



Invitation to the VIBT/ÖGMBT seminar at the

Institute of Molecular Modeling and Simulation

Muthgasse 18, 1190 Vienna
Seminarraum Chemie 03/03

October 7th, 2016
10:30 h

Xavier Daura

Catalan Institution for Research and Advanced Studies (ICREA)
and Institute of Biotechnology and Biomedicine of the Autonomous
University of Barcelona (UAB), Spain.

Exploring the pan-genome of pathogenic bacterial species for the identification of novel antimicrobial targets and vaccine candidates

Host: Chris Oostenbrink

The main objective of our research group is the development of new strategies to combat infections by multidrug-resistant (MDR) bacteria, in particular of the gram-negative group. The increasing emergence and spread of MDR pathogens constitutes at present one of the major threats to public health worldwide. The shortage of effective antimicrobials for the treatment of infections by MDR gram-negative bacteria is particularly critical as cases of pan-resistance accumulate. The discovery of new targets and modes of action, less propitious to the evolution of resistance, has therefore become a pressing need. In parallel, the development of prophylactic, as well as therapeutic vaccines constitutes an alternative that might offer advantages in certain cases, including endemic infections or the protection of high-risk population groups. Our team combines a range of computational and experimental techniques for the identification of antimicrobial targets with new modes of action and vaccine candidates eliciting prescribed responses. In this talk I will explain our strategy in this field with recent examples from our work, including the development of bioinformatics tools and the experimental investigation of specific drug-target and vaccine candidates.



Xavier Daura studied Biological Sciences at UAB, Barcelona, where he graduated in 1991 and obtained the PhD in 1996. He then moved to ETH, Zurich. There, he performed seminal work on the simulation of polypeptide folding by molecular-dynamics methods. In 2002 he was appointed as ICREA Research Professor and returned with this position to the Institute of Biotechnology and Biomedicine (IBB) of UAB, starting a new group in Computational Biology. Today, his group focuses on the identification and development of new strategies to combat infections by multidrug-resistant bacteria, using a range of computational and experimental approaches.