

Invitation à la soutenance publique de thèse

Pour l'obtention du grade de Docteur en Sciences

Monsieur Jean-François BODY

Master en sciences chimiques à finalité approfondie

Development of Methodologies towards the Total Synthesis of Okadaic Acid

During the last decades, our laboratory has been interested in the development of new synthetic methodologies and their application to the total syntheses of natural products exhibiting biological activities.

In this context, this work started with an investigation of the diastereoselective parameters of the ISMS reaction (Intramolecular Silyl Modified Sakurai). Three parameters were investigated: (i) the annelating fragment configuration, (ii) the vinylsilane geometry and (iii) the steric hindrance in allylic position.

This first part was followed by its direct application to the synthesis of the C15-C27 domain of okadaic acid; a polycyclic ether produced by dinoflagellates. This natural compound exhibits a strong affinity for protein phosphatases 1 and 2A and is largely used as a probe in biochemistry. An unexpected rearrangement during a Woodward-Prevost dihydroxylation triggered our interest and opened doors to the use of photochemistry. Our research finally led to a specific tetracycle containing every chiral centers required to pursue the synthesis of our polycyclic ether.

Since green chemistry became an important challenge for chemists all around the world, we decided to develop an electrochemical process leading to the formation of spiroketals. The electrochemical decarboxylation was applied to the synthesis of the C15-C27 domain of okadaic acid and offered a second route towards this fragment. Furthermore, we decided to extend this new and ecological methodology to the synthesis of the C1-C14 and C28-C38. Previous work performed in the laboratory by Dr S. Dochain allowed us to rapidly generate the desired substrate and promoted this wonderful tool.

Jeudi 21 décembre 2017 à 16h00

Auditoire LAVO 51
Bâtiment Lavoisier
Place Louis Pasteur, 1
1348 Louvain-la-Neuve



Membres du jury :

Prof. Benjamin Elias (UCL), promoteur
Prof. Jean-François Gohy (UCL), président
Prof. Raphaël Robiette (UCL), secrétaire
Prof. Adrian Dobbs (University of Greenwich, UK)
Dr. Ali Ates (UCB, Belgique)
Prof. Michaël Singleton (UCL)