

## Equipe 4 : Organométalliques / Ultra-hautes pressions

Production scientifique 2010 (juin)-2015 (fin mai)

### a) Publications de l'équipe dans les journaux à comité de lecture

2010

1. "Are sp lithiated carbons more nucleophilic than sp<sup>2</sup> or sp<sup>3</sup> ones? A comparative DFT theoretical study on the condensation of propynyllithium and its aggregates on formaldehyde." *J. Org. Chem.* **2010**, *75*, 1427-1436 Fressigné, C. ; Maddaluno, J.
2. "Chiral 3-aminopyrrolidines as a rigid diamino scaffold for organocatalysis and organometallic chemistry." *Tetrahedron: Asymm.* **2010**, *21*, 1511-1521 Pouliquen, M.; Blanchet, J.; De Paolis, M.; Devi, B. R.; Rouden, J.; Lasne, M.-C.; Maddaluno, J.
3. "Synthesis and antimicrobial activities of two novel amino sugars derived from chloraloses. " *Carbohydr. Res.* **2010**, *345*, 1617-1621 Yenil, N.; Ay, E.; Ay, K.; Oskay, M.; Maddaluno, J.
4. "Concise route to  $\alpha'$ -methoxy- $\gamma$ -pyrones and to verticipyrone based on a desymmetrization of  $\alpha,\alpha'$ -dimethoxy- $\gamma$ -pyrone" *Chem. Eur. J.* **2010**, *16*, 11229-11232 De Paolis, M.; Rosso, H.; Henrot, M.; Prandi, C.; d'Herouville, F.; Maddaluno, J.
5. "Direct access to cumbersome aminated quaternary centers by hyperbaric aza-Michael additions" *Eur. J. Org. Chem.* **2010**, 6423-6429 Rulev, A.Y.; Azad, S.; Kotsuki, H.; Maddaluno, J.
6. "Study of the docking of competitive inhibitors at a model of tyrosinase active site: insights from joint broken-symmetry / spin-flip DFT computations and ELF topological analysis" *Interdiscip. Sci. Comput. Life Sci.* **2010**, *2*, 1-9 De la Lande, A.; Maddaluno, J.; Parisel, O.; Darden, T. A., Piquemal, J.-P.
7. "First catalytic enantioselective version of a thia hetero-Diels-Alder reaction with dithioesters" *Tetrahedron Lett.* **2010**, *51*, 6014-6017 Dentel, H.; Chataigner, I.; Le Cavalier, F.; Gulea, M.

2011

8. "Domino alkylation/oxa-Michael of 1,3-cyclohexanediones: Steering the C/O-chemoselectivity to reach tetrahydrobenzofuranones" *Org. Biomol. Chem.* **2011**, *9*, 6509-6512 Devi, R. B.; Henrot, M.; De Paolis, M.; Maddaluno, J.
9. "One-pot regio- and stereoselective diversity-oriented synthesis of  $\alpha'$ -methoxy- $\gamma$ -pyrones starting from  $\alpha,\alpha'$ -dimethoxy- $\gamma$ -pyrone" *J. Org. Chem.* **2011**, *76*, 9429-9437 Rosso, H.; De Paolis, M.; Dey, S.; Collin, V.; Hecht, S.; Prandi, C.; Maddaluno, J.
10. "Facile dearomatization of nitrobenzene derivatives and other nitroarenes with n-benzyl azomethine ylide" *Angew. Chem. Int. Ed.* **2011**, *50*, 472-476 Lee, S.; Chataigner, I.; Piettre, S. R.
11. "Organocatalytic asymmetric hetero-Diels-Alder reaction of oxindoles under high pressure" *Synlett* **2011**, 2080-2084 Mori, K.; Yamauchi, T.; Maddaluno, J.; Nakano, K.; Ichikawa, Y.; Kotsuki, H.

12. "Synthetic applications of the nickel-catalyzed cyclisation of alkynes combined with addition reactions in a domino process" *Chem. Eur. J.*, **2011**, *17*, 12773-12783 Durandetti, M.; Hardou, L.; Lhermet, R.; Rouen, M.; Maddaluno, J.

13. "Spin-driven activation of dioxygen in various metalloenzymes and their bio-inspired models" *J. Comp. Chem.* **2011**, *32*, 1178-1182 De La Lande, A.; Salahub, D.R.; Maddaluno, J.; Scemama, A.; Pilme, J.; Parisel, O.; Gerard, H.; Caffarel, M.; Piquemal, J.-P.

## 2012

14. "Unprecedented directed oxidative cross-coupling of sulfahydantoins with aldehydes via a radical sulfonate-sulfinatate conversion" *New J. Chem.* **2012**, *36*, 1560-1563 Aubin, Y.; Colacino, E.; Bouchouk, D.; Chataigner, I.; Sanchez, M. D., Martinez, J.; Dewynter, G.

15. "Asymmetric diastereoselective thia-hetero-Diels-Alder reactions of dithioesters." *Tetrahedron* **2012**, *68*, 2326-2335 Dentel, H.; Chataigner, I.; Lohier, J.-F.; Gulea, M.

16. "Intramolecular sila-Matteson rearrangement: a general access to silylated heterocycles." *Org. Lett.* **2012**, *14*, 2074-2077 François, C.; Boddaert, T.; Durandetti, M.; Querolle, O.; Van Hijfte, L.; Meerpoel, L.; Angibaud, P.; Maddaluno, J.

17. "Influence of the acetylenic substituent on the intramolecular carbolithiation of alkynes." *Eur. J. Org. Chem.* **2012**, 2895-2905 Girard, A.-L.; Lhermet, R.; Fressigné, C.; Durandetti, M.; Maddaluno, J.

18. "Convergent asymmetric synthesis of (+)-aureothin employing an unprecedented oxygenase-mediated resolution step." *Angew. Chem. Int. Ed.* **2012**, *51*, 9587-9591 Henrot, M.; Richter, M.; Maddaluno, J.; Hertweck, C.; De Paolis, M.

19. "Catalytic enantioselective nucleophilic addition of organolithium derivatives: pitfalls and opportunities." *New J. Chem.* **2012**, *36*, 2441-2446 Harrison-Marchand, A.; Gérard, H.; Maddaluno, J.

20. "High pressure promoted aza-Michael addition of primary and secondary amines to alpha-substituted acrylates." *Green Chem.* **2012**, *14*, 503-508 Rulev, A. Y.; Kotsuki, H.; Maddaluno, J.

21. "Recent advances in stereoselective synthesis of 1,3-dienes." *Top. Curr. Chem.* **2012**, 87-146 De Paolis, M.; Chataigner, I.; Maddaluno, J.

22. "New approaches to nitrogen containing heterocycles: enantioselective organocatalyzed synthesis of dihydropyridines (DHP's), quinolizidine derivatives and dihydropyrimidines (DHPM's)" *Curr. Org. Chem.* **2012**, *16*, 1754-1775 Pham, H. T.; Chataigner, I.; Renaud, J.-L.

## 2013

23. "Stereoselective access to heteroarylmethylene-substituted pyrrolidines: fully organocatalytic Mannich/hydroamination reactions." *Chem. Commun.* **2013**, *49*, 1651-1653 Jean, A.; Blanchet, J.; Rouden, J.; Maddaluno, J.; De Paolis, M.

24. "Intramolecular carbonickelation of alkenes." *Beilstein J. Org. Chem.* **2013**, *9*, 710-716 Lhermet, R.; Durandetti, M.; Maddaluno, J.

25. "Mixed Aggregate (MAA): a single concept for all dipolar organometallic aggregates. 1. Structural data" *Chem. Rev.* **2013**, *113*, 7470-7562 Harrison-Marchand, A.; Mongin, F.
26. "Mixed Aggregate (MAA): a single concept for all dipolar organometallic aggregates. 2. Syntheses and reactivities of homo/hetero MAAs" *Chem. Rev.* **2013**, *113*, 7563-7727 Harrison-Marchand, A.; Mongin, F.
27. "An organocatalytic route to 2-heteroarylmethylene decorated N-arylpyrroles" *Beilstein J. Org. Chem.* **2013**, *9*, 1480-1486 Jean, A.; Blanchet, J.; Rouden, J.; Maddaluno, J.; De Paolis, M.
28. "Formal asymmetric synthesis of aplykurodinone-1" *Angew. Chem. Int. Ed.* **2013**, *52*, 6971-6973 Peixoto, P. A.; Jean, A.; Maddaluno, J.; De Paolis, M.
29. "Aza-Michael access to fluoroalkylidenes analogues of biomolecules" *J. Org. Chem.* **2013**, *78*, 8083-8097 Prunier, A.; Calata, C.; Legros, J.; Maddaluno, J.; Pfund, E.; Lequeux, T.
30. "Influence of the acetylenic substituent on the intramolecular carbolithiation of alkynes: a DFT theoretical study" *J. Org. Chem.* **2013**, *78*, 9659-9669 Fressigné, C.; Lhermet, R.; Girard, A.-L.; Durandetti, M.; Maddaluno, J.
31. "Selectivities of multicomponent [4 + 2]/[3 + 2] cycloadditions of 3-nitroindole with substituted alkenes: a DFT analysis" *J. Org. Chem.* **2013**, *78*, 9233-9242 Gérard, H.; Chataigner, I.
32. "Organoytterbium ate complexes extend the value of cyclobutenediones as isoprene equivalents" *Angew. Chem. Int. Ed.* **2013**, *52*, 13076-13079 Packard, E.; Pascoe, D. D.; Maddaluno, J.; Gonçalves, T. P.; Harrowven, D. C.
33. "Straightforward synthesis of 2-propylquinolines under multicomponent conditions in fluorinated alcohols." *J. Fluorine Chem.* **2013**, *152*, 94-98 Venkateswarlu, Ch.; Balaji, P. V.; De, K.; Crousse, B.; Figadère, B.; Legros, J.
34. "Polyfluorinated mercaptoalcohol as a H-bond modifier of poly(2,3,4,5,6-pentafluorostyrene) (PPFS) enhancing miscibility of hydroxylated-PPFS with various acceptor polymers." *Polymer* **2013**, *54*, 3757-3766 Chen, J.; Vuluga, D.; Crousse, B.; Legros, J.; Duchet-Rumeau, J.; Charlot, A.; Portinha, D.

## 2014

35. "Formylation of amines through catalyst- and solvent-free transamidation reaction" *Tetrahedron Lett.* **2014**, *55*, 362-364 Lebleu, T.; Kotsuki, H.; Maddaluno, J.; Legros, J.
36. "Selective monomethylation of primary amines with simple electrophiles" *Chem. Commun.* **2014**, *50*, 1836-1838 Lebleu, T.; Ma, X.; Maddaluno, J.; Legros, J.
37. "The solvatomagnetic comparison method : a proper quantification of solvent hydrogen-bond basicity." *J. Phys. Chem. B* **2014**, *118*, 7594-7608 Laurence, C.; Legros, J.; Nicolet, P.; Vuluga, D.; Chantzis, A.; Jacquemin, D.
38. "Anionic access to silylated and germylated binuclear heterocycles." *Chem. Eur. J.*, **2014**, *20*, 10131-10139 Boddaert, T.; François, C.; Mistico, L.; Querolle, O.; Meerpoel, L.; Angibaud, P.; Durandetti, M.; Maddaluno, J.

39. "Carbolithiation of chloro-substituted alkynes: a new access to vinyl carbenoids." *Chem. Eur. J.*, **2014**, *20*, 10249-10254 Lhermet, R.; Ahmad, M.; Fressigné, C.; Silvi, B.; Durandetti, M.; Maddaluno, J.

40. "Metal-free aerobic C-H oxidation of cyclic enones." *Org. Chem. Front.*, **2014**, *1*, 748-754 Peixoto, P. A.; Cormier, M.; Ekosso Epane, J.; Jean, A.; Maddaluno, J.; De Paolis, M.

41. "Diastereoselective organocatalytic Mannich access to azacyclic system en route to lyconadin A." *Tetrahedron Lett.* **2014**, *55*, 5074-5077 Cormier, M.; Jean, J.; Blanchet, J.; Rouden, J.; Maddaluno, J.; De Paolis, M.

## 2015

42. "Intramolecular carbolithiation of heterosubstituted alkynes: experimental and theoretical study." *Chem. Eur. J.* **2015**, *21*, 8105-8111 Lhermet, R.; Ahmad, M.; Hauduc, C.; Fressigné, C.; Durandetti, M.; Maddaluno, J.

43. "A database of dispersion-induction *DI*, electrostatic *ES*, and hydrogen bonding  $\alpha$ 1 and  $\beta$ 1 solvent parameters and some applications" *J. Phys. Chem. B* **2015**, *119*, 3174-3184 Laurence, C.; Legros, J.; Chantzis, A.; Planchat, A.; Jacquemin, D.

44. "Selective monoalkylation of amines with light electrophiles using a flow microreactor system." *Org. Chem. Front.* **2015**, *2*, 324-327 Lebleu, T.; Maddaluno, J.; Legros, J.

45. "An organocatalytic access to spiro[4.5]decanes and spiro[4.6]undecanes containing aminolactones and 3-aminopyrrolidines" *Synthesis: Special Topic* **2015** (invited article), *47*, 2549-2553 Cormier, M.; Chardon, A.; Blanchet, J.; Rouden, J.; Maddaluno, J.; De Paolis, M.

46. "First enantioselective total synthesis and configurational assignments of suberosenone and suberosanone as potential antitumor agents." *Chem. Commun.* **2015**, *51*, 3458-3461 Kousara, M.; Ferry, A.; Le Bideau, F.; Serré, K. L.; Chataigner, I.; Morvan, E.; Dubois, J.; Chéron, M.; Dumas, F.

47. "Base or nucleophile? DFT finally elucidates the origin of the selectivity between the competitive reactions triggered by MeLi or LDA on propanal" *Chem. Commun.* **2015**, *51*, 9801-9804 Marchois, J.; Fressigné, C.; Lecache, B.; Maddaluno, J.

48. "Thiourea-catalyzed dearomatizing [4+2] cycloadditions of 3-nitroindole" *Catal. Commun.* **2015**, *63*, 15-20 Andreini, M.; De Paolis, M.; Chataigner, I.

49. "A lithium amide protected against protonation in the gas phase: unexpected effect of LiCl." *J. Org. Chem.* **2015**, *80*, 6441-6446 Lesage, D.; Barozzino-Consiglio, G.; Duwald, R.; Fressigné, C.; Harrison-Marchand, A.; Faull, K.; Maddaluno, J.; Gimbert, Y.

### b) Publication dans les journaux à comité de lecture, communes à plusieurs équipes internes

1. "NMR studies of a ternary complex reagent of lithium ester enolate, chiral diether, and lithium diisopropylamide in an asymmetric Michael reaction." *Tetrahedron* **2010**, *66*, 2470-2473 Yamamoto, Y.; Yasuda, Y.; Oulyadi, H.; Maddaluno, J.; Tomioka, K.

2. "MeLi + LiCl in THF: one heterotrimer and no tetramers." *J. Org. Chem.* **2010**, *75*, 5976-5983 Lecachez, B.; Oulyadi, H.; Lameiras, P.; Harrison-Marchand, A.; Gérard, H.; Maddaluno, J.
3. "Ph<sub>2</sub>P(BH<sub>3</sub>)Li: From ditopicity to dual reactivity." *J. Am. Chem. Soc.* **2011**, *133*, 6472-6480 Barozzino-Consiglio, G.; Queval, P.; Harrison-Marchand, A.; Mordini, A.; Lohier, J.-F.; Delacroix, O.; Gaumont, A.-C.; Gerard, H.; Maddaluno, J.; Oulyadi, H.
4. "First substoichiometric version of the catalytic enantioselective addition of an alkyllithium to an aldehyde." *Chem. Commun.* **2011**, *47*, 9915-9917 Lecachez, B.; Fressigné, C.; Oulyadi, H.; Harrison-Marchand, A.; Maddaluno, J.
5. "Structure of the mixed aggregates between a chiral lithium amide and phenyllithium or vinylolithium." *Organometallics* **2012**, *31*, 4801-4809 Oulyadi, H.; Fressigné, C.; Yuan, Y.; Maddaluno, J.; Harrison-Marchand, A.
6. "Aromatic carbon-carbon double bonds as dipolarophiles: facile transformation of uncomplexed benzene derivatives and other aromatic rings into functionalized polycycles." *Chem. Eur. J.* **2013**, *19*, 7181-7192 Lee S.; Diab S.; Queval P.; Sebban M.; Chataigner I.; Piettre S. R.
7. "<sup>1</sup>H Pure Shift DOSY: a handy tool to evaluate the aggregation and solvation of organolithium derivatives." *Chem. Commun.* **2014**, *50*, 4073-4075 Hamdoun, G.; Sebban, M.; Cossoul, E.; Harrison-Marchand, A.; Maddaluno, J.; Oulyadi, H.
8. "Dynamics of the lithium amide/alkyllithium interactions: mixed dimers and beyond." *Top. Organomet. Chem.* **2014**, *47*, 43-62 Harrison-Marchand, A.; Duguet, N.; Barozzino-Consiglio, G.; Oulyadi, H.; Maddaluno, J.
9. "Probing solvent effects on mixed aggregates associating a chiral lithium amide and n-BuLi by NMR: from structure to reactivity." *Dalton Trans.* **2014**, *43*, 14219-14228 Barozzino-Consiglio, G.; Rouen, M.; Oulyadi, H.; Harrison-Marchand, A.; Maddaluno, J.
10. "Alkyllithium Mixed Aggregates: Dynamic Behavior and Comprehensive Analysis of NMR <sup>2</sup>J<sub>7Li-7Li</sub> Spin-Spin Coupling." *Organometallics* **2015**, *34*, 1932-1941 Hamdoun, G.; Sebban, M.; Tognetti, V.; Harrison-Marchand, A.; Joubert, L.; Maddaluno, J.; Oulyadi, H.
11. "Enantioselective alkynylation of aldehydes by mixed aggregates of 3-aminopyrrolidine lithium amides and lithium acetylides." *Organometallics*, **2015**, *34*, DOI: 10.1021/acs.organomet.5b00647. Barozzino-Consiglio, G.; Yuan, Y.; Fressigné, C.; Harrison-Marchand, A.; Oulyadi, H.; Maddaluno, J.

### c) Ouvrages ou chapitres d'ouvrages

"Synthèse organique sous haute pression." Chataigner, I.; Maddaluno, J. *Techniques de l'Ingénieur*, **2010**, CHV 1 610, pp. 1-17.

"Polar organometallic reagents: advantages and limits in synthesis." Maddaluno, J.; De Paolis, M. *Semin. Org. Synth. "A. Corbella" Summer Sch.*, 35th, Gargnano, Italy, June 14-18 **2010**, 177-198

"Chimie Organique: Tout le cours en fiches" Bellosta, V.; Chataigner, I.; Couty, F.; Garcia, L.; Harrison-Marchand, A.; Lasne, M.-C.; Maddaluno, J.; Rouden, J. Editions Dunod, Paris. **2013**.

"Advances in the chemistry of chiral lithium amides" Harrison-Marchand, A.; Maddaluno, J. *Lithium Compounds in Organic Synthesis - From Fundamentals to Applications*, R. Luisi and V. Capriati, Eds, J. Wiley VCH, Weinheim, 2014, Chap. 10, pp. 297-328.

"Nickel Bromide Bipyridine." Durandetti, M.; Maddaluno, J. *e-EROS Encyclopedia of Reagents for Organic Synthesis* 2014, 1-3.

"Mémovisuel de Chimie Organique" Bellosta, V.; Chataigner, I.; Couty, F.; Harrison-Marchand, A.; Lasne, M.-C.; Maddaluno, J.; Prunet, J.; Rouden, J. Editions Dunod, Paris. 2015.