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SCF-ChemBio: Chemical Biology Tour de France

Marie Lopez,^{*,[a]} Yung-Sing Wong,^{*,[b]} Christophe Biot,^{*,[c]} and Boris Vauzeilles^{*,[d]}

Chemical biology is a steadily growing field that has traditionally struggled to clearly define its boundaries in a short sentence. However, it can be stated that through the development of chemical and physicochemical tools, concepts and methods, chemical biology aims to address or stimulate biological questions at the molecular level in living organisms. Chemical biologists design and develop molecular tools that can probe or modulate biological processes, in order to understand their function, and sometimes to modify it for

specific applications, but also to observe and analyze these tools in complex biological environments. Essentially positioned as a fundamental approach, chemical biology often remains very close to potential applications as it builds molecular objects capable of reacting to a significant biological stimulus. Chemical biology therefore finds natural development in fields such as health for the design of drugs and diagnostic systems or the environment for applications in crop science and ecology.

The French chemical biology community has a large number of members and is very diverse, but has long lacked representative structures and visibility. A series of recent initiatives have sought to establish a better representation of this field and include: 1) the creation in 2020 of a new Chemical Biology Group within the French Chemical Society (SCF-ChemBio); 2) a "Groupement de Recherche" (GDR ChemBio) with strong interactions with many other organizations and Universities, supported since 2021 by the CNRS, one of the major nationwide research organizations; 3) the first CNRS Thematic School of Chemobiology, which, as an emanation of this GDR, took place in Le Touquet in November 2021; its success led to its renewal for a future edition in November 2023.

SCF-ChemBio puts its efforts in promoting chemical biology and federating French researchers working in that field into a strong connection with the international chemical biology landscape. SCF-ChemBio annually gives out a young researcher

award (latest laureates Dr. Daniela Verga (2022) and Dr. Wadih Ghattaz (2021)) and, with strong support from Chemistry Europe, has organized several virtual events inviting both French and international speakers, which have had an impact far beyond the French frontiers. We are planning to pursue this fruitful collaboration, and in an effort to further emphasize the specificities of the French chemical biology community, we have decided to launch this special collection entitled "SCF-ChemBio: Chemical biology Tour de France", together with *ChemBioChem* and *Chemistry – A European Journal*.


In this special issue, SCF-ChemBio has asked researchers from this community to illustrate a number of themes representative of current developments, showing the scientific diversity of the work carried out.

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 This article is part of the SCF-ChemBio: Chemical Biology Tour de France Special Collection. Please see our homepage for more articles in the collection.



Marie Lopez obtained her Ph.D. in 2007 in chemo-enzymatic synthesis of oligosaccharides under the supervision of Drs. H. Driguez and A. Buléon. In 2008, she joined Poulsen's group (GRIDD, Brisbane) to work on glycosylated carbonic anhydrase inhibitors. She then worked on anti-infectious agents before being recruited as a CNRS research scientist (ETaC, Toulouse) to work on DNA methylation through enzyme inhibition and chemical probe strategies. She is currently at the IBMM in Montpellier, managing projects in chemistry and chemical biology to decipher and target epigenetic modifications in pathological contexts. Since 2020, she has been treasurer of SCF-ChemBio.



Yung-Sing Wong obtained his Ph.D. at ICSN, Gif-sur-Yvette, with Dr C. Marazano. After two post-doc experiences with Profs. E. Winterfeldt and J. S. Clark, he returned to France in 2000 as a CNRS researcher with Prof. J. Lévy at the Université Reims Champagne Ardennes. He joined the Département de Pharmacochimie Moléculaire (DPM) at the Université Grenoble Alpes in 2004 and has been leading the unit since 2020. He is interested in developing eco-efficient ways to explore new chemical spaces and using bio-orthogonal reactions and cell-penetrating agents to design chemical biology tools and therapeutic applications. He is in charge of social media for SCF-ChemBio.



Christophe Biot obtained his Ph.D. in bio-organometallics in 1998 under the supervision of Prof. J. Brocard. After several post-doc positions, he was recruited by the University of Lille in 2004 as an assistant professor. He then integrated the Unity of Structural and Functional Glycobiology where he was appointed Professor in 2012. He coordinates the Chemical GlycoBiology (CheGB) team of scientists displaying complementary know-how from organic synthesis to cell biology. The research topics cover several aspects of high significance in chemical biology. He has published more than 130 articles and 15 book chapters. Since 2020, he has been vice-chair of SCF-ChemBio.



Former student of the Ecole Normale Supérieure in Paris, Boris Vauzeilles prepared his PhD with Prof. Pierre Sinaÿ, before joining Prof. Julius Rebek, Jr. for a post-doctoral experience. He then returned to France as a CNRS researcher. In 2015 he initiated the Department of Chemical Biology at the Institut de Chimie des Substances Naturelles in Gif-sur-Yvette (ICSN). He is also the co-founder of a startup company. His research is mainly focused on the use of synthetic chemistry to develop molecular tools designed to probe biological processes. Since early 2020, he has been the Director of ICSN and President of SCF-ChemBio.

EDITORIAL

Created in 2020, SCF-ChemBio aims to promote the French community of chemical biologists. In this Tour de France, we asked researchers from this community to illustrate the strength, originality and diversity of their work.



*Dr. M. Lopez**, *Dr. Y.-S. Wong**, *Prof. C. Biot**, *Dr. B. Vauzeilles**

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Tour de France**

