β-Lactams cidal against *Mycobacterium tuberculosis*

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We have designed, synthesized, and tested monocyclic β-lactams that carry thiophenoxy group at C4. These thioethers have shown good intrinsic activity against serine β-lactamase producing *Mycobacterium tuberculosis* H37Rv (Mtbc). Some of the compounds have demonstrated minimal inhibitory concentration (MIC) as low as 6.25 µg/ml in 7H9 and 1.5 µg/ml in GAST. Our investigations indicate that these compounds are cidal to both replicating and non-replicating persistent Mtbc. These compounds have also shown activity against multi-drug resistant strains of *M. tuberculosis*. Therefore, they are promising candidates for lead discovery. Mechanism of action and target identification studies which are currently underway.

Biography

Monika Konaklieva is an organic synthetic/medicinal chemist, whose research focuses on the synthesis and evaluation of new antibacterial, neuroprotective and anticancer agents, as well as development of efficient and environmentally friendly synthetic approaches for their preparation. She obtained her doctoral degree in Organic Synthetic Chemistry from State University of New York at Buffalo (1997). She was a visiting Assistant Professor at the School of Pharmacy, Midwestern University, Chicago, IL (1997-1999). She is currently an Associate Professor in the Department of Chemistry, Washington, DC. In 2007, she spent her sabbatical leave at the Tuberculosis Research Section, LCID, NIAID, NIH.

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