Park. With more than 10 years of industry experience in LG Chem and Pfizer (Wyeth), and 17 years of academia in Pusan National University, Dongguk University, and Yonsei University, his research has been focused on cutting-edge pharmaceutical methodologies, including machine learning-driven optimization, Quality by Design, and modeling to streamline formulation development and manufacturing. He is the President-Elect of the Korean Society of Pharmaceutical Science and Technology (KSPST) in 2026.

### **Title: Formulation Development and Stabilization Strategies for Therapeutic Proteins: Overcoming Aggregation and Degradation Pathways**

**Abstract:** Injectable administration remains the primary route for delivering therapeutic proteins, yet developing stable liquid or lyophilized (freeze-dried) formulations presents significant technical challenges. Proteins and monoclonal antibodies (mAb) are inherently unstable and highly susceptible to physical degradation (aggregation and surface adsorption) and chemical degradation (oxidation and cleavage) during processing, storage, and shipping. This presentation explores comprehensive formulation development and stabilization strategies designed specifically for injectable biologics. We examine the rational design of the microenvironment, focusing on pH optimization, ionic strength, and the synergistic use of functional excipients—including cryoprotectants, non-ionic surfactants, and amino acid stabilizers—to prevent protein self-association. Additionally, we address critical engineering considerations, such as mitigating shear stress during aseptic filling and minimizing container-closure interactions. By combining predictive stability testing with target product profiles, this framework provides a systematic approach to ensuring the long-term safety and efficacy of mainly injectable biopharmaceutical products.

### **References:**

1. Ravi M, et al., Machine learning-driven optimization of mRNA-lipid nanoparticle vaccine quality with XGBoost/Bayesian method and ensemble model approaches. *Journal of Pharmaceutical Analysis*, Nov 1, 2024, 100996
2. Shavron H et al., In-use stability of Rituximab and IVIG during intravenous infusion: Impact of peristaltic pump, IV bags, flow rate, and plastic syringes. *International Journal of Pharmaceutics*, 2024, 124577
3. Ravi M, et al., Effects of antimicrobial preservatives on protein folding stability and subvisible particle formation in mAb trastuzumab. *European Journal of Pharmaceutics and Biopharmaceutics*, 2025, 215, 114835
4. Shavron H et al., Evaluation of subvisible particles in human immunoglobulin and lipid nanoparticles repackaged from a multi-dose vial using plastic syringes. *International Journal of Biological Macromolecules*, 2023, 232, 123439

## Speaker Profiles



**Jinhui Wu**

Nanjing University

Jinhui Wu is a Zhicheng Distinguished Professor and Vice Dean of the Medical School at Nanjing University. He is also a Changjiang Scholar Distinguished Professor. He serves on the editorial boards of *Molecular Pharmaceutics* and *Asian Journal of Pharmaceutical Sciences* and is a Young Editorial Board Member of *Acta Pharmaceutica Sinica B*. His research focuses on the design and application of innovative biological drug delivery systems. Supported by multiple national research grants, his work has been published in leading journals, including *Nature Biomedical Engineering*, *Nature Communications*, *PNAS*, *Science Advances*, and *Advanced Materials*, and has been highlighted by *Science* and *Nature Biomedical Engineering*. He has filed more than 40 invention patent applications.

### **Title: Drug Delivery Systems Based on Engineered Living Biological Carriers**

**Abstract:** With advances in synthetic biology and immunoengineering, biomimetic living carriers offer a new research paradigm for tumor immunotherapy. Engineered microorganisms can mimic the sensing, responding, and regulatory functions of natural biological systems; their tumor tropism, self-replication, and programmable expression make it possible to build dynamically tunable platforms for drug delivery and immunomodulation in vivo. This report presents our team's progress on engineered living carriers for antitumor immune regulation. Through microbial metabolic engineering and synthetic gene circuit design, we have constructed bacterial systems that sense tumor microenvironment signals and respond in a programmed manner, achieving precise expression and release of immunomodulatory molecules, antigens, and metabolic factors, thereby promoting immune cell infiltration, enhancing antigen presentation, and activating specific antitumor immune responses. These studies further reveal the role of engineered live bacteria in remodeling the tumor immune microenvironment and promoting the formation of immunological memory. In parallel, we have developed safety-oriented carriers with self-limiting growth and controllable clearance, as well as multi-responsive smart delivery systems, providing new strategies for the tunable delivery of biomimetic biologics and for precision tumor immunotherapy.

### **References:**

1. *Adv. Mater.* 2026, 38(23): e19052.
2. *J. Control. Release.* 2026, 390: 114548.
3. *ACS Nano.* 2025, 19(5): 5376-5391.
4. *Adv. Mater.* 2023, 35(38): e2303357.
5. *Nat. Biomed. Eng.* 2022, 6(1): 44-53.



## Speaker Profiles



**Soyoung Shin**

Chung-Ang University

### EDUCATION

2005. 09 – 2011. 05 State University of New York at Buffalo, USA Ph.D. in Pharmaceutical Sciences

2002. 03 – 2004. 02 Seoul National University, Seoul, Korea M.Sc. in Pharmaceutical Sciences

1998. 03 – 2002. 02 Seoul National University, Seoul, Korea B.Sc. in Pharmacy

### WORK EXPERIENCE

2024. 03 – Present Associate Professor, College of Pharmacy, Chung-Ang University, Korea

2012. 03 – 2024. 02. Professor, College of Pharmacy, Wonkwang University, Korea

2011. 07 – 2012. 02. PK Scientist, Clinical Pharmacokinetics, AstraZeneca, USA

**Title: Beyond Conventional in vitro–in vivo Correlation: Linking Formulation Composition to Pharmacokinetics and Pharmacodynamics**

**Abstract:** The development of sustained-release formulations often relies on repeated in vitro and in vivo studies to identify formulations with desirable pharmacokinetic and pharmacodynamic profiles. This presentation introduces a formulation-driven, model-informed framework integrating design of experiments, in vitro dissolution testing, in vitro–in vivo correlation (IVIVC), and population pharmacokinetic/pharmacodynamic modeling. In this framework, formulation composition is quantitatively linked to drug-release parameters, which are subsequently incorporated into models describing in vivo dissolution, absorption, systemic exposure, and pharmacological response. Representative studies of sustained-release formulations will demonstrate how formulation variables can be linked sequentially to dissolution profiles, plasma concentration–time courses, and pharmacodynamic response–time profiles. The developed models characterize formulation-dependent differences and enable prediction of the in vivo behavior of formulations not used for model development. By predicting pharmacokinetic and pharmacodynamic outcomes directly from formulation composition, this approach extends conventional IVIVC beyond the relationship between dissolution and systemic exposure. The proposed framework may support rational formulation optimization, selection of promising formulation candidates, and reduction of empirical in vivo experiments during sustained-release product development.

**Time: October 29, 2026, 17:50-18:15**

**Chair: Hu-Lin Jiang**



**Xiaoxuan Liu**

China Pharmaceutical University

Professor Liu received her Ph.D. in Chemistry from Wuhan University, China, in June 2010, and simultaneously obtained her Ph.D. in Chemistry from Aix-Marseille University, France, in August of the same year. From September 2010 to May 2015, she conducted research at the Marseille Cancer Research Center (INSERM) and the Center for Interdisciplinary Nanoscience of Marseille (CNRS), France, where she was awarded postdoctoral fellowships from the French Association for Prostate Cancer Research and the French Association against Myopathies.

Since September 2015, she has been working at the Center for Advanced Drug Delivery and Materials, Institute of Pharmaceutical Sciences, China Pharmaceutical University. She was selected for the Jiangsu Specially-Appointed Professor Program in 2015 and the National Overseas High-level Talent Youth Program in 2016.

Her research primarily focuses on developing novel self-assembled nanomaterials based on dendrimers, and utilizing them to construct safe and efficient nucleic acid drug delivery platforms. This work aims to improve the druggability of nucleic acid therapeutics for the treatment of refractory diseases such as cancer and viral infections. In recent years, her research findings have been published in academic journals including PNAS, Nat. Commun., J. Am. Chem. Soc., Angew. Chem. Int. Ed., Adv. Funct. Mater., Small, and J. Control. Release, and have been highlighted or featured as cover stories by journals such as Nature Chemistry. She has applied for 7 Chinese invention patents, with 1 granted. She has led and participated in multiple provincial and ministerial research and talent projects, as well as international cooperation projects. She is the Principal Investigator of the Innovation Talent Training Program of the China Scholarship Council (CSC) and the Sino-French "Cai Yuanpei" International Exchange and Cooperation Program.

She currently serves as a committee member of the Nanobiology Branch of the Biophysical Society of China, a youth committee member of the Pharmaceutics Professional Committee of the Chinese Pharmaceutical Association (CPA), and a youth editorial board member for the Journal of China Pharmaceutical University and the Asian Journal of Pharmaceutical Sciences.

## Editor Profiles



**Panpan Yang**

Exploration

Panpan Yang, Managing Editor of Exploration Journal, Secretary-General of the Youth Editorial Committee, and a full-time faculty member of the College of Life Sciences, Henan University. She graduated from the National Reference Laboratory for Veterinary Drug Residues (Huazhong Agricultural University) in 2013, and joined the Henan Key Laboratory of Brain-Targeting Bio-Nanomedicines at Henan University in 2016, where she has long been engaged in scientific research and platform administrative management. As one of the first core editors since the founding of Exploration, she has in-depth experience in the full workflow of journal operation, taking the lead in core tasks including the recruitment and management of the editorial board and editorial team, the organization of major academic conferences, research project application, and the international promotion of the journal's brand. She has served as the sub-forum secretary for 4 large-scale academic exchange conferences as a core participant, undertaken 4 teaching reform projects (including 2 provincial-level ones), and presided over and participated in 1 special provincial-level project for university laboratory construction and management. She has accumulated systematic and rich practical experience in interdisciplinary scientific research management and academic journal operation.



**Yin Liu**

Materia Medica,  
Chinese Academy  
of Medical Sciences

Yin Liu, M.D., Director of the Editorial Office of Acta Pharmaceutica Sinica B (APSB). She graduated from Shenyang Pharmaceutical University in 2006 and received her doctoral degree from the Institute of Materia Medica, Chinese Academy of Medical Sciences in 2011. She participated in the founding of APSB the same year and has nearly 16 years of experience in English academic journal editing. She was honored as an "Outstanding Editor" by the Chinese Pharmaceutical Association (2019) and received the China Excellence Action Plan Outstanding Editor Award (2021). She serves as the responsible editor for award-winning papers recognized by China Association for Science and Technology, the China Association of Chinese Medicine, and Chinese Academy of Medical Sciences. She is a key contributor to the Excellence Action Plan Leading Journal Program (Phases I & II) and a member of the International Exchange Committee of the Chinese Society for Scientific and Technical Periodicals.



**Huanfang Guo**

Chinese Chemical Letters

Huanfang Guo received his PhD from the Academy of Military Medical Sciences. He serves as Director of the Journal Center, Institute of Materia Medica, Chinese Academy of Medical Sciences & Peking Union Medical College, holding the professional title of Professor of Editing (编审).

Director of the Editorial Office, Acta Pharmaceutica Sinica (药学报)

Executive Editor-in-Chief / Director of the Editorial Office, Chinese Chemical Letters

Chief-Editor, Green Synthesis & Catalysis

Editorial Board Member, Chinese Journal of Medicinal Chemistry

Member of the Medical Journal Committee, China Editology Society of Science Periodicals

Member of the Journal Publishing Working Committee, Chinese Pharmaceutical Association

Member of the Medicinal Chemistry Committee, Chinese Pharmaceutical Association

Member of the Geriatric Pharmacy Committee, Chinese Pharmaceutical Association  
Member of the Molecular and Biochemical Pharmacology Committee, Chinese Pharmacological Society

**Time: October 29, 2026, 18:15-18:30**

**Chair: Hu-Lin Jiang**



**Hu-Lin Jiang**

China Pharmaceutical University

Hu-Lin Jiang is a Leading Academic Talent in Drug Innovation at China Pharmaceutical University, a doctoral supervisor and a recipient of the Jiangsu Provincial Outstanding Youth Fund. He has long been engaged in research on intelligent drug delivery systems and their druggability. He has presided over more than 10 projects, including the Key International (Regional) Cooperation and Exchange Program of the National Natural Science Foundation of China, the General Program, the National Key Research and Development Program of the Ministry of Science and Technology, and the Independent Deployment Research Project of Lingang National Laboratory. He has published over 200 research papers, including in *Nat Biomed Eng*, *Nat Commun*, *Sci Adv*, *Adv Mater*, etc., which have been cited more than 12,400 times with an H-index of 61. He has filed 52 patent applications, including 5 PCT patents, and has been granted 24 invention patents, 5 of which have been successfully transferred. He serves as a Standing Member of the Endocrine and Immunity Professional Committee of the Jiangsu Society for Immunology, a Member of the Bioparticle Professional Committee of the Chinese Society of Particuology. He was recognized as a Leader of the Outstanding Scientific and Technological Innovation Team of Jiangsu Higher Education Institutions, received the First Prize of the Jiangsu Medical Science and Technology Award and the Jiangsu Pharmaceutical Science and Technology Outstanding Young Scholar Award.

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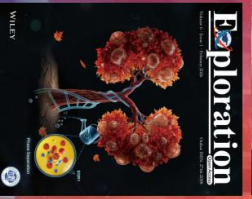
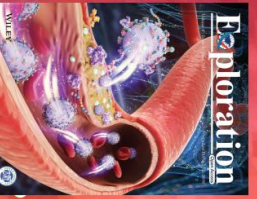
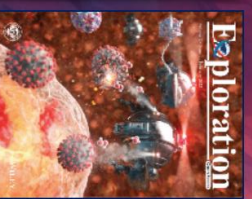
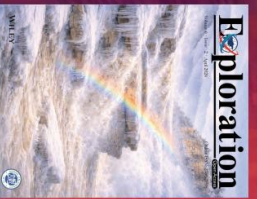
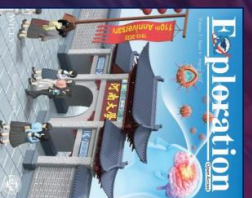
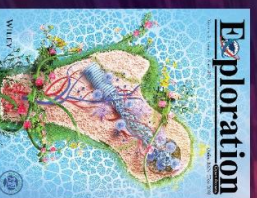
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- 2024 Global "Highly Cited Researchers " List, (59)
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# Exploration

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### 发展定位

Exploration由河南大学、中国生物物理学会纳米米生物学分会和Wiley出版集团共同创办（2021年1月），“双一区”TOP期刊、中国科协高起点新刊、世界一流科技期刊。聚焦于学科交叉融合探索，跨界创新成果传播，旨在向公众传播生命科学、医学、材料、化学、能源、可持续、计算、植物科学及其交叉学科领域的研究成果。

始终坚持以习近平科学精神和科学价值为选稿、用稿的唯一标准，执行“双盲”审稿制度，严把论文质量关，守好学术诚信关，探究真理，求真务实；用科技“神笔”为文化“点睛”！

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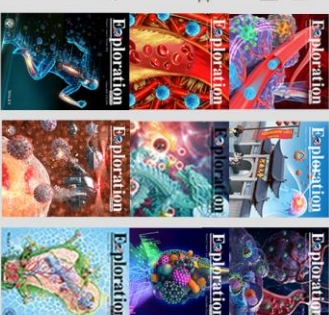
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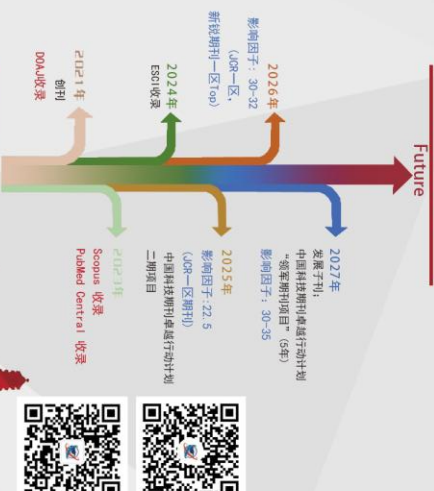
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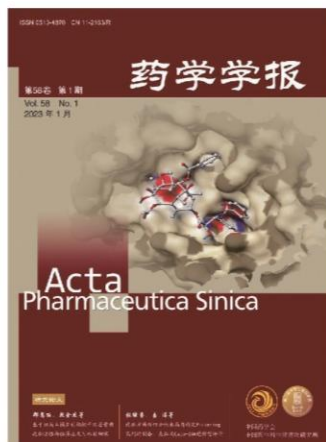


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主编：王晓良



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药理学、合成药物化学、天然药物化学、药物分析学、生药学、药剂学与抗生素学等方面的研究论文、研究简报、综述、学术动态与述评

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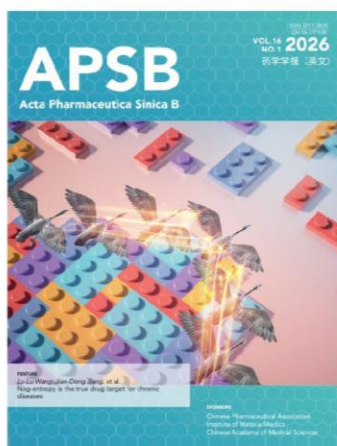
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"Studies on the constituents of *Artemisia annua* L."

Youyou Tu, et al. *Yao Xue Xue Bao* (1981) 16, 366-370



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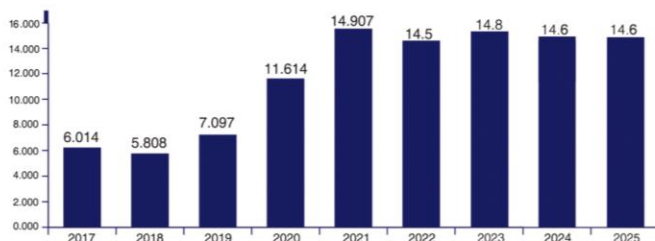


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创刊于2011年，月刊，中国科协中国科技期刊卓越行动计划项目——领军期刊  
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## 2017-2025 年APSB影响因子



## Aims & Scope

- Drug Delivery
- Novel Technology in Drug Quality Control
- Activity & Molecular Mechanisms
- Medicinal Resources & Application
- Molecular Design & Synthesis
- Natural Product Research

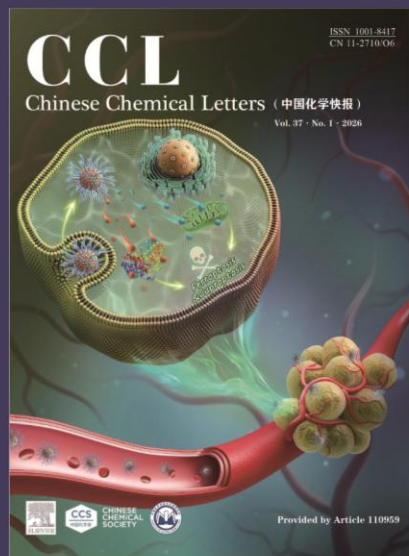


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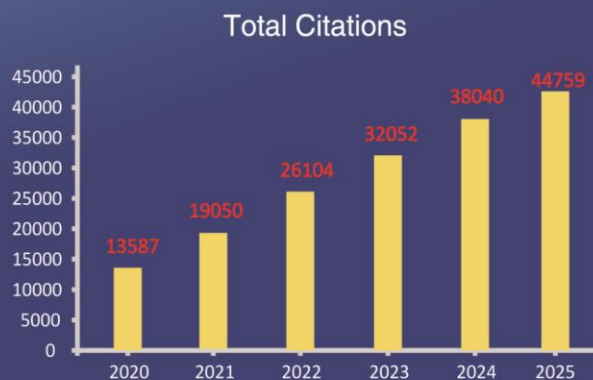
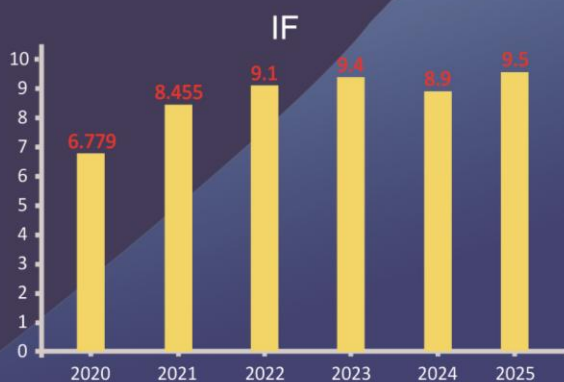
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Chin Chem Lett (ISSN 1001–8417 ) is founded in 1990 and being published monthly in collaboration with Elsevier Publisher. Now the IF and total citation belong to JCR Q1 and the Chinese Academy of Sciences Ranking Q1.

## IF and total citations of Chin Chem Lett in 2020–2025



## Aims & Scope

- Whole field of chemistry, especially hot topics, nearly 1,200 articles/year

## Type

- Communication
- Review ( mini-review )
- Perspective
- Highlight



ISSN:1001–8417

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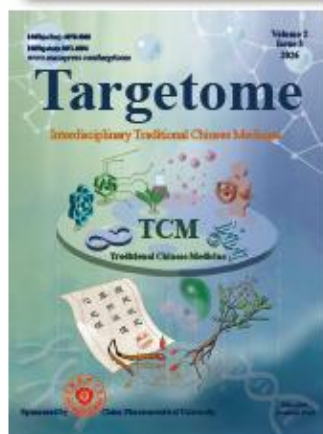
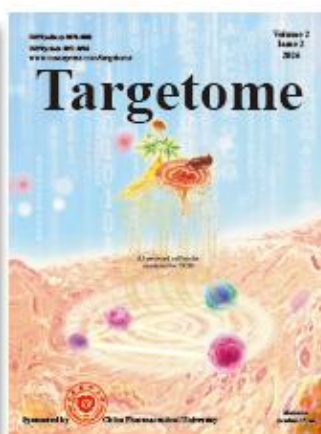
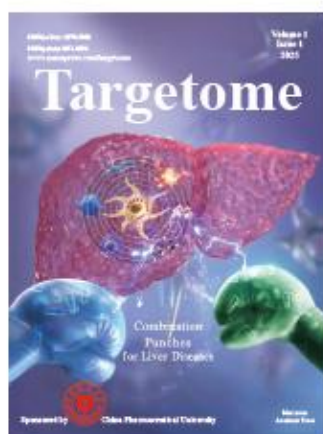
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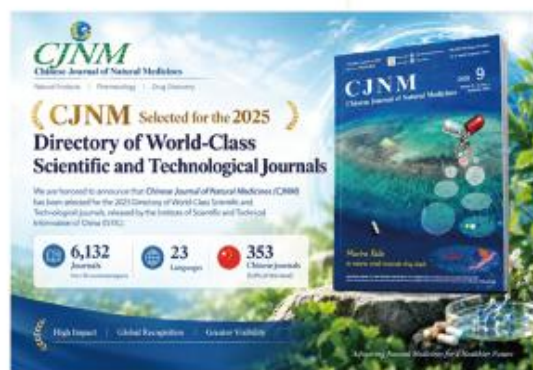
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### 学术荣誉

2024—2028中国科协“中国科技期刊卓越行动计划二期”英文梯队  
2019—2023中国科协“中国科技期刊卓越行动计划一期”梯队项目  
2024 首届江苏省科技期刊卓越行动计划领军期刊  
2012—2023蝉联十二届中国最具国际影响力学术期刊  
2021 第七届华东地区优秀期刊  
2021 第三届江苏省新闻出版政府奖期刊奖提名奖  
2018 第二届江苏省新闻出版政府奖期刊奖提名奖  
2016 中国高校杰出科技期刊  
2015,2017蝉联两届“江苏省十强报刊”  
2013,2015,2017连续三届中国百强科技期刊,排名第22位  
2011,2014 蝉联“中国精品科技期刊”  
2014 教育部“中国高校精品科技期刊”(40/2000)  
2014 “江苏文化艺术精品”项目资助(仅3种)  
2013 首届江苏省新闻出版政府奖报刊奖  
2013 “中国科技期刊国际影响力提升计划”B类项目资助  
2012 被SCI、MEDLINE/PubMed等26个数据库收录  
2012 “中国科协精品科技期刊”

### 学术活动

- ★ 第一届中国天然药物研究发展论坛 (2003)
- ★ 第二届中国天然药物研究发展论坛 (2008)
- ★ 第199次中国科协青年科学家论坛 (2009)
- ★ 中国创新药物研发战略新思路论坛 (2010)
- ★ 第254次中国科协青年科学家论坛 (2012)
- ★ 第68次新观点新学说学术沙龙 (2012)
- ★ 中国新药研发战略高峰论坛 (2013)
- ★ 第三届中国天然药物研究发展论坛 (2013)
- ★ 第86次新观点新学说学术沙龙 (2013)
- ★ CJNM “十三五”规划杰青研讨会 (2015)
- ★ CJNM 杰青研讨会——天然药物研究发展高层论坛 (2016)
- ★ 中国天然药物青年学者论坛 (2018, 2019, 2020)
- ★ 第四届中国天然药物研究发展论坛 (2018)
- ★ 药学前沿杰青报告会 (2021)
- ★ 药学前沿青年学者沙龙 (2021)
- ★ CJNM学术分享会: 合成生物学 (2022)
- ★ CJNM青年人才报告会 (2022)
- ★ CJNM创刊 20 周年全体编委会议暨药学前沿报告会 (2023)
- ★ CJNM青年科学家论坛 (2023, 2024, 2025)
- ★ 全球药学发展联盟国际靶标组学与天然药物研讨会 (2026, 海口)

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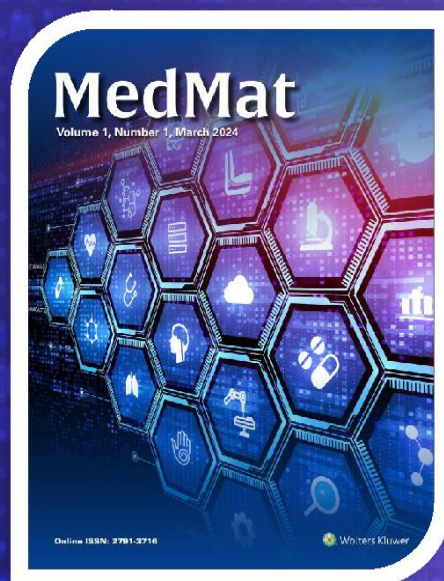
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## 二、体内药效学评价研究

抗肿瘤药物筛选与评价 | 代谢药物筛选与评价 | 心脑血管疾病药物筛选与评价 | 精神神经疾病 | 免疫、抗炎、抗感染药物筛选与评价 | 消化重症药物筛选与评价 | 骨科疾病药物筛选与评价 | 抗衰老药物筛选 | 药物急性毒性 | 行为学观察 | 影像学观察



## 三、蛋白质分析研究

蛋白免疫印迹 | 病理学实验 | 多重染色 | 病理成像及分析 | 生化检测 | 蛋白表达转化 | 蛋白互作



## 四、分子生物学研究

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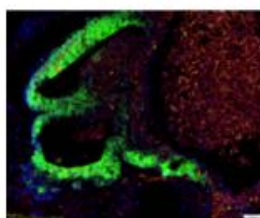
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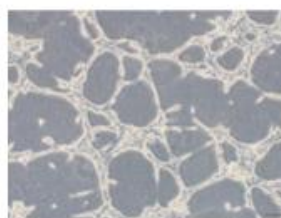
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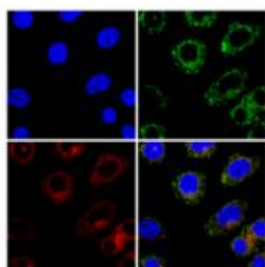
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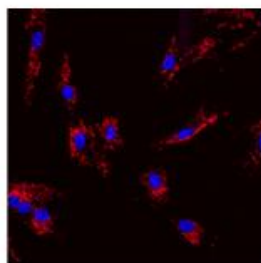
细胞成球



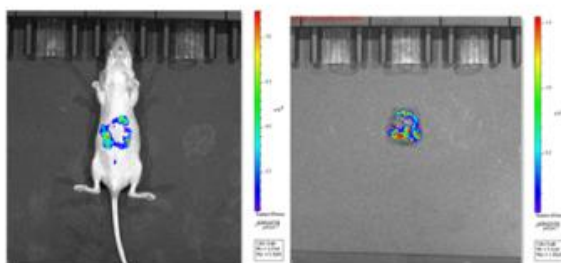
血管生成



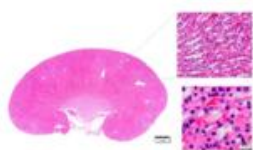
JC-1 激光共聚焦



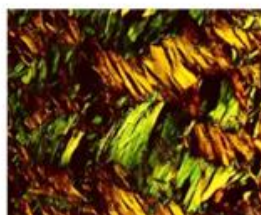
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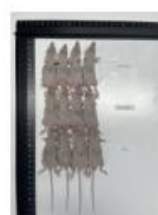
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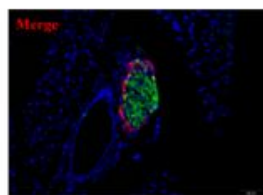
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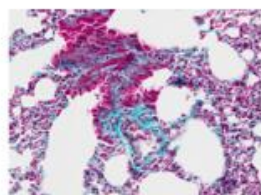
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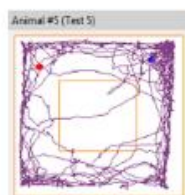
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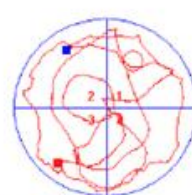
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