

## Extended Abstract

### Molecular targets of $\beta$ -lactams- beyond the usual suspects

Monika I Konaklieva

American University, USA

In addition to being inhibitors of bacterial enzymes,  $\beta$ -lactams also inhibit viral and mammalian serine enzymes demonstrating inter-kingdom activity. The focus of this presentation is on the evaluation of the potential of  $\beta$ -lactam antibiotics as inhibitors of the serine enzymes of both prokaryotic and eukaryotic origin, with specific focus on the structure-function relationship of  $\beta$ -lactams as antimicrobial and antineoplastic agents.

#### Abstract

$\beta$ -Lactams have historically been viewed as a class of antimicrobials. However, this paradigm is shifting towards a focus on their ability to function as inhibitors of bacterial enzymes, particularly those involved in broad-spectrum  $\beta$ -lactam resistance, i.e., extended spectrum  $\beta$ -lactamases (ESBL). This shift in focus is the result of the recognition of the  $\beta$ -lactam's ability to acylate enzymes, the majority of which have serine as nucleophile in the active site.