CYCLE DE CONFÉRENCES DE CHIMIE

Avec le concours de : Manufacture Française des Pneumatiques MICHELIN
Ecole Nationale Supérieure de Chimie de Clermont-Ferrand
Institut de Chimie de Clermont-Ferrand (ICCF UMR 6296)
U.F.R.S.T. Département de Chimie

Jeudi 16 Mai 2013 à 16h

Amphi de Chimie Paul REMI - (Site des Cézeaux)

Pr. Stefan Bräse

Karlsruhe Institute of Technology, Karlsruhe, Germany

Small molecular entities for chemical biology

With the advent of the field of chemical biology, the demand of new chemical entities to control specific biological functions has been decreased exponentially over the last decade. In this lecture, selected designed small biologically-active compounds based on natural products (mostly isolated from fungi) will be presented alongside to combinatorial approaches. In particular, the combination of asymmetric (vinylogous)-aldol, oxa-/aza-Michael and Diels-Alder reactions enables the synthesis of a number of heterocyclic benzoannelated natural products. Namely (desoxy)diversonol, lachnone analogues, marmycin derivatives and cannabinoids can be efficiently synthesized using an asymmetric organo-catalytic vinylogous aldol reaction and subsequent oxa- or aza-Michael reaction, respectively. In these cases, all stereogenic centers were assembled through organo-catalysis.

In addition to this, we present briefly combinatorial approaches towards small molecular libraries. Finally, approaches towards drug delivery using bioconjugates of peptoids and polyamines will be discussed. Biological studies in fish, mice and cellular models will be presented briefly.

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