**Nature’s Inspiration and Chemists’ Perspiration: Total Synthesis of Natural Products**

**Krishna P. Kaliappan**

*Department of Chemistry, Indian Institute of Technology Bombay, Mumbai*

*kpk@chem.iitb.ac.in*

 Our group has been involved in developing new strategies for asymmetric syntheses of complex natural products and natural product like molecules, which are of biological and medicinal importance. We have recently reported the first enantioselective formal synthesis of vinigrol, a complex tricyclic diterpene, which involved a domino metathesis/Diels-Alder reaction as a key step. We had also reported an enantioselective route to the core structure of a highly potent antibiotic, platensimycin,which was isolated from the strain of *Streptomyces platencis* by the Merck group through a systematic screening of extracts of 250000 natural products. We also have recently completed the formal synthesis of platencin, which also show broad-spectrum antibacterial activity against methycillin resistant *Staphyllococcus aureus* (MRSA), vancomycin-resistant *enterococci* and linezolid-resistant MRSA. Furthermore, we have recently accomplished the formal synthesis of palmerolide A, a novel macrolide isolated from an unusual source, Antarctic marine tunicate *Synoicum adareanum*. In this lecture, our synthetic efforts toward some of these natural products will be discussed in details.



**References**

1. Betkeker, V. V.; Sayyad, A.; Kaliappan, K. P. *Org. Lett.,* **2014**, *16*, 5540-5543.

2. Ramakrishna, K.; Kaliappan, K. P. *Org. Biomol. Chem.* **2015**, *13*, 234-240.

3. a. Gowrisankar, P.; Pujari, S. A.; Kaliappan, K. P. *Chem*. *Eur. J*, **2010**, *16*, 5858-5862. b. Pujari, S. A.; Gowrisankar, P.; Kaliappan, K. P. *Chem. Asian J.* **2011**, *6*, 3137-3151.