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Monika I Konaklieva

American University, USA

Molecular targets of b-lactams-beyond the usual suspects

b-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 b-lactam resistance, i.e., extended spectrum b-lactamases (ESBL). This shift in focus is the result of the recognition of the b-lactam's ability to acylate enzymes, the majority of which have serine as nucleophile in the active site. In addition to being inhibitors of bacterial enzymes, b-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 b-lactam antibiotics as inhibitors of the serine enzymes of both prokaryotic and eukaryotic origin, with specific focus on the structure-function relationship of b-lactams as antimicrobial and antineoplastic agents.

Biography

Monika Konaklieva completed her PhD in Chemistry - Organic Synthesis from SUNY Buffalo -1997, and became a visiting professor in Medicinal Chemistry at Midwestern University, Chicago, Illinois (1997-1999). She is currently an Associate Professor at American University. She has published more than 40 papers in reputed journals and has been serving as an editorial board member of several chemistry journals publishing in the areas of organic and medicinal chemistry.

mkonak@american.edu