IBN SEMINAR SERIES



Conformational Communication: Design and Synthesis of Membrane-Bound Receptor Mimics

Professor Jonathan Clayden
School of Chemistry, University of Bristol, UK

Tuesday, January 23, 2018 • 9:00 am to 10:00 am
Discovery Theatrette, Level 4 • The Matrix, 30 Biopolis Street, Biopolis

ABSTRACT

Biology solves the problem of communicating information through cell membranes by means of conformationally switchable proteins, of which the most important are the G-protein coupled receptors (GPCRs). The lecture will describe the design and synthesis of dynamic foldamers as artificial mimics of GPCRs, with the ultimate aim of controlling function in the interior of an artificial vesicle. Techniques that allow detailed dynamic conformational information to be extracted both in solution and in the membrane phase will be described.

ABOUT THE SPEAKER

Jonathan Clayden was born in Uganda in 1968, grew up in the county of Essex, in the East of England, and was an undergraduate at Churchill College, Cambridge. In 1992 he completed a PhD at the University of Cambridge with Dr Stuart Warren. After postdoctoral work with Professor Marc Julia at the École Normale Supérieure in Paris, he moved in 1994 to Manchester as a lecturer. In 2001 he was promoted to full professor, and in 2015 he moved to a position as Professor of Chemistry at the University of Bristol.

His research interests encompass various areas of synthesis and stereochemistry, particularly where conformation has a role to play: asymmetric synthesis, atropisomerism, organolithium chemistry, long-range stereocontrol. He has pioneered the field of dynamic foldamer chemistry for the synthesis of artificial molecules with biomimetic function.

He is a co-author of the widely used textbook “Organic Chemistry”, and his book “Organolithiums: Selectivity for Synthesis” was published by Pergamon in 2002.

He has received the Royal Society of Chemistry’s Meldola (1997) and Corday Morgan (2003) medals, Stereochemistry Prize (2005), Hickinbottom Fellowship (2006) and Merck Prize (2011), and the Novartis Young European Investigator Award (2004). He held senior research fellowships from the Leverhulme Trust and the Royal Society in 2003-4 and 2009-10 and has held a Royal Society Wolfson Research Merit award and a European Research Council Advanced Investigator Grant (€2.5M).

This seminar is free and no pre-registration is required.

For any enquiries, please contact: announcements@ibn.a-star.edu.sg.

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