Focus Group IMMUNO DELIVERY

CRS Controlled Release Society

Upcoming Webinar - March 6, 2020 11:30 AM EST

Nature inspired nanomaterials enable adoptive macrophage therapy of sepsis

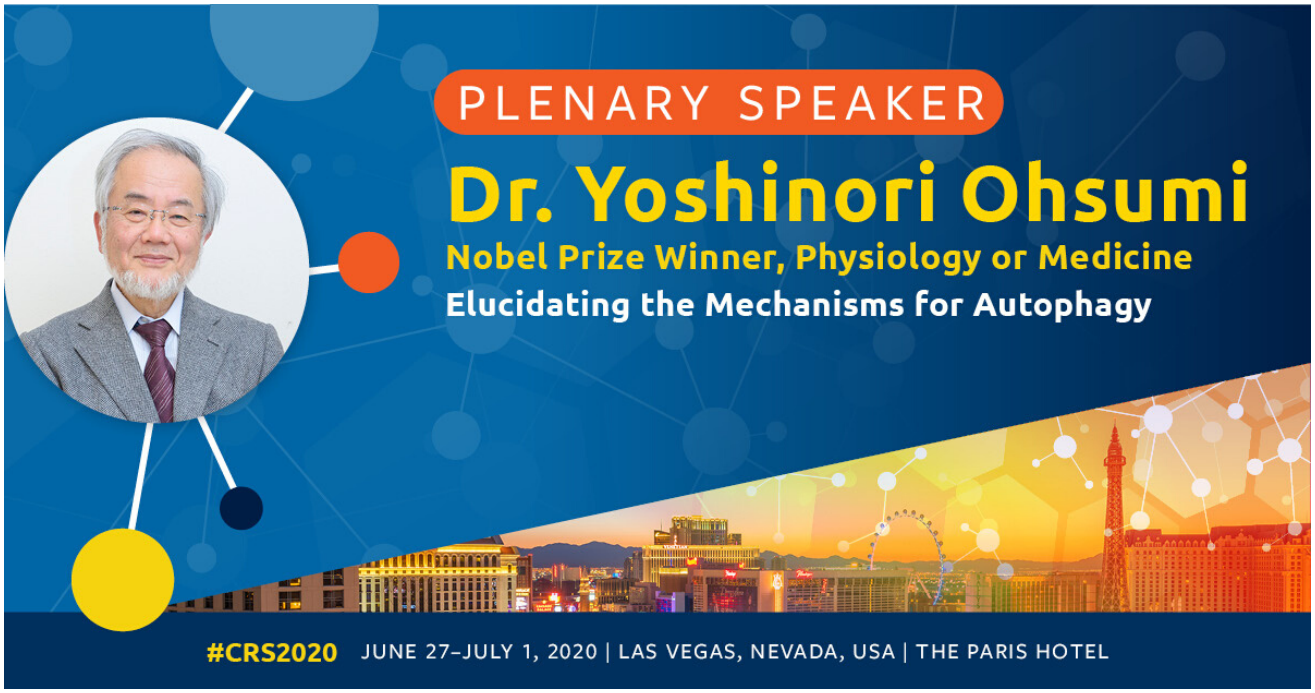
Vitamins are natural compounds for numerous cell functions. Chemically, they possess unique and diverse functional moieties such as hydrophobic chains, hydroxyl groups, and positive charges, which may be incorporated into nanoparticle components. Inspired by vitamin structures, we designed a series of vitamin-derived lipid nanomaterials to deliver the mRNA into macrophages. Then, we identified vitamin C lipid nanoparticles (VcLNPs) with efficient delivery of mRNA in both RAW264.7 cells and bone-marrow-derived macrophages (BMDMs). We also designed the antimicrobial peptides/cathepsin B (AMP-CatB) mRNA. The VcLNPs enabled specific accumulation of AMP-CatB in the macrophage lysosomes, the key location for antibacterial activities. Our results demonstrate that adoptive macrophages (MACs) transfer leads to the elimination of multidrug resistant (MDR) bacteria, including S. aureus and E. coli. Overall, this study provides a promising strategy for overcoming MDR bacteria-induced sepsis and opens up possibilities for the development of nanoparticle-enabled cell therapy for infectious diseases.

Yizhou Dong
Division of Pharmaceutics and Pharmacology, College of Pharmacy, The Ohio State University

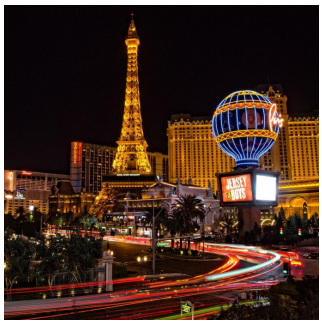
THE OHIO STATE UNIVERSITY

Yizhou Dong is an Associate Professor at the College of Pharmacy, The Ohio State University. His research focuses on the design and development of nanotechnology platforms for the treatment of infectious diseases, genetic disorders, and cancers. Dr. Dong has published over seventy papers and patents. Several of his inventions have been licensed and are currently under development as drug candidates for clinical trials. He is the recipient of numerous honors, such as NIGMS Maximizing Investigators' Research Award and Ohio State Early Career Innovator of the Year.

Announcing The First CRS 2020 Plenary Speaker



Plenary Session 1: Monday, June 29, 2020 **Learn More**



Book Travel Now!!

Paris Hotel is the oficial hotel of CRS 2020.
Rates are **$79 + tax Sunday thorugh Thursday & $159 + tax Friday & Saturday**

Book Here

New CRS Travel Award!!

The CRS Chinese Ph.D./Post-Doctoral Travel Grant Award is presented by the Institute of Drug Delivery Technology (IDDT) and recognizes five (5) CRS members who have an accepted abstract (oral/poster) and are a Chinese Ph.D. or Post-Doctoral Student residing in China

Apply Now

NEWS & EVENTS

Abstract Deadline Extended - 2.7.2020!!

The Controlled Release Society invites you to submit an abstract for an oral or poster presentation at the 2020 CRS Annual Meeting & Exposition. Submit Your Abstract Abstract Submission Guidelines

Submit Your Abstract **Abstract Submission Guidelines**

CRS 2020 ID-FG Video Competion

The Immuno Delivery Focus Group (ID-FG) invites you to submit a video demonstrating a scientific concept or a research finding relevant to Immuno Delivery

Eligibility

- PhD student or Post-Doctoral Researcher
- Registered Members of CRS & the ID-FG
- Must submit an abstract to the 2020 CRS annual Meeting for the work shown in the video

Video Requirements

- Max Length: 3 mins
- Related to ID research
- Submission Deadline: 2/14/20 20:00 UCT

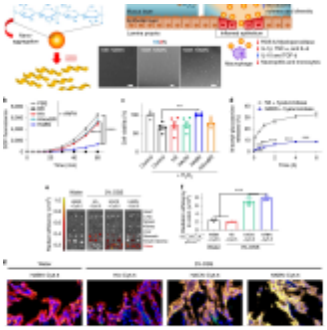
Reward

- $500 USD prize
- Chance to speak at the 2020 CRS Annual Meeting

Please submit videos to crs.fg.id@gmail.com by the deadline

- Voting will occur between 2/17/20 - 3/2/20 and will be conducted by the ID-FG board & members of the ID-FG's social media accounts
- The winner will be announced 3/4/20

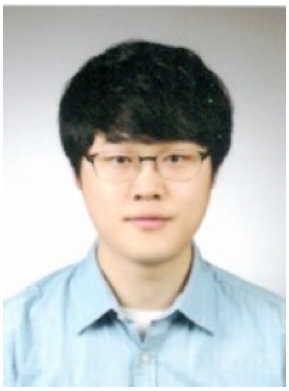
Featured Publications



Hyaluronic acid-bilirubin nanomedicine for targeted modulation o

Imbalance of the gut microbiome has been implicated in numerous human diseases. Nanoparticles have now been...

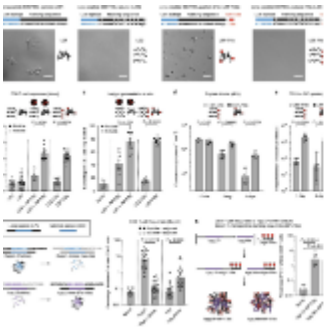
Nature Materials / Aug 19, 2019



Lee Y, Sugihara K, Gillilland MG 3rd, Jon S, Kamada N, Moon JJ.

Researchers at the University of Michigan College of Pharmacy have developed a nanoparticle that alters the gut microbiome and alleviates symptoms of inflammatory bowel disease in mice more effectively than common FDA-approved medications.

Learn More



Peptide–TLR-7/8a conjugate vaccines chemically programmed for na

Cancer vaccines that self-assemble into uniform nanoparticles improve tumor clearance.

Nature Biotechnology / Jan 13

Lynn G, Sedlik C, Baharom F, Zhu Y... Jewell C, Lantz O, Piaggio E, Ishizuka A, Seder R

Researchers at the University of Maryland have developed a novel method of providing vaccinations through self-assembly of peptides into uniform nanoparticles. This approach was applied to several cancer models to great success.

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