



## Dr Cyrille SABOT



CNRS Researcher

Bioorganic team

Tel : 02 35 52 24 39

E-mail : [cyrille.sabot@univ-rouen.fr](mailto:cyrille.sabot@univ-rouen.fr)



Website: <https://cyrille-sabot.cnrs.fr/>

### PROFESSIONAL EXPERIENCES

- 2010- Researcher at CNRS; Rouen Normandy University, France.
- 2009-2010 Postdoctoral Associate; Advisor: Prof. A. Greene, Grenoble Alpes University, France.
- 2007-2009 Postdoctoral Associate; Advisor: Prof. S. Canesi, University of Quebec at Montreal, Canada.

### EDUCATION

- 2017 HDR (Habilitation to conduct researches and supervise students) delivered by Rouen Normandy University, France.
- 2003-2007 Ph.D. Organic Chemistry, Advisor: Dr. C. Mioskowski, University of Strasbourg, France.
- 2002-2003 M.S. Organic Chemistry, Advisor: Prof. M. A. Ciufolini, Claude Bernard Lyon 1 University, France.

### ADMINISTRATIVE & INSTITUTIONAL RESPONSIBILITIES

- 2018-- Nominated member of the Unit Council of the UMR 6014.
- 2016- Biorganic chemistry project manager of the technologic platform Innovation Chimie Carnot (I2C).
- 2014- Member of the Advisor Commission of faculty specialists (CCSE, section 32) – Rouen Normandy University, France.

### RESEARCH INTERESTS

Development of new synthetic methodologies and ligation tools for bioorganic applications.

### SCIENTIFIC ACHIEVEMENTS

**Academic record (h-index: 24), 51 publications, Guest Editor of Biomolecules (2019-2020).**

## *SUPERVISION ACTIVITIES*

2010-present Supervision of 11 postdoctoral researchers, 8 PhD students, 13 M. Sc. students  
– CNRS-COBRA Laboratory – Rouen, France

## *GRANTS AND FELLOWSHIPS*

2021-2025 Laureate of the ANR (French National Research Agency) – PRC programme (Project: NEOCLASSIC).  
2022-2027 Holder of the premium for scientific excellence and doctoral training (PEDR/PES)  
2017-2020 Laureate of the ANR (French National Research Agency) – Young Researchers programme (Project: Click and Fish).  
2014-2017 Holder of the premium for scientific excellence and doctoral training (PEDR/PES)  
2003-2007 Industrial fellowship award co-funded by CNRS & Solvay Research Centre (formerly Rhodia) – Lyon, St Fons, France

## *TEACHING ACTIVITIES*

2021 Tutorials (M. Sc. Students, 2 × 17 hours) – Pericyclic reactions – University of Rouen, France.  
2018-present Lecture (M. Sc. students, 2 hours per year) – Bioorthogonal ligation – University of Rouen, France.  
2019 Lectures and Tutorials (3rd-year university students, 6 hours) – Heterocyclic chemistry – University of Rouen, France.  
2016 Lecture (M. Sc. Students, 1 hour) – New ligation strategies for bioconjugation – University of Lille, France.  
2009-2010 Practical laboratory work (2nd- and 3rd-year University students, 40 hours) – Organic chemistry – University of Grenoble, France.  
2008-2009 Tutorials (2nd-year university students, 40 hours) – Organic chemistry – University of Quebec, Montreal, Canada.  
Tutorials (1st-year university students, 20 hours) – Inorganic chemistry – University of Quebec, Montreal, Canada.  
2007-2008 Lectures (3rd-year university students, 90 hours) – Bioorganic chemistry – University of Quebec, Montreal, Canada.

## *MEMBERSHIPS OF SCIENTIFIC SOCIETIES*

Member of The Chemical Society of France (Société Chimique de France).  
Member of The French Medicinal Chemistry Society (Société de Chimie Thérapeutique).

## *EDITORIAL ACTIVITIES*

2019-2020 Guest Editor of the Special Issue "Novel Approaches in Biomolecule Labeling" in the Journal *Biomolecules* (IF 4.082).

## CONFERENCES/SEMINARS

20. Daix, Biopharma Inventiva (France), June 1<sup>st</sup>, 2023.
19. Budapest, Research Centre for Natural Sciences (Hungary), April 19<sup>th</sup>, 2023.
18. Grenoble, DPM (France), February 10<sup>th</sup>, 2023.
17. Marseille, AFMB (France), October 17<sup>th</sup>, 2022.
16. Grenoble (France), First scientific days of GDR ChemBio, October 21-22, 2021.
15. Orléans (France), January 27-29<sup>th</sup>, 2020 (4<sup>th</sup> Chemical Ligation Meeting).
14. Université du Havre Normandie, URCOM (France), November 21<sup>st</sup>, 2019.
13. University of Warangal (India), September 23-25<sup>th</sup>, 2019 (International conference on Advances in Chemical Sciences and Technologies ACST 2019).
12. Université Paris Sud, BioCIS (France), February 21<sup>st</sup>, 2019.
11. Université de Bourgogne Franche-Comté, ICMUB (France), November 8<sup>th</sup>, 2018.
10. ENS Paris-Saclay (France), June 26<sup>th</sup>, 2018 (6<sup>th</sup> scientific meeting of LabEx CHARM3AT).
9. Université de Strasbourg, Faculté de pharmacie (France), September 21<sup>st</sup>, 2017.
8. Kiel University (Germany), June 15-17<sup>th</sup>, 2015 (Symposium).
7. Nant (France), August 23-28<sup>th</sup>, 2015 (GECO56).
6. Strasbourg (France), 2-3<sup>rd</sup>, 2015 (5<sup>ème</sup> symposium francophone de synthèse totale).
5. Faculté des Sciences Pharmaceutiques et Biologiques de Lille (France), June 26<sup>th</sup>, 2014.
4. ENSCP Chimie ParisTech (France), March 25<sup>th</sup>, 2014 (Journée de printemps - Division de Chimie Organique de la Société Chimique de France – communication Jeunes Chercheurs).
3. Université de Rouen, COBRA (France), November 9<sup>th</sup>, 2010.
2. Université Grenoble-Alpes (France), January 10<sup>th</sup>, 2010.
1. Université du Québec à Montréal (Canada), January 14<sup>th</sup>, 2008.

## PUBLICATIONS

[51]. The light-controlled release of 2-fluoro-L-fucose, an inhibitor of the root cell elongation, from a nitrobenzyl-caged derivative.

Mathieu Carlier, Thomas Poisson, Jean-Claude Mollet, Patrice Lerouge, Cyrille Sabot, Arnaud Lehner\*. *Int. J. Mol. Sci.* **2023**, 24, 2533.

[50]. Quinoxalin-2(1H)-ones: Chemical Synthesis, Fluorescence Properties and Applications. Kévin Renault, Pierre-Yves Renard, Cyrille Sabot\*. *Eur. J. Org. Chem.* **2022**, e202201314.

[49]. Metalloenzyme-Mediated Thiol-Yne Addition Towards Photoisomerizable Fluorescent Dyes.

Alexis Lossouarn, Chloé Puteaux, Laetitia Bailly, Vincent Tognetti,\* Laurent Joubert, Pierre-Yves Renard, Cyrille Sabot\*. *Chem.Eur. J.* **2022**, 28, e202202180

- [48]. Novel Approaches in Biomolecule Labeling.  
Cyrille Sabot\*, Péter Kele\*. *Biomolecules* **2021**, *11*, 1809 (Editorial)
- [47]. One-Pot Synthesis of Diazirines and <sup>15</sup>N<sub>2</sub>-Diazirines from Ketones, Aldehydes and Derivatives: Development and Mechanistic Insight.  
Quentin Ibert, Madeleine Cauwel, Thomas Glachet, Tony Tite, Patricia Le Nahenec-Martel, Jean-François Lohier, Pierre-Yves Renard, Xavier Franck,\* Vincent Reboul,\* Cyrille Sabot\*  
*Adv. Synth. Catal.*, 2021, 363, 4390-4398.
- [46]. 3-Benzoylquinoxalinone as a photoaffinity labelling derivative with fluorogenic properties allowing reaction monitoring under “no-wash” conditions.  
Madeleine Cauwel, Clément Guillou, Kévin Renault, Damien Schapman, Magalie Bénard, Ludovic Galas, Pascal Cosette, Pierre-Yves Renard, Cyrille Sabot\*, *Chem. Commun.*, **2021**, 57, 3893-3896.
- [45]. Tailored Bioorthogonal and Bioconjugation Chemistry : A Source of Inspiration for Developing Kinetic Target-Guided Synthesis Strategies.  
Alexis Lossouarn, Pierre-Yves Renard, Cyrille Sabot\*, *Bioconjugate Chem.* **2021**, *32*, 63–72.
- [44]. Dearomatization of a 3-Hydroxypyridine through an Unexpected Oxidative Deformylation Process: An Entry to Azacyclohexadienones.  
Afef Mabrouki, Patricia Le Nahenec-Martel, Abdelkader Kriaa, Ahmed Hedhli, Pierre-Yves Renard, Cyrille Sabot\*, *Synlett* **2020**, *31*, 1497-1500.
- [43]. Fluorophore-assisted click chemistry through copper(I) complexation.  
Victor Flon, Magalie Bénard, Damien Schapman, Ludovic Galas, Pierre-Yves Renard, Cyrille Sabot\*, *Biomolecules*, **2020**, *10*, 619.
- [42]. Maleimide-based metal-free ligation with dienes: A comparative study.  
Alexis Lossouarn, Kévin Renault, Laetitia Bailly, Patricia Le Nahenec-Martel, Pierre-Yves Renard, Cyrille Sabot\*, *Org. Biomol. Chem.*, **2020**, *18*, 3874-3887.
- [41]. Diverted natural Lossen rearrangement for bioconjugation through in situ myrosinase-triggered isothiocyanate synthesis.  
Jean Wilfried Fredey, Giuliano Cutolo, Benjamin Poret, Reine Nehmé, Marie Hubert-Roux, Pierrick Gandolfo, Helene Castel, Marie Schuler, Arnaud Tatibouët\*, Cyrille Sabot\*, Pierre-Yves Renard, *Bioconjugate Chem.* **2019**, *30*, 5, 1385-1394.
- [40]. Investigation of tetrazine reactivity towards C-nucleophiles: pyrazolone-based modification of biomolecules.  
Kévin Renault, Clément Guillou, Pierre-Yves Renard, Cyrille Sabot\*, *Org. Biomol. Chem.* **2019**, *17*, 388-396.

[39]. Detection of Biothiols with a Fast-Responsive and Water-Soluble Pyrazolone-Based Fluorogenic Probe.

Kévin Renault, Pierre-Yves Renard, Cyrille Sabot\*, *Eur. J. Org. Chem.* **2018**, 6494-6498.

[38]. Covalent Modification of Biomolecules through Maleimide-based Labeling Strategies.

Kévin Renault, Jean Wilfried Fredy, Pierre-Yves Renard, Cyrille Sabot\*, *Bioconjugate Chem.* **2018**, 29, 8, 2497-2513.

[37]. Total Synthesis and Structural Revision of Chaetoviridins A.

Mehdi Makrrougras, Romain Coffinier, Samuel Oger, Arnaud Chevalier, Cyrille Sabot\*, Xavier Franck\*. *Org. Lett.* **2017**, 19, 4146-4149.

[36]. Photophysical properties of quinoxalin-2(1H)-ones: application in the preparation of an azide-based fluorogenic probe for the detection of hydrogen sulphide.

Renault, Kevin Renaud, Pierre-Yves Renard, Cyrille Sabot\*. *New J. Chem.* **2017**, 41, 10432-10437.

[35]. Metal-free oxidative ring contraction of benzodiazepinones: an entry to quinoxalinones.

Hasan Mtiraoui, Kevin Renault, Morgane Sanselme, Moncef Msaddek,\* Pierre-Yves Renard, Cyrille Sabot\*. *Org. Biomol. Chem.* **2017**, 15, 3060-3068.

[34]. Regioselective synthesis of *o*-triazolyl-1,5-benzodiazepin-2-ones and *o*-isoxazolyl-1,5-benzodiazepin-2-ones *via* copper-catalyzed 1,3-dipolar cycloaddition reactions.

Hasan Mtiraoui, Asma Nsira, Moncef Msaddek,\* Pierre-Yves Renard, Cyrille Sabot\*. *C. R. Chim.* **201**, 7, 746-757.

[33]. Fluorogenic behaviour of the hetero-Diels-Alder ligation of 5-alkoxyoxazoles with maleimides and applications.

Kévin Renault, Laurie-Anne Jouanno, Antoine Lizzul-Jurse, Pierre-Yves Renard, Cyrille Sabot\*. *Chem. Eur. J.*, **2016**, 22, 18522-18531.

[32]. Solution and solid-state fluorescence of 2-(2'-hydroxyphenyl)-1,5-benzodiazepin-2-one (HBD) borate complexes.

Hasan Mtiraoui, Rafik Gharbi, Moncef Msaddek,\* Yann Bretonnière, Chantal Andraud, Pierre-Yves Renard, Cyrille Sabot\*. *RSC Adv.* **2016**, 6, 86352-86360.

[31]. Readily functionalizable phosphonium-tagged fluorescent coumarins for enhanced detection of conjugates by mass spectrometry.

Antoine Lizzul-Jurse, Laetitia Bailly, Marie Hubert-Roux, Carlos Afonso, Pierre-Yves Renard, Cyrille Sabot\*. *Org. Biomol. Chem.*, **2016**, 14, 7777-7791.

[30]. 1,5-Benzodiazepin-2-ones: investigation of a family of photoluminescent materials.

Hasan Mtiraoui, Rafik Gharbi, Moncef Msaddek,\* Yann Bretonnière, Chantal Andraud, Cyrille Sabot\* Pierre-Yves Renard. *J. Org. Chem.*, **2016**, 81, 4720-4727.

- [29]. 5-Alkoxyoxazole - a versatile building block in (bio)-organic Synthesis.  
Laurie-Anne Jouanno, Kevin Renault, Cyrille Sabot\* Pierre-Yves Renard\*. *Eur. J. Org. Chem.*, **2016**, 3264-3281.
- [28]. Fast-responsive nitroso-based turn-on probe for hydrogen sulfide.  
Kévin Renault, Cyrille Sabot\* Pierre-Yves Renard\*. *Eur. J. Org. Chem.*, **2015**, 36, 7992–7996.
- [27]. New insights into the kinetic target-guided synthesis of protein ligands.  
Emilia Oueis, Cyrille Sabot\* Pierre-Yves Renard\*. *Chem. Commun.*, **2015**, 51, 12158-12169.
- [26]. Kondrat'eva ligation: Diels–Alder-based irreversible reaction for bioconjugation.  
Laurie-Anne Jouanno, Arnaud Chevalier, Nawal Sekkat, Nicolas Perzo, H  l  ne Castel, Anthony Romieu, Norbert Lange, Cyrille Sabot\* Pierre-Yves Renard\*. *J. Org. Chem.*, **2014**, 79, 10353–10366.
- [25]. Reaction site-driven regioselective synthesis of AChE inhibitors.  
Emilia Oueis, Gianluca Santoni, Cyril Ronco, Olga Syzgantseva, Vincent Tognetti, Laurent Joubert, Anthony Romieu, Martin Weik, Ludovic Jean,\* Cyrille Sabot\* Florian Nachon, Pierre-Yves Renard\*. *Org. Biomol. Chem.*, **2014**, 12, 156-161.
- [24]. First enzymatic hydrolysis/thio-Michael addition cascade route to synthesis of AChE inhibitors.  
Emilia Oueis, Florian Nachon, Cyrille Sabot\* Pierre-Yves Renard\*. *Chem. Commun.*, **2014**, 50, 2043-2045.
- [23]. Metal-free decarboxylative hetero-Diels–Alder synthesis of 3-hydroxypyridines: a rapid access to N-fused bicyclic hydroxypiperidine scaffolds.  
Laurie-Anne Jouanno, Vincent Di Mascio, Vincent Tognetti,\* Laurent Joubert, Cyrille Sabot\* Pierre-Yves Renard. *J. Org. Chem.*, **2014**, 79, 1303-1319.
- [22]. Synthesis, biological evaluation, and *in vivo* imaging of the first camptothecin–fluorescein conjugate.  
Arnaud Chevalier, Martine Dubois, Vadim Le Joncour, S  bastien Dautrey, C  line Lecointre, Anthony Romieu, Pierre-Yves Renard, H  l  ne Castel,\* Cyrille Sabot\*. *Bioconjugate Chem.*, **2013**, 24, 1119–1133.
- [21]. Thermally controlled decarboxylative [4 + 2] cycloaddition between alkoxyoxazoles and acrylic acid: expedient access to 3-hydroxypyridines.  
Laurie-Anne Jouanno, Vincent Tognetti, Laurent Joubert, Cyrille Sabot\* Pierre-Yves Renard\*. *Org. Lett.*, **2013**, 15, 2530-2533.

[20]. Expedient microwave-assisted synthesis of 5-alkoxyoxazoles from  $\alpha$ -triflyloxy esters and nitriles.

Laurie-Anne Jouanno, Cyrille Sabot, Pierre-Yves Renard\*. *J. Org. Chem.*, **2012**, *77*, 8549–8555. Correction *J. Org. Chem.* **2013**, *78*, 1706.

[19]. Synthesis of polysubstituted 3-hydroxypyridines via the revisited hetero-Diels-Alder reaction of 5-alkoxyoxazoles with dienophiles.

Cyrille Sabot, Emilia Oueis, Xavier Brune, Pierre-Yves Renard\*. *Chem. Commun.* **2012**, *48*, 768–770.

[18]. Intramolecular isomuenchnone cycloaddition approach to the antitumor agent camptothecin.

Francois Grillet, Cyrille Sabot, Regan Anderson,\* Matej Babjak, Andrew E. Greene, Alice Kanazawa\*. *Tetrahedron* **2011**, *67*, 2579–2584.

[17]. Total synthesis of ( $\pm$ )-17-norcamptothecin, a novel E-ring modified camptothecin.

Marie Devert, Cyrille Sabot, Pascale Giboreau, Jean-François Constant, Andrew E. Greene, Alice Kanazawa\*. *Tetrahedron* **2010**, *66*, 7227–7231.

[16]. Oxidative Prins-Pinacol tandem process mediated by a hypervalent iodine reagent: scope, limitations, and applications.

Marc-André Beaulieu, Kimiaka C. Guerard, Gaetan Maertens, Cyrille Sabot, Sylvain Canesi\*. *J. Org. Chem.*, **2011**, *76*, 9460–9471.

[15]. An oxidative Prins-Pinacol tandem process and its application to the synthesis of (-)-platensimycin.

Marc-André Beaulieu, Cyrille Sabot, Nabil Achache, Kimiaka C. Guérard, Sylvain Canesi\*. *Chem. Eur. J.*, **2010**, *16*, 11224–11228.

[14]. Aromatic ring umpolung, rapid access to the main core of several natural products.

Kimiaka C. Guérard, Cyrille Sabot, Marc-André Beaulieu, Marc-André Giroux, Sylvain Canesi\*. *Tetrahedron* **2010**, *66*, 5893–5901.

[13]. An unprecedented oxidative Wagner-Meerwein transposition.

Kimiaka C. Guérard, Clément Chapelle, Marc-André Giroux, Cyrille Sabot, Marc-André Beaulieu, Nabil Achache, Sylvain Canesi\*. *Org Lett.*, **2009**, *11*, 4756–4759.

[12]. Alternative coupling reaction with unactivated furan derivatives.

Marc-André Giroux, Kimiaka C. Guérard, Marc-André Beaulieu, Cyrille Sabot, Sylvain Canesi\*. *Eur. J. Org. Chem.*, **2009**, 3871–3874.

[11]. Concise total synthesis of ( $\pm$ )-aspidospermidine via an oxidative Hosomi-Sakurai process.

Cyrille Sabot, Chantal Guérard, Sylvain Canesi\*. *Chem. Commun.*, **2009**, 2941–2943.

[10]. Oxidative Friedel-Crafts reaction and its application to the total syntheses of amaryllidaceae alkaloids.

Chantal Guérard, Cyrille Sabot, Léanne Racicot, Sylvain Canesi\*. *J. Org. Chem.*, **2009**, *74*, 2039–2045.

[9]. On the way to an oxidative Hosomi-Sakurai reaction.

Cyrille Sabot, Bruno Commare, Salima Nahi, Marc-Alexandre Duceppe, Chantal Guérard, Sylvain Canesi\*. *Synlett* **2008**, *20*, 3226–3230.

[8]. Expeditious total syntheses of natural allenic products *via* a concept of aromatic ring umpolung.

Cyrille Sabot, Didier Bérard, Sylvain Canesi\*. *Org. Lett.*, **2008**, *10*, 4629–4632. (Synfact **2008**, *12*, 1309)

[7]. Intriguing formal cycloaddition [2+3] promoted by a hypervalent iodine reagent.

Didier Bérard, Marc-André Giroux, Léanne Racicot, Cyrille Sabot and Sylvain Canesi\*. *Tetrahedron* **2008**, *64*, 7537–7544.

[6]. Formal [2+3] cycloaddition between substituted phenols and allylsilane.

Didier Bérard, Léanne Racicot, Cyrille Sabot, Sylvain Canesi\*. *Synlett* **2008**, *7*, 1076–1080.

[5]. Novel chiral derivatizing isothiocyanate-based agent for the enantiomeric excess determination of amines.

Cyrille Sabot, Michel Mosser, Cyril Antheaume, Rachid Baati,\* Charles Mioskowski, Alain Wagner\*. *Chem. Commun.*, **2009**, *23*, 3410–3412.

[4]. TBD-catalyzed direct 5- and 6-enolexo aldolization of ketoaldehydes.

Cynthia Ghobril, Cyrille Sabot, Charles Mioskowski, Rachid Baati \*. *Eur. J. Org. Chem.*, **2008**, 4104–4108.

[3]. Highly efficient, room temperature, non-enzymatic kinetic resolution of amines in ionic liquids.

Cyrille Sabot, Pithani Subhash, Alain Valleix, Stelios Arseniyadis,\* Charles Mioskowski. *Synlett* **2008**, *2*, 268–272.

[2]. Triazabicyclodecene : an effective isotope exchange catalyst in CDCl<sub>3</sub>.

Cyrille Sabot, Kanduluru Ananda Kumar, Cyril Antheaume, Charles Mioskowski\*. *J. Org. Chem.*, **2007**, *13*, 5001–5004.

[1]. A convenient aminolysis of esters catalysed by 1,5,7-triazabicyclo[4.4.0]dec-5-ene (TBD) under solvent-free conditions.



Cyrille Sabot, Kanduluru Ananda Kumar, Stéphane Meunier, Charles Mioskowski.  
*Tetrahedron Lett.*, **2007**, *48*, 3863–3866.