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Novel Multivalent Glyco-gold Nanoparticles to Inhibit Bacterial Fim H

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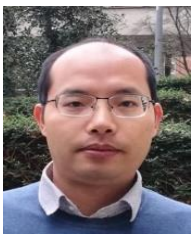

Abstract

The accelerated drug resistance of bacteria is one of the most serious problems in global healthcare and the difficulties in finding new antibiotic drugs are even more challenging. Almost 80% of bacterial infections of living tissues are associated with bacterial biofilms, including lung infections of cystic fibrosis patients, colitis, urethritis, conjunctivitis, otitis, endocarditis and periodontitis.[1] Multivalency is ubiquitous in biological interactions, especially in carbohydrate-mediated processes. The low affinity of carbohydrate-mediated interactions is compensated by clustering of the ligands. However, At the same time, gold nanoparticles have interesting characteristics including a three-dimensional (3D) polyvalent carbohydrate network, a globular shape and a chemically well-defined composition. In this project, we have designed novel multivalent gold nanoparticles with functionalized fullerene-C60, to investigate the inhibition of bacterial Fim H by the gold nanoparticle conjugates.

Biography:

Tao WANG received his Master`s degree in "Medicinal Chemistry" from the University of Guizhou in 2012. In 2013, he worked as a lecturer at the School of Pharmaceutical Engineering of Guizhou Institute of Technology. In 2016, he started his PhD titled "Novel Multivalent Molecules as Antibiofilm and Antibacterial Agents" at the University of Namur under the supervision of Professor Stéphane VINCENT in the research unit of Organic and Bio-organic Supramolecular Chemistry.

Speaker Publications:

1. Classical Monocyte Transcriptomes Reveal Significant Anti-Inflammatory Statin Effect in Women with Chronic HIV
2. A crossed molecular beam apparatus with multi-channel Rydberg tagging time-of-flight detection
3. Measurement and theoretical analysis of transient liquid film during micro-channel flow boiling
4. Quantum interference in H + HD → H 2 + D between direct abstraction and roaming insertion pathways
5. Vibrational overtone excitation of D 2 in a molecular beam with a high-energy, narrow-bandwidth, nanosecond optical parametric oscillator/amplifier

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