
Charles Gauthier, PhD

Professor-researcher in bioorganic chemistry and glycochemistry

Institut National de la Recherche Scientifique
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ACADEMIC & PROFESSIONAL APPOINTMENTS

- 2016-present **Assistant Professor**
Institut national de la recherche scientifique
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2012-present **Adjunct Professor**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Département des Sciences Fondamentales, Laboratoire LASEVE
- 2011-2016 **Maître de Conférences**
Université de Poitiers, Poitiers, France
CNRS-UMR 7285, Institut de Chimie IC2MP (Prof. Yves Blériot)
- 2010-2011 **Postdoctoral Fellow**
University of Oxford, Oxford, United Kingdom
Mentor: Prof. Benjamin G. Davis
- 2009-2010 **Postdoctoral Fellow**
Institut Pasteur, Paris, France,
CNRS-UMR 3523, Unité de Chimie des Biomolécules
Mentor: Dr Laurence A. Mulard
- 2005-2008 **PhD student, Natural Products Chemistry**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Université du Québec à Montréal, Montréal (Québec), Canada
Director: Prof. André Pichette; Co-director: Prof. Jean Legault
- 2004 **Research Trainee**
Université de Poitiers, Poitiers, France
CNRS-UMR 6514, Synthèse et Réactivité des Substances Naturelles
Mentor: Prof. Sébastien Papot
- 2003-2008 **Teaching Assistant**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Université du Québec à Montréal, Montréal (Québec), Canada
- 2003-2005 **MSc student, Natural Products Chemistry**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Director: Prof. André Pichette; Co-director: Prof. Jean Legault

- 2002-2003 **Research Assistant**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Laboratoire LASEVE
Mentor: Prof. André Pichette
- 2001 **Research Assistant**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
ALCAN
Mentor: Prof. Michel J. Gagnon
- 2000-2003 **BSc student, Chemistry**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada

RESEARCH FUNDING

- 2018-2020 **Fondation Armand-Frappier & Institut national de la recherche scientifique**
New Investigator Investment Fund
Project: Plateforme de synthèse et d'analyse de molécules organiques à visée médicinale
(Principal investigator; \$310,000)
- 2016-2021 **Natural Sciences and Engineering Research Council of Canada (NSERC)**
Discovery Grant
Project: New approaches for the stereoselective synthesis of therapeutic glycans
(Principal investigator; \$125,000)
- 2016-2019 **INRS-Institut Armand-Frappier**
Starting Grant
Project: Synthetic glycochemistry for therapeutic innovation
(Principal investigator; \$100,000)
- 2016-2018 **Réseau Québécois de Recherche sur les Médicaments (RQRM)**
Discovery of compounds and therapeutic chemistry
Project: Synthesis of iminosugar inhibitors of Kdo-processing enzymes as potential broad spectrum antibiotic agents against Gram-negative bacteria
(Principal investigator; \$35,000)
- 2016-2017 **Natural Sciences and Engineering Research Council of Canada (NSERC)**
Engage Grant for Universities
Project: Sugar-based fiber-optic biosensors for the detection of *Escherichia coli* bacteria
(Principal investigator; \$25,000)
- 2014-2018 **Canadian Institutes of Health Research (CIHR)**
Operating Grant
Project: Pharmacomodulation of bioactive natural products by glycosylation
(Collaborator; \$400,000)
- 2013-2014 **Canadian Institutes of Health Research (CIHR)**
Bridge Funding
Project: Pharmacomodulation of bioactive natural products by glycosylation
(Collaborator; \$100,000)

- 2012-2016 **Agence Nationale de la Recherche (ANR)**
Jeunes Chercheuses Jeunes Chercheurs
 Project: Development of a glycoconjugate vaccine against melioidosis
 (Principal investigator; €200,000)
- 2012-2015 **Direction Générale de l'Armement (DGA)**
 DGA Thesis
 Project: Development of a glycoconjugate vaccine against melioidosis
 (Principal investigator; €100,000)

HONORS, AWARDS & FELLOWSHIPS

- 2017 **New investigators in glycoscience** (highlighted in *Carbohydr. Res.* **2017**, 438, 65-66)
- 2015-2016 **Prime d'encadrement doctoral et de recherche** (PEDR)
- 2013-2014 **Reduced teaching service for young *Maîtres de Conférences***
- 2011 ***Maître de Conférences* Position, Université de Cergy-Pontoise, France** (declined)
- 2010 **Natural Sciences and Engineering Research Council of Canada (NSERC) Industrial Research & Development Fellowship** (pre-selected application, declined)
- 2010-2011 **Fonds de Recherche du Québec – Nature et Technologies Postdoctoral Fellowship**
- 2009-2010 **Bourse Émile-Roux Postdoctoral Fellowship**, Institut Pasteur, Paris
- 2009 **Vasant & Kusum Joshi Postdoctoral Fellowship**, Institut Pasteur, Paris
- 2009 **Fondation Canadienne Louis-Pasteur Postdoctoral Fellowship** (declined)
- 2008-2009 **Fondation de l'Université du Québec à Chicoutimi Doctoral Fellowship**
- 2007-2008 **Fonds de Recherche du Québec – Nature et Technologies Doctoral Fellowship**
- 2007-2008 **Fondation de l'Université du Québec à Chicoutimi Doctoral Fellowship** (declined)
- 2007 **Association Francophone pour le Savoir (ACFAS) Bernard-Belleau Award**
- 2007 **First Prize Science for Laymen, Université du Québec à Chicoutimi**
- 2006-2007 **Institutional Funding Program (PAIR-UQAC) Doctoral Fellowship**
- 2005-2006 **Abitibi-Consolidated MSc Fellowship**
- 2004-2005 **Gaston-L. Tremblay MSc Fellowship**
- 2004 **Work Abroad MSc Fellowship**
- 2000-2001 **Professors of Chemistry BSc Fellowship**

- 2000-2001 **Fondation du Royaume BSc Fellowship**
- 1999-2000 **Provigo-Loblaws Leadership Fellowship**
- 1999 **First Prize Science for Laymen**, CEGEP de St-Félicien (Québec), Canada
- 1998 **Nominated for the Governor General's Academic Medal**

PEER REVIEWED PUBLICATIONS

Citations: 774; H-index: 12

34. "Polysaccharides from *Burkholderia* species as targets for vaccine development, diagnostics and immunomodulation"
Cloutier, M.; Muru, K; Ravicoularamin, G.; **Gauthier, C.*** (Corresponding author)
In preparation.
33. "Probing the binding epitope of *Burkholderia mallei*-specific anti-lipopolysaccharide monoclonal antibody 4C7 at the monosaccharide level"
Mazur, M.; Muru, K.; Ndong, S.; Hoyeck, R. R.; Nualnoi, T.; Marchetti, R.; Silipo, A.; Molinaro, A.; AuCoin, D. P.; Burtnick, M. N.; Brett, P. J.; **Gauthier, C.*** (*Corresponding author)
Revision submitted to *Carbohydrate Research* (#CAR_2017_698)
32. "Synthetic glyco-viruses for targeted DNA therapy and immune evasion"
Minall, L. H.; Pearce, O. M. T.; **Gauthier, C.**; Moghaddam, A. E.; Unger, W.; De Munari, S.; Maskell, K.; Humphries, J.; Wadoodi, A.; Mayer, A.; Simmons, A.; van Kooyk, Y.; Smith, A.; Fisher, K. D.; Seymour, L. W.; Sattentau, Q. J.; Davis, B. G.
Awaiting resubmission to *Nature Communications* (#NCOMMS-16-25587-T)
31. "Bidesmosidic betulin saponin bearing L-rhamnopyranoside moieties induces apoptosis and inhibition of lung cancer cells growth *in vitro* and *in vivo*"
Mihoub, M.; Pichette, A.; Sylla, B.; **Gauthier, C.**; Legault, J.
PLOS ONE **2018**, *13*, e0193386
30. "Deciphering minimal antigenic epitopes associated with *Burkholderia pseudomallei* and *Burkholderia mallei* lipopolysaccharide O-antigens"
Tamigney Kenfack, M.; Mazur, M.; Nualnoi, T.; Shaffer, T. L.; Ngassimou, A.; Blériot, Y.; Marrot, J.; Marchetti, R.; Sintiprungrat, K.; Chantratita, N.; Silipo, A.; Molinaro, A.; AuCoin, D. P.; Burtnick, M. N.; Brett, P. J.; **Gauthier, C.*** (*Corresponding author)
Nature Communications **2017**, *8*, 115
29. "Chemical composition and anti-herpes simplex virus type 1 (HSV-1) activity of extracts from *Cornus canadensis*"
Lavoie, S.; Côté, I.; Pichette, A.; **Gauthier, C.**; Ouellet, M.; Nagau-Lavoie, F.; Mshvildadze, V.; Pichette, A.; Legault, J.
BMC Complementary and Alternative Medicine **2017**, *17*, 123

28. "4'-Methoxyphenacyl-assisted synthesis of β -Kdo glycosides"
Mazur, M.; Barycza, B.; Andriamboavonjy, H.; Lavoie, S.; Tamigney Kenfack, M.; Laroussarie, A.; Blériot, Y.; **Gauthier, C.*** (*Corresponding author)
The Journal of Organic Chemistry **2016**, *81*, 10585-10599
Selected as a "Featured Article" and for the cover page of issue #22
27. "Structure elucidation of anti-methicillin resistant *Staphylococcus aureus* (MRSA) flavonoids from balsam poplar buds"
Simard, F.; **Gauthier, C.**; Legault, J.; Lavoie, S.; Mshvildadze, V.; Pichette, A.
Bioorganic & Medicinal Chemistry **2016**, *24*, 4188-4198
26. "Complete ^1H and ^{13}C NMR assignments of a series of pergalloylated tannins"
Lavoie, S.; Ouellet, M.; Fleury, P.-Y.; **Gauthier, C.**; Legault, J.; Pichette, A.
Magnetic Resonance in Chemistry **2016**, *54*, 168-174
25. "DFT calculations and ROESY NMR data for the diastereochemical characterization of cytotoxic tetraterpenoids from the oleoresin of *Abies balsamea*"
Lavoie, S.[†]; **Gauthier, C.**[‡]; Mshvildadze, V.; Legault, J.; Roger, B.; Pichette, A. (†These authors contributed equally)
Journal of Natural Products **2015**, *78*, 2896-2907
24. "Synthesis of the tetrasaccharide repeating unit of the β -Kdo-containing exopolysaccharide from *Burkholderia pseudomallei* and *B. cepacia* complex"
Laroussarie, A.; Barycza, B.; Andriamboavonjy, H.; Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.*** (*Corresponding author)
The Journal of Organic Chemistry **2015**, *80*, 10386-10396
23. "*Burkholderia pseudomallei* capsular polysaccharide recognition by a monoclonal antibody reveals key details toward a biodefense vaccine and diagnostics against melioidosis"
Marchetti, R.; Dillon, M. J.; Burtnick, M. N.; Hubbard, M. A.; Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.**; Brett, P. J.; AuCoin, D. P.; Lanzetta, R.; Silipo, A.; Molinaro, A.
ACS Chemical Biology **2015**, *10*, 2295-2302
22. "Antibacterial balsacones J-M, hydroxycinnamoylated dihydrochalcones from *Populus balsamifera* buds"
Simard, F.; **Gauthier, C.**; Chiasson, E.; Lavoie, S.; Mshvildadze, V.; Legault, J.; Pichette, A.
Journal of Natural Products **2015**, *78*, 1147-1153
21. "Synthesis of 1,2-*trans*-2-acetamido-2-deoxy-homoimosugars"
Blériot, Y.; Tran, A. T.; Prencipe, G.; Jagadeesh, Y.; Auberger, N.; Zhu, S.; **Gauthier, C.**; Zhang, Y.; Désiré, J.; Adachi, I.; Kato, A.; Sollogoub, M.
Organic Letters **2014**, *16*, 5516-5519
20. "Synthesis of 1,2-*cis* homoimosugars derived from GlcNAc and GalNAc exploiting a β -aminoalcohol skeletal rearrangement"
Blériot, Y.; Auberger, N.; Jagadeesh, Y.; **Gauthier, C.**; Prencipe, G.; Tran, A. T.; Marrot, J.; Désiré, J.; Yamamoto, A.; Kato, A.; Sollogoub, M.
Organic Letters **2014**, *16*, 5512-5515

19. "Isolation of a new disaccharide nucleoside from *Helleborus caucasicus*: structure elucidation and total synthesis of hellecaucaside A and its β -anomer"
Sylla, B.[†]; **Gauthier, C.**[†]; Legault, J.; Fleury, P.-Y.; Lavoie, S.; Mshvildadze, V.; Muzashvili, T.; Kemertelidze, E.; Pichette, A. ([†]These authors contributed equally)
Carbohydrate Research **2014**, 398, 80-89
18. "Non-stoichiometric O-acetylation of *Shigella flexneri* 2a O-specific polysaccharide: synthesis and antigenicity"
Gauthier, C.; Chassagne, P.; Theillet, F.-X.; Guerreiro, C.; Thouron, F.; Nato, F.; Delepierre, M.; Sansonetti, P. J.; Phalipon, A.; Mulard, L. A.
Organic & Biomolecular Chemistry **2014**, 12, 4218-4232
17. "Intramolecular aglycon delivery enables the synthesis of 6-deoxy- β -D-manno-heptosides as fragments of *Burkholderia pseudomallei* and *Burkholderia mallei* capsular polysaccharide"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.*** (*Corresponding author)
The Journal of Organic Chemistry **2014**, 79, 4615-4634
16. "Lanostane- and cycloartane-type triterpenoids from *Abies balsamea* oleoresin"
Lavoie, S.[†]; **Gauthier, C.**[†]; Legault, J.; Mshvildadze, V.; Pichette, A. (*These authors contributed equally)
Beilstein Journal of Organic Chemistry **2013**, 9, 1333-1339
15. "Structural studies of the O-acetyl containing O-antigen from a *Shigella flexneri* serotype 6 and synthesis of oligosaccharide fragments thereof"
Chassagne, P.; Fontana, C.; Guerreiro, C.; **Gauthier, C.**; Phalipon, A.; Widmalm, G.; Mulard, L. A.
European Journal of Organic Chemistry **2013**, 4085-4106
14. "Synthesis and cytotoxicity of lupane-type triterpenoid glyceryl esters"
Thibeault, D.[†]; **Gauthier, C.**[†]; Legault, J.; Bouchard, J.; Gagné, L.; Pichette, A. (*These authors contributed equally)
Bioorganic & Medicinal Chemistry Letters **2012**, 22, 4735-4739
13. "Abibalsamins A and B, two new tetraterpenoids from *Abies balsamea* oleoresin"
Lavoie, S.; Legault, J.; **Gauthier, C.**; Mshvildadze, V.; Mercier, S.; Pichette, A.
Organic Letters **2012**, 14, 1504-1507
12. "Advances in the synthesis and pharmacological activity of lupane-type triterpenoid saponins"
Gauthier, C.*; Legault, J.; Piochon-Gauthier, M.; Pichette, A. (*Corresponding author)
Phytochemistry Reviews **2011**, 10, 521-544
Invited contribution for special issue: "New Trends in Saponins"
11. "Acid-catalyzed E-ring expansion and isomerization of 3-acetylbetulin: synthesis of cytotoxic anhydrobetulin saponins"
Thibeault, D.; Legault, J.; **Gauthier, C.**; Lavoie, S.; Bouchard, J.; Pichette, A.
Synthetic Communications **2010**, 40, 213-221
10. "Recent progress in the synthesis of naturally occurring triterpenoid saponins"
Gauthier, C.; Legault, J.; Pichette, A.
Mini-Reviews in Organic Chemistry **2009**, 6, 321-344

9. "Synthesis, cytotoxicity, and haemolytic activity of chacotrioside lupane-type neosaponins and their germanicane-type rearrangement products"
Gauthier, C.; Legault, J.; Piochon, M.; Lavoie, S.; Tremblay, S.; Pichette, A.
Bioorganic & Medicinal Chemistry Letters **2009**, *19*, 2310-2314
8. "Haemolytic activity, cytotoxicity and membrane cell permeabilization of semi-synthetic and natural lupane- and oleanane-type saponins"
Gauthier, C.; Legault, J.; Girard-Lalancette, K.; Mshvildadze, V.; Pichette, A.
Bioorganic & Medicinal Chemistry **2009**, *17*, 2002-2008
7. "Synthesis and cytotoxicity of bidesmosidic betulin and betulinic acid saponins"
Gauthier, C.; Legault, J.; Lavoie, S.; Rondeau, S.; Tremblay, S.; Pichette, A.
Journal of Natural Products **2009**, *72*, 72-81
6. "Synthesis of betulinic acid acyl glucuronide for application in anticancer prodrug monotherapy"
Gauthier, C.; Legault, J.; Rondeau, S.; Pichette, A.
Tetrahedron Letters **2009**, *50*, 988-991
5. "Synthesis and cytotoxicity evaluation of natural α -bisabolol β -D-fucopyranoside and analogues"
Piochon, M.; Legault, J.; **Gauthier, C.;** Pichette, A.
Phytochemistry **2009**, *70*, 228-236
4. "Synthesis of two natural betulinic acid saponins containing α -L-rhamnopyranosyl-(1 \rightarrow 2)- α -L-arabinopyranose and their analogues"
Gauthier, C.; Legault, J.; Lavoie, S.; Rondeau, S.; Tremblay, S.; Pichette, A.
Tetrahedron **2008**, *64*, 7386-7399
3. "Synthesis and structure-activity relationships study of cytotoxic germanicane- and lupane-type 3 β -O-monodesmosidic saponins starting from betulin"
Thibeault, D.[†]; **Gauthier, C.**[†]; Legault, J.; Bouchard, J.; Dufour, P.; Pichette, A. ([†]These authors contributed equally)
Bioorganic & Medicinal Chemistry **2007**, *15*, 6144-6157
2. "Anticancer diarylheptanoid glycosides from the inner bark of *Betula papyrifera*"
Mshvildadze, V.; Legault, J.; Lavoie, S.; **Gauthier, C.;** Pichette, A.
Phytochemistry **2007**, *68*, 2531-2536
1. "Glycosidation of lupane-type triterpenoids as potent *in vitro* cytotoxic agents"
Gauthier, C.; Legault, J.; Lebrun, M.; Dufour, P.; Pichette, A.
Bioorganic & Medicinal Chemistry **2006**, *14*, 6713-6725

BOOK CHAPTERS

1. "Conformationally restricted glycoside derivatives as mechanistic probes and/or inhibitors of sugar processing enzymes"
Maaliki, C.; **Gauthier, C.;** Massinon, O.; Sagar, R.; Vincent, S.; Blériot, Y.
Carbohydrate Chemistry **2014**, *40*, 418-444
Invited contribution for special issue in the memory of Prof. André Lubineau

CONFERENCE PROCEEDINGS

2. "Phenacyl ester-assisted preparation of β -Kdo glycosides: application to synthesis of the biological repeating unit of *Burkholderia pseudomallei* exopolysaccharide"
Gauthier, C.*; Mazur, M.; Barycza, B.; Laroussarie, A.; Blériot, Y. (*Corresponding author)
Abstracts of Papers, 28th International Carbohydrate Symposium, July 17th-21st **2016**, ICS-55
1. "Synthetic and immunochemical investigations on a set of *Shigella flexneri* 2a O-acetylated deca-saccharides"
Gauthier, C.; Chassagne, P.; Guerreiro, C.; Thouron, F.; Nato, F.; Phalipon, A.; Mulard, L. A.
Abstracts of Papers, 241st ACS National Meeting & Exposition, March 27th-31st **2011**, CARB-136

OTHER PUBLICATIONS

4. "Amélioration du comportement biopharmaceutique de triterpènes naturels anticancéreux par synthèse de saponines mono- et bidesmosidiques"
Gauthier, C. *PhD Thesis*, Université du Québec network, **2008**, 307 pp.
3. "Glycosidation de triterpènes pentacycliques de type lupane et évaluation *in vitro* de leur potentiel anticancéreux"
Gauthier, C. *MSc Thesis*, Université du Québec à Chicoutimi, **2006**, 219 pp.
2. "Baisse des réserves de pétrole : les Québécois agiront-ils à temps ?"
Ben Mokhtar, I.; **Gauthier, C.**; Grenier, P.; Guay, J.-F.; Lajoie, F.; Lupu, C.; Not, C.; Plante, B.; Plouhinec, J.-B.; Thibodeau, B.; Trépanier, S.; Vincent, M.; Yilmaz, E. (collective)
Libre Opinion – Le Devoir, June 29th **2006**.
1. "La société des fourmis"
Gauthier, C.; Dufour, D.
Cyber Expo-Journal, Département des Sciences de la Nature, Cégep de St-Félicien **2000**, 11 pp.

PATENTS

3. "Novel O-acetylated deca-saccharides"
Mulard, L. A.; **Gauthier, C.**
European Patent Application **2011**, EP-2386563A1, 70 pp.
2. "Bidesmosidic betulin and betulinic acid saponins and uses thereof as antitumor agents"
Pichette, A.; Legault, J.; **Gauthier, C.**
PCT International Patent Application **2010**, WO-2010028487, 93 pp.
1. "Synthesis of triterpene derivatives as antitumor or anti-inflammatory agents"
Pichette, A.; Legault, J.; **Gauthier, C.**
Canadian & USA Patent Application **2008**, CA-2,586,614 & US-11/924,789, 73 pp.

ORAL COMMUNICATIONS & POSTERS

47. "Synthetic O-antigens related to pathogenic *Burkholderia* species enable to decipher the minimal binding epitopes"
Tamigney Kenfack, M.; Mazur, M.; Nualnoi, T.; Marchetti, R.; Silipo, A.; Molinaro, A.; AuCoin, D. P.; Burtnick, M. N.; Brett, P. J.; **Gauthier, C.*** (oral communication)
29th International Carbohydrate Symposium, July 15th-19th **2018**, Lisboa, Portugal
46. "Synthetic glycochemistry enables the development of therapeutic agents and vaccines"
Gauthier, C. (invited conference)
14th Organic and Bioorganic Workshop for Leading Young Canadian Chemists, May 24th-27th **2018**, Edmonton (Alberta), Canada
45. "La chimie des sucres au service de l'innovation thérapeutique"
Gauthier, C. (invited conference, science for laymen)
Collège Jean-de-Brébeuf, April 5th **2018**, Montréal (Québec), Canada
44. "New synthetic approaches in carbohydrate chemistry: towards a glycoconjugate vaccine against melioidosis"
Gauthier, C. (invited conference)
Conseil national de recherches du Canada (CNRC), November 29th **2017**, Ottawa (Ontario), Canada
43. "Synthèse totale de glycolipides d'origine marine d'intérêt biologique"
Muru, K.; **Gauthier, C.*** (poster)
10^e édition du Congrès Armand-Frappier, November 10th **2017**, Orford (Québec), Canada
42. "Synthetic glycochemistry enables the development of therapeutic agents and vaccines"
Gauthier, C. (invited conference)
Symposium de partenariats académiques/industriels – Academic/industry partnerships symposium (SPAI – AIPS), October 4th **2017**, Laval (Québec), Canada
41. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioiidose"
Gauthier, C. (invited conference)
Département de Chimie, Université Laval, October 2nd **2017**, Ville de Québec (Québec), Canada
40. "Are Kdo-processing enzymes underexploited antibiotic targets?"
Gauthier, C. (invited conference)
7^e édition du Colloque annuel du Réseau québécois de recherche sur les médicaments, October 1st, **2017**, Ville de Québec (Québec), Canada
39. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioiidose"
Gauthier, C. (invited conference)
7^e colloque Pharmaqam, August 31st **2017**, Montréal (Québec), Canada
38. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioiidose"
Gauthier, C. (invited conference)
Département de Chimie, Université du Québec à Montréal, October 12th **2016**, Montréal (Québec), Canada

37. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioïdose"
Gauthier, C. (invited conference)
Département des Sciences Fondamentales, Université du Québec à Chicoutimi, October 7th 2016, Saguenay (Québec), Canada
36. "Phenacyl-ester assisted preparation of β -Kdo glycosides: application to synthesis of the biological repeating unit of *Burkholderia pseudomallei* exopolysaccharide"
Gauthier, C.*; Mazur, M.; Barycza, B.; Laroussarie, A.; Blériot, Y. (oral communication)
28th International Carbohydrate Symposium, July 17th-21st 2016, New Orleans, United States
35. "En route vers un vaccin glycoconjugué semi-synthétique contre la mélioïdose"
Gauthier, C. (invited conference)
Institut de Chimie des Substances Naturelles (ICSN), January 28th 2016, Gif-sur-Yvette, France
34. "Diastereoisomeric tetraterpenes from *Abies balsamea* oleoresin"
Lavoie, S.; **Gauthier, C.**; Mshvildadze, V.; Legault, J.; Roger, B.; Pichette, A. (oral communication)
Workshop – Magnetic Resonance at Georgia Tech 2015, December 15th 2015, Atlanta, United States
33. "Synthesis of the repeating unit of the β -Kdo-containing exopolysaccharide from pathogenic *Burkholderia* species"
Laroussarie, A.; Barycza, B.; **Gauthier, C.*** (poster)
Glycosyl Cation Day, December 14th 2015, Poitiers, France
32. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.*** (poster)
Glycosyl Cation Day, December 14th 2015, Poitiers, France
31. "Synthesis of original iminosugars derived from GlcNAc and GalNAc targeting NAGLU and NAGAL glycosidases"
Blériot, Y.; Jagadeesh, Y.; **Gauthier, C.**; Tran, A. T.; Désiré, J.; Boraston, A. ; Metcalf, M. C.; Garman, S. C.; Sollogoub, M. (oral communication)
18th European Carbohydrate Symposium, August 2nd-6th 2015, Moscow, Russia
30. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.*** (oral communication & poster)
European Cooperation in Science and Technology (COST) - Training School MultiGlycoNano, April 9th-11th 2015, Bangor, United Kingdom
29. "La glycochimie organique au service de l'innovation thérapeutique"
Gauthier, C. (invited conference)
INRS-Institut Armand-Frappier, Université du Québec, January 29th 2015, Laval, Canada
28. "Développement d'un vaccin glycoconjugué contre la mélioïdose"
Gauthier, C. (invited conference)
Revue mi-parcours de l'Agence Nationale de la Recherche (ANR), November 27th 2014, Rennes, France

27. "Vaccin 'sucré' contre la mélioïdose, une maladie tropicale à potentiel bioterroriste"
Gauthier, C. (invited conference)
3^e Journée Scientifique de l'Institut de Chimie des Milieux et Matériaux de Poitiers, November 7th **2014**, Poitiers, France
26. "Synthèse de 6-désoxy- β -D-manno-heptosides par glycosylation intramoléculaire : vers un vaccin de biodéfense contre la mélioïdose"
Tamigney Kenfack M.; Blériot, Y.; **Gauthier, C.*** (oral communication)
9^e Symposium de Chimie Organique en Centre – Auvergne – Limousin (Sycocal9), September 17th-19th **2014**, Tours, France
25. "Diastereosiomeric tetraterpenes from *Abies balsamea* oleoresin"
Lavoie, S.; **Gauthier, C.**; Legault, J.; Mshvildadze, V.; Pichette, A. (oral communication)
Trends in Natural Products Research, June 23th-25th **2014**, Olomouc, Czech Republic
24. "Synthèse de 6-désoxy- β -D-manno-heptosides par glycosylation intramoléculaire : vers un vaccin de biodéfense contre la mélioïdose et la morve"
Gauthier, C.*; Tamigney Kenfack, M.; Blériot, Y. (oral communication)
25^e Journées du Groupe Français des Glycosciences, May 12th-15th **2014**, Paris, France
23. "Synthèse de 6-désoxy- α -L-talopyranosyl-(1 \rightarrow 3)- β -D-glucopyranosides diversement acétylés et méthylés représentatifs de l'Ag-O du LPS des bactéries du genre *Burkholderia*"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.*** (poster)
25^e Journées du Groupe Français des Glycosciences, May 12th-15th **2014**, Paris, France
22. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Gauthier, C.*; Tamigney Kenfack, M.; Blériot, Y. (oral communication)
27th International Carbohydrate Symposium, January 12th-17th **2014**, Bangalore, India
21. "Synthesis of 2-acetamido-2-deoxy- α -homogalactonojirimycin (HGJNAc) as a potent inhibitor of α -N-acetylgalactosaminidases"
Gauthier, C.; Blériot, Y. (poster)
27th International Carbohydrate Symposium, January 12th-17th **2014**, Bangalore, India
20. "Access to complex iminosugars of biological interest by skeletal rearrangement"
Blériot, Y.; Mondon, M.; Fontelle, N.; Désiré, J.; **Gauthier, C.** (oral communication)
17th European Carbohydrate Symposium, July 7th-11th **2013**, Tel-Aviv, Israel
19. "Développement d'un vaccin glycoconjugué semi-synthétique contre la mélioïdose"
Gauthier, C. (invited conference)
2^e Séminaire du Département de Microbiologie de l'Institut de Recherche Biomédicale des Armées (IRBA), October 16th **2012**, Paris, France
18. "Synthèse d'oligosaccharides conjugués à visée vaccinale"
Gauthier, C. (invited conference)
Département des Sciences Fondamentales, Université du Québec à Chicoutimi, August 14th **2012**, Saguenay, Canada
17. "Développement d'un vaccin glycoconjugué semi-synthétique contre la mélioïdose"
Gauthier, C. (invited conference)
Institut de Recherche Biomédicale des Armées (IRBA), December 21st **2011**, Grenoble, France

16. "On the road to a synthetic carbohydrate-based vaccine against endemic shigellosis"
Gauthier, C.; Kim, T. H.; Chassagne, P.; Thouron, F.; Guerreiro, C.; Theillet, F.-X.; Delepierre, M.; Sansonetti, P. J.; Phalipon, A.; Mulard, L. A. (oral communication)
6th International Conference on Vaccines for Enteric Diseases, September 16th **2011**, Cannes, France
15. "Input of non-stoichiometric O-acetylation on antigenicity: *Shigella flexneri* 2a LPS as an example"
Gauthier, C.; Chassagne, P.; Thouron, F.; Guerreiro, C.; Theillet, F.-X.; Nato, F.; Delepierre, M.; Phalipon, A.; Mulard, L. A. (oral communication)
16th European Carbohydrate Symposium, July 7th **2011**, Sorrento, Italy
14. "Highly convergent synthesis of three mono- and di-O-acetylated deca-saccharides as mimics of the *Shigella flexneri* serotype 2a Ag-O"
Gauthier, C.; Chassagne, P.; Guerreiro, C.; Mulard, L. A. (poster)
16th European Carbohydrate Symposium, July 7th **2011**, Sorrento, Italy
13. "Synthetic and immunochemical investigations on a set of *Shigella flexneri* 2a O-acetylated deca-saccharides"
Gauthier, C.; Chassagne, P.; Guerreiro, C.; Thouron, F.; Nato, F.; Phalipon, A.; Mulard, L. A. (oral communication)
241st ACS National Meeting, March 27th-31st **2011**, Anaheim, USA
12. "Synthèse de molécules glycosylées à visée thérapeutique: saponines triterpéniques et déca-saccharides acétylés"
Gauthier, C. (invited conference)
Centre Interdisciplinaire des Nanosciences de Marseille (CINAM), July 15th **2010**, Marseille, France
11. "From LPS antigens to synthetic oligosaccharide-based conjugates as potential vaccines against bacillary dysentery"
Chassagne, P.; **Gauthier, C.;** Nato, F.; Phalipon, A.; Mulard, L. A. (poster)
11th Summer Course on Glycosciences, May 17th-20th **2010**, Wageningen, Netherlands
10. "Synthesis of lupane-type triterpenoid saponins as non-haemolytic anticancer agents"
Gauthier, C.; Legault, J.; Pichette, A. (poster)
4th International Symposium on Saponins, July 8th-11th **2009**, Nancy, France
9. "Les écorces de bouleau contre le cancer ? Glycosylation de triterpènes naturels cytotoxiques"
Gauthier, C. (invited conference)
Département de Biologie Structurale et Chimie, Institut Pasteur, June 30th **2009**, Paris, France
8. "Synthesis of lupane-type triterpenoid saponins as non-haemolytic anticancer agents"
Gauthier, C.; Legault, J.; Pichette, A. (poster)
10th Tetrahedron Symposium, June 23th-26th **2009**, Paris, France
7. "Développement d'agents anticancéreux à partir de l'huile essentielle de peuplier baumier"
Piochon, M.; **Gauthier, C.;** Legault, J.; Pichette, A. (oral communication)
1^{ère} Rencontre des Jeunes Chercheurs de la Maison des Étudiants Canadiens, March 8th **2009**, Paris, France
6. "Développement d'agents anticancéreux à partir de l'huile essentielle de peuplier baumier"
Pichette, A.; Piochon, M.; **Gauthier, C.;** Legault, J. (oral communication)
10^e Symposium International d'Aromathérapie & Plantes Médicinales, April 12th **2008**, Grasse, France

5. "Synthèse et relations structure-activité anticancéreuse de saponines triterpéniques"
Gauthier, C.; Thibeault, D.; Legault, J.; Pichette, A. (oral communication)
75^e Congrès de l'Association Francophone pour le Savoir (ACFAS), May 10th **2007**, Trois-Rivières, Canada
4. "Synthèse et relations structure-activité anticancéreuse de saponines triterpéniques"
Gauthier, C.; Dufour, D.; Legault, J.; Pichette, A. (poster, science for laymen)
75^e Congrès de l'Association Francophone pour le Savoir (ACFAS), May 10th **2007**, Trois-Rivières, Canada
3. "La chimie verte au secours de l'environnement"
Gauthier, C. (oral communication)
2^e Séminaire en Ressources Renouvelables, October 20th **2006**, Saguenay, Canada
2. "Développement d'agents anticancéreux d'origine végétale"
Pichette, A.; **Gauthier, C.**; Legault, J. (invited conference)
Université de la Méditerranée, May 9th **2006**, Marseille, France
1. "Le rôle des glycosides dans la nature"
Gauthier, C. (invited conference)
Congrès CEPROCQ-LASEVE, January 29th **2004**, Québec City, Canada

STUDENTS & RESEARCH STAFF MENTORING

- 2018-present **Maude Cloutier** (MSc student), INRS-Institut Armand-Frappier
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
- 2018 **Oscar Javier Gamboa Marín** (NSERC summer student), INRS-Institut Armand-Frappier
Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2018-present **Emmanilo Delar** (Master 2 trainee), INRS-Institut Armand-Frappier
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
- 2017-present **Gokulakrishnan Ravicoularamin** (MSc student), INRS-Institut Armand-Frappier
Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2017-present **Kevin Muru** (PhD student), INRS-Institut Armand-Frappier
Project: Total synthesis of sponge-derived acetylated glycolipids
- 2017-present **Seynabou Ndong** (research trainee), INRS-Institut Armand-Frappier
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
- 2014-present **Alexis St-Gelais** (PhD student, co-direction), Université du Québec à Chicoutimi
Project: Synthesis and isolation of hydrolysable tannins
- 2017 **Robert Hoyeck** (NSERC summer student), INRS-Institut Armand-Frappier
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
Current position: Medical student, McGill University, Montréal (Québec), Canada

- 2017 **Ariane Provost-Savard** (NSERC summer student), INRS-Institut Armand-Frappier
Project: Total synthesis of sponge-derived acetylated glycolipids
Current position: Engineer student, École polytechnique, Montréal (Québec), Canada
- 2017 **Nassima Ameur** (Master 2 trainee), INRS-Institut Armand-Frappier
Project: Synthesis of Kdo glycosyltransferase inhibitors
Current position: n/a
- 2016-2017 **Marianne Piochon** (research assistant), INRS-Institut Armand-Frappier
Project: Development of sugar-based biosensors
Current position: Looking for a job
- 2016-2017 **Philippe Gauthier** (MSc student), INRS-Institut Armand-Frappier
Project: Synthesis of Kdo glycosyltransferase inhibitors
Current position: n/a
- 2015-2016 **Dr Marcelina Mazur** (postdoctoral research assistant), Université de Poitiers
Project: Synthesis of β -Kdo glycosides
Current position: Assistant Professor, Wroclaw University of Environmental and Life Sciences, Wroclaw, Poland
- 2015 **Anaïs Laroussarie** (Master 1 trainee), Université de Poitiers
Project: Synthesis of *Burkholderia pseudomallei* EPS mimics
Current position: Research Scientist, Evotek, Toulouse, France
- 2015 **Hadrien Coqueblin** (research trainee), Université de Poitiers
Project: Synthesis of iminosugars as inhibitors of GalNAcases
Current position: Production technician, Biosynthis Production, France
- 2014 **Dr Barbara Barycza** (postdoctoral research assistant), Université de Poitiers
Project: Synthesis of β -Kdo glycosides
Current position: Research Assistant Professor, Wroclaw University of Environmental and Life Sciences, Wroclaw, Poland
- 2014-2016 **Pierre-Yves Fleury** (MSc student, co-direction), Université du Québec à Chicoutimi
Project: Synthesis of chimeric saponins
Current position: n/a
- 2014 **Rémi Menanteau** (Master 2 trainee), Université de Poitiers
Project: Synthetic access to polyaminated cages
Current position: n/a
- 2014 **Jimmy Lauberteaux** (engineer trainee), Université de Poitiers
Project: Synthesis of *Burkholderia pseudomallei* CPS mimics
Current position: PhD student, École nationale supérieure de chimie de Montpellier
- 2013-2014 **Dr Ram Sagar** (postdoctoral research assistant, co-direction), Université de Poitiers
Project: Synthesis of iminosugars as inhibitors of GalNAcases
Current position: Assistant Professor, Shiv Nadar University, India

- 2013 **Abba Ngassimou** (Master 1 trainee), Université de Poitiers
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
Current position: n/a
- 2012-2015 **Marielle Tamigney Kenfack** (PhD student), Université de Poitiers
Project: Development of a glycoconjugate vaccine against melioidosis
Current position: Postdoctoral research assistant, Commissariat à l'énergie atomique, Saclay, France
- 2012-2013 **Hanitra Andriambovonjy** (PhD student), Université de Poitiers
Project: Synthesis of *Burkholderia pseudomallei* EPS mimics
Current position: Graphic designer, La Compagnie du Café-Théâtre, France
- 2012-2014 **Dr Jagadeesh Yerri** (postdoctoral research assistant, co-direction), Université de Poitiers
Project: Synthesis of iminosugars as inhibitors of GalNAcases
Current position: Postdoctoral research assistant, Université de Strasbourg, France
- 2012 **Marielle Tamigney Kenfack** (Master 2 trainee), Université de Poitiers
Project: Synthesis of *Burkholderia pseudomallei* CPS mimics
Current position: Postdoctoral research assistant, Commissariat à l'énergie atomique, Saclay, France
- 2012 **Victor Noe Delgado** (Master 2 trainee, co-direction), Université de Poitiers
Project: Synthesis of iminosugars as inhibitors of GalNAcases
Current position: n/a
- 2012 **Aurélien Fruchard** (research trainee), Université de Poitiers
Project: Synthesis of *Burkholderia pseudomallei* CPS mimics
Current position: n/a
- 2010 **Yan Crisan** (engineer trainee), Institut Pasteur, Paris
Project: Synthesis of *Shigella flexneri* serotype 2a LPS mimics
Current position: Engineer, Essilor, France
- 2008 **Frédéric Rossignol** (BSc trainee), Université du Québec à Chicoutimi
Project: Synthesis of activated sugars
Current position: Senior Scientist, Rio Tinto, Saguenay (Québec), Canada
- 2007 **Simon Rondeau-Gagné** (BSc trainee), Université du Québec à Chicoutimi
Project: Glucuronidation of betulinic acid
Current position: Assistant Professor, University of Windsor, Canada
- 2007 **Samuel Tremblay-Fortin** (BSc trainee), Université du Québec à Chicoutimi
Project: Synthesis of lupane-type chactotriosides
Current position: n/a
- 2006 **Philippe Dufour** (BSc trainee), Université du Québec à Chicoutimi
Project: Synthesis of lupane-type glycosides
Current position: Research assistant (Prof. Jean-François Morin), Université Laval, Canada

TEACHING EXPERIENCES

- 2017-present **Comprehensive exam** (co-responsible, BIO9010)
PhD Biology, INRS-Institut Armand-Frappier
- 2017-present **Thesis project** (co-responsible, BIO9000)
PhD Biology, INRS-Institut Armand-Frappier
- 2012-2014 **Glycochemistry & Glycobiology** (lectures & tutorials)
Master 2, Biomolécules, catalyse et environnement, Université de Poitiers
- 2012-2016 **Research Project in Organic Chemistry** (lab session)
Institut Universitaire de Technologie de Poitiers (2nd year)
- 2012-2016 **Industrial Organic Chemistry** (lectures & tutorials)
Institut Universitaire de Technologie de Poitiers (2nd year)
- 2011-2016 **Organic Chemistry I, II & III** (tutorials & lab session)
Institut Universitaire de Technologie de Poitiers (1st and 2nd year)
- 2006-2008 **Aromatic Chemistry** (lectures & tutorials)
BSc Chemistry (2nd year), Université du Québec à Chicoutimi
- 2006 **Interdisciplinary Seminars in Environment** (organization)
PhD Environmental Sciences, Université du Québec à Montréal
- 2005-2007 **Organic Chemistry** (lectures & tutorials)
BSc Chemistry (1st year), Université du Québec à Chicoutimi
- 2004-2005 **Natural Product Chemistry** (lab session)
BSc Chemistry (3rd year), Université du Québec à Chicoutimi
- 2003 **Separation and Characterization of Complex Mixtures** (lab session)
BSc Chemistry (3rd year), Université du Québec à Chicoutimi

PROFESSIONAL AFFILIATIONS

- 2018-present **Canadian Society for Chemistry** (Regular Member)
- 2016-present **Pharmaqam** (Regular Member)
- 2016-present **GlycoNet** (Network Investigator)
- 2016-present **Réseau québécois de recherché sur les médicaments** (Regular Member)
- 2011-present **Groupe Français des Glycosciences** (Regular Member)

SERVICES TO THE COMMUNITY

- 2018 **Judge of Science Fair**, École Saint-Maxime
Laval (Québec), Canada
- 2017-present **Grant Reviewer** (number):
Medical Research Council (1)
Royal Society International Collaboration Award (1)
Agence Nationale de la Recherche (2)
Mathematics of Information Technology and Complex Systems (1)
- 2017-present **INRS Representative**
Journée Carrière en Chimie, Université de Montréal, Montréal (Québec), Canada
Forum Provincial Carrière en Chimie, Université Laval, Québec City (Québec), Canada
- 2016/11 **Judge of the 19th Annual Chemistry and Biochemistry Graduate Research Conference**
University of Concordia, Montréal (Québec), Canada
- 2016/11 **Chairman of the 1^{ère} Journée scientifique de l'axe Pharmacologie et Toxicologie**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2015 **President of the Baccalaureate Committee**
Lycée Jean Macé, Niort, France
- 2006-present **Referee for peer reviewed journals** (number):
Bioconjugate Journal (2), *Chemical Science (4)*, *The Journal of Organic Chemistry (5)*,
Organic Letters (2), *Tetrahedron Letters (4)*, *European Journal of Medicinal Chemistry (5)*,
Bioorganic & Medicinal Chemistry (1), *Chemistry Select (1)*, *Carbohydrate Chemistry (1)*,
Phytochemistry Reviews (1), *Molecular Nutrition & Food Research (1)*, *Molecules (1)*, *Expert
Opinion in Therapeutic Patents (1)*
- 2006 **Organizer of Interdisciplinary Seminar in Environmental Sciences**
Université du Québec network, April 4th-6th 2006, Saguenay, Canada
- 2006 **Judge of Canada-Wide Science Fair**
Saguenay (Québec), Canada
- 2004-2008 **Judge of Bell Science Fair**
Saguenay-Lac-St-Jean (Québec), Canada

COMMITTEE MEMBER

- 2018-present **Member of the Fondation Armand-Frappier fellowship evaluation committee**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2018/04 **Member of the PhD Seminar II committee of Golara Golbagi**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)
- 2018/02 **Member of the PhD thesis committee of Chintam Narayana**
Shiv Nadar University, Uttar Pradesh, India (Prof. Ram Sagar)

- 2018/02 **Member of the MSc thesis committee of Louise Roux**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Nicolas Doucet)
- 2018/01 **Member of the MSc thesis committee of Raphaël Dufour**
Université Laval, Québec City (Québec), Canada (Prof. Donald Poirier)
- 2017/12 **Member of the PhD thesis committee of Elham Akbariromani**
Université du Québec à Montréal, Montréal (Québec), Canada (Prof. René Roy)
- 2017-present **Member of the NSERC MSc fellowship evaluation committee**
Institut national de la recherche scientifique, Québec City (Québec), Canada
- 2017-present **Member of the INRS Bourses Vanier evaluation committee**
Institut national de la recherche scientifique, Québec City (Québec), Canada
- 2017/10 **Member of the selection committee for two *Maître de Conférences* position**
Université des Antilles, Guadeloupe, France
- 2017/05 **Member of the infrastructures investment committee**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2017-présent **Member of the INRS Gold medal and excellence scholarships committee**
Institut national de la recherche scientifique, Québec City (Québec), Canada
- 2017/01 **Member of the “Prix Perron-Desrosiers” committee**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2017/01 **Member of the MSc thesis committee of Gilles Jost**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada (Prof. André Pichette)
- 2016/12 **PhD comprehensive exam committee member of Golara Golbaghi**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)
- 2016/12 **PhD thesis project committee member of Tahani Bayrakdar**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)
- 2016/11 **Member of INRS-CRSNG “support grant for conference” committee**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2007-2008 **Member of the graduate fellowship committee**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada

TECHNICAL & SCIENTIFIC SKILLS

Organic Chemistry:

Multi-steps organic synthesis, glycochemistry, glycoconjugation, stereoselective glycosylation, iminosugar synthesis, isolation and synthesis of natural products.

Analytical Chemistry:

Thin layer chromatography, flash chromatography, 1D and 2D NMR spectroscopy (^1H , ^{13}C , COSY, TOCSY, HMQC, HSQC, coupled-HSQC, HMBC, DEPT-90, DEPT-135, NOESY, selective NOESY, EXSY), HPLC-UV, HPLC-MS, preparative HPLC, GC-MS, UV, IR, polarimetry, H-CubeTM, LR-ESI-TOF-MS, MALDI-TOF-MS, dynamic light scattering (DLS).

Molecular Biology & Pharmacology:

Cell culture, *in vitro* cytotoxic and hemolytic assays, *in vivo* studies on tumour-bearing mice, chemical modification of viral vectors, SDS-PAGE, Western blot, RT-qPCR, *ex vivo* gene therapy, PicoGreen assay, luciferase assay, BCA assay, flux cytometry, fluorescence microscopy.

Computer skills:

Office Suite, Photoshop, ReadCube, EndNote, ChemDraw, Qikprop, SciFinder, TopSpin, SpinWorks.

ADDITIONAL INFORMATION

Languages: English (professional competences), French (native)

Date & place of birth: October 10th 1980, Dolbeau (Québec), Canada

Nationality: Canadian, French (naturalized on November 25th 2013)

Civil statute: Married (2009), father of a girl (2013) and a boy (2015)