Scan for Registration

Conference of RNA, Exosome and Nanomedicine

—— 5th International Conference on Biomotors, Virus Assembly, and RNA Nanobiotechnology

December 15-17, 2025

DoubleTree by Hilton Los Angeles - Rosemead
(888 Montebello Blvd., Rosemead, Los Angeles, CA 91770, USA)

▼ HOSTED BY

International Society of RNA Nanotechnology & Nanomedicine (ISRNN)
International Association of Biomedical Sciences (IABS)
Center for RNA Nanobiotechnology and Nanomedicine
Center for RNA Biology
The Ohio State University

Registration:
https://rnanano.osu.edu/Guo/Biomotor2025/Biomotor2025.html
https://ia-bs.org/etn/iabs-forum/

Welcome Letter

Dear colleagues,

It's our great pleasure to welcome you to the Conference of RNA, Exosome, and Nanomedicine (https://rnanano.osu.edu/Guo/Biomotor2025/Biomotor2025.html), the fifth iteration of the Biennial Conference on Biomotors, Virus Assembly, and RNA Nanobiotechnology. This year's conference is hosted by the International Society of RNA Nanotechnology and Nanomedicine (ISRNN), the International Association of Biomedical Sciences (IABS), and The Ohio State University's Center for RNA Nanotechnology and Nanomedicine and Center for RNA Biology.

We are excited to continue this conference series and extend a focus to the field of RNA. Due to the RNA field arriving as the third milestone in pharmaceutical drug development, we extended the previous conference series to focus on RNA for this conference. Since exosomes contain many RNAs inside and RNA can display on the surface of exosomes for the purpose of RNA delivery, exosomes are another focus of this conference.

As a continuation of the previous three conferences, we are excited to bring together 68 distinguished speakers representing academia, government agencies, and industry to provide unique perspectives in multidisciplinary research. This interdisciplinary conference includes leading scientists and engineers working in the diverse fields of chemistry, biochemistry, biophysics, structural biology, microbiology, cell biology, materials, and nanotechnology to develop an interdisciplinary environment to expand our horizons and look to the future of RNA based research. We believe this conference will foster communication between researchers from many different backgrounds, so please take the opportunity to interact with the leading scientists in the field and establish collaborations to promote this field into new and exciting directions.

After hosting the first two in-person biennial conferences at The Ohio State University and the last two conferences virtually due to COVID-19, we are excited to bring the conference back to in-person, allowing for greater interactions between conference attendees. We encourage everyone to take advantage of the poster session time and social hours to fully engage with each other and bring together the diverse scientific community among RNA, exosomes, biomotors, and nanomedicine. We ask that you respect the confidentiality of this meeting and refrain from recording or taking pictures of any presentation, as all material presented during this conference is privileged to its attendees and intended to only be shared during the conference.

Finally, we would like to draw attention to the ISRNN council meeting that is scheduled for Tuesday 12.16.25 at 10:40 AM, and highly encourage all council members to attend to discuss updates with the Society and future directions. We sincerely hope that you will find the presentation insightful. If you feel there is anything we can do to make the conference more interesting or enjoyable, please feel free to contact the conference organization staff. Thank you for taking the time to attend this meeting.

Sincerely,

Conference Chair:

Peixuan Guo, The Ohio State University, USA

Conference Co-chairs:

Kirill Afonin, University of North Carolina-Charlotte, USA
Karin Musier-Forysth, The Ohio State University, USA
Eric Westhof, Institut de Biologie Moléculaire et Cellulaire du CNRS, France
Sara Woodson, Johns Hopkins University, USA

Conference Leadership

Conference Chair

Peixuan Guo

Fellow of National Academy of Inventors,
Editor in Chief of RNA NanoMed,
Sylvan Frank Endowed Chair,
College of Pharmacy,
College of Medicine,
Director, Center for RNA Nanobiotech & Nanomed,
President, Intl. Society of RNA Nanotech & Nanomed (ISRNN),
The Ohio State University

Conference Co-Chair

Kirill Afonin

Professor, University of North Carolina– Charlotte, USA

Karin Musier-Forsyth

Professor, The Ohio State University, Columbus, USA

Sarah Woodson

T.C. Jenkins Professor, Johns Hopkins University, Baltimore, USA

Eric Westhof

Professor, University of Strasbourg, France

Organizers and Scientific Program Committees

Peixuan Guo, The Ohio State University, USA

Sarah Woodson, Johns Hopkins University, USA

Kirill Afonin, University of North Carolina – Charlotte, USA

Daniel Binzel, The Ohio State University, USA

Karin Musier-Forsyth, The Ohio State University, USA

Aijun Wang, University of California, Davis, USA

Eric Westhof, University of Strasbourg, France

Invited Speakers

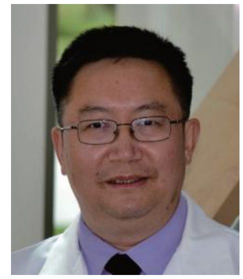
Arranged in the order of registration date


Minsun Song
City of Hope


Jaimie Stewart
University of California, Los Angeles


Aijun Wang
University of California, Davis


Eunji Chung
University of Southern California


Shujun Liu
Case Comprehensive Cancer Center

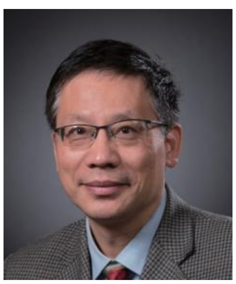

Wen Zhang
Indiana University School of Medicine


Alex Johnson-Buck
University of Michigan

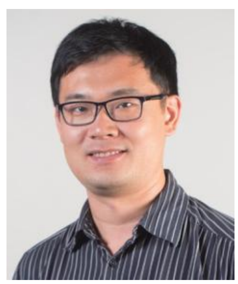

Fei Liu
Harvard University


Steven Jay
University of Maryland


Randy Carney
University of California, Davis


Biao Lu
Santa Clara University


Nikolay Dokholyan
University of Virginia School of Medicine


Mingxu You
University of Massachusetts


Cheemeng Tan
University of California, Davis


Wei Fang
Institute of Biophysics

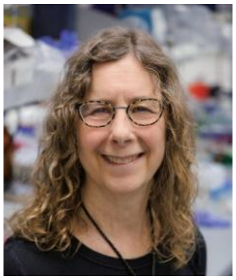

Wayne Miles
The Ohio State University


Emanuele Cocucci
The Ohio State University


Yun-xing Wang
NCI/NIH


Kay Choi
Indiana University


Andrei Korostelev
UMass Chan Medical School



Julie Feigon
University of California, Los Angeles

Shalini Oberdoerffer
NCI/NIH

Jane Jackman
The Ohio State University

Robin Stanley
NIH

Tae Jin Lee
McGovern Medical School

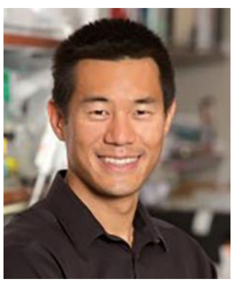
Soma Dhakal
Virginia Commonwealth University

Rajgopal Govindarajan
The Ohio State University

Jin Yu
University of California Irvine

Daniel Binzel
The Ohio State University

Kristin Koutmou
University of Michigan



Gene Yeo
University of California, San Diego

Lela Lackey
Clemson University

Elisa Franco
University of California, Los Angeles

Deepak Koirala
University of Maryland, Baltimore County

Gaurav Sahay
Oregon State University

Holland Cheng
University of California, Davis

Jeffrey Kieft
Columbia University

Tianmin Fu
University of Massachusetts

Wenqiang Yu
Fudan University

Jinbiao Ma
Fudan University

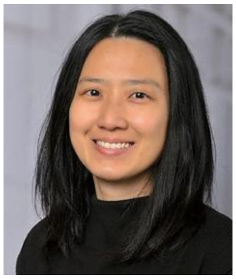
Zihe Rao
Tsinghua University

Xiangxi Wang
Chinese Academy of Sciences

Kiran Kondabagilu
Indian Institute of Technology Bombay

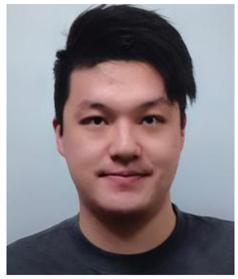
Shipra Agrawal
Stony Brook University

Ambro van Hoof
The Ohio State University



Li-Chun Tu
The Ohio State University

Guramrit Singh
The Ohio State University

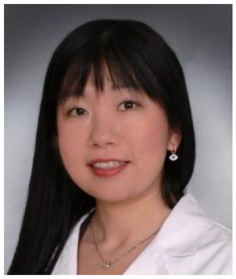


Kai Jin
The Ohio State University

Dan Shu
The Ohio State University

Margaret Bohmer
The Ohio State University

Xiaoning Bi
Western University



Chen Gao
University of Cincinnati

Guizhi (Julian) Zhu
University of Michigan

Tamar Schlick
New York University

Yibin Feng
The University of Hong Kong

Lalit Sehgal
The Ohio State University

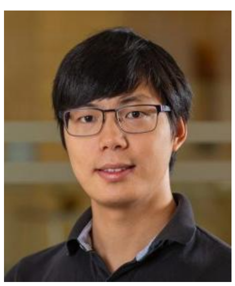
Dawn Chandler
The Ohio State University

Mohtadin Hashemi
Auburn University

Thomas Webster
Brown University

Marina Dobrovolskaia
Frederick National Laboratory

Yin Chen
University of Arizona



Fan Hong
University of Florida

Ana Luisa Duran Meza
University of California, Los Angeles

MONDAY, DECEMBER 15, 2025

9:00 AM	**Ballroom**
9:00 – 9:30 AM	**Peixuan Guo;** The Ohio State University, USA *Introduction: The Current Advancement of RNA Nanotechnology, Extracellular Vesicles, and RNA-displaying EVs*
9:30 AM	
SESSION 1: RNA, Virus Assembly, and Exosomes Session Moderator: Peixuan Guo & Thomas Webster	**Ballroom**
9:30 – 10:00 AM	**Karin Musier-Forsyth;** The Ohio State University, USA *How Structure Determines HIV-1 Unspliced RNA Fate: A Tale of Two Gs*
10:00 – 10:30 AM	**Zihe Rao;** Tsinghua University, China *Cryo-EM Structural Imaging of the Revolving Hexameric DNA Packaging Motor of Human Herpesvirus*
10:30 – 11:00 AM	**Meeting Logistics and Break** Daniel Binzel, Michel Baudry, Brandon Li
11:00 – 11:30 AM	**Aijun Wang;** University of California Davis, USA *Engineering Extracellular Vesicles and Lipid Nanoparticles for Targeted Delivery and Therapy*
11:30 – 12:00 PM	**Gene Yeo;** University of California San Diego, USA *Discovery of Circular RNA Biogenesis Regulators*

12:00 PM	**Break for Lunch**

1:30 PM	
SESSION 2: RNA Structure, Aggregation, and Nanotechnology Session Moderator: Jane Jackman & Julie Feigon	**Ballroom**
1:30 – 2:00 PM	**Jeffrey Kieft;** New York Structural Biology Center and Columbia University, USA *Viral RNA Structures that Manipulate Cellular Machinery*
2:00 – 2:30 PM	**Kirill Afonin;** University of North Carolina Charlotte, USA *Nucleic Acid Nanoparticles for Biomedical Applications*
2:30 – 3:00 PM	**Sarah Woodson;** Johns Hopkins University, USA *Mechanisms of RNA Aggregation in Triplet Repeat Expansion Disease*

3:00 PM	**Break**

3:30 PM		
SESSION 3A: RNA with Unique Functionality: Small Noncoding RNA and Long Noncoding RNA (1) Session Moderator: Yibin Feng & Soma Dhakal		**La Brea Room**
3:30 – 3:50 PM	**Rajgopal Govindarajan**; The Ohio State University, USA *Cardioprotective SNPs in SLC28A3 and lncRNA SLC28A3-AS1 Result in Transcriptional Changes and Alternative Splicing to Reduce Doxorubicin Cytotoxicity*	
3:50 – 4:10 PM	**Wenqiang Yu**; Fudan University, China *NamiRNA-Enhancer Network as Novel Target for Developing Small Nuclear Acid Therapy*	
4:10 – 4:30 PM	**Tae Jin Lee**; University of Texas Health Science Center at Houston, USA *Targeting microRNAs for Treating Glioblastoma with Engineered Extracellular Vesicles*	
4:30 – 4:50 PM	**Yibin Feng;** The University of Hong Kong, Hong Kong *Multidisciplinary research and drug discovery in Chinese medicine: coptis and berberine as the case*	
SESSION 3B: RNA Processing and Regulation Session Moderator: Karin Musier-Forsyth & Gene Yeo		**Ballroom**
3:30 – 3:50 PM	**Ambro van Hoof;** The Ohio State University, USA *tRNA Splicing Endonuclease is a Multifunctional Enzyme with Roles in Maturation and Degradation of Diverse RNA*	
3:50 – 4:10 PM	**Kay Choi;** Indiana University, USA *Lessons from the Structure of the HIV Rev Response Element*	
4:10 – 4:30 PM	**Kristin Koutmou;** University of Michigan, USA *The Molecular Level Consequences of RNA Modifications on Protein Synthesis*	
4:30 – 4:50 PM	**Shipra Agrawal;** Stony Brook University, USA *Alternative RNA Splicing and Polyadenylation in Chronic Kidney Disease*	

4:50 PM	**Break**

5:10 PM		
SESSION 4A: RNA with Unique Functionality: Small Noncoding RNA and Long Noncoding RNA (2) Session Moderator: Kirill Afonin & Elisa Franco		**La Brea Room**
5:10 – 5:30 PM	**Wen Zhang;** Indiana University, USA *Mirror-image Nucleic Acids as Next-generation Reagents for Basic Research and Therapeutic Applications*	
5:30 – 5:50 PM	**Daniel Binzel**; The Ohio State University, USA *RNA Nanoparticles Harboring Radioisotopes or Other Imaging Molecules for Spontaneous Tumor Targeting for Early Cancer Diagnosis*	
5:50 – 6:10 PM	**Kai Jin;** The Ohio State University, USA **--- Selected Student Talk** *Illustration of the Variable 1D Sequences and Conserved 2D and 3D Structures of Different ncRNA Nanostructures for Tracking the Evolution and Origin of Organisms*	
6:10 – 6:30 PM	**Lalit Sehgal;** The Ohio State University, USA *MALAT1 Long-Non-Coding RNA Regulates SOX11 Expression in Mantle Cell Lymphoma*	

SESSION 4B: Advances in RNA Therapeutics and RNA Delivery Vehicles Session Moderator: Aijun Wang & Eunji Chung	**Ballroom**
5:10 – 5:30 PM	**Thomas Webster;** Brown University, USA *Human Nanomedicine: Using the G^C DNA Motif to Grow Tissue, Fight Infection, and Inhibit Inflammation*
5:30 – 5:50 PM	**Minsun Song**; City of Hope, USA *Transferrin Receptor-Targeted RNA Aptamer Enhances Blood-Brain Barrier Penetration in Brain Metastases from Triple-Negative Breast Cancer*
5:50 – 6:10 PM	**Marina Dobrovolskaia**; Nanotechnology Characterization Laboratory, USA *Translational Journey of Nanomedicines: General and RNA- Nanotechnology-specific Challenges, Solutions and Perspective from the Nanotechnology Characterization Laboratory Assay Cascade Experiences*
6:10 – 6:30 PM	**Elisa Franco**; University of California Los Angeles, USA *Programmable Artificial RNA Condensates in Mammalian Cells*

6:40 PM	**Break for Dinner**

8:00 PM	**Musical and Dance Performance & Social Hour Entertainment**

TUESDAY, DECEMBER 16, 2025

9:00 AM	
SESSION 5A: RNA Structure and Function to Build Biological Machines Session Moderator: Sarah Woodson & Deepak Koirala	**Ballroom**
9:00 – 9:20 AM	**Jane Jackman;** The Ohio State University, USA *Harnessing the Unusual Chemistry and Biology of tRNA Modification Enzymes*
9:20 – 9:40 AM	**Lela Lackey;** Clemson University, USA *Sequence and structural characteristics of conserved splice junctions surrounding neural microexons*
9:40 – 10:00 AM	**Yin Chen;** University of Arizona, USA *MARCKS-driven nano-defenders (MDND) as a prototype for novel anti-infectious therapy*
10:00 – 10:20 AM	**Yun-xing Wang;** National Cancer Institute, USA *RNA Conformational Space Beyond Static Structure*

SESSION 5B: Cellular Function Regulated by RNA Session Moderator: Wayne Miles & Alex Johnson-Buck	**La Brea Room**
9:00 – 9:20 AM	**Jaimie Stewart;** University of California Los Angeles, USA *Building and Tuning Synthetic RNA Condensates: Experimental Design Principles and Computational Insights*
9:20 – 9:40 AM	**Deepak Koirala;** University of Maryland Baltimore, USA *RNA Structure-Based Strategies of Cap-Independent Viral Genome Translation*
9:40 – 10:00 AM	**Chen Gao;** University of Cincinnati, USA *Cardiac microexon regulation in cell death*
10:00 – 10:20 AM	**Wayne Miles;** The Ohio State University, USA *Coordinated Post-Transcriptional Regulation Facilitates PD-L1 Protein Production and Tumor Immune Suppression*

10:20 AM	**Break**	

10:40 AM		
ISRNN Council Meeting		**La Brea Room**
Personal Interaction, Communication, and Collaboration Among Attendees		**Ballroom**
Visiting Company Exhibitions		

12:00 PM	**Break for Lunch**	

1:00 PM		
SESSION 6A: Extracellular Vesicles and Their Application in RNA Therapeutics (1) Session Moderator: Daniel Binzel & Randy Carney		**Ballroom**
1:00 – 1:20 PM	**Steven Jay**; University of Maryland, USA *Mechanical Regulation of Extracellular Vesicle Production and Cargo*	
1:20 – 1:40 PM	**Cheemeng Tan**; University of California Davis, USA *High-Throughput and Cell-Free Engineering of Synthetic Extracellular Vesicles*	
1:40 – 2:00 PM	**Eunji Chung**; University of Southern California, USA *Engineering Extracellular Vesicles as Nanotherapeutics for Cardiovascular and Chronic Diseases*	
2:00 – 2:20 PM	**Emmanuele Cocucci;** The Ohio State University, USA *How Far Can an Extracellular Vesicle Journey from its Cell of Origin?*	
SESSION 6B: Mechanisms of Biomotors for Packaging Double Stranded DNA Session Moderator: Shujun Liu & Holland Cheng		**La Brea Room**
1:00 – 1:20 PM	**Kiran Kondabagilu;** Indian Institute of Technology Bombay, India *Genome Packaging and Compaction in Mimivirus*	
1:20 – 1:40 PM	**Robin Stanley;** National Institutes of Health, USA *Molecular Mechanisms of RNA Processing Machines*	
1:40 – 2:00 PM	**Margaret Bohmer;** The Ohio State University, USA **--- Selected Student Talk** *Constructing an Active Chimeric pRNA Ring with a Stoichiometry of Six and Identifying 12 Domains of the pRNA Ring Binding to the 12-Subunit Channel of Phi29 DNA Packaging Motor*	
2:00 – 2:20 PM	**Tamar Schlick;** New York University, USA *Conformational Transitions of the SARS-CoV-2 Frameshifting element suggest translation mechanism*	

2:20 PM	**Break**	

2:40 PM	
SESSION 7A: Extracellular Vesicles and Their Application in RNA Therapeutics (2) **Ballroom** Session Moderator: Steven Jay & Emmanuele Cocucci	
2:40 – 3:00 PM	**Fei Liu;** Harvard University, USA *High-Throughput Production of Extracellular Vesicles for Diagnostic and Therapeutic Research*
3:00 – 3:20 PM	**Biao Lu;** Santa Clara University, USA *Genetic Engineering of Multifunctional Exosomes for Cancer Diagnosis and Therapy*
3:20 – 3:40 PM	**Dan Shu;** The Ohio State University, USA *Engineered Extracellular Vesicles for Combinatorial TNBC Therapy: SR-SIM-Guided Design Achieves Substantial Drug Dosage Reduction*
3:40 – 4:00 PM	**Xiaoning Bi;** Western University, USA *Extracellular Vesicle Dysregulation and Potential Therapeutic Application in Neurodevelopmental Disorders: Insights from Angelman Syndrome*

SESSION 7B: Oral Presentations from Abstracts and Posters **La Brea Room** Session Moderator: Kai Jin & Margaret Bohmer
Oral presentations will be selected from the following abstracts and posters before the conference opens.
Jayden Vega; El Dorado High School, USA *FRET-Based Assay of Ikaros Ubiquitination by CRBN*
Nehleen Reza; Ohio State University, USA *Sterical configuration beyond conformation to RNA-protein interaction for executing functions in biological systems.*
Qiaoya Zhang; Northwood High School, USA *Fluorescent Reporter-Based Platform for Monitoring and Enhancing Tau and Aβ42 Degradation in Alzheimer's Disease*
Frank He; Walnut High School, USA *A quantitative FRET-based assay for assessing the interaction between CRBN and c-Myc*
Xueyun Gao; Beijing University of Technology, China *A probe for NIR-II imaging and multimodal analysis of early Alzheimer's disease by targeting CTGF*
Yiwei Tian; Zhaoliang Biotechnology Development (Shanghai) Co., Ltd, China *Research proposal for the role and mechanism of 108CI/CT intravenous injection in myocardial ischemia and reperfusion injury*
Jianing Li; Walnut High School, USA *Investigating Corpus Collostomies and Alternative Treatments for Drug-Resistant Epilepsy in Pediatric and Adolescent Patients*
Min Wu; University of Chinese Academy of Sciences, China *Enhancing Immune Responses against Monkeypox: Chimeric Antigen Design and mRNA Vaccine Efficacy*
Tesla Yudhistira; The Ohio State University, USA *Developing Potent Therapeutics for Liver Cancer Chemoresistant via RNA Nanotech and Series-Circuits-Christmas-Bulb Mechanism Targeting ABC Transporters*
Mahfam Shariati; The Ohio State University, USA *Probing the Role of Human Lysyl-tRNA Synthetase in HIV-1 Immune Evasion*
Christina Ross Budding; The Ohio State University, USA *Site-specific identification and role of m6A RNA modification in HIV-1 genomic RNA 5'UTR*
Chen Xie; Western University, USA *Allosteric Inhibition of P-Glycoprotein-Mediated Efflux by DMH1*

4:00 PM	**Break**
4:20 PM	**Poster Session**

6:30 PM	**Break for Dinner and Social Time**

WEDNESDAY, DECEMBER 17, 2025

9:00 AM	
SESSION 8A: Single Molecule Sensing and Counting in RNA Investigation	**La Brea Room**
Session Moderator: Xiaoning Bi & Guramrit Singh	
9:00 – 9:20 AM	**Soma Dhakal**; Virginia Commonwealth University, USA *High-Confidence Single-Molecule Detection of miRNAs*
9:20 – 9:40 AM	**Jinbiao Ma;** Fudan University, China *Cryo-EM Structure of a Natural RNA Nanocage*
9:40 – 10:00 AM	**Alex Johnson-Buck;** University of Michigan, USA *In Situ Multi-Omic Digital Biology via Single-Molecule Kinetic Fingerprinting*
10:00 – 10:20 AM	**Steven Nguyen;** Creighton University, USA **--- Selected Student Talk** *Optimization of a High-throughput FRET Assay to Study glmS Riboswitch Self-cleavage in Staphylococcus aureus*
SESSION 8B: mRNA for Gene Therapy and Vaccines	**Ballroom**
Session Moderator: Guizhi (Julian) Zhu & Fei Liu	
9:00 – 9:20 AM	**Andrei Korostelev**; University of Massachusetts, USA *A Molecular Switch Between AUG and Non-AUG Translation*
9:20 – 9:40 AM	**Shalini Oberfoerffer;** National Cancer Institute, USA *Exploring the Utility and Mechanisms of N4-Acetylcytidine in mRNA Therapeutics*
9:40 – 10:00 AM	**Guramrit Singh;** The Ohio State University, USA *Connections Between mRNA Synthesis and Decay*
10:00 – 10:20 AM	**Shujun Liu;** Case Western Reserve University, USA *Next Generation Oncology: Harnessing Precision mRNA Vaccines and Exosome Delivery*

10:20 AM	**Break**

10:40 AM	
SESSION 9A: RNA and EV Biology for Therapeutic Applications	**Ballroom**
Session Moderator: Jeffrey Kieft & Jinbiao Ma	
10:40 – 11:00 AM	**Jin Yu;** University of California Irvine, USA *Computational Interrogation on Mechanochemical and Fidelity Control of Human Mitochondrial RNA Polymerase and SARS-CoV-2 RNA Dependent RNA Polymerase in Comparison with Bacteriophage T7 RNA Polymerase*
11:00 – 11:20 AM	**Randy Carney**; University of California Davis, USA *Nearing Single Vesicle-Resolved Lipidomics of Circulating Extracellular Vesicles (EVs) to Untangle the EV Interactome in Cancer*

11:20 – 11:40 AM	**Julie Feigon;** University of California Los Angeles, USA *Structural Biology of Telomerase and Inhibition by Drugs*
11:40 – 12:00 PM	**Dawn Chandler;** The Ohio State University, USA *Developing Cancer Models for Testing Splice Switching Therapies*

SESSION 9B: Structure and Function of Biological Machines — **La Brea Room**

Session Moderator: Kiran Kondabagilu & Nikolay Dokholyan

10:40 – 11:00 AM	**Gaurav Sahay;** Oregon State University, USA *Rapid In-vivo Endosomal Escape Assay Reveals Insights into Mechanism of Efficient Lipid Nanoparticle-based RNA Delivery*
11:00 – 11:20 AM	**Xiangxi Wang**; Chinese Academy of Sciences, China *Viral Structures, Antibody Profiles and Vaccine Design*
11:20 – 11:40 AM	**Holland Cheng;** University of California Davis, USA *Essence of Quaternary Structural Modularity in Novel Nanomedicine Designs*
11:40 – 12:00 PM	**Tianmin Fu**; University of Massachusetts, USA *How Non-Coding RNA Controls the Activation of Retron Anti-phage Defense Systems*

12:00 PM	**Break for Lunch**

1:30 PM

SESSION 10A: Unique Roles and Applications of RNA with Therapeutic Potential — **La Brea Room**

Session Moderator: Andrei Korostelev & Gaurav Sahay

1:30 – 1:50 PM	**Mohtadin Hashemi;** Auburn University, USA *Conformational Switching in APOBEC3G-RNA Complexes Revealed by High-Speed AFM and Molecular Simulations*
1:50 – 2:10 PM	**Guizhi (Julian) Zhu;** University of Michigan, USA *Engineering and delivery of circRNA therapeutics and vaccines*
2:10 – 2:30 PM	**Fan Hong;** University of Florida, USA *Programmable RNA molecular devices for biosensing and cellular regulation*
2:30 – 2:50 PM	**Ana Luisa Duran Meza;** University of California Los Angeles, USA *Plant-Derived Virus-Like Particles as Versatile Nanocarriers for Therapeutic RNA Delivery in Mammalian Systems*

SESSION 10B: Nanodevices and Their Application in RNA Studies — **Ballroom**

Session Moderator: Dawn Chandler & Rajgopal Govindarajan

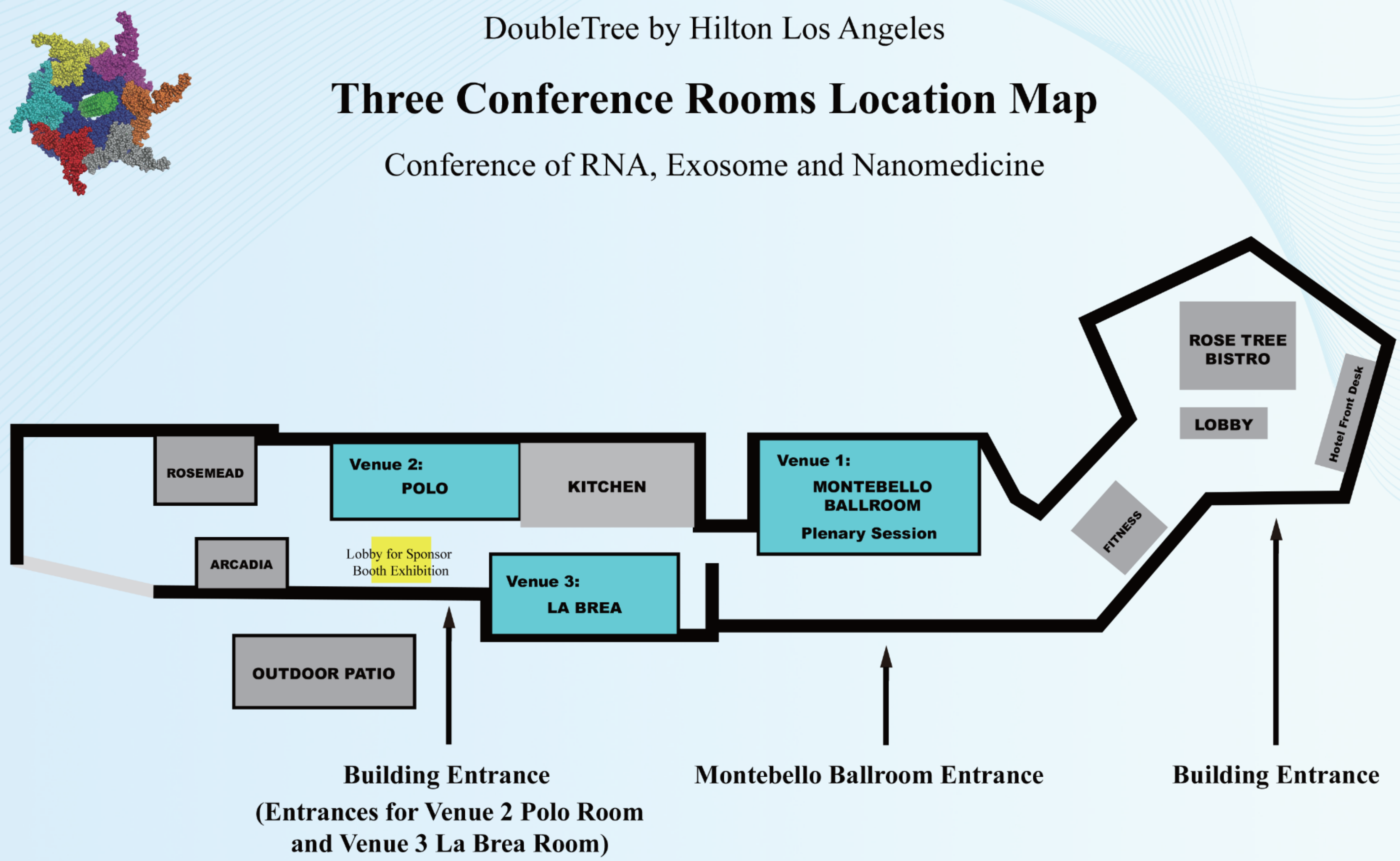
1:30 – 1:50 PM	**Li-Chun Tu;** The Ohio State University, USA *A Programmable sgRNA Tool for Engineering Chromatin Architecture in Live Cells*
1:50 – 2:10 PM	**Nikolay Dokholyan;** University of Virginia, USA *Spread of Motor Neuron Death in ALS*
2:10 – 2:30 PM	**Mingxu You;** University of Massachusetts, USA *Multiplexed RNA Imaging and Live-Cell Profiling Using Genetically Encodable Fluorogenic*

2:50 PM	**Peixuan Guo;** The Ohio State University, USA *Closing Remarks and Awards*	**Ballroom**

DoubleTree by Hilton Los Angeles

Three Conference Rooms Location Map

Conference of RNA, Exosome and Nanomedicine



Name	*Title*	*Session*	*Date*	*Room*
Afonin, Kirill	Nucleic Acid Nanoparticles for Biomedical Applications	2	12.15.25	Ballroom
Agrawal, Shipra	Alternative RNA Splicing and Polyadenylation in Chronic Kidney Disease	3B	12.15.25	Ballroom
Bi, Xiaoning	Extracellular Vesicle Dysregulation and Potential Therapeutic Application in Neurodevelopmental Disorders: Insights from Angelman Syndrome	7A	12.16.25	Ballroom
Binzel, Daniel	*RNA Nanoparticles Harboring Radioisotopes or Other Imaging Molecules for Spontaneous Tumor Targeting for Early Cancer Diagnosis*	4A	12.15.25	La Brea
Bohmer, Margaret	Constructing an active chimeric pRNA ring with a stoichiometry of six and identifying 12 domains of the pRNA ring binding to the 12-subunit channel of phi29 DNA packaging motor	7B	12.16.25	La Brea
Carney, Randy	Nearing single vesicle-resolved lipidomics of circulating extracellular vesicles (EVs) to untangle the EV interactome in cancer	9A	12.17.25	Ballroom
Chandler, Dawn	Developing Cancer Models for Testing Splice Switching Therapies	9A	12.17.25	Ballroom
Chen, Yin	MARCKS-driven nano-defenders (MDND) as a prototype for novel anti-infectious therapy	5A	12.16.25	Ballroom
Cheng, Holland	Essence of quaternary structural modularity in novel nanomedicine designs	9B	12.17.25	La Brea
Choi, Kay	Lessons from the Structure of the HIV Rev Response Element	3B	12.15.25	Ballroom
Chung, Eunji	Engineering Extracellular Vesicles as Nanotherapeutics for Cardiovascular and Chronic Diseases	6A	12.16.25	Ballroom
Cocucci, Emanuele	How far can an extracellular vesicle journey from its cell of origin?	6A	12.16.25	Ballroom
Dhakal, Soma	High-Confidence Single-Molecule Detection of miRNAs	8A	12.17.25	La Brea
Dobrovolskaia, Marina	Translational Journey of Nanomedicines: General and RNA- Nanotechnology-specific Challenges, Solutions and Perspective from the Nanotechnology Characterization Laboratory Assay Cascade Experiences	4B	12.15.25	Ballroom
Dokholyan, Nikolay	Spread of Motor Neuron Death in ALS	10B	12.17.25	Ballroom
Duran Meza, Ana Luisa	Plant-Derived Virus-Like Particles as Versatile Nanocarriers for Therapeutic RNA Delivery in Mammalian Systems	10A	12.17.25	La Brea

Feigon, Julie	Structural biology of telomerase and inhibition by drugs	9A	12.17.25	Ballroom
Feng, Yibin	Multidisciplinary research and drug discovery in Chinese medicine: coptis and berberine as the case	3A	12.15.25	La Brea
Franco, Elisa	Programmable artificial RNA condensates in mammalian cells	4B	12.15.25	Ballroom
Fu, Tianmin	Molecular mechanisms of Holliday junction branch migration catalyzed by an asymmetric RuvB hexamer	9B	12.17.25	La Brea
Gao, Chen	Cardiac microexon regulation in cell death	5B	12.16.25	La Brea
Govindarajan, Rajgopal	Cardioprotective SNPs in SLC28A3 and lncRNA SLC28A3-AS1 result in transcriptional changes and alternative splicing to reduce doxorubicin cytotoxicity	3A	12.15.25	La Brea
Guo, Peixuan	Introduction: The Current Advancement of RNA Nanotechnology, Extracellular Vesicles, and RNA-displaying EVs	1	12.15.25	Ballroom
Hashemi, Mohtadin	Conformational Switching in APOBEC3G-RNA Complexes Revealed by High-Speed AFM and Molecular Simulations	10A	12.17.25	La Brea
Hong, Fan	Programmable RNA molecular devices for biosensing and cellular regulation	10A	12.17.25	La Brea
Jackman, Jane	Harnessing the unusual chemistry and biology of tRNA modification enzymes	5A	12.16.25	Ballroom
Jay, Steven	Mechanical Regulation of Extracellular Vesicle Production and Cargo	6A	12.16.25	Ballroom
Jin, Kai	Illustration of the variable 1D sequences and conserved 2D and 3D structures of different ncRNA nanostructures for tracking the evolution and origin of organisms	4A	12.15.25	La Brea
Johnson-Buck, Alex	In Situ Multi-Omic Digital Biology via Single-Molecule Kinetic Fingerprinting	8A	12.17.25	La Brea
Kieft, Jeffrey	Viral RNA structures that manipulate cellular machinery	2	12.15.25	Ballroom
Koirala, Deepak	RNA structure-based strategies of cap-independent viral genome translation	5B	12.16.25	La Brea
Kondabagilu, Kiran	Genome packaging and compaction in Mimivirus	6B	12.16.25	La Brea
Korostelev, Andrei	A molecular switch between AUG and non-AUG translation	8B	12.17.25	Ballroom
Koutmou, Kristin	The molecular level consequences of RNA modifications on protein synthesis	3B	12.15.25	Ballroom
Lackey, Lela	The contribution of RNA structure to 3’ splice site selection	5A	12.16.25	Ballroom
Lee, Tae Jin	Targeting microRNAs for treating glioblastoma with engineered extracellular vesicles	3A	12.15.25	La Brea

Liu, Fei	High-throughput Production of Extracellular Vesicles for Diagnostic and Therapeutic Research	7A	12.16.25	Ballroom
Liu, Shujun	*Next Generation Oncology: Harnessing Precision mRNA Vaccines and Exosome Delivery*	8B	12.17.25	Ballroom
Lu, Biao	Genetic Engineering of Multifunctional Exosomes for Cancer Diagnosis and Therapy	7A	12.16.25	Ballroom
Ma, Jinbiao	Cryo-EM structure of a natural RNA nanocage	8A	12.17.25	La Brea
Miles, Wayne	Coordinated Post-Transcriptional Regulation Facilitates PD-L1 Protein Production and Tumor Immune Suppression	5B	12.16.25	La Brea
Musier-Forsyth, Karin	How Structure Determines HIV-1 Unspliced RNA Fate: A Tale of Two Gs	1	12.15.25	Ballroom
Nguyen, Steven	Optimization of a High-throughput FRET Assay to Study glmS Riboswitch Self-cleavage in Staphylococcus aureus	8A	12.17.25	La Brea
Oberdoerffer, Shalini	Exploring the utility and mechanisms of N4-acetylcytidine in mRNA therapeutics	8B	12.17.25	Ballroom
Rao, Zihe	Cryo-EM structural imaging of the revolving hexameric DNA packaging motor of human herpesvirus	1	12.15.25	Ballroom
Sahay, Gaurav	Rapid In-vivo Endosomal Escape Assay Reveals Insights into Mechanism of Efficient Lipid Nanoparticle-based RNA Delivery	9B	12.17.25	La Brea
Schlick, Tamar	Conformational Transitions of the SARS-CoV-2 Frameshifting element suggest translation mechanism	6B	12.16.25	La Brea
Sehgal, Lalit	MALAT1 Long-Non-Coding RNA Regulates SOX11 Expression in Mantle Cell Lymphoma	4A	12.15.25	La Brea
Shu, Dan	Engineered extracellular vesicles for combinatorial TNBC therapy: SR-SIM-guided design achieves substantial drug dosage reduction	7A	12.16.25	Ballroom
Singh, Guramrit	Connections between mRNA synthesis and decay	8B	12.17.25	Ballroom
Song, Minsun	Transferrin receptor-targeted RNA aptamer enhances blood-brain barrier penetration in brain metastases from triple-negative breast cancer	4B	12.15.25	Ballroom
Stanley, Robin	Molecular Mechanisms of RNA Processing Machines	6B	12.16.25	La Brea
Stewart, Jaimie	Building and tuning synthetic RNA condensates: Experimental design principles and computational insights	5B	12.16.25	La Brea
Tan, Cheemeng	High-throughput and cell-free engineering of synthetic extracellular vesicles	6A	12.16.25	Ballroom
Tu, Li-Chun	A programmable sgRNA tool for engineering chromatin architecture in live cells	10B	12.17.25	Ballroom

van Hoof, Ambro	tRNA Splicing Endonuclease is a Multifunctional Enzyme with Roles in Maturation and Degradation of Diverse RNA	3B	12.15.25	Ballroom
Wang, Aijun	Engineering Extracellular Vesicles and Lipid Nanoparticles for Targeted Delivery and Therapy	1	12.15.25	Ballroom
Wang, Xiangxi	Viral structures, antibody profiles and vaccine design	9B	12.17.25	La Brea
Wang, Yun-xing	RNA conformational space beyond static structure	5A	12.16.25	Ballroom
Webster, Thomas	Human Nanomedicine: Using the G^C DNA Motif to Grow Tissue, Fight Infection, and Inhibit Inflammation	4B	12.15.25	Ballroom
Woodson, Sarah	Mechanisms of RNA aggregation in triplet repeat expansion disease	2	12.15.25	Ballroom
Yeo, Gene	Discovery of Circular RNA biogenesis regulators	1	12.15.25	Ballroom
You, Mingxu	Multiplexed RNA imaging and live-cell profiling using genetically encodable fluorogenic RNA nanodevices	10B	12.17.25	Ballroom
Yu, Jin	Computational Interrogation on mechanochemical and fidelity control of human mitochondrial RNA polymerase and SARS-CoV-2 RNA dependent RNA polymerase in comparison with bacteriophage T7 RNA polymerase	9A	12.17.25	Ballroom
Yu, Wenqiang	NamiRNA-Enhancer Network as novel target for developing small Nuclear acid therapy	3A	12.15.25	La Brea
Zhang, Wen	Mirror-image Nucleic Acids as Next-generation Reagents for Basic Research and Therapeutic Applications	4A	12.15.25	La Brea
Zhu, Guizhi (Julian)	Engineering and delivery of circRNA therapeutics and vaccines	10A	12.17.25	La Brea

Conference of RNA, Exosome and Nanomedicine

--- 5th International Conference on Biomotors, Virus Assembly, and RNA Nanobiotechnology

Dear Conference Participant,

The 5th Conference on Biomotors, Virus Assembly, and RNA Nanobiotechnology is supported by the National Center for Advancing Translational Sciences (NCATS) and The Ohio State University (OSU). This conference and OSU align with National Institutes of Health's (NIH) commitment to provide a safe environment for all attendees, presenters, and participants. All individuals are to be provided an environment in which they feel comfortable expressing and sharing their opinions, ideas, and participate in the conference freely without prejudice or harassment. This is an international conference that welcomes individuals from multiple scientific backgrounds as well as physical locations and cultures. To produce such an environment all participants of the conference are expected to conduct themselves in a behavior that promotes a safe environment. Behaviors considered harassing including age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law will be treated with zero tolerance by OSU.

OSU does not tolerate discrimination and holds Excellence and Impact, Diversity and Innovation, Inclusion and Equity, Care and Compassion and Integrity and Respect as our shared core values. All participants in OSU programs, including conference participants, must comply with OSU policies on nondiscrimination, harassment, and sexual misconduct. All employees of OSU have had training on how to identify any type of discriminatory behavior and are required to report violations to the Title IX Coordinator or Official with Authority. Conference participants who have questions, concerns or complaints related to harassment are encouraged to visit OSU's Civil Rights Compliance Office at https://civilrights.osu.edu/ and/or the Health and Human Services (HHS) Office for Civil Rights (OCR) at https://www.hhs.gov/civil-rights/index.html. Additionally, the NIH provides resources on handling harassment and discrimination at https://grants.nih.gov/policy-and-compliance/policy-topics/harassment/find-help that may be useful in such cases.

The Civil Rights Compliance Office coordinates Ohio State's response to complaints of all protected class harassment, discrimination and sexual misconduct affecting students, employees, graduate associates, appointees, volunteers, visitors, suppliers and contractors, and provides information on rights and options for formal investigation. Please take some time to review the following policies and standards related to the areas within the Civil Rights Compliance Office.

Accessibility

- Guides the university's efforts to provide seamless access to all of its programs, the physical and digital environments.
- Focused on disability-based discrimination such as exclusion, refusal to accommodate, harassment and retaliation.
- Provides oversight for the reasonable accommodations for students, employees, visitors and other program participants.
- Provides training, information and resources on access and accommodations.

Equal Employment Opportunity

- Ensures equality in all employment processes from time of hire to separation through the university's Equal Employment Opportunity (EEO) program.
- Consults with the university community to educate on the key principles of EEO and works to strategically align internal operations with applicable regulations.
- Coordinates the collection, analysis, and reporting of key demographic and operational data to assess program impact.

Youth Protection

- Promotes the safety and welfare of minors who participate in activities and programs with minors, whom

are entrusted to the university's care.
- Outlines what is required of individuals interacting with minors, with the goal of safeguarding the wellbeing of minors.
- Informs individuals of their reporting obligations in instances of known or suspected child abuse or neglect.

Title IX/Sexual Misconduct
- Responds to all incidents of sex-based harassment and discrimination, including sexual assault, sexual harassment, relationship violence, and pregnancy discrimination.
- Provides support resources, investigation options, and interim measures.
- Oversees prevention education and training around sexual misconduct for university community.

Reporting Discrimination, Harassment, or Retaliation.
All participants are encouraged to report any actions that threaten their safety or comfortability during the conference at their earliest convenience. All reports will be treated with confidentiality, in which all identities and details of incidents will be protected.
1. ***If you need immediate help:*** Please call 911.
2. ***Report to OSU Civil Rights Compliance Office:*** Individuals should report any allegations of harassment or discrimination to OSU through the Civil Rights Compliance Office at https://civilrights.osu.edu/, by phone at +1 (614) 247-5838 or TTY +1 (614) 688-8605, or email civilrights@osu.edu. Chairs of the conference will be in attendance and available to all individuals to assist if needed.
3. ***Report to Health and Human Services Office for Civil Rights:*** Individuals are also encouraged to file a report with HHS OCR on their website (https://www.hhs.gov/civil-rights/filing-a-complaint/index.html) using their "File a Complaint Online" tool. Filing a complaint with OSU is not required prior to filing a complaint through HHS OCR, nor does it prevent an individual from filing a report with HHS OCR.
4. ***Report to National Institutes of Health:*** Individuals may also file a complaint with the NIH using their online tool at https://public.era.nih.gov/shape/public/index.era or by calling +1 (301) 480-6701.

Handling Reports of Discrimination, Harassment, or Retaliation.
All reported concerns are taken seriously, reviewed carefully, and addressed promptly. Your report will be acknowledged, and your questions and concerns will be relayed to the appropriate parties. If an investigation is warranted, an investigative unit will conduct a prompt and thorough investigation. Investigators will reach a conclusion and share the outcome of the investigation. If circumstances warrant, discipline for OSU students or employees may include suspension, expulsion, or termination and corrective action may be pursued related to individuals who are not OSU students or employees.

Conference Sponsors

We would like to thank the sponsors of this conference:

NIH National Center for Advancing Translational Sciences

ISRNN International Society of RNA Nanotechnology and Nanomedicine

INTERNATIONAL ASSOCIATION OF BIOMEDICAL SCIENCES (IABS)

Center for RNA Nanobiotechnology and Nanomedicine

THE OHIO STATE UNIVERSITY
CENTER FOR RNA BIOLOGY

THE OHIO STATE UNIVERSITY
COLLEGE OF PHARMACY

GenScript
Scripting Possibilities

System Biosciences
A CellBio Scientific Company

FUELING YOUR INNOVATION

System Biosciences (SBI) offers end-to-end extracellular vesicle (EV) solutions - from isolation to EV labeling, as well as downstream analysis and engineering. Whether you're working with serum, plasma, tissue culture, saliva, urine, or CSF, SBI's innovative platforms **- ExoQuick®, SmartSEC™, and EQ Ultra™ -** deliver the most efficient polymer-based and mixed-mode resin technologies for superior performance.

Our latest ExoQuick™ UltraPure kit

*** Contaminant trapping technology (>95% ApoB removal, reduced albumin contamination)**

*** > 25x higher yield vs. SEC; Greater than 10^3X higher yield vs. ultracentrifugation**

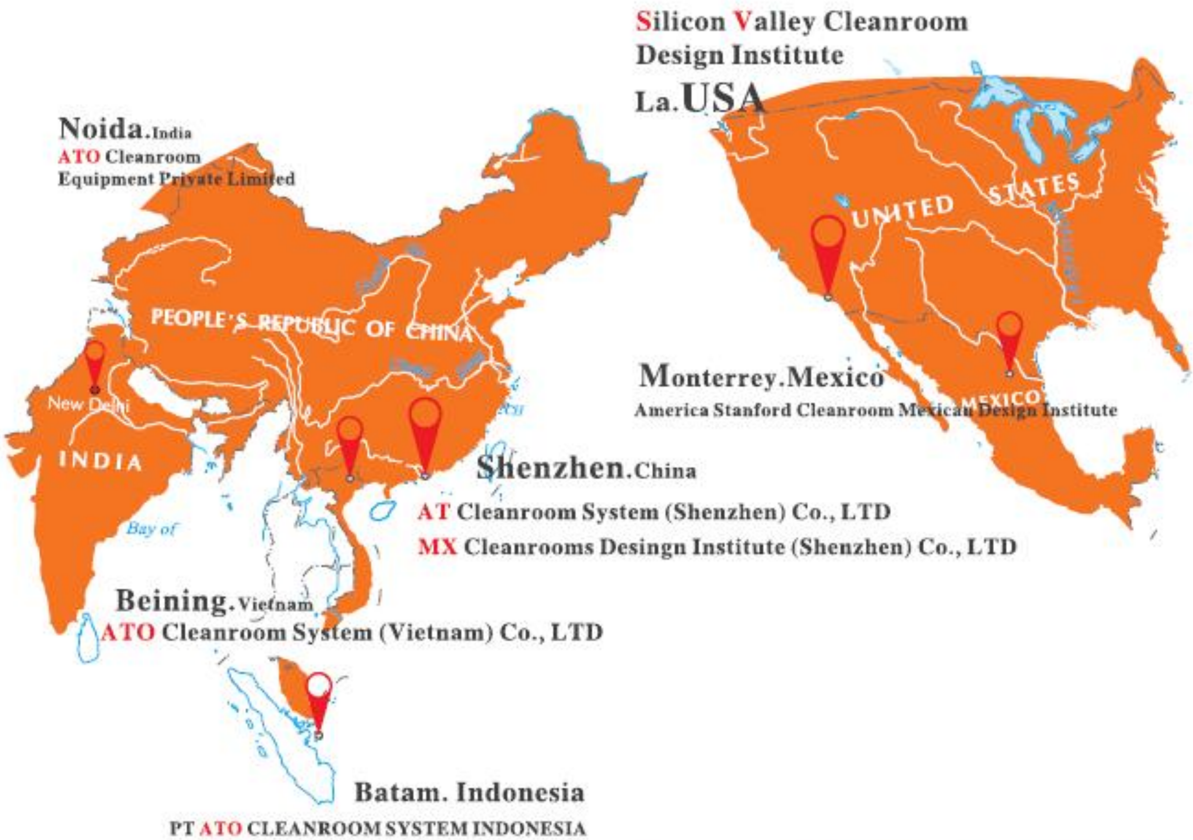
Our scalable formats support sample volumes from **10 µL up to > 1 liter**, making SBI the ideal partner for both research, preclinical EV studies, and custom services - encompassing EV characterization, RNA-Seq analysis, ELISA, and much more.


Herbal Enzymatic Biotech
The Green Key to Unlocking Medicinal Potential
翌靓生物科技
ZIU LENG BIOTECHNOLOGY
上海市第十人民医院
同济大学附属第十人民医院
同济大学 医学院
TONGJI UNIVERSITY
school of medicine
INTRODUCTION
Bioenzymatic Hydrolysis Technology:
Activates and repairs mucosal cells
Nanoencapsulation Technology:
Significantly enhances corneal absorption rate
Inherit Traditional TCM Wisdom | Integrate Modern Biological Technology
Zhaoliang Eye Drops
0 Additives | 0 Hormones | 0 Pesticide Residues | 0 Synthetic Western Medicines | 0 Heavy Metals | 0 Preservatives
Rapid onset of action No side effects
Non-addictive Suitable for long-term use
Over 30 types of Chinese medicinal materials
Synergistic network of multiple active ingredients
Four-dimensional mechanism of action
Effective for myopia, astigmatism, presbyopia, and dry eye syndrome
108CI/CT Injection
Stroke treatment, nerve repair
108CI/CT
Precision Targeted Therapy-
Breakthrough in Safety
No Side Effects
Significant Clinical Value
A brand-new category of thrombolytic drugs created through three major technological breakthroughs: the synergy of nanotechnology, biological coenzymes, and traditional Chinese medicine prescriptions.
Zhaoliang Biotechnology Development (Shanghai) Co., Ltd.
Headquarters: Shanghai, ChinaCore
Business Scope: The company specializes in the R&D and application of integrated technologies combining traditional Chinese herbal extraction with modern bioenzymatic hydrolysis. It boasts comprehensive industrial chain capabilities covering technology R&D, raw material supply, finished product sales, OEM/ODM services, and project development. Its products are widely applied in multiple fields including daily chemical products, medical aesthetics products, functional foods, biomedicine, medical devices, and pet pharmaceuticals.
For academic research and business co-operation inquiries, please contact:
Contact Person: Mr. Wei
Mobile Phone: +86 139 1742 4410
Email: 021vip@126.com


CHINESE SCHOLAR ASSOCIATION
美国华裔教授学者协会
C S A
U.S.A
USA CHINESE SCHOLAR ASSOCIATION
美国华裔教授学者协会
• 美国华裔教授学者协会是一个非盈利、非政治性的社区公益组织；
• 自1998年成立到现在已经走过了27个年头，是南加地区成立最早，历史最悠久的以学术交流为基础的专业人员团体之一；
• 云集了美国院士、国际知名奖项获得者、大学和研究机构的教授和学者，现有201位终身会员。
协会理念
CORPORATE PHILOSOPHY
促进中国学者在世界各地的知识交流和友谊
协会宗旨
ENTERPRISE TENET
促进中美两国科学、技术和高等教育的发展
协会使命
ENTERPRISE SPIRIT
增进中美友谊和东西方文化的相互了解
• 美国华裔教授学者协会网站：http://usacsa.org/
• 美国华裔教授学者协会活动：专题讲座，学术刊物，年会报告

AT Holding

Http//www.atclean.com



Cleanroom System Service Provider

US: 9300 Santa Anita Avenue, Unit108,Rancho Cucamonga,CA,91730

6263650321 atclean0208@gmail.com

CH: (23H, No.1088 Nanshan Avenue, Nanshan District, Shenzhen)

086 13501558321 atclean@atclean.com

0755-26055000 26068111


Sequence to
Clinic-ready mRNA
Optimized Cap. High integrity. Clinical-grade quality.
Rush mRNA
2 weeks gene to mRNA
RNA Modalities
mRNA · saRNA · circRNA
GMP mRNA
IND -> Phase III
LNP Delivery
Targeted & ReadyEdit LNPs
Ready to Accelerate
Your Program
Schedule your consultation
GenScript
Scripting Possibilities