

COINS Seminar #41

[Date] Jan/18/2019 (Fri) 16 : 00~17 : 15 (Registration Open at 15 : 30)

[Venue] Life Science & Environment research center. ([LiSE](#)) 1F Conference room

* It's located opposite side of iCONM

[Research Mixer] 17 : 15~18 : 15 ※Fee 500yen ★Please pay the exact amount.

[Registration] URL: https://www.cis-trans.jp/coins_seminar41/index.html

Title : Reactive Oxygen Species Goes Beyond Photodynamic Therapy

Abstract :

The reactive oxygen species (ROS)-mediated mechanism is the major cause underlying the efficacy of photodynamic therapy (PDT). The PDT procedure is based on the cascade of synergistic effects between light, a photosensitizer (PS) and oxygen, which greatly favors the spatiotemporal control of the treatment. This procedure has also evoked several unresolved challenges at different levels including (i) the limited penetration depth of light, which restricts traditional PDT to superficial tumors; (ii) oxygen reliance does not allow PDT treatment of hypoxic tumors; (iii) light can complicate the phototherapeutic outcomes because of the concurrent heat generation; (iv) specific delivery of PSs to sub-cellular organelles for exerting effective toxicity remains an issue; and (v) side effects from undesirable white-light activation and self-catalyzation of traditional PSs. In this talk, the current status and the possible opportunities of nanomedicine for ROS generation for cancer therapy will be discussed in detail.

Speaker : Xiaoyuan (Shawn) Chen

Affiliation : National Institutes of Health

Position : Senior Investigator

URL: <https://www.nibib.nih.gov/about-nibib/staff/xiaoyuan-chen>



<CV>

Dr. Xiaoyuan (Shawn) Chen received his PhD in Chemistry from the University of Idaho (1999). After two postdocs at Syracuse University and Washington University in St. Louis, he started his Assistant Professorship in 2002 and then moved to Stanford in 2004. He moved to NIH in 2009 and became a Senior Investigator and Chief of the Laboratory of Molecular Imaging and Nanomedicine (LOMIN) at the National Institute of Biomedical Imaging and Bioengineering (NIBIB), NIH. His current research interests include development of molecular imaging toolbox for better understanding of biology, early diagnosis of disease, monitoring therapy response, and guiding drug discovery/development. His lab puts special emphasis on high-sensitivity nanosensors for biomarker detection and theranostic nanomedicine for imaging, gene and drug delivery, and monitoring of treatment. Dr. Chen has published over 700 peer-reviewed papers (H-index = 124, total citations > 56,000 based on Google Scholar) and numerous books and book chapters. He is the founding editor of journal "Theranostics" (2017 IF = 8.537). He was elected as AIMBE Fellow (2017), received Michael J. Welch, PhD Award (2019), ACS Bioconjugate Chemistry Lecturer Award (2016), NIH Director's Award (2014) and NIBIB Mentor Award (2012).

<Keywords>

molecular imaging, nanomedicine, theranostics, gene and drug delivery, biomaterials