

# Pr Christophe Rochais

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## Education

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**2010** **Université de Caen Basse-Normandie, France**  
*Habilitation à Diriger des Recherches (HDR)*

**2002-2005** **Université de Caen Basse-Normandie, France**  
*Ph.D. in Medicinal Chemistry* **CERMN**  
*Thesis title: "Synthesis and physico-chemical study of novel pyrrolo- and pyrazolopyrrolizines as anticancer drugs"*  
*Adviser:* Professor Sylvain Rault

**2001-2002** **Université de Haute-Alsace, Mulhouse, France**  
*DEA (Master's) in Organic Chemistry* **Hoffman-La Roche, Basel, Switzerland**  
*Adviser:* Dr Andrew Thomas

**1998-2002** **Ecole Nationale Supérieure de Chimie de Mulhouse, France**  
*Engineer Diploma in Chemistry (including 1 year of internship in industry)*

## Academic and Research Experience

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**2014-present** **Université de Caen Normandie, France**  
*Professor of Organic Chemistry : Faculty of Pharmacy*

**2007-2013** **Université de Caen Basse-Normandie, France**  
*Assistant Professor (promoted in 2010) of Organic and Medicinal Chemistry : Faculty of Pharmacy.*

**2006-2007** **University of Nottingham, UK**  
*Post-Doctoral position : Centre for Biomolecular Sciences.* *Adviser:* Pr Peter M. Fischer

**2005-2006** **Université de Caen Basse-Normandie, France**  
*Research and Teaching Assistant (ATER) : CERMN and Faculty of Pharmacy.*

**2002-2005** **CERMN, Faculty of Pharmacy, Caen, France**  
*Graduate Assistant: Medicinal and Organic Chemistry laboratories to 3<sup>rd</sup> and 4<sup>th</sup> year Students of the Faculty of Pharmacy (200 h) during my Ph.D.*

**February-July 2002** **Hoffman-La Roche, Basel, Switzerland**  
*Experimental part of the MSc - Central Nervous System department of Hoffman-La Roche.*

**January-June 2001** **Novartis Forschung Institut, Vienna, Austria**  
*Six month internship - Dermatology department of Novartis Research Institut in Vienna. Adviser: Dr Murty A.R.C. Bulusu*

**July-December 2000** **Bayer AG, Leverkusen, Germany**  
*Six month internship - Phytosanitary division of Bayer AG. Adviser: Dr Christiane Boie*

## Teaching Experience

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Since 2007 I participate to the teaching of Organic Chemistry and Drug Design in the Faculty of Pharmacy of Caen (1<sup>st</sup> year to Master's degree) and the ESITech Engineer School in Rouen (200h/year), and support this discipline at the national level.

**2012-present** Creation and management of the Master degree "Drug Design" in the Faculty of Pharmacy at the University of Caen Normandie.

**2013-present** Head of the Medicinal and Organic Chemistry department of the Faculty of Pharmacy at the University of Caen Normandie.

**2007-present** Supervision at the CERMN of 12 Master's student, 13 PhD and 14 Post-doctoral researcher.

**2016-present** President of the French Association of Organic Chemistry Teacher in Pharmacy (AECOP).

**2014-2016** Secretary of the French Association of Organic Chemistry Teacher in Pharmacy (AECOP).

## University Experience

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**2015-2017** Head of the Research Council of the Faculty of Pharmacy at the University of Caen Normandie.

**2011-2016** Member of the management committee of the Faculty of Pharmacy at the University of Caen Normandie.

**2012-2014** Member of the Commission Formation et Vie Universitaire (CFVU) of the University of Caen Normandie.

## Awards

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**2008** Young researcher prize (Journées Franco-Belges).

**2012** Young researcher in medicinal chemistry prize from the French Medicinal Chemistry Society (SCT)

## Research

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My main research interest is concentrated to drug discovery research programs targeting neurodegenerative diseases and more particularly Alzheimer's disease (AD). In order to tackle the complex and multifactorial origin of AD, we decided few years ago to develop original "Multi-Target-Directed Ligands" (MTDLs), compounds that are able to interact simultaneously with the multiple targets responsible for the disease pathogenesis (PLEIAD program). We have built a translational and multithematic research program in the CERMN and select Polypharmacology as one of our two main research topics. I was recently appointed as the Group Leader for this topic with the objective to accelerate the discovery of novel preclinical candidates using a polypharmacology approach. According to this expertise, I joined in 2016 the COST action CA15135 "Multi-target paradigm for innovative ligand identification in the drug discovery process (MuTaLig)" as French Management Committee Substitute. I took part recently in another European consortium in the field of neurodegenerative diseases: the ITN research project Euroneurotrophin. In this project, I led the Work Package 1: "Design, Synthesis and Isolation from Marine Microorganisms of Small Molecule Mimetics of Neurotrophins" which will coordinate 7 Phd students.

More specifically the PLEIAD research program - PLEIotropic agents for Alzheimer's Disease - is dedicated to the development of MTDL able to target simultaneously various enzymes and GPCRs. This program has received funding from different institutions (ANR, LECMA, Normandy Region, Interreg European Funding, Fondation Plan Alzheimer, France Alzheimer ...) or pharmaceutical industries and recently led to the identification of novel drug candidates. One of our main achievement was the recent identification of donecopride, a potent acetylcholinesterase inhibitor with 5-HT4 agonist activities with potential interest for the treatment of Alzheimer's Disease (PNAS, 2014; J. Med. Chem. 2015, Br. J. Pharmacol. 2020), currently in reglementary preclinical development with the financial support of BPI France and Region Normandie.

## Source of Independent Funding (PI position)

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- 2018-2021** Euroneurotrophin (H2020-MSCA-ITN-2017 n° 765704– 263k€)
- 2016-2018** Preclinic'Alzh (Normandie Valorisation - BPI - 320k€).
- 2016-2019** Synthesis of orphan-GPCRs ligands (Institut De Recherche Servier - 570k€).
- 2013-2016** Multi-Active Ligands for Alzheimer's Disease (MALAD) ANR-12-JS007-0012-01, (181k€).
- 2014-2016** MALAD project; Conseil Régional de Basse-Normandie (CRBN) (55k€).
- 2012-2015** Synthesis of melatoninerigic ligands (Institut De Recherche Servier - 500k€).
- 2010-2014** Emergence program - CRBN, co-supervision with Pr P Dallemagne (236 k€).

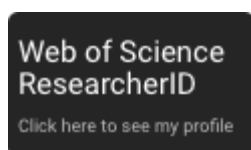
## External Activities

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- 2021** Member of the Scientific Advisory Board of the RICT 2020 "Interfacing Chemical Biology and Drug Discovery" (52nd International Conference on Medicinal Chemistry), Bordeaux, France - July 7-9, 2021.
- 2020** Organizer of the 27<sup>th</sup> Young Research Fellow Meeting, Caen, January 2020
- 2019-present** Elected as a National Member of the French Academy of Pharmacy.
- 2019-present** Communication Head for the University Graduate School EUR-XL-Chem.
- 2017-** Vice-Chair of the Group of Medicinal Chemists of the Atlantic Arc Network (<https://gp2a.org/>)
- 2017-2024** Head of the Pharmacy-Chemistry sector of the Institut Carnot I2C.
- 2016-2018** National Substitute Representative in the COST action Mutalig N°CA15135.
- 2015-present** External scientific expert for France Alzheimer Research grant, Ligue contre le Cancer, COST Open call 2019, Programa Fondecyt (Chile), National Science Center Poland (NCN), ERC StG 2020, ANR.
- 2016** Member of the Executive Scientific and the Local Organizing Committee of the RICT 2016 "Interfacing Chemical Biology and Drug Discovery" (52nd International Conference on Medicinal Chemistry), Caen, Normandy, France - July 6-8, 2016.
- 2010-present** External PhD examiner for 24 students in universities including Cork, Geneva, Calabria, Monash, Bologna, Nottingham, Besançon, Lille, Nantes, Rouen, Caen.

## Dissemination

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<http://www.researcherid.com/rid/A-8362-2015>



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## Publications

- P1.** M. A. R. C. Bulusu, P. Waldstätten, T. Tricotet, **C. Rochais**, A. Steck and M. Bacher. Synthesis of 6-vinyl and 5-vinylproline analogues of ascomycin. *Tetrahedron Letters*, **2004**, 45, 5833-5836. <https://doi.org/10.1016/j.tetlet.2004.06.010> (IF 2004: 2.484)
- P2.** **C. Rochais**, V. Lisowski, P. Dallemagne and S. Rault. First Synthesis of Methyl 3-amino-4-(Het)Aryl-1H-pyrrolo-2-carboxylates as Useful Scaffolds in Medicinal Chemistry. *Tetrahedron*, **2004**, 60, 2267-2270. <https://doi.org/10.1016/j.tetlet.2004.06.047> (IF 2004: 2.643)  
Highlighted in ChemInform, 2004, 35 (28), <https://doi.org/10.1002/chin.200428129>.
- P3.** **C. Rochais**, E. Lescot, V. Lisowski, A. Lepailleur, J. Sopkova-de Oliveira Santos, R. Bureau, P. Dallemagne, L. Meijer and S. Rault. Synthesis, Biological Evaluation and SAR Study of Thienopyrrolizines, a New Family of CDK/GSK-3 Inhibitors. *J. Enz. Inh. Med. Chem.*, **2004**, 19, 585-593. <https://doi.org/10.1080/14756360400004565> (IF 2004: 1.423)
- P4.** **C. Rochais**, V. Lisowski, P. Dallemagne and S. Rault. First Synthesis of ArylPyrrolo- and Pyrazolopyrrolizinones as Useful Agents with Potential Biological Interest. *Tetrahedron Letters*, **2004**, 45, 6353-6355. . <https://doi.org/10.1016/j.tetlet.2004.06.047> (IF 2004: 2.484)  
Highlighted in ChemInform, 2004, 35 (46), <https://doi.org/10.1002/chin.200446119>.
- P5.** E. Lescot, R. Bureau, J. Sopkova-de Oliveira Santos, **C. Rochais**, V. Lisowski, P. Dallemagne, J.C. Lancelot and S. Rault. 3D-QSAR and docking studies of 3-anilino-4-arylmaleimides, selective GSK-3 $\beta$  inhibitors. Comparison with a thieno[2,3-b]pyrrolizinone derivative, new potential lead for GSK3- $\beta$  ligands. *J. Chem. Inf. Model.*, **2005**, 45, 708-715. <https://doi.org/10.1021/ci050008y> (IF 2005: 2.923)  
Highlighted in ChemInform, 2005, 36 (32), <https://doi.org/10.1002/chin.200532209>.
- P6.** **C. Rochais**, J. Sopkova-de Oliveira Santos, P. Dallemagne and S. Rault. Synthesis of Novel Pyrazolopyrrolizinones as Prospective Anticancer Agents. *Heterocycles*, **2006**, 10, 2063-2077. <https://doi.org/10.3987/COM-06-10824> (IF 2006: 1.077)  
Highlighted in ChemInform, 2007, 38 (7), <https://doi.org/10.1002/chin.200707095>.
- P7.** **C. Rochais**, V. Lisowski, P. Dallemagne and S. Rault. Synthesis and Biological Evaluation of Novel Pyrrolopyrrolizinones as Anticancer Agents. *Bioorg. Med. Chem.*, **2006**, 14, 8162-8175. <https://doi.org/10.1016/j.bmc.2006.09.022> (IF 2006: 2.624)
- P8.** **C. Rochais**, D. N. Vu, E. Lescot, J. Sopkova-de Oliveira Santos, R. Bureau, L. Meijer, P. Dallemagne and S. Rault. Synthesis of New DiPyrrolo- and FuroPyrroloPyrazinones Related to Tripentones and their Biological Evaluation as Potential Kinases (CDKs1-5, GSK-3) Inhibitors. *Eur. J. Med. Chem.*, **2009**, 44, 708-716. <https://doi.org/10.1016/j.ejmech.2008.05.011> (IF 2009: 3.269)  
Highlighted in ChemInform, 2009, 40 (30), <https://doi.org/10.1002/chin.200930169>.
- P9.** **C. Rochais**, P. Dallemagne and S. Rault, Tripentones: a Promising Series of Potent Anti-Cancer Agents. *Anticancer Agents in Medicinal Chemistry*, **2009**, 4 (9), 369-380. <https://doi.org/10.2174/1871520610909040369> (IF 2009: 4.708)
- P10.** M. A. R. C. Bulusu, P. Waldstätten, T. Tricotet, **C. Rochais**, A. Steck, M. Bacher., G. Schulz and J. G. Maingassner, New Derivatives of Ascomycin with Modifications in the Amino Acid Region – Synthesis and Biological Activities, and X-Ray Crystal Structure of 5,6-Dehydroascomycin. *Helv. Chim. Act.*, **2009**, 92, 839-889. <https://doi.org/10.1002/hlca.200800436> (IF 2009: 1.435)
- P11.** **C. Rochais**, R. Yougnia, P. Dallemagne and S. Rault, An expedient one-pot synthesis of novel 10-substituted 9-aminophenanthrenes. *Tetrahedron Letters*, **2009**, 50 (41), 5704-5708. <https://doi.org/10.1016/j.tetlet.2009.07.124> (IF 2009: 2.660)  
Highlighted in ChemInform, 2010, 41 (2), <https://doi.org/10.1002/chin.201002108>.
- P12.** **V. Perri**, **C. Rochais**, T. Cresteil, P. Dallemagne and S. Rault, Synthesis, reactivity and biological evaluation of novel halogenated tripentones. *Bioorg. Med. Chem.*, **2009**, 17, 7783-7788. <https://doi.org/10.1016/j.bmc.2009.09.027> (IF 2009: 2.822)
- P13.** **V. Perri**, **C. Rochais**, J. Sopkovà-de Oliveira Santos, R. Legay, T. Cresteil, P. Dallemagne and S. Rault, Hydrogenative desulphurization of Thienopyrrolizinones: An Easy and Selective Access to (Z)-Phenethylidenepyrrolizinones with in vitro Cytotoxic Activity. *Eur. J. Med. Chem.*, **2010**, 45, 1146-1150. <https://doi.org/10.1016/j.ejmech.2009.12.021> (IF 2010: 3.193)  
Highlighted in ChemInform, 2010, 41 (28), <https://doi.org/10.1002/chin.201028118>.
- P14.** J. Sopkovà-de Oliveira Santos, A. Lesnard, J.-H. Agondanou, N. Dupont, A.-M. Godard, S. Stiebing, **C. Rochais**, F. Fabis, P. Dallemagne, R. Bureau and S. Rault, Virtual screening discovery of new Acetylcholinesterase inhibitors issued from CERMN chemical library. *J. Chem. Inf. Model.*, **2010**, 50, 422-428. <https://doi.org/10.1021/ci900491t> (IF 2010: 3.822)
- P15.** **R. Yougnia**, **C. Rochais**, J. Sopkovà-de Oliveira Santos, P. Dallemagne and S. Rault, One-pot synthesis of novel poly-substituted phenanthrenes. *Tetrahedron*, **2010**, 66, 2803-2808. <https://doi.org/10.1016/j.tet.2010.02.060> (IF 2010: 3.011)  
Highlighted in ChemInform, 2010, 41 (32), <https://doi.org/10.1002/chin.201032106>.

**P16.** C. Rochais, S. Rault and P. Dallemagne Intramolecular Cyclisation of  $\beta$ -Aryl- $\beta$ -Amino Acids in the Design of Novel Heterocyclic Systems with Therapeutic Interest: an Unfailing Source of Diversity. *Current Medicinal Chemistry*, **2010**, 17 (35), 4342-4369. <https://doi.org/10.2174/092986710793361261> (IF 2010: 4.630)

Highlighted in ChemInform, 2011, 42 (25), <https://doi.org/10.1002/chin.201125232>.

**P17.** E. Chosson, C. Rochais, R. Legay, J. Sopková-de Oliveira Santos, S. Rault and P. Dallemagne, First and mild synthesis of fluorene-9-malonic acid and some substituted derivatives via the intramolecular hydroarylation of 2-phenylbenzylidenemalonic acids. *Tetrahedron*, **2011**, 67, 2548-2554. <https://doi.org/10.1016/j.tet.2011.02.026> (IF 2011: 3.025)

Highlighted in ChemInform, 2011, 42 (29), <https://doi.org/10.1002/chin.201129089>.

**P18.** C. Rochais\*, R. Yougnia, T. Cailly, J. Sopková-de Oliveira Santos, S. Rault and P. Dallemagne, One-pot synthesis of new aza- and diaza-aminophenanthrenes. *Tetrahedron*, **2011**, 67 (32), 5806-5810. <https://doi.org/10.1016/j.tet.2011.05.116> (IF 2011: 3.025)

Highlighted in ChemInform, 2011, 42 (49), <https://doi.org/10.1002/chin.201149147>.

**P19.** T. Freret, V. Bouet, A. Quiedeville, G. Nee, P. Dallemagne, C. Rochais, M. Boulouard, Synergistic effect of acetylcholinesterase inhibition (donepezil) and 5-HT<sub>4</sub> receptor activation (RS67333) on object recognition in mice. A new hope to design a treatment for Alzheimer's disease, *Behav. Brain Res.*, **2012**, 230, 304-308. <https://doi.org/10.1016/j.bbr.2012.02.012> (IF 2012: 3.327)

**P20.** E. Chosson, F. Santoro, C. Rochais, J. Sopkova-de Oliveira Santos, R. Legay, S. Thoret, T. Cresteil, M. S. Sinicropi, T. Besson, P. Dallemagne, Synthesis of Novel 7-Oxo and 7-Hydroxy Trifluoroalcolchicinoids with Cytotoxic Effect. *Bioorg. Med. Chem.*, **2012**, 20, 2614-2623. <https://doi.org/10.1016/j.bmc.2012.02.043> (IF 2012: 2.903)

**P21.** C. Lecoutey, C. Rochais, D. Genest, S. Butt-Gueulle, C. Ballandonne, S. Corvaisier, F. Dulin, A. Lepailleur, J. Sopkova-de Oliveira Santos, P. Dallemagne, Synthesis of Dual AChE /5-HT<sub>4</sub> Receptors Multi-Target Directed Ligands, *Med. Chem. Commun.*, **2012**, 3, 627-634. <https://doi.org/10.1039/c2md20063e> (IF 2012: 2.722)

**P22.** J.P. Jourdan, C. Rochais, R. Legay, J. Sopkova-de Oliveira Santos, P. Dallemagne, An unusual boron tribromide-mediated, one-pot bromination/cyclization reaction. Application to the synthesis of a highly strained cyclopenta[1,3]cyclopropa[1,2-b]pyrrolizin-8-one *Tetrahedron Lett.*, **2013**, 54, 1133-1136. <https://doi.org/10.1016/j.tetlet.2012.12.056> (IF 2013: 2.391)

**P23.** C. Rochais\*, T. Cresteil, V. Perri, M. Jouanne, A. Lesnard, S. Rault, P. Dallemagne, MR22388, a Novel Very Specific FLT-3 ITD Kinase Inhibitor, *Cancer Lett.*, **2013**, 331, 92-98. <https://doi.org/10.1016/j.canlet.2012.12.017> (IF 2013: 5.016)

**P24.** D. Genest, C. Rochais\*, J. Sopkova-de Oliveira Santos, C. Ballandonne, S. Butt-Gueulle, R. Legay, P. Dallemagne, Design, Synthesis and Biological Evaluation of Novel Indano- and Thiaindano-Pyrazoles as Dual Binding Site Acetylcholinesterase Inhibitors *Med. Chem. Commun.* **2013**, 4(6), 925-931. <https://doi.org/10.1039/c3md00041a> (IF 2013: 2.626)

**P25.** C. Lecoutey, D. Hedou, T. Freret, P. Giannoni, F. Gaven, M. Since, V. Bouet, C. Ballandonne, S. Corvaisier, A. Malzert-Fréon, S. Mignani, T. Cresteil, M. Boulouard, S. Claeysen, C. Rochais\*, P. Dallemagne\*, Design of donecopride, a dual serotonin subtype 4 receptor agonist/acetylcholinesterase inhibitor with potential interest for Alzheimer's disease treatment, *Proc. Natl. Acad. Sci. USA*, **2014**, 111(36), E3825-E3830. <https://doi.org/10.1073/pnas.1410315111> (IF 2014: 9.674)

Edited by Joanna S. Fowler, Brookhaven National Laboratory, Upton, NY, and approved July 23, 2014 (received for review June 5, 2014)

**Selected in PNAS Plus Significance Statements** PNAS 2014 111 (36) 12966-12967; <https://doi.org/10.1073/pnas.ss11136>.

**P26.** T. Angelone, A. Caruso, C. Rochais, A. M. Caputo, M.C. Cerra, P. Dallemagne, E. Filice, D. Genest, T. Pasqua, F. Puoci, C. Saturnino, M.S. Sinicropi, H. El-Kashef, Indenopyrazole Oxime Ethers: Synthesis and beta1-Adrenergic blocking Activity, *Eur. J. Med. Chem.* **2015**, 92, 672-681. <https://doi.org/10.1016/j.ejmech.2015.01.037> (IF 2015: 3.902).

**P27.** C. Rochais\*, C. Lecoutey, F. Gaven, P. Giannoni, K. Hamidouche, D. Hedou, E. Dubost, D. Genest, S. Yahiaoui, T. Freret, V. Bouet, F. Dauphin, J. Sopkova de Oliveira Santos, C. Ballandonne, S. Corvaisier, A. Malzert-Fréon, R. Legay, M. Boulouard, S. Claeysen, P. Dallemagne\*, Novel Multitarget-Directed Ligands (MTDLs) with Acetylcholinesterase (AChE) Inhibitory and Serotonergic Subtype 4 Receptor (5-HT<sub>4</sub>R) Agonist Activities As Potential Agents against Alzheimer's Disease: The Design of Donecopride, *J. Med. Chem.*, **2015**, 58 (7), 3172-3187. <https://doi.org/10.1021/acs.jmedchem.5b00115> (IF 2015: 5.589)

#### Highly Cited Article of 2015 in Journal of Medicinal Chemistry

**P28.** M. de Fatima Pereira, C. Rochais, P. Dallemagne, Recent advances in phenanthroindolizidine and phenanthroquinolizidine derivatives with anticancer activities, *Anticancer Agents in Medicinal Chemistry*, **2015**, 15 (9), 1080-1091. <https://doi.org/10.2174/1871520615666150520143600> (IF 2015: 2.722)

**P29.** D. Karila, T. Freret, V. Bouet, M. Boulouard, P. Dallemagne\*, C. Rochais\* Therapeutic potential of 5-HT<sub>6</sub> receptor agonists, *J. Med. Chem.*, **2015**, 58 (20), 7901-7912. <https://doi.org/10.1021/acs.jmedchem.5b00179> (IF 2015: 5.589)

- P30.** A. Quiedeville, M. Boulouard, K. Hamidouche, V. Da Silva Costa-Aze, G. Nee, **C. Rochais**, P. Dallemagne, F. Fabis, T. Freret, V. Bouet, Chronic activation of 5-HT<sub>4</sub> receptors or blockade of 5-HT<sub>6</sub> receptors improve memory performances, *Behav. Brain Res.*, **2015**, 293, 10–17. <https://doi.org/10.1016/j.bbr.2015.07.020> (IF 2015: 3.002)
- P31.** P. Rizza, M. Pellegrino, A. Caruso, D. Iacopetta, M.S. Sinicropi, S. Rault, J.C. Lancelot, H. El-Kashef, A. Lesnard, **C. Rochais**, P. Dallemagne, C. Saturnino, F. Giordano, S. Catalano, S. Andò, 3-(Dipropylamino)-5-hydroxybenzofuro[2,3-f]quinazolin-1(2H)-one (DPA-HBFQ-1) plays an inhibitory role on breast cancer cell growth and progression, *Eur. J. Med. Chem.* **2016**, 107, 275–287. <https://doi.org/10.1016/j.ejmech.2015.11.004> (IF 2016: 4.519).
- P32.** J.-P. Jourdan, M. Since, L. El Kihel, C. Lecoutey, S. Corvaisier, R. Legay, J. Sopkova-de Oliveira Santos, T. Cresteil, A. Malzert-Fréon, **C. Rochais**,\* P. Dallemagne\* Novel benzylidenephénylpyrrolizinones with pleiotropic activities potentially useful in Alzheimer's disease treatment. *Eur. J. Med. Chem.* **2016**, 114, 365–379 <https://doi.org/10.1016/j.ejmech.2016.03.023> (IF 2016: 4.519).
- P33.** J. Lalut, B. B. Tournier, T. Cailly, C. Lecoutey, S. Corvaisier, A. Davis, C. Ballandonne, M. Since, P. Millet, F. Fabis, P. Dallemagne, **C. Rochais**\* Synthesis and evaluation of novel serotonin 4 receptor radiotracers for single photon emission computed tomography, *Eur. J. Med. Chem.* **2016**, 116, 90–101. <https://doi.org/10.1016/j.ejmech.2016.03.059> (IF 2016: 4.519).
- P34.** S. Yahiaoui, K. Hamidouche, C. Ballandonne, A. Davis, J. Sopkova de Oliveira Santos, T. Freret, M. Boulouard, **C. Rochais**,\* P. Dallemagne\* Design, synthesis, and pharmacological evaluation of multitarget-directed ligands with both serotonergic subtype 4 receptor (5-HT<sub>4</sub>R) partial agonist and 5-HT<sub>6</sub>R antagonist activities, as potential treatment of Alzheimer's disease, *Eur. J. Med. Chem.* **2016**, 121, 283–293. <https://doi.org/10.1016/j.ejmech.2016.05.048> (IF 2016: 4.519).
- P35.** J. Lalut, D. Karila, P. Dallemagne, **C. Rochais**\* Modulating 5-HT<sub>4</sub> and 5-HT<sub>6</sub> receptors in Alzheimer's disease treatment, *Future Med. Chem.*, **2017**, 9 (8), 781–795. <https://doi.org/10.4155/fmc-2017-0031>. (IF 2017: 3.969).
- P36.** J.P. Jourdan, M. Since, L. El Kihel, C. Lecoutey, S. Corvaisier, R. Legay, J. Sopkova-de Oliveira Santos, T. Cresteil, A. Malzert-Fréon, **C. Rochais**,\* P. Dallemagne\* Benzylphenylpyrrolizinones with anti-amyloid and scavenging effects, potentially useful in Alzheimer's disease treatment, *ChemMedChem*, **2017**, 12, 913–916. <https://doi.org/10.1002/cmdc.201700102>. (IF 2017: 3.009). **Highlighted in Back Cover Picture:** Benzylphenylpyrrolizinones with Anti-amyloid and Radical Scavenging Effects, Potentially Useful in Alzheimer's Disease Treatment, *ChemMedChem*, **2017**, 12, 1012. <https://doi.org/10.1002/cmdc.201700343>.
- P37.** J. Lalut, G. Santoni, D. Karila, C. Lecoutey, A. Davis, F. Nachon, I. Silman, J. Sussman, M. Weik, T. Maurice, P. Dallemagne,\* **C. Rochais**\* Novel Multitarget-Directed Ligands Targeting Acetylcholinesterase and  $\sigma$ <sub>1</sub> Receptors as Lead Compounds for Treatment of Alzheimer's Disease: Synthesis, Evaluation, and Structural Characterization of their Complexes with Acetylcholinesterase, *Eur. J. Med. Chem.* **2019**, 162, 234–248. <https://doi.org/10.1016/j.ejmech.2018.10.064>. (IF 2018: 4.833).
- P38.** F. Laggoun, F. Dardelle, J. Dehors, D. Falconet, A. Driouich, **C. Rochais**, P. Dallemagne, A. Lehner, J.-C. Mollet A chemical screen identifies two novel small compounds that alter Arabidopsis thaliana pollen tube growth. *BMC Plant Biology* **2019**, 19, 152, 1–15. <https://doi.org/10.1186/s12870-019-1743-9>. (IF 2018: 3.67).
- P39.** B. Hatat, S. Yahiaoui, C. Lecoutey, A. Davis, T. Freret, M. Boulouard, S. Claeysen, **C. Rochais**,\* P. Dallemagne\* A novel in vivo anti-amnesic agent, specially designed to express both acetylcholinesterase (AChE) inhibitory, serotonergic subtype 4 receptor (5-HT<sub>4</sub>R) agonist and serotonergic subtype 6 receptor (5-HT<sub>6</sub>R) inverse agonist activities, with a potential interest against Alzheimer's disease. *Front. Aging Neurosci.*, **2019**, 11, 148. <https://doi.org/10.3389/fnagi.2019.00148>. (IF 2018: 3.633).
- P40.** F.X. Toublet, C. Lecoutey, J. Lalut, B. Hatat, A. Davis, M. Since, S. Corvaisier, T. Freret, J. Sopkova de Oliveira Santos, S. Claeysen, M. Boulouard, P. Dallemagne\*, **C. Rochais**\* Inhibiting Acetylcholinesterase to Activate Pleiotropic Prodrugs with Therapeutic Interest in Alzheimer's Disease. *Molecules* **2019**, 24(15), 2786. <https://doi.org/10.3390/molecules24152786>. (IF 2018: 3.060).
- P41.** C. Lanthier, H. Payan, I. Liparulo, B. Hatat, C. Lecoutey, M. Since, A. Davis, C. Bergamini, S. Claeysen, P. Dallemagne, M-L. Bolognesi, **C. Rochais**\* Novel multi target-directed ligands targeting 5-HT<sub>4</sub> receptors with in cellulo antioxidant properties as promising leads in Alzheimer's disease. *Eur. J. Med. Chem.* **2019**, 182, 111596. <https://doi.org/10.1016/j.ejmech.2019.111596>. (IF 2018: 4.833).
- P42.** P. Dallemagne, **C. Rochais**, T. Besson, P. Marchand. 26th Annual GP2A Medicinal Chemistry Conference & 32nd Journées Franco-Belges de Pharmacochimie. *Pharmaceuticals*, **2019**, 12, 73. <https://doi.org/10.3390/ph12020073>.
- P43.** S.-L. Thirumaran, A. Lepailleur, **C. Rochais**\*. Structure-activity relationships of serotonin 5-HT<sub>7</sub> receptors ligands: A review. *Eur. J. Med. Chem.* **2019**, 183, 111715 <https://doi.org/10.1016/j.ejmech.2019.111715> (IF 2018: 4.833).
- P44.** P. Dallemagne, **C. Rochais**\*. Facing the complexity of Alzheimer's disease. *Future Med. Chem.*, **2020**, 12(3), 175–177. <https://doi.org/10.4155/fmc-2019-0310>. (IF 2018: 3.617).
- P45.** **C. Rochais**, C. Lecoutey, K. Hamidouche, P. Giannoni, F. Gaven, E. Cem, S. Mignani, K. Baranger, T. Freret, J. Bockaert, S. Rivera, M. Boulouard, P. Dallemagne, S. Claeysen. Donecopride, a Swiss army knife with potential interest against Alzheimer's disease *Br. J. Pharmacol.*, **2020**, 177 (9), 1988–2005. <https://doi.org/10.1111/bph.14964> (IF 2018: 6.583).



- P46.** J. Lalut, H. Payan, A. Davis, C. Lecoutey, R. Legay, J. Sopkova-de Oliveira Santos, S. Claeysen, P. Dallemagne, C. Rochais\* Rational design of novel benzisoxazole derivatives with acetylcholinesterase inhibitory and serotonergic 5-HT<sub>4</sub> receptors activities for the treatment of Alzheimer's disease *Sci. Rep.*, **2020**, *10* (1), 3014. <https://doi.org/10.1038/s41598-020-59805-7> (IF 2018: 4.122).
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- P48.** J.P. Jourdan, R. Bureau, C. Rochais, P. Dallemagne. Drug repositioning: a brief overview. *J. Pharm. Pharmacol.*, **2020**, asap. <https://doi.org/10.1111/jphp.13273> (IF 2018: 2.39).
- P49.** A. Garrido, A. Lepailleur, S.M. Mignani, P. Dallemagne, C. Rochais\*. hERG toxicity assessment: useful guidelines for drug design. *Eur. J. Med. Chem.* **2020**, *195*, 112290. <https://doi.org/10.1016/j.ejmech.2020.112290> (IF 2018: 4.833).
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- P51.** P. Zipfel, C. Rochais, K. Baranger, S. Rivera, P. Dallemagne. Matrix Metalloproteinases as New Targets in Alzheimer's Disease: Opportunities and Challenges. *J. Med. Chem.* **2020** asap. <https://doi.org/10.1021/acs.jmedchem.0c00352> (IF 2018: 6.058).

## Book chapters

- C1.** C. Rochais, P. Dallemagne, 2,5-Dimethoxytetrahydrofuran First up-date **2012**, *Encyclopedia of Reagents for Organic Synthesis* [Online], John Wiley & Sons Ltd., <http://onlinelibrary.wiley.com/book/10.1002/047084289X>; [doi: 10.1002/047084289X.rd289.pub2](https://doi.org/10.1002/047084289X.rd289.pub2).
- C2.** C. Rochais, S. Rault, P. Dallemagne, Tripentones: A Promising Series of Potent Anti-Cancer Agents, *Advances in Anti-Cancer Agents in Medicinal Chemistry*, Vol. 2, **2013**, chap. 6, 313-343 e-book Bentham Ed. Chapter [doi: 10.2174/9781608054961113020009](https://doi.org/10.2174/9781608054961113020009). ISBN: 978-1-60805-715-3.
- C3.** J. Lalut, C. Rochais,\* P. Dallemagne\* Multiple ligands in neurodegenerative diseases, "Drug Selectivity – An Evolving Concept in Drug Discovery", "Methods and Principles in Medicinal Chemistry", **2018** Wiley-VCH Publishing house, [doi: 10.1002/9783527674381.ch16](https://doi.org/10.1002/9783527674381.ch16). ISBN: 978-3-527-67440-4.



## Patents

- PA1.** P. Dallemagne, C. Rochais, C. Lecoutey, M. Boulouard, T. Freret, « Composés inhibiteurs de l'acétylcholinestérase et agonistes des récepteurs sérotoninergiques 5HT-4, à effet promnésiant, leurs procédés de préparation et compositions pharmaceutiques les contenant. » Fr. Demande (2014), FR 3006686 A1 20141212 (5 juin 2013, N° de dépôt : 1355155. N° de soumission : 1000195306).
- PA2.** P. Dallemagne, C. Rochais, C. Lecoutey, M. Boulouard, T. Freret Acetylcholinesterase inhibitor compounds and 5-HT<sub>4</sub> serotonergic receptor agonists with promnesia effect, their preparation and pharmaceutical compositions containing them. PCT Int. Appl. (2014), WO 2014195593 A2 20141211
- PA3.** B. Gicquel, M. Cimino, P. Dallemagne, C. Rochais, M. Ouattara, S. Coulibaly Phenanthroline derivatives for use in the treatment of bacterial infections. Demande prioritaire : 2018, US 62/616,249 (11 janvier 2018) puis PCT/EP2019/050713 (11 janvier 2019) ; PCT Int. Appl. (2019), WO 2019138084 A1 20190718.
- PA4.** S. Rault, C. Rochais, S. Lemaitre, F. Xiao, P. Suzanne, P. Dallemagne, S. Castagnet, A. Léon-Seck. Dérivés du m-Gaïacols, leur préparation et leurs utilisations. FR (2020) 3083426 A1 20200110 (3 juillet 2018, N° de dépôt 1856125) ; FR 3083426 A1 20200110.
- PA5.** P. Dallemagne, C. Rochais, A. Malzert-Fréon, A.-C. Groo Bambuterol for the treatment of Alzheimer's disease USA Provisional Patent Application (2018) US 62/658,631, PCT Intl Appl (2019) WO 2019202400. A1 20191024.
- PA6.** P. Dallemagne, C. Rochais, S. Claeysen Donecopride as neuroprotective agent in the treatment of neurodegenerative diseases European Patent Application (2018) EP18306280.
- PA7.** P. Dallemagne, C. Rochais, S. Claeysen Combination of acetylcholinesterase inhibitor and 5-HT<sub>4</sub> receptor agonist as neuroprotective agent in the treatment of neurodegenerative diseases European Patent Application (2018) EP18306278.

## Conferences proceedings and abstract

- A1.** Tripentones, a promising anti-cancer family with a strong FLT3 affinity. Meeting Abstract: 350, C. Rochais, P. Dallemagne, *International Journal of Molecular Medicine*, **2013**, Vol: 32 Supp: 1, pS67-S67.

- A2. *Découverte du Donécopride, un nouveau principe actif d'intérêt thérapeutique pléiotrope dans la maladie d'Alzheimer*. P53bis, C. Lecoutey, T. Freret, C. Ballandonne, V. Bouet, P. Giannoni, F. Gaven, S. Clayesen, **C. Rochais**, M. Boulouard, P. Dallemagne, *Maladie d'Alzheimer et déclin cognitif*, **2014**, Vol. 18, p99.
- A3. *Une nouvelle approche thérapeutique multi-cibles pour la maladie d'Alzheimer : agonistes du récepteur 5-HT<sub>4</sub> avec activité inhibitrice de l'acétylcholinesterase*. P45, F. Gaven, C. Lecoutey, P. Giannoni, K. Barranger, T. Freret, C. Ballandonne, V. Bouet, S. Rivera, M. Boulouard, **C. Rochais**, P. Dallemagne, S. Claeysen, *Maladie d'Alzheimer et déclin cognitif*, **2014**, Vol. 18, p93
- A4. *Donecopride, a newly designed MTDL, appears as a promising candidate for the treatment of Alzheimer's disease*, K. Hamidouche, V. Bouet, P. Dallemagne, **C. Rochais**, C. Lecoutey, T. Freret, M. Boulouard, *Fundamental & Clinical Pharmacology*, **2015**, Vol. 29 (Supplement: 1, Special Issue: SI), Pages: 9-9, Meeting Abstract: CO-035
- A5. *Microdose study of C-11 radiolabeled Donecopride, a multi-target-directed ligand for Alzheimer's disease treatment*. F. Fillesoye, M. Ibazizene, M. Dhilly, A. Maiza, C. Lecoutey, **C. Rochais**, P. Dallemagne, F. Gourand, L. Barre, *Journal of labelled compounds & radiopharmaceuticals*, **2015**, Vol. 58 (Supplement 1), Pages: S302-S302, Meeting Abstract: 302.

## Oral Communications and Invited Lecture

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- C1. *Obtention de nouvelles 3-Aryl-8H-pyrrolo[2,3-b]pyrrolizin-8-ones à visée anticancéreuse* C. Rochais, V. Lisowski, J. Sopkova-de Oliveira Santos, D. H. Caignard, P. Renard, P. Dallemagne, S. Rault. XII<sup>ème</sup> Conférences Européennes du GP<sub>2</sub>A – 3<sup>èmes</sup> Journées Scientifiques du Comité 17 de la Ligue contre le Cancer ; La Rochelle, 1-3 Octobre 2003. **Best oral communication prize**
- C2. *Synthèse et évaluation biologique de nouvelles « Tripentones » en séries pyrrole et pyrazole*. C. Rochais, V. Lisowski, P. Dallemagne, S. Rault. 12<sup>ème</sup> Journée Jeunes Chercheurs ; Paris, 28 Janvier 2005.
- C3. *Synthèse et évaluation biologique de nouvelles Tripentones à visée anticancéreuse*. C. Rochais, V. Lisowski, P. Dallemagne, S. Rault. Journée de l'Ecole Doctorale Normande de Chimie-Biologie ; Le Havre, 18 Mars 2005.
- C4. *Recent Advances in the chemistry of a novel and promising family of anticancer agents: the Tripentones*. C. Rochais, V. Perri, P. Dallemagne, S. Rault. 9<sup>th</sup> Anglo-Norman ORganic Chemistry colloquium (ANORCQ IX) ; Le Havre, 3-5 Avril 2008
- C5. *Synthèse de tripentones à visée anticancéreuse* C. Rochais, P. Dallemagne, S. Rault. 2<sup>èmes</sup> Rencontres de Chimie Pharmaceutique 13/14 ; Caen le 29 Avril 2008.
- C6. *Les Tripentones : développement d'une famille de puissants agents anticancéreux* C. Rochais, P. Dallemagne, S. Rault. Johnson et Johnson ; Val de Reuil (76) le 08 Juillet 2009.
- C7. *Application of the "Multi-Target-Directed Ligand" concept for the treatment of Alzheimer's disease (AD): Towards a single compound targeting AChE inhibition and R5HT<sub>4</sub> agonist effect* C. Rochais, C. Lecoutey, D. Genest, P. Dallemagne, S. Rault. IXX<sup>ème</sup> Conférences Européennes du GP<sub>2</sub>A ; Rouen, 1-2 Septembre 2010.
- C8. *Conception et synthèse d'analogues de tylophorines à visée anticancéreuse* C. Rochais, P. Dallemagne. 5<sup>èmes</sup> Rencontres de Chimie Pharmaceutique 13/14 ; Marseille le 27 Septembre 2012.
- C9. *Tripentone Program, NSC763847 and recent results* C. Rochais, P. Dallemagne 73rd Meeting of the NCI compounds/Drug Discovery Committee of the European Organisation for Research and Treatment of Cancer, Cardiff, 23 Janvier 2013.
- C10. *Nouvelles perspectives chimiothérapeutiques dans le traitement de la maladie d'Alzheimer : du Symptomatique au Curatif* C. Rochais, P. Dallemagne Assemblée Générale de l'Amicale Chimie Mulhouse, 23 Mars 2013
- C11. *Tripentones, a promising anti-cancer family with a strong FLT3 affinity* C. Rochais, P. Dallemagne 18th World Congress on Advances in Oncology and 16th International Symposium on Molecular Medicine, Hersonissos (Crète, Grèce), 10 au 12 Octobre 2013
- C12. *Conception et synthèse de nouveaux principes actifs d'intérêt thérapeutique pléiotrope dans la maladie d'Alzheimer* C. Rochais, P. Dallemagne Conférences de chimie et biologie structural de l'institut de Recherche Servier, Croissy sur Seine, 12 Février 2014.
- C13. *Development of novel multi-target directed ligands for Alzheimer's disease* C. Rochais, P. Dallemagne XXI<sup>èmes</sup> Journées Jeunes Chercheurs, Montpellier, 24 et 25 Mars 2014.
- C14. *Le donécopride, un nouvel espoir dans la maladie d'Alzheimer*, C. Rochais, P. Dallemagne Association APICAEN, Caen 17 novembre 2014.
- C15. *MALAD Multi-Active Ligands for Alzheimer's Disease*, C. Rochais Revue mi-parcours ANR, Rennes, 27 - 28 November 2014.
- C16. *Discovery of Donecopride: Design of Dual 5-HT<sub>4</sub>R Agonists/AChE Inhibitors Multi-Target Directed Ligands for Alzheimer's Disease Treatment* C. Rochais, P. Dallemagne MedChem 2014, New Vistas in GPCR Research: the Dawn of an Exciting Drug Discovery Era? Braine-L'Alleud (Belgium), le 21 novembre 2014.
- C17. *Development of Multi-Target Directed Ligands with pronostic and/or therapeutic effects in Alzheimer's disease* C. Rochais, J. Lalut, P. Dallemagne, Closing Event INTERREG IVA AI CHEM, Rouen, 19 Janvier 2015
- C18. *Development of Novel Multi-Target Directed Ligands for Alzheimer's Disease: Identification of Donecopride*. C. Rochais, 51st International Conference on Medicinal Chemistry Avignon (France) - July 1-3, 2015.

- C19. *Development of Donecopride for Alzheimer's Disease: an illustration of CERMN research facilities* C. Rochais, University College Cork (Irlande), March 15 2016.
- C20. Modulation of RS67,333: from a 5-HT<sub>4</sub>R Partial Agonist to the Identification of Several Promising Multi-Target Directed Ligands for Alzheimer's Disease, C. Rochais, XXIV EFMC International Symposium on Medicinal Chemistry, Manchester, UK - August 28 - September 1, 2016.
- C21. Modulating 5-HT receptors in Alzheimer's disease treatment: a polypharmacology approach C. Rochais, European School of Medicinal Chemistry ESMEC, Urbino, Italy, July 2 – 6, 2017.
- C22. Case studies: Polypharmacology in drug discovery C. Rochais, European School of Medicinal Chemistry ESMEC, Urbino, Italy, July 2 – 6, 2017.
- C23. Development of donecopride as a potential multi-target directed ligands for the treatment of Alzheimer's disease. C. Rochais Joint annual COST Action meeting CA15135, Porto, Portugal, September 22-24, 2017.
- C24. Design du donécopride, un candidat préclinique contre la maladie d'Alzheimer. C. Rochais Société des Docteurs et Amis du CERMN, Caen, 30 Septembre 2017.
- C25. Modulating 5-HTs receptors in Alzheimer's disease treatment: a polypharmacology approach. C. Rochais, University of St Andrews, St Andrews (Scotland), November 22, 2017.
- C26. Design of Acetylcholinesterase inhibitors for the treatment of Alzheimer's Disease. C. Rochais, Special joint tutorial BL4212 (Enzymes) and BL4216 (Drug Design). University of St Andrews, St Andrews (Scotland), November 23, 2017.
- C27. Design du donécopride, un candidat préclinique contre la maladie d'Alzheimer. C. Rochais, Mini-Symposium Drug Discovery 2017, Lille, 7 Décembre 2017.
- C28. Nouvelles stratégies de découverte de médicaments : Exemple d'un candidat préclinique pour le traitement de la Maladie d'Alzheimer. C. Rochais, Conférence BU Sciences STAPS, Caen, 12 Décembre 2017.
- C29. Modulating 5-HT receptors in Alzheimer's disease treatment: a polypharmacology approach. Rochais, C. Dallemagne, P. University of Valencia, Valencia (Spain), 26 mars 2018.
- C30. Development of Donecopride for Alzheimer's Disease: an illustration of CERMN research facilities. Rochais, C. Dallemagne, P. Novalix, Strasbourg (France), 5 juillet 2018.
- C31. Pleiotropic prodrugs: a novel polypharmacology approach to treat neurodegenerative diseases. Rochais, C. Dallemagne, P. 13th International Meeting on Cholinesterase, Hradec Králové (République Tchèque), 9 – 14 septembre 2018.
- C32. Modern synthetic methodologies leading to Neurotrophin small molecule mimetics, Rochais, C., Calogeropoulou, T. Euroneurotrophin First Training School, Athens (Greece), 7 December 2018.
- C33. Polypharmacologie, Rochais, C., Séance délocalisée de l'Académie Nationale de Pharmacie, Caen, 17 Mai 2019.
- C34. Modulating 5-HTs receptors in Alzheimer's disease treatment. Rochais, C. Dallemagne, P. University of Würzburg (Germany), 11 June 2019.
- C35. Acetylcholinesterase inhibitors for the treatment of Alzheimer's Disease. C. Rochais, University of Würzburg (Germany), 13 June 2019.
- C36. Application du concept de polypharmacologie au design du donécopride et d'autres MTDL. P. Dallemagne, C. Rochais, Université de Strasbourg, 5 Septembre 2019.
- C37. The design of multi-target drug candidates with potential therapeutic interest against Alzheimer's disease, P. Dallemagne, C. Rochais, 8ièmes rencontres de la Fondation Alzheimer, Paris, 20 November 2019.
- C38. Polypharmacology of 5-HTs receptors in Alzheimer's Disease: An illustration of CERMN research facilities. P. Dallemagne, C. Rochais, Multi-Target directed ligands for Alzheimer's disease therapy Workshop, Université de Besançon, 28 Novembre 2019.

## Awarded presentations

**17 poster or communication prizes** (over more than 150 posters presented in national and international conference)

**2011** *Vers de nouveaux allocolchicinoïdes inhibiteurs de la polymérisation de la tubuline à visée antinéoplasique* F. Santoro, E. Chosson, **C. Rochais**, S. Thoret, T. Cresteil, M.S. Sinicropi, C. Saturnino, S. Rault, P. Dallemagne. 25ème Journées franco-belges de pharmacochimie ; Liège, 19 et 20 Mai 2011.

**2013** *An unusual boron tribromide-mediated, one-pot bromination/cyclization reaction. Application to the synthesis of a highly strained cyclopenta[1,3]cyclopropa[1,2-b]pyrrolizin-8-one* J.-P. Jourdan, **C. Rochais**, R. Legay, J. Sopkova de Oliveira Santos, P. Dallemagne. 20ème Journée Jeunes Chercheurs ; Biocitech, Romainville, 7 et 8 Février 2013.

**2014** *Une nouvelle approche thérapeutique multi-cibles pour la maladie d'Alzheimer : agonistes du récepteur 5-HT<sub>4</sub> avec activité inhibitrice de l'acétylcholinesterase* F. Gaven, C. Lecoutey, P. Giannoni, K. Barranger, T. Freret, C. Ballandonne, V. Bouet, S. Rivera, M. Boulouard, **C. Rochais**, P. Dallemagne, S. Claeysen. 12èmes Réunion Francophone sur la Maladie d'Alzheimer et les syndromes apparentés, Montpellier, 11-13 Juin 2014.

**2014** *Novel indolic derivatives targeting the dual binding site of acetylcholinesterase for Alzheimer's Disease: design, biological evaluation and co-crystallization study* J. Lalut, D. Karila, C. Ballandonne, G. Santoni, M. Weik, P. Dallemagne, **C. Rochais**. XXIIth European Conference of GP2A, Nantes, 28-29 Août 2014.



**2014** *Donecopride, a promising newly designed MTDL for the treatment of Alzheimer's disease* KH Hamidouche, V. Bouet, P. Dallemagne, **C. Rochais**, T. Freret, M. Boulouard. 18th annual LARC-Neuroscience Network Conference, Caen, 17 October 2014.

**2015** *Development of <sup>125</sup>I-labeled 5-HT<sub>4</sub> Receptor Ligands for the diagnosis of Alzheimer's disease: design, structure-affinity relationships, and radiolabeling for SPECT Imaging* J. Lalut, N. Dumas, B. Tournier, C. Lecoutey, T. Cailly, C. Ballandonne, S. Corvaisier, P. Dallemagne, Y. Charnay, P. Millet, F. Fabis, **C. Rochais** XXIèmes Journées Jeunes Chercheurs, Biology and Chemistry: a permanent dialogue, Romainville, 4-6 Février 2015.

**2016** *Novel benzylidenephénylpyrrolizinones with pleiotropic activities potentially useful in Alzheimer's disease treatment* J.-P. Jourdan, M. Since, S. Corvaisier, C. Lecoutey, L. El Kihel, R. Legay, J. Sopkova de Oliveira Santos, A. Malzert-Fréon, **C. Rochais**, P. Dallemagne 52nd International conference on medicinal chemistry: RICT 2016, Caen (France), 6 - 8 Juillet, 2016.

**2017** *Development of a nasal drug delivery composite nanosystem for Alzheimer's disease treatment*, T. Adnet, A.C. Groo, L. Le Pluart, C. Picard, A. Davis, S. Corvaisier, E. Demissy, M. Since, **C. Rochais**, P. Dallemagne, A. Malzert-Fréon, Journée normande de recherche biomédicale – JNRb 2017, Caen, 14 Novembre 2017.

**2018** *Design, synthesis and biological evaluation of novel MT5-MMP inhibitors with potential interest for Alzheimer's disease.* Zipfel, P., Lalut, J., Saidoun, H., Métivier, J.P., Suzanne, P., Lepailleur, L., Bureau, R., Baranger, K., Khrestchatsky, M., Rivera, S., **Rochais, C.**, Dallemagne, P., 25th Young Research Fellow Meeting, Orléans (France), 5-7 Mars 2018.

**2018** *Design of new pleiotropic compounds that both displays 5-HT<sub>4</sub>R agonist activity and antioxidant property*, C. Lanthier, C. Lecoutey, J. Lalut, F.X. Toublet, P. Dallemagne, **C. Rochais**, 25th Young Research Fellow Meeting, Orléans (France), 5-7 Mars 2018.

**2018** *Innovative drug design for alzheimer's disease therapy: synthesis of serotonergic multi-target-directed ligands*, Hatat, B., Lecoutey, C., Davis, A., Freret, T., Boulouard, B., Rochais, C., Claeysen, S., Dallemagne, P. CAIM (Club Alzheimer de montpellier), Genopolys (Montpellier), 21-22 Novembre 2018.

**2018** *Alzheimer's Disease: Development and application of a Multistep Procedure to Characterize Modulators of Amyloid- $\beta$  Peptide* Smeralda, W., Since, M., Jourdan, J.P., Corvaisier, S., Boisserie, M., Cardin, J., Rochais, C., Guilhaudis, L., Dallemagne, P., Malzert-Fréon, A. Journée normande de recherche biomédicale – JNRB, Rouen, 20 septembre 2018

**2019** *Development of new promising 2-in-1 molecules to fight Alzheimer's disease with in cellulo antioxidant effect.* Lanthier, C., Liparulo, I., Lecoutey, C., Since, M., Davis, A., Bolognesi, M.L., Dallemagne, P., Rochais, C. Journée de l'Ecole Doctorale Normande de Chimie, Caen, 5 Juillet, 2019.

**2019** *Synthesis and biological evaluation of original bicyclic thiophene derivatives targeting MT5-MMP for Alzheimer's therapy.* Zipfel, P., Lalut, J., Denis, C., Bureau, R., Suzanne, P., Davis, A., Malzert-Fréon, A., Baranger, K., Khrestchatsky, M., Rivera, S., Rochais, C., Dallemagne, P. Journée de l'Ecole Doctorale Normande de Chimie, Caen, 5 Juillet, 2019

**2019** *In silico screening and development of small molecules neurotrophin receptors ligands.* Antonijevic, M., Bureau, R., Dallemagne, P., Rochais, C. GP2A 2019 – 27th Annual GP2A Medicinal Chemistry Conference – Nottingham UK, 21st – 23rd August 2019.

**2019** *A novel in vivo anti-amnesic agent, specially designed to express both Acetylcholinesterase (AChE) Inhibitory, serotonergic subtype 4 Receptor (5-HT<sub>4</sub>R) agonist and serotonergic subtype 6 Receptor (5-HT<sub>6</sub>R) inverse agonist activities, with a potential interest against Alzheimer's Disease.* Hatat, B., Yahiaoui, S., Lecoutey, C., Davis, A., Freret, T., Boulouard, M., Claeysen, S., Rochais, C., Dallemagne, P. 8th Annual Meeting of GDR3545 GPCR, Montpellier, 7-9 October 2019.

**2020** *Development of TrkB/5-HT<sub>4</sub> receptors ligands, a new approach in the treatment of neurodegenerative diseases.* Antonijevic, M., Charou, D., Rogdakis, T., Papadopoulou, M., Gravanis, A., Charalampopoulos, I., Dallemagne, P., Rochais, C. 27th Young Research Fellow Meeting, Caen, 29-31 Janvier 2020.