



Université Blaise Pascal

UNIVERSITÉ BLAISE PASCAL
U.F.R de Recherche Scientifique et Technique



CYCLE DE CONFÉRENCES DE CHIMIE

Avec le concours de : **Manufacture Française des Pneumatiques MICHELIN**
Centre de Développement Préclinique, Schering-Plough
Fédération de Chimie (FR 2404)
Section Auvergne de la Société Française de Chimie
U.F.R.S.T. / Master de Chimie / Département de Chimie

Lundi 3 Mai 2010 à 16 h (Hors cycle)
Amphi 9111 - Pôle physique - (Site des Cézeaux)

Pr. Wolf-Dieter Fessner

Petersenstr. 22, 64287 Darmstadt, Germany

Biomedicals Development by Chemo-Enzymatic Routes: Simple Monosaccharides to Complex Oligosaccharides to Multivalent Glycoclusters

Glycoconjugates have been recognized to play essential roles in cell signaling, cellular differentiation, and immune response. Nature uses carbohydrate building blocks to create a combinatorial diversity of bioactive oligosaccharide components. Multivalency is a common strategy in biological systems to enhance affinity and specificity of ligand-receptor interactions. Precise clustering of multiple synthetic ligands in space around suitable scaffolds to maximize their biological effects has attracted considerable attention.

Our group is developing enzymatic methods to prepare natural and non-natural saccharidic components for the preparation of novel glycocluster structures for potential biomedical applications. This includes preparation of monosaccharides by carbonylation, oligosaccharide synthesis by Leloir-type glycosyl transfer, and click chemistry strategies for decoration of hybrid nanoscaffold structures.