南京大学有机化学前沿讲座

Find the Art of Chemistry!

题　　目：**Bringing pathogens to light**

报 告 人：**Boris Vauzeilles, Department of Chemical Biology, Université Paris-Saclay**

地　　点：**化学楼H201蒋雯若报告厅**

时　　间：**2019年10月23号（星期三）上午10:00**

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Biography：

In 1992-1996	PhD with Prof. Pierre Sinaÿ
In 1996-1998	Post-doctoral Research Associate with Prof. Julius Rebek Jr.,Massachusetts Institute of Technology
In 1998-2015	CNRS research Associate in the group of Prof. Jean-Marie Beau
In 2016-2017	President - National Committee for Scientific Research-Section 16-Chemistry and Life Science
In 2018	President,selection committee for the Fondation pour la Recherche Médicale
In 2020-2024	Director of Institut de Chimie des Substance Naturelles

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Lecture abstract：

In the pre-antibiotic era, bacterial infections could have serious consequences, and some epidemic outbreaks often proved dramatic. During the 20th century, the discovery of these molecules considerably impacted our life conditions. Some bacteria remain however difficult to treat or to detect, and the development of resistant strains, combined with their rapid diffusion within our globalized societies, have considerably reduced our antibiotic arsenal. Epidemic outbreaks can regularly have severe sanitary, but also economic impact. Rapid detection and identification of bacteria remains therefore a major challenge.We are developing an approach to address this question, relying on metabolic labeling of the bacterial cell surface. As an example, the external membrane of Gram-negative bacteria is covered by a dense lipopolysaccharide layer (LPS) which is involved in cell integrity, but also in the virulence of some strains.

Our recent work has shown that, when metabolically active, Gram-negative bacteria, can specifically incorporate a chemically modified, azide-containing monosaccharide within their LPS. This bioorthogonal reporter group can then be used to "reveal" labeled bacteria, using a click-chemistry ligation method. This strategy allows for rapid detection of live pathogenic bacteria.

Selected publications:

1. E. Lesur, A. Baron, C. Dietrich, M. Buchotte, G. Doisneau, D. Urban, J.-M. Beau, N. Bayan, B. Vauzeilles, D. Guianvarc'h, Y. Bourdreux, Chem Commun., 2019.
2. C. Cabriel, N. Bourg, P. Jouchet, G. Dupuis, C. Leterrier, A. Baron, M.-A. Badet-Denisot, B. Vauzeilles, E. Fort, S. Lévêque-Fort, Nature Communication, 2019, 10:1980.
3. N. Berthelot, A. Brossay, V. Gasciolli, J.-J. Bono, A. Baron, J.-M. Beau, D. Urban, F.-D. Boyer*, B. Vauzeilles*, Org. Biomol. Chem., 2017, 15, 7802-7812.
4. M. Dumont, A. Lehner, B. Vauzeilles, J. Malassis, A. Marchant, K. Smyth, B. Linclau, A. Baron, J. Mas Pons, C. T. Anderson, D. Schapman, L. Galas, J.-C. Mollet, P. Lerouge*, Plant J., 2016, 85, 437–447.

欢迎参加！

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