11th International Conference and Expo on

## Nanoscience and Molecular Nanotechnology

October 20-22, 2016 Rome, Italy

## Preparation of pyrenyl-based multifunctional nanocomposites for biomedical applications

Eun-Kyung Lim

Korea Research Institute of Bioscience and Biotechnology, Korea

Nanocomposites are widely utilized to obtain an accurate diagnosis and provide effective therapy for a number of diseases, because they can be easily formulated by introducing therapeutic agents (e.g., drug and gene) and imaging agents (e.g., magnetic nanocrystal). Furthermore, nanocomposites can be developed as all-in-one systems, which enable cancer diagnosis and therapy, as well as the simultaneous monitoring of drug behavior. In this protocol, we describe the preparation of pyrenyl-based polymer and multifunctional nanocomposites, which enable multimodal imaging, targeted cancer detection and pH-sensitive drug delivery. Notably, these nanocomposites can be used to perform multiple tasks simultaneously for early cancer detection, efficient cataloguing of patient groups for personalized therapy, and real-time monitoring of disease progress. Starting from synthesis of pyrenyl-based polymers, this protocol can be completed in about 15 d.

## **Biography**

Eun-Kyung Lim obtained her PhD (2011) in Chemical Engineering from Yonsei University under the guidance of Professor S Haam. Her research efforts are on development of smart theranostics nanosystems for cancer metabolism regulation.

eklim1112@kribb.re.kr

Notes: