



Challenges and opportunities of antibacterial drug discovery

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Given the current uncertain climate of pharmaceutical industry, with FDA approved NCEs continue to stagger, antibacterial discovery faces unprecedented challenges, however, huge opportunities exist because the well recognized medical need for new agents to fight MDR bacterial infections, such as conditions caused by MRSA and VRE, and also a strong industrial appeal for incentives to invest in this area with orphan drug status, for instance, be granted to novel therapeutics. Here we use one AstraZeneca discovery program to illustrate the challenges and opportunities. The inhibition of essential cell-wall targets, such as Glutamate Racemase (MurI), provides a great opportunity to design the next generation of antibacterials. This talk will be focused on the recent efforts of discovering MurI inhibitors in Gram-positive bacteria and Gram-negative *Helicobacter Pylori*. The entire discovery process from High Throughput Screening, Lead Identification and Lead Optimization will be presented. Emphasis will be given to the demonstration of the power of HTS to discover allosteric enzyme inhibitors and Structural Activity Relationship development employing Structure-Based Drug Design approach.

Biography

Dr. Bolin Geng is a Principal Scientist of Infection iMed at AstraZeneca R&D Boston. He received his Ph.D. in organic chemistry from *University of Montpellier*, France, in 1992. Bolin has been working in pharmaceutical industry over the last 15 years, mostly in antibacterial field. He has over 40 publications, patents and patent applications and has contributed to the developments of several ongoing preclinical and clinical drug candidates.