

## CURRICULUM VITAE

### Dr. **Élie BESSERER-OFFROY**

*Primary address:*

Dept. of Pharmacology and Therapeutics  
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McIntyre Medical Sciences Building  
3655 Promenade Sir William Osler  
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School of Pharmacy  
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## LANGUAGE SKILLS

French	Read, Write, Speak, Understand, Peer Review	(mother tongue)
English	Read, Write, Speak, Understand, Peer Review	(full bilingual proficiency)

## EDUCATION

### ▪ Degrees

<b>Post-doctorate, Post-Doctoral Academic Associate (CIHR/FRQ-S Fellow)</b> <i>Dept. of Pharmacology and Therapeutics, McGill University, Quebec, Canada</i>	<b>Sep. 2018 - present</b>
<b>Post-doctorate, Associate Researcher (MITACS Fellow)</b> <i>Dept. of Pharmacology and Physiology, Université de Sherbrooke, Quebec, Canada</i>	<b>Jan. 2018 - Aug. 2018</b>
<b>Doctorate, Philosophiæ Doctor, Pharmacology</b> <i>Dept. of Pharmacology and Physiology, Université de Sherbrooke, Quebec, Canada</i>	<b>Jun. 2012 - Jul. 2018</b>
<b>Master of Science, Pharmacology</b> <i>Dept. of Pharmacology and Physiology, Université de Sherbrooke, Quebec, Canada</i>	<b>Oct. 2010 - May. 2012</b>
<b>Bachelor of Medical Science (Honors), Medical Biochemistry, “cum laude”</b> <i>Université Lyon I - Claude Bernard, France</i>	<b>Sep. 2009 - Jun. 2010</b>
<b>Associate of Science, Biochemistry, Physiology and Cell Biology, “magna cum laude”</b> <i>Université de Franche-Comté, France</i>	<b>Sep. 2007 - Jun. 2009</b>

### ▪ Credentials

<b>Member of the Royal Society of Biology (MRSB)</b> <i>Elected at this rank by decision of the Society’s Council</i>	<b>Apr. 2015 - present</b>
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## RECOGNITIONS

### ▪ Honors

- Nomination for *Prix Léon-Tétreault*** **Mar. 2019**  
*Université de Sherbrooke, Quebec, Canada*  
 The *Prix Léon-Tétreault* is a prize that recognizes innovative work of Ph.D. Students at the Université de Sherbrooke
- Nomination for the best doctoral thesis in health sciences** **Mar. 2019**  
*Université de Sherbrooke, Quebec, Canada*
- Publication Prize** **Nov. 2017**  
*Université de Sherbrooke, Quebec, Canada*  
 \$500.00 (Canadian dollar)  
*1st Prize for publication "Signaling signature of neurotensin receptor type 1 with endogenous ligands" awarded by the Sherbrooke Neuroscience Center*
- Dean's Honor List (for being in the Top 10% of PhD candidates of the Faculty)** **May. 2017**  
*Université de Sherbrooke, Quebec, Canada*
- Prize / Award, 2nd Best oral presentation** **Dec. 2016**  
*Journée Phare 2016*  
 \$400.00 (Canadian dollar)
- Nominated to attend the Canadian Student Health Research Forum (as being in the top 5% of PhD students in Canada)** **Apr. 2016**  
*Canadian Student Health Research Forum, The University of Manitoba, Manitoba, Canada*
- Prix de la recherche et de l'innovation (Research and Innovation Prize)*** **Jun. 2015**  
*Université de Sherbrooke, Quebec, Canada*  
*For our paper 'Conjugation of a brain-penetrant peptide with neurotensin provides antinociceptive properties' published in J Clin Invest in 2014*
- Dean's Honor List (for being in the Top 10% of PhD candidates of the Faculty)** **May. 2015**  
*Université de Sherbrooke, Quebec, Canada*
- Distinction, BSc (Hons) in Medical Biochemistry "cum laude" Ranked 7/144, Grade 12.5/20** **Jun. 2010**  
*Université Lyon I - Claude Bernard, France*
- Distinction, ASc in Biology "magna cum laude" Ranked: 2/132, grade: 14/20** **Jun. 2009**  
*Université de Franche-Comté, France*

### ▪ Awards / Fellowships / Scholarships

- Post-Doctoral Fellowship (ranked 39/626)** **Apr. 2019 - Apr. 2022**  
*Canadian Institutes of Health Research, Canada*  
 \$135,000.00 (Canadian dollar) / 3 years
- Post-Doctoral Fellowship (ranked 5/118)** **May. 2018 - May. 2020**  
*Fonds de recherche du Québec - Santé (FRQS), Québec, Canada*  
 \$90,000.00 (Canadian dollar) / 2 years
- CNS Scholarship** **Apr. 2014 - Apr. 2015**  
*Université de Sherbrooke, Québec, Canada*  
 \$10,000.00 (Canadian dollar)
- IPS-CNS Scholarship** **Apr. 2014 - Apr. 2015**  
*Université de Sherbrooke, Québec, Canada*  
 \$15,000.00 (Canadian dollar)

**Domenico-Regoli Scholarship** **Apr. 2012 - Apr. 2013**  
*Université de Sherbrooke, Quebec, Canada*  
 \$19,000.00 (Canadian dollar)

**IPS-CREBSUS Scholarship** **Apr. 2011 - Apr. 2012**  
*Université de Sherbrooke, Quebec, Canada*  
 \$15,000.00 (Canadian dollar)

#### ▪ Travel Grants

**Travel Award** **Aug. 2018**  
*Quebec Pain Research Network, Quebec, Canada*  
 \$1,000.00 (Canadian dollar)  
*To present at the Society for Neuroscience Symposium-Neuroscience 2018 (San Diego, CA, USA)*

**Travel Award** **Sep. 2017**  
*Quebec Pain Research Network, Quebec, Canada*  
 \$1,000.00 (Canadian dollar)  
*To present at the Great Lakes GPCR Retreat 2017 (Ottawa, ON, Canada)*

**Travel Award** **Oct. 2016**  
*Université de Sherbrooke, Quebec, Canada*  
 \$500.00 (Canadian dollar)  
*To present at the Society for Neuroscience Symposium-Neuroscience 2016 (San Diego, CA, USA)*

**Travel Award** **Sep. 2016**  
*Quebec Pain Research Network, Quebec, Canada*  
 \$1,000.00 (Canadian dollar)  
*To present at the Society for Neuroscience Symposium-Neuroscience 2016 (San Diego, CA, USA)*

**Travel Award** **May. 2016**  
*Canadian Institutes of Health Research, Canada*  
 \$1,000.00 (Canadian dollar)  
*To present at the Canadian Student Health Research Forum 2016 (Winnipeg, MB, Canada). Paid by the University of Manitoba on behalf of the Canadian Institutes of Health Research*

**Travel Award** **Sep. 2015**  
*Quebec Pain Research Network, Quebec, Canada*  
 \$1,000.00 (Canadian dollar)  
*To present at the Society for Neuroscience Symposium-Neuroscience 2015 (Chicago, IL, USA) – Declined*

**Travel Award** **Apr. 2013**  
*Université de Sherbrooke, Quebec, Canada*  
 \$500.00 (Canadian dollar)  
*To present at the 23rd American Peptide Symposium (Big Island, HI, USA)*

**Travel Award** **Mar. 2013**  
*Quebec Pain Research Network, Quebec, Canada*  
 \$1,000.00 (Canadian dollar)  
*To present at the 23rd American Peptide Symposium (Big Island, HI, USA)*

## EMPLOYMENT

#### ▪ Academic Work Experience

**Faculty Lecturer (non-tenure track)** **Jul. 2019 - present**  
*School of Pharmacy, Université de Montréal, Quebec, Canada*

<b>Post-Doctoral Academic Associate (CIHR &amp; FRQ-S Research Fellowships)</b> <i>Pharmacology and Therapeutics, McGill University, Quebec, Canada</i>	<b>Sep. 2018 - present</b>
<b>Associate Researcher (University Consortium and Domain Therapeutics NA Inc.)</b> <i>Université de Montréal &amp; Université de Sherbrooke, Quebec, Canada</i>	<b>Jan. 2018 - Aug. 2018</b>
<b>PhD Student</b> <i>Pharmacologie-Physiologie, Université de Sherbrooke, Quebec, Canada</i>	<b>Jun. 2012 - Jul. 2018</b>
<b>MSc Student</b> <i>Pharmacologie, Université de Sherbrooke, Quebec, Canada</i>	<b>Oct. 2010 - May. 2012</b>
<b>Bachelor Research Intern</b> <i>Institut de Biologie et Chimie des Protéines, CNRS - Université Lyon I-Claude Bernard, France</i>	<b>Apr. 2010 - Oct. 2010</b>

## RESEARCH FUNDING HISTORY

### ▪ Awarded Research Grants (Competitive)

<b>Principal Applicant, Investigating the role of APJ heterodimers in pain modulation</b> Canadian Institutes of Health Research (CIHR) Total: \$135,000.00 (Canadian dollar)	<b>Apr. 2019 - Apr. 2022</b>
<b>Principal Applicant, Investigating the role of APJ heterodimers in pain modulation</b> Fonds de recherche du Quebec - Santé (FRQS) Total: \$90,000.00 (Canadian dollar)	<b>May. 2018 - May. 2020</b>
<b>Co-applicant, Elucidation of the functional role of APJ heterodimers in pain modulation</b> Other Investigators: Dr. P. Sarret (Co-applicant), Dr. L. Gendron (Principal Investigator) Sherbrooke Neuroscience Centre; Pilot Grants Total: \$12,500.00 (Canadian dollar)	<b>Jan. 2018 - Jan. 2019</b>
<b>Collaborator, NTS1 modulation by allosteric lipopeptides</b> Other Investigators: Dr. M. Grandbois (Co-applicant), Dr. P. Sarret (Co-applicant), Dr. C.E. Mona (Collaborator), Dr. É. Marsault (Principal Applicant) Fonds de recherche du Quebec - Nature et technologies (FRQNT); Team Research Grants Total: \$162,000.00 (Canadian dollar)	<b>Apr. 2017 - Apr. 2020</b>
<b>Co-applicant, Understanding the NTS1 receptor signaling with new lipopeptide modulators</b> Other Investigators: Dr. M. Grandbois (Co-applicant), Dr. P. Sarret (Co-applicant), Dr. C.E. Mona (Co-applicant), Dr. É. Marsault (Principal Applicant) Sherbrooke Neuroscience Centre: Pilot Grants (2016/1 - 2017/1) Total: \$7,500.00 (Canadian dollar)	<b>Jan. 2016 - Jan. 2017</b>

## SUPERVISORY ACTIVITIES

### ▪ Student Supervision

**Supervisor / Principal Supervisor of 7 BSc Students**  
**Principal Supervisor of 1 MSc Student**  
**Principal Supervisor of 1 Undergraduate Diploma Student**

### ▪ Staff Supervision

**Direct Project Supervisor of 2 Staff Research Associate I/II**

## ADMINISTRATIVE ACTIVITIES

### ▪ Event Administration

Member, Program Committee, Conference, Great Lakes GPCR Retreat 2019 (Sep. 2019)	Apr. 2019 - Sep. 2019
Member, Organizing Committee, Conference, 1 <sup>st</sup> Joint Pain Retreat (Apr. 2016)	Nov. 2015 - Apr. 2016
Member, Organizing Committee, Conference, PAINtalks 2015 (Nov. 2015)	Apr. 2015 - Dec. 2015
Associate Director, Communications, Conference, Journée Phare 2014 (Nov. 2014)	Dec. 2013 - Dec. 2014
Chair, Organizing Committee, Conference, Journée Phare 2013 (Nov. 2013)	Dec. 2012 - Dec. 2013

## ADVISORY ACTIVITIES

### ▪ Mentoring Activities

**Mentor, Science Fair/Expo-Sciences** **Apr. 2013 - present**  
 Number of Mentorees: 6, I act as a Mentor for elementary and high school students participating at the Expo-Sciences/Science Fair in Quebec. My role is to guide them for their project by meeting them in person or via skype as well as providing them with on-line resources relevant for their project. I mentor no more than one team of students per year.

## ASSESSMENT AND REVIEW ACTIVITIES

### ▪ Journal Activities

#### Ad Hoc Reviewer

Biochemical Pharmacology, Number of Works Reviewed / Refereed: 1  
 British Journal of Pharmacology, Number of Works Reviewed / Refereed: 1  
 Clinical and Experimental Pharmacology and Physiology, Number of Works Reviewed: 2  
 Journal of Medicinal Chemistry, Number of Works Reviewed / Refereed: 4

### ▪ Community and Volunteer Activities

<b>Juge/Judge</b> <i>Expo-Sciences/Science Fair</i> Judge for the local, regional, and national Science Fair in Quebec (Expo-Science).	<b>Mar. 2012 - present</b>
<b>eLife Ambassador</b> <i>eLife Publishing Co.</i> Member of Science reproducibility and Early career researchers funding special interest groups.	<b>Jan. 2018 - Feb. 2019</b>
<b>Member of the Advisory Board</b> <i>Quebec Network of Junior Pain Investigators</i> The Advisory Board gives advice on orientations and main strategies of the QNJPI, submits proposals to the Board of Directors, and increases the QNJPI's influence.	<b>Apr. 2017 - Sep. 2018</b>
<b>Member of the Board of Directors</b> <i>Quebec Network of Junior Pain Investigators</i> The Board of Directors of the QNJPI is responsible for the day to day management of the network and also provide the main strategies and orientations of the network. BoD members are also responsible for the organization of the QNJPI's events (PAIN talks, scientific day).	<b>Jan. 2015 - Apr. 2017</b>
<b>Member of the Student Committee</b> <i>Institut de pharmacologie de Sherbrooke</i> The Student Committee of the Institut de pharmacologie de Sherbrooke is responsible for the institute's scientific animation (invites speakers and organizes collaborative/social events).	<b>Dec. 2013 - Dec. 2017</b>
<b>PhD student's representative at the Program Committee</b> <i>Université de Sherbrooke, Quebec, Canada, Academic</i>	<b>Dec. 2013 - Dec. 2017</b>

The Program Committee is responsible to oversee the academic training of graduate students in pharmacology. This Committee aims to ensure the best possible training for graduate students in pharmacology.

### Executive Vice-President

Nov. 2012 - Nov. 2013

*Regroupement des Étudiants-Chercheurs en Pharmacologie de l'Université de Sherbrooke*

#### ▪ International Collaboration Activities

##### Scientific Collaborator, United States

Mar. 2017 - present

Collaboration with the team of Prof. V. Cherezov (University of South California). Prof. Cherezov's team crystallized two new GPCRs (CysLT1 and CysLT2) and need to have some binding experiments done to confirm the interactions they saw on the X-ray structure. In this collaboration, I am responsible for the development of the binding assay as well as to test some mutants in for their ability to activate some intracellular signaling cascade in response to a stimulation. We are currently testing new molecules, targeting these two GPCRs, found in a virtual library screening in collaboration with Prof. V. Katritch (University of South California). This collaboration already led to the publication of two research papers in Science Advances ([Luginina A, et al.; 2019, Sci Adv](#)) and in Nature Communications ([Gusach A, et al.; 2019, Nat Commun](#)).

##### Scientific Collaborator, United States

Aug. 2015 - Dec. 2016

Collaboration with Dr. J.B. Thomas from Research Triangle Institute for the development of new molecules targeting the NTS2 receptor. This collaboration led to the publication of a research paper in ACS Chemical Neuroscience ([Thomas JB, et al.; 2016, ACS Chem Neurosci](#)).

##### Scientific Collaborator, France

May. 2012 - Sep. 2018

Collaboration with the team of Dr. Florine Cavelier (Université de Montpellier, IBMM-CNRS). Dr. Cavelier's team designs and synthesizes novel neurotensin analogs containing non-natural amino-acids. In Prof. Sarret's lab we test these compounds in several *in vitro* and *in vivo* assays. So far, this collaboration led to the publication of three research papers ([Fanelli R, et al.; 2017, J Med Chem](#); [Hapau D, et al.; 2016, Eur J Org Chem](#); [Besserer-Offroy É, et al.; 2015, J Med Chem](#)) and a manuscript submitted in British Journal of Pharmacology (Besserer-Offroy É, et al.; 2019, Submitted).

#### CONTRIBUTIONS (\*Invited speaker)

10. **\*Besserer-Offroy É.** (2019). *Biased agonism in drug discovery: Is it too soon to choose a path?* 20th Great lakes GPCR retreat, Bromont, Canada.
9. **\*Besserer-Offroy É.** (2017). *Phosphomimetic lipopeptides as new tools to investigate  $\beta$ -arrestin-mediated functions.* 18th Great lakes GPCR retreat, Ottawa, Canada.
8. **\*Besserer-Offroy É.** and Côté J. (2017). *Le développement de nouveaux médicaments : De la chimie aux études précliniques.* Bistro Brain: Du fondamental vers l'application, Sherbrooke, Canada.
7. **Besserer-Offroy É.** (2016). *Phosphomimetic lipopeptides as new tools to investigate  $\beta$ -arrestin-mediated functions.* Journée Phare 2016, Bromont, Canada.
6. **Besserer-Offroy É.** (2016).  *$\beta$ -arrestin-2-biased apelin receptor agonists as novel potent analgesics.* Symposium of the Pain and Inflammation research axis of the Université de Sherbrooke, Sherbrooke, Canada.
5. **Besserer-Offroy É.** (2016). *Phosphomimetic lipopeptides as new tools to investigate  $\beta$ -arrestin-mediated functions.* Neuroscience 2016 (46th annual meeting of the Society for Neuroscience), San Diego, United States.
4. **Besserer-Offroy É.** (2015). *New biased analogs of Apelin-13 and their impacts on cardiovascular effects.* 5<sup>e</sup> rencontres Montpellier – Sherbrooke, Sherbrooke, Canada.
3. **Besserer-Offroy É.** (2013). *Molecular Signature of the Neurotensin Receptor 1.* 3<sup>e</sup> Journée Scientifique du RQRM, Montréal, Canada.



2. **Besserer-Offroy É.** (2012). *BRET-Based Assay Development for the Discovery of Novel GPCR Ligands*. Conference of the Sherbrooke Institute of Pharmacology, Sherbrooke, Canada.
1. **Besserer-Offroy É.** (2012). *BRET-Based Assay Development for the Discovery of Novel GPCR Ligands*. Journée Phare 2012, Orford, Canada.

## INTERVIEWS AND MEDIA RELATIONS

### ▪ Text Interviews

1. **Besserer-Offroy, É.** (2013). *Journée Phare pour la pharmacologie au Québec*. Le Collectif, Vol 37, No 7.

## PUBLICATIONS

### ▪ Published Journal Articles (\*Corresponding author) == [View my bibliography on Pubmed](#)

23. **\*Besserer-Offroy É,** Brouillette RL, Mona CE, Chartier M, Lavenus S, Sousbie M, Belleville K, Longpré JM, Marsault E, Grandbois M, \*Sarret P. (2020). Cell-penetrating pepducins targeting the neurotensin receptor type 1 relieve pain. *Pharmacol Res*. (Accepted)
22. Gusach A, Luginina A, Marin E, Brouillette RL, **Besserer-Offroy É,** Longpré JM, Ishchenko A, Popov P, Patel N, Fujimoto T, Stauch B, Ergasheva M, Romanovskaya D, Stepko A, Kovalev K, Shevtsov M, Gordeliy V, Han GW, Katritch V, Borshchevskiy V, \*Sarret P, \*Mishin A, \*Cherezov V. (2019). Structural Basis of Ligand Selectivity and Disease Mutations in Cysteinyl Leukotriene Receptors. *Nat Commun*, 10:5573. doi: [10.1038/s41467-019-13348-2](https://doi.org/10.1038/s41467-019-13348-2)
21. Boulkeroua C, Ayari H, Khalfaoui T, Lafrance M, **Besserer-Offroy É,** Ekindi N, Sabbagh R, Dumaine R, Lesur O, Sarret P, \*Chraïbi A. (2019). Apelin-13 regulates vasopressin-induced aquaporin-2 expression and trafficking in kidney collecting duct cells. *Cell Physiol Biochem*, 53(4):687-700. doi: [10.33594/000000165](https://doi.org/10.33594/000000165)
20. Luginina A, Gusach A, Marin E, Mishin A, Brouillette RL, Popov P, Shiryayeva A, **Besserer-Offroy É,** Longpré JM, Lyapina E, Ishchenko A, Patel N, Polovinkin V, Safronova N, Bogorodskiy A, Edelweiss E, Hu H, Weierstall U, Liu W, Batyuk A, Gordeliy V, Han GW, Sarret P, \*Katritch V, \*Borshchevskiy V, \*Cherezov V. (2019). Structure-based mechanism of cysteinyl leukotriene receptor inhibition by antiasthmatic drugs. *Sci Adv*, 5(10):eeax2518. doi: [10.1126/sciadv.aax2518](https://doi.org/10.1126/sciadv.aax2518)
19. **\*Besserer-Offroy É,** Sarret P. (2019). Sending Out Biased Signals: An Appropriate Proposition For Pain? *Douleur analg*, 32(2), 108-110. doi: [10.3166/dea-2019-0065](https://doi.org/10.3166/dea-2019-0065)
18. St-Pierre D, Cabana J, Holleran BJ, **Besserer-Offroy É,** Escher E, Guillemette G, Lavigne P, \*Leduc R. (2018). Angiotensin II cyclic analogs as tools to investigate AT1R biased signaling mechanisms. *Biochem Pharmacol*, 154, 104-117. doi: [10.1016/j.bcp.2018.04.021](https://doi.org/10.1016/j.bcp.2018.04.021)
17. Lavenus S, Simard E, **Besserer-Offroy É,** Froelich U, Leduc R, \*Grandbois M. (2018). Label-free cell signaling pathway deconvolution of Angiotensin type 1 receptor reveals time-resolved G-protein activity and distinct agonist responses. *Pharmacol Res*, 136, 108-120. doi: [10.1016/j.phrs.2018.06.027](https://doi.org/10.1016/j.phrs.2018.06.027)
16. Sousbie M, **Besserer-Offroy É,** Brouillette R, Longpré JM, Leduc R, Sarret P, \*Marsault É. (2018). In search of the optimal macrocyclization sites for neurotensin. *ACS Med Chem Lett*, 9(3), 227-232. doi: [10.1021/acsmchemlett.7b00500](https://doi.org/10.1021/acsmchemlett.7b00500)
15. Sousbie M, Vivancos M, Brouillette R, **Besserer-Offroy É,** Longpré JM, Leduc R, Sarret P, \*Marsault É. (2018). Structural Optimization and Characterization of Potent Analgesic Macrocyclic Analogues of Neurotensin 8-13. *J Med Chem*, 61(16), 7103-7115. doi: [10.1021/acs.jmedchem.8b00175](https://doi.org/10.1021/acs.jmedchem.8b00175)
14. **Besserer-Offroy É,** Bérubé P, Côté J, Murza A, Longpré JM, Dumaine R, Lesur O, Auger-Messier M, Leduc R, Marsault É, \*Sarret P. (2018). The hypotensive effect of activated apelin receptor is correlated with  $\beta$ -arrestin recruitment. *Pharmacol Res*, 131, 7-16. doi: [10.1016/j.phrs.2018.02.032](https://doi.org/10.1016/j.phrs.2018.02.032)

13. Fanelli R, Floquet N, **Besserer-Offroy É**, Delort B, Vivancos M, Longpré JM, Renault P, Martinez J, Sarret P, \*Cavelier F. (2017). Use of Molecular Modeling to Design Selective-NTS2 Neurotensin Analogues. *J Med Chem*, 60(8), 3303-3313. doi:[10.1021/acs.jmedchem.6b01848](https://doi.org/10.1021/acs.jmedchem.6b01848)
12. **Besserer-Offroy É**, Brouillette RL, Lavenus S, Froehlich U, Brumwell A, Murza A, Longpré JM, Marsault É, Grandbois M, Sarret P, \*Leduc R. (2017). Signaling signature of neurotensin receptor type 1 with endogenous ligands. *Eur J Pharmacol*, (805), 1-13. doi:[10.1016/j.ejphar.2017.03.046](https://doi.org/10.1016/j.ejphar.2017.03.046)
11. Mona CE, **Besserer-Offroy É**, Cabana J, Lefrançois M, Boulais PE, Lefebvre MR, Leduc R, Lavigne P, Heveker N, Marsault É, \*Escher E. (2017). Agonist-Antagonist Transition in CXCR4 Ligands. *J Pharmacol Toxicol Methods*, 88(2), 170-171. doi:[10.1016/j.vascn.2017.09.012](https://doi.org/10.1016/j.vascn.2017.09.012)
10. Murza A, Sainsily X, Côté J, Bruneau-Cossette L, **Besserer-Offroy É**, Longpré JM, Leduc R, Dumaine R, Lesur O, Auger-Messier M, Sarret P, \*Marsault É. (2017). Structure-activity relationship of novel macrocyclic biased apelin receptor agonists. *Org Biomol Chem*, 15(2), 449-458. doi:[10.1039/C6OB02247B](https://doi.org/10.1039/C6OB02247B)
9. Mona CE, **Besserer-Offroy É**, Cabana J, Lefrançois M, Boulais PE, Lefebvre MR, Leduc R, Lavigne P, Heveker N, Marsault E, \*Escher E. (2016). Structure Activity Relationship and Signaling of New Chimeric CXCR4 Agonists. *J Med Chem*, 59(16), 7512-7524. doi:[10.1021/acs.jmedchem.6b00566](https://doi.org/10.1021/acs.jmedchem.6b00566)
8. \*Thomas JB, Vivancos M, Giddings AM, Wieth RW, Warner KR, Murza A, **Besserer-Offroy É**, Longpré JM, Runyon SP, Decker AM, Gilmour BP, Sarret P. (2016). Identification of 2-([1-(4-fluorophenyl)-5-(2-methoxyphenyl)-1H-pyrazol-3-yl]carbonyl)amino)tricyclo[3.3.1.1<sup>3,7</sup>]decane-2-carboxylic acid (NTRC-844) as a selective antagonist for the Rat Neurotensin receptor type 2. *ACS Chem Neurosci*, 7(9), 1225-1231. doi:[10.1021/acschemneuro.6b00097](https://doi.org/10.1021/acschemneuro.6b00097)
7. Mona CE, **Besserer-Offroy É**, Cabana J, Leduc R, Lavigne P, Heveker N, Marsault E, \*Escher E. (2016). Design, Synthesis, and Biological Evaluation of Novel CXCR4 Inverse Agonists. *Org Biomol Chem*, 14(43), 10298-10311. doi:[10.1039/C6OB01484D](https://doi.org/10.1039/C6OB01484D)
6. Murza A, Sainsily X, Coquerel D, Côté J, Marx P, **Besserer-Offroy É**, Longpre JM, Lainé J, Reversade B, Salvail D, Leduc R, Dumaine R, Lesur O, Auger-Messier M, Sarret P, \*Marsault E. (2016). Discovery and structure-activity relationship of a bioactive fragment of ELABELA that modulates vascular and cardiac functions. *J Med Chem*, 59(7), 2962-2972. doi:[10.1021/acs.jmedchem.5b01549](https://doi.org/10.1021/acs.jmedchem.5b01549)
5. Hapau D, Rémond E, Fanelli R, Vivancos M, René A, Côté J, **Besserer-Offroy É**, Longpré JM, Martinez J, Zaharia V, Sarret P, \*Cavelier F. (2016). Stereoselective synthesis of  $\beta$ -(5-arylthiazolyl)  $\alpha$ -amino acids and use in neurotensin analogues. *Euro J Org Chem*, 2016(5), 1017-1024. doi:[10.1002/ejoc.201501495](https://doi.org/10.1002/ejoc.201501495)
4. Murza A, **Besserer-Offroy É**, Côté J, Bérubé P, Longpré JM, Dumaine R, Lesur O, Auger-Messier M, Leduc R, Sarret P, \*Marsault E. (2015). C-terminal modifications of apelin-13 significantly change ligand binding, receptor signaling and hypotensive action. *J Med Chem*, 58(5), 2431-2440. doi:[10.1021/jm501916k](https://doi.org/10.1021/jm501916k)
3. **Besserer-Offroy É**, Fanelli R, René A, Côté J, Tétrault P, Collerette-Tremblay J, Longpré JM, Leduc R, Martinez J, Sarret P, \*Cavelier F. (2015). Synthesis, in vitro and in vivo characterization of (L)-(trimethylsilyl)alanine containing neurotensin analogues. *J Med Chem*, 58(19), 7785-7795. doi:[10.1021/acs.jmedchem.5b00841](https://doi.org/10.1021/acs.jmedchem.5b00841)
2. Demeule M, Beaudet N, Régina A, **Besserer-Offroy É**, Murza A, Tétrault P, Belleville K, Ché C, Larocque A, Thiot C, Béliveau R, Longpré JM, Marsault É, Leduc R, Lachowicz JE, Gonias SL, Castaigne JP, Sarret P. (2014). Conjugation of a brain-penetrant peptide with neurotensin provides antinociceptive properties. *J Clin Invest*, 124(3), 1199-1213. doi:[10.1172/JCI70647](https://doi.org/10.1172/JCI70647)
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### ▪ Dissertations

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22. **Besserer-Offroy É**, Lafrance M, Dansereau MA, Ouirzane M, Bode N, Murza A, Longpré JM, Leduc R, Behlke M, Marsault E and Sarret P (2019). Bias factor toward  $\beta$ -arrestin 2 predicts analgesic efficacy at apelin receptor. In *20th Great lakes GPCR retreat*.
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13. **Besserer-Offroy É**, Côté J, René A, Longpré JM, Martinez J, Cavelier F, Sarret P (2015). Novel neurotensin analogs with TMSAla residue induce antinociception without hypothermia. In *19th McGill Pain Day*.
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## INTELLECTUAL PROPERTY

### ▪ Patents

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