

Qi (Maggie) Yang

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EDUCATION:

- Shanghai Normal University,
Master in Inorganic Chemistry, 2018.06
Research Advisor: Dr. Hong Yang
- Anhui Agricultural University,
B. S. Applied Chemistry, 2014.06
Research Advisor: Dr. Peirong Chen

RESEARCH EXPERIENCE:

- **2018 Jun. – Now** Researcher, Wuxi DEL, WuXi Apptec Co., Ltd.
Main work: Design and Synthesis of DNA-Encoded Library
DNA-Encoded library technology (DEL) is apply the "Split and Pool" Strategy of combination chemistry to synthesize a large compound library with DNA sequences. DEL technique competent the short and efficient construction and screening of molecule library, showing significant time advantages and cost advantages in the discovery of new drugs. I take in charge of 'On DNA chemistry reaction', DNA library production and high-throughput screen. I have developed two 'On DNA chemistry reactions' and applied a patent for DEL enzyme reaction.
Key words: DNA-Encoded library, Split and Pool, drug screen
- **2015 Aug. – 2018 Jun** Shanghai Normal University
(Supervisor: Dr. Hong Yang.)
- **Project 1:** 'Water-Soluble Polymer Nanoparticles Constructed by Three-Component Self-Assembly: An Efficient Theranostic Agent for Phosphorescent Imaging and Photodynamic Therapy'

I synthesized a water-soluble polymer nanoparticle using three-component self-assembly method. These nanoparticles showed bright phosphorescence and generated the singlet oxygen ($^1\text{O}_2$) species effectively under visible-light irradiation. In cell experiment, they showed great potential as phosphorescent probes and photodynamic therapy reagents for cancer.
Key words: Iridium complex, Phosphorescent Probe, Cancer photodynamic Therapy
- **Project 2:** 'Photostable Iridium (III)-Cyanine Complex Nanoparticles for Photoacoustic Imaging

Guided Near-Infrared Photodynamic Therapy in Vivo'

Iridium complexes trigger PDT under visible light, which limits the application in vivo for poor tissue penetration. Taking the advantage of strong near-infrared absorption of cyanine dyes, we synthesized a novel Iridium (III)-Cyanine complex with intense NIR absorption and monitored its long blood circulation half-time and good targeting ability by Animal Photoacoustic (PA) Imaging System. Therefore, we used IrCy NPs for highly effective PA imaging-guided Near-Infrared Photodynamic Therapy *in vivo*.

Key words: Iridium-cyanine complex, PA Imaging, Photodynamic Therapy

- **Project3:** Photoacoustic imaging guided Lymph node metastasis and surgery dissection with Near-infrared iridium nanoparticles

In last work, we obtained an Near-Infrared iridium (III)-cyanine complex (IrCy). After modify iridium (III)-cyanine complex with protein and folic acid, a new nano-platform was established. Notably, this nano-platform also exhibit intense NIR absorption and good biocompatibility. In vivo PA imaging showing that the metastasis Lymph node can be traced and enriched with our nano-platform and showing strong PA signal. What's more, we can clearly distinguish the sentinel lymph node and muscle by naked eye. Under this specific character we successfully performed lymph node dissection on Lymph node metastasis mice without using other instruments, which greatly reduced the operation time and pain of the metastasis mice.

Key words: PA imaging, Lymph node metastasis, surgery dissection

WORK EXPERIENCE:

- 2018 Jun. – Now Researcher, Department of Wuxi DEL, WuXi Apptec Co., Ltd.
Main responsibilities:
 - On DNA new reaction development, drug screening, library production
 - Manage lab, lead team work and serves as trainer
 - Write new reaction protocols
 - Custom explainer
- 2015 Aug. – 2018 Jun Shanghai Normal University
Main responsibilities:
 - Wrote book chapters and helped mark homework
 - Supervised undergraduate students with their dissertations, designed experiments and revised their papers
 - Manage lab instruments

PUBLICATIONS:

- **Paper:** Qi Yang, etc. Photostable Near-IR Iridium (III)-Cyanine Complex Nanoparticles for Photoacoustic Imaging Guided Photodynamic Therapy in Vivo. [J] *ACS Appl. Mater. Interfaces*, 2019 (**IF: 8.097**)
- **Paper:** He Hu, Qi Yang, etc. Polydopamine-decorated Tobacco Mosaic Virus for Photoacoustic/Magnetic Resonance Bimodal Imaging and Photothermal Cancer Therapy. [J] *Nanoscale*, 2019 (**IF: 7.233**)
- **Paper:** Qi Yang, etc. Water-Soluble Polymer Nanoparticles Constructed by Three-Component Self-Assembly: An Efficient Theranostic Agent for Phosphorescent Imaging and Photodynamic Therapy. [J] *Chem-Eur J.* 2017 (**IF: 5.16**)
- **Paper:** Yuping Yan, Qi Yang, etc. Heteropoly blue doped polymer nanoparticles: an efficient theranostic agent for targeted photoacoustic imaging and near-infrared photothermal therapy in vivo. [J] *J. Mater. Chem. B*, 2016 (**IF: 4.776**)
- **Paper:** Qi Yang, etc. Photoacoustic imaging guided Lymph node metastasis and surgery dissection with Near-infrared iridium nanoparticles, in progress
- **Patent:** Preparation methods and application of an Iridium-phthalocyanine complex. Publication Number: **105968118A**, authorized
- **Patent:** Preparation methods of a near infrared metal Iridium complexes. Publication Number: **106188149A**

AWARDS AND HONORS:

- **Excellent workers in year 2018** (Department of Wuxi DEL, WuXi Apptec Co., Ltd) 2018
- **Excellent graduate student for 2018**, (Shanghai Normal University) 2017-2018
(*Granted to students in top 3% students of the year)
- **Excellent graduates of Anhui Province**, (Anhui Agricultural University) 2013-2014
(*Granted to students in top 5% students of the year)
- **The Academic special Scholarship of the year***, (Anhui Agricultural University) 2013-2014
(*Granted to students in top 2% students of the year)
- **National Encouragement Scholarship***(Anhui Agricultural University) 2012-2013
(*Granted to students in top 5% students of the year)
- **The First Class Academic Scholarship of the year ***, (Anhui Agricultural University) 2011-2012
(*Granted to students in top 5% students of the year)
- **National Encouragement Scholarship***(Anhui Agricultural University) 2011-2012
(*Granted to students in top 5% students of the year)
- **The First Class Academic Scholarship of the year ***, (Anhui Agricultural University) 2010-2011
(*Granted to students in top 5% students of the year)
- **National Encouragement Scholarship***(Anhui Agricultural University) 2010-2011
(*Granted to students in top 5% students of the year)

SKILLS

Skills

- 1 Material synthesis and material characterizations methods (XRD, TEM, AFM, XPS, ICP, FTIR, UV, FL)
- 2 Animal surgery, establish animal model
- 3 Cell culture, safety evacuation
- 4 Design, synthesis, analysis and purify organic molecular
- 5 Drug delivery and in vivo imaging
- 6 DNA PAGE/ Agarose gel electrophoresis
- 7 Good handling of Aniaml Photoacoustic Imaging, Laser Confocal Microscope, Flow Cyclometer, Magnetic Resonance Imaging, etc

REFERENCES

Professor, Hong Yang
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