



Dr Cyrille SABOT



CNRS Researcher

Bioorganic team

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PROFESSIONNAL 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: 19), 45 publications, Guest Editor of Biomolecules (2019-2020).

SUPERVISION ACTIVITIES

2010-present Supervision of 7 postdoctoral researchers, 8 PhD students, 5 M. Sc. students – CNRS-COBRA Laboratory – Rouen, France

GRANTS AND FELLOWSHIPS

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

15. Orléans (France), January 27-29th, 2020 (4th Chemical Ligation Meeting).
14. Université du Havre Normandie, URCOM (France), November 21st, 2019.
13. University of Warangal (India), September 23-25th, 2019 (International conference on Advances in Chemical Sciences and Technologies ACST 2019).
12. Université Paris Sud, BioCIS (France), February 21st, 2019.
11. Université de Bourgogne Franche-Comté, ICMUB (France), November 8th, 2018.
10. ENS Paris-Saclay (France), June 26th, 2018 (6th scientific meeting of LabEx CHARM3AT).
9. Université de Strasbourg, Faculté de pharmacie (France), September 21st, 2017.
8. Kiel University (Germany), June 15-17th, 2015 (Symposium).
7. Nant (France), August 23-28th, 2015 (GECO56).
6. Strasbourg (France), 2-3rd, 2015 (5^{ème} symposium francophone de synthèse totale).
5. Faculté des Sciences Pharmaceutiques et Biologiques de Lille (France), June 26th, 2014.
4. ENSCP Chimie ParisTech (France), March 25th, 2014 (Journée de printemps - Division de Chimie Organique de la Société Chimique de France – communication Jeunes Chercheurs).
3. Université de Rouen, COBRA (France), November 9th, 2010.
2. Université Grenoble-Alpes (France), January 10th, 2010.
1. Université du Québec à Montréal (Canada), January 14th, 2008.

PUBLICATIONS

[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**

[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 Fredey, 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, Hélène 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, Sébastien Dautrey, Céline Lecointre, Anthony Romieu, Pierre-Yves Renard, Hélène 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]. Expeditious microwave-assisted synthesis of 5-alkoxyoxazoles from α -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 amaryllidaccae 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, Stellios Arseniyadis,* Charles Mioskowski. *Synlett* **2008**, *2*, 268–272.

[2]. Triazabicyclodecene : an effective isotope exchange catalyst in CDCl₃.

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.