

2nd World Congress on

NANOSCIENCE AND NANOTECHNOLOGY

August 10-11, 2018 Osaka, Japan

Analysis of MRSA combining aptamer-modified magnetic nanoparticles and mass spectrometry**Yu-Tsen Liu and Yen-Peng Ho**

National Dong Hwa University, Taiwan

In recent years, the abuse of antibiotics has led to bacterial variation in drug resistance, which has become a major risk for public health safety. The present work applied magnetic nanoparticles modified with highly specific aptamers to the capture of antibiotic-resistant bacteria, methicillin resistant *Staphylococcus aureus* (MRSA). The affinity probe is easy to synthesize and reusable. After silica and polyacrylic acid was modified on the surface of magnetic nanoparticles, and the highly specific DNA of MRSA was covalently bound to the particles. Antibiotic-resistant bacteria can be quickly captured by the probes. The probe is superior to antibody probes in stability and cost. The 60 minute capture time for MRSA has a capture rate of more than 90% while the capture rate for the antibiotic-susceptible *Staphylococcus aureus* is less than 15%. The bacteria species were further identified by mass spectrometer. The proposed method can be applied to quickly screen clinical samples and reduce the analysis time compared to the conventional methods.

Biography

Yu-Tsen Liu is currently pursuing Masters in Chemistry from National Dong Hwa University.

yu024527@gmail.com

Notes: