"New Generation of Anti-TB Drug Discovery Targeting Bacterial Cell Division"

Tuesday, September 24, 2013
12:00 noon

Ernest Mario School of Pharmacy
Medicinal Chemistry Conference Room
William Levine Hall, Room 323A
Busch Campus

Abstract: The emergence of multi-drug resistant and extensively drug resistant *Mycobacterium tuberculosis* (MDR-TB and XDR-TB) strains has made many of the currently available anti-TB drugs ineffective. Other drug-resistant pathogens such as MRSA, VRE, *F. tularensis*, *B. pseudomallei*, etc., are serious threat to human health as well as for bioterrorism. Therefore, there is a pressing need to identify new drug targets. FtsZ, bacterial tubulin homologue, is a highly conserved essential cell division protein that polymerizes in a GTP-dependent manner, forming a highly dynamic cytokinetic ring, designated as the Z ring. Other cell division proteins are recruited to the Z ring, and upon resolution of the septum two daughter cells are produced. Since inactivation of FtsZ or alteration of FtsZ assembly results in the inhibition of Z ring and septum formation, FtsZ is a very promising target for new generation antibacterial drug development. This lecture presents recent preclinical development of FtsZ inhibitors as potential new generation antibacterial agents for MDR/XDR-TB and other pathogens in our laboratory.

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