Christophe ALLAIS, Ph.D., Process Chemist

EDUCATION

2011-2014 Postdoctoral Associate, Organic Chemistry, The Scripps Research Institute, FL

2007-2010 Ph.D., Organic Chemistry, Université Paul Cézanne, Marseille, France

PROFESSIONAL EXPERIENCE

2017-present **Senior Principal Scientist (since Apr. 2021), Pfizer Inc.**
Chemical Research & Development (Groton, CT, USA)

- *Chemical processes designer and team leader to support early clinical to Launch Portfolio*

2014-2017 **Principal Scientist (since Oct. 2015), Pfizer Inc.**
Senior Scientist (Mar. 2014-Sept. 2015), Pfizer Inc.
Medicinal Chemistry, Inflammation & Immunology (Groton, CT, USA)

- *Enablement of chemistry to support discovery programs*

2011–2014 **Postdoctoral Associate**
The Scripps Research Institute, Jupiter, Florida, USA
Advisor: Prof. William R. Roush

- *Med Chem projects, development of methodologies (reductive aldol reactions, double allylboration) and total synthesis (experience in terpene, polypropionate and alkaloid chemistry)*

2007-2010 **Ph.D. candidate**
Institut des Sciences Moleculaires de Marseille, iSm2, Marseille, France
Advisors: Prof. Jean Rodriguez, Prof. Thierry Constantieux

- *Synthesis of nitrogen-containing heterocycles via multicomponent reactions*

AWARDS AND MEMBERSHIP

2021 ACS Young Investigator Award

2007-2010 Ph.D. Award from French Ministry

2007 M. Sc. Award of Excellence from Aix-Marseille Université

Since 2013 Member of the American Chemical society

PUBLICATIONS

Articles

22. Xu, P.; Zhang, M.;Ingoglia, B.; **Allais. C.**; Dechert-Schmitt, A.-M. R.; Lee, J. T.; Singer, R. A.; Morken, J. P. "Construction of Azacycles by Intramolecular Amination of Organoboronates and Organobis(boronates)" *Org. Lett.* **2021**, *23,* 3379-3383.

21. Vendola, A.; **Allais. C.**; Dechert-Schmitt, A.-M. R.; Lee, J. T.; Singer, R. A.; Morken, J. P. "Diastereoselective Diboration of Cyclic Alkenes: Application to the Synthesis of Aristeromycin" *Org. Lett.* **2021**, *23,* 2863-2867.

20. Herrero-Gomez, E.; van der Loo, C. HM.; Huck, L.; Rioz-Martínez, A.; Keene, N. F.; Li, B.; Pouwer, K.; **Allais. C.** "Photo-oxidation of Cyclopentadiene Using Continuous Processing: Application to the Synthesis of (1R,4S)-4-Hydroxycyclopent-2-en-1-yl Acetate" *Org. Proc. Res, Dev.* **2020**, *24,* 2304-2310.

19. Lovering, F.; Morgan, P.; **Allais, C**.; Aulabaugh, A.; Brodfuehrer, J.; Chang, J.; Coe, J.; Ding, W.; Dowty, H.; Fleming, M.; Frisbie, R.; Guzova, J.; Hepworth, D.; Jasti, J.; Kortum, S.; Kurumbail, R.; Mohan, S.; Papaioannou, N.; trohbach, J. W.; Vincent, F.; Lee, K.; Zapf, C. F. "Rational approach to highly potent and selective apoptosis signal-regulating kinase 1 (ASK1) inhibitors" *Eur. J. Med. Chem.* **2018**, *145*, 606-621.

18. Nuhant, P.; Oderinde, M. S.; Genovino, J.; Juneau, A.; Gagné, Y.; **Allais, C.**; Chinigo, G. M.; Choi, C.; Sach, N. W.; Bernier, L.; Fobian, Y. M.; Bundesmann, M. W.; Khunte, B.; Frenette, M.; Fadeyi, O. O. "Visible-Light-Initiated Manganese Catalysis for C− H Alkylation of Heteroarenes: Applications and Mechanistic Studies" *Angew. Chem. Int. Ed.* **2017**, *56*, 15309-15313.

17. **Allais, C.**; Roush, W.R. "Enantio-and Diastereoselective Synthesis of 1, 5-syn-(Z)-Amino Alcohols via Imine Double Allylboration: Synthesis of trans-1, 2, 3, 6-Tetrahydropyridines and Total Synthesis of Andrachcine" *Org. Lett*. **2017**, *19*, 2646-2649.

16. Fadeyi, O. O.; Mousseau, J. J.; Feng, Y.; **Allais, C.**; Nuhant, P.; Chen, M. Z.; Pierce, B.; Robinson, R. "Visible-Light-Driven Photocatalytic Initiation of Radical Thiol–Ene Reactions Using Bismuth Oxide" *Org. Lett*. **2015**, *17*, 5756-5759.

15. Nuhant, P.; **Allais, C.**; Chen, M. Z.; Coe, J. W.; Dermenci, A.; Fadeyi, O. O.; Flick, A. C.; Mousseau, J. J. "Access to Highly Substituted 7-Azaindoles from 2-Fluoropyridines via 7-Azaindoline Intermediates" *Org. Lett*. **2015**, *17*, 4292-4295. Highlighted in Synfacts **2015**, *11*, 1135.

14. Abbott, J.; **Allais, C.**; Roush, W.R. "Enantioselective Reductive Syn-Aldol Reactions of 4-Acryloylmorpholine" *Org. Synth*. **2015**, *92*, 38-57. *Featured Article*

13. Abbott, J.; **Allais, C.**; Roush, W.R. "Preparation of Crystalline (Diisopinocampheyl)borane" *Org. Synth*. **2015**, *92*, 26-37.

12. **Allais, C**.; Grassot, J.-M.; Constantieux, T.; Rodriguez, J. "Metal-free Multicomponent synthesis of pyridines" *Chem. Rev.* **2014**, *114*, 10829-10868.

11. **Allais, C.**; Tsai, A.; Nuhant, P.; Roush, W.R. "Generation of Stereochemically Defined Tetrasubstituted Enolborinates By 1,4-Hydroboration of α,β-Unsaturated Morpholine Carboxamides with (Diisopinocampheyl)borane" *Angew. Chem. Int. Ed*. **2013**, *52*, 12888-12891. Highlighted in *Synfacts* **2014**, *10*, 188.

10. **Allais, C.**; Nuhant, P.; Roush, W.R. "(Diisopinocampheyl)borane-mediated reductive aldol reactions of acrylate esters: enantioselective synthesis of *anti*-aldols" *Org. Lett.* **2013**, *15*, 3922-3925.

9. Nuhant, P.; **Allais, C.**; Roush, W.R. "(Diisopinocampheyl)borane-mediated reductive aldol reactions: highly enantio- and diastereoselective synthesis of *syn*-aldols from *N*-acryloylmorpholine" *Angew. Chem. Int. Ed*. **2013**, *52*, 8703-8707. Highlighted in *C&EN*, July, 15th **2013**, p.24 and *Synfacts* **2013**, *9*, 1217.

8. **Allais, C.**; Liéby-Muller, F.; Constantieux, T.; Rodriguez, J. "Metal-free Michael addition-initiated three-component reaction for the regioselective synthesis of highly functionalized pyridines: scope, mechanistic investigations and applications" *Eur. J. Org. Chem*. **2013**, *19*, 4131-4145.

7. **Allais, C.**; Liéby-Muller, F.; Constantieux, T.; Rodriguez, J. "Dual heterogeneous catalysis for a totally regioselective three-component synthesis of bi- and tri(hetero)aryl pyridines" *Adv. Synth. Catal*. **2012**, 2537-2544.

6. **Allais, C**.; Baslé, O.; Grassot, J.-M.; Fontaine, M.; Anguille, S.; Rodriguez, J.; Constantieux, T. "Cooperative heterogeneous organocatalysis and homogeneous metal catalysis for the one-pot regioselective synthesis of 2-pyridones" *Adv. Synth. Catal.* **2012**, 2084-2088.

5. **Allais, C**.; Constantieux, T.; Rodriguez, J. "Use of β,γ-unsaturated α-ketocarbonyls for a totally regioselective oxidative multicomponent synthesis of polyfunctionalized pyridines" *Chem. Eur. J.* **2009**, 12945-12948.

4. **Allais, C**.; Constantieux, T.; Rodriguez, J. "Highly efficient synthesis of *trans*-β,γ-unsaturated-α-keto amides" *Synthesis* **2009**, 2523-2530.

3. Sotoca, E.; **Allais, C**.; Constantieux, T.; Rodriguez, J. "User friendly stereoselective one-pot access to 1,4-diazepane derivatives by a cyclodehydrative three-component reaction with 1,3-dicarbonyls" *Org. Biomol. Chem.* **2009**, 1911-1920.

2. Courtois, C.; Constantieux, T.; Caldarelli, S.; Delaurent, C.; **Allais, C**.; Rodriguez, J. "Cholesteric bonded stationary phases for high performance liquid chromatography II: synthesis, physico-chemical characterization and chromatographic behavior of a phospho-cholesteric bonded support. A new way to mimic drug/membrane interactions?" *Anal. Bioanal. Chem*. **2008**, *392*, 1345-1354.

1. Liéby-Muller, F.; **Allais, C**.; Constantieux, T.; Rodriguez, J. "Metal-free Michael addition initiated multicomponent oxidative cyclodehydration route to polysubstituted pyridines from 1,3-dicarbonyls" *Chem. Commun*. **2008**, 4207-4209.

And more than 15 Synfacts-Heterocycle/Flow articles co-authored with Prof. Victor Snieckus

Patents

2. Casimiro-Garcia, A.; Strohbach, J. W.; Hepworth, D.; Lovering, F. E.; Choi, C.; **Allais, C. P**.; Wright, S. W. "Novel pyrimidine carboxamides as inhibitors of vanin-1 enzyme" 2019, US 2019/0315715 A1

1. Lee, K. L.; **Allais, C. P**.; Dehnhardt, C. M.; Gavrin, L. K.; Han, S.; Hepworth, D.; Lee, A.; Lovering, F. E.; Mathias, J. P.; Owen, D. R.; Papaioannou, N.; Saiah, E.; Strohbach, J. W.; Trzupek, J. D.; Wright, S. W.; Zapf, C. W. "Bicyclic-fused heteroaryl or aryl compounds as IRAK4 modulators" 2019, US 10,316,018 B2

Book Chapters

2. **Allais, C.**; Hansen, E. C.; Ide, N. D.; Perkins, R. J.; Swift, E. C. "Selected Free Radical Reactions" Practical Synthetic Organic Chemistry, Caron, S. (Ed.), John Wiley & Sons, Inc., **2020**, 563-589.

1. Sanchez Duque, M.; **Allais, C**.; Isambert, N.; Constantieux, T.; Rodriguez, J. "β-diketo building blocks for MCRs-based syntheses of heterocycles" *Topics in Heterocyclic Chemistry*, Orru, R. (Ed.), Springer Berlin, Heidelberg, **2010**, *23*, 227-277.