

# 2<sup>nd</sup> International Summit on Clinical Pharmacy

December 02-03, 2014 DoubleTree by Hilton Hotel San Francisco Airport, USA

## Novel approach for the design of antimicrobial materials inspired by nature

**Pascal Thebault, Isabelle Lequeux, Emmanuel Ducasse and Thierry Jouenne**  
Universite de Rouen, France

Since a long time, bacterial contamination, leading to biofilm formation, is a major problem in fields as diverse as medical, food or cosmetics even with preventive hygiene protocols. In order to eliminate or reduce bacterial colonization and biofilm formation, many strategies have emerged. Among them, one strategy is the covalent immobilization of antimicrobial compounds, e.g., antibiotics, quaternary ammonium or silver ions, to design biocidal coatings able to kill bacteria by release (or not) of the active substances. But today antimicrobial materials based on classical agents such as antibiotics, silver ions or quaternary ammoniums have restrictions due to some drawbacks such as toxicity, bacterial resistance or low efficiency. In this context, we developed antimicrobial materials inspired by nature to limit emergence of multiresistant bacteria and chemical toxicity. Here, we describe the elaboration of various antimicrobial materials. All these materials were characterized by appropriate techniques such Nuclear magnetic resonance (NMR) or X-ray photoelectron spectroscopy (XPS). Furthermore, their antimicrobial activity was evaluated against a range of bacteria.

### Biography

Pascal Thebault has completed his PhD in 2007 from Nice-Sophia Antipolis University, followed by Postdoctoral studies from Pierre et Marie Curie University at Paris and at the Commissariat à l'énergie atomique (CEA). Since 2010, he is doing research on polymers, biopolymers, surfaces Laboratory at Rouen University. He has published more than 15 papers in reputed journals on the elaboration of antimicrobial materials.

[pascal.thebault@univ-rouen.fr](mailto:pascal.thebault@univ-rouen.fr)