



Dr Muriel SEBBAN



Assistant Professor - HDR

Analysis and Modeling team (NMR group)

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PROFESSIONAL EXPERIENCES

- 2009- Assistant Professor; Normandy University, Rouen, France.
2004-2008 Research Engineer; NMRTec, Versailles University.
2004 Research Engineer in charge of NMR laboratory, Sanofi, Rueil-Malmaison.
2001-2003 Postdoctoral Associate, CEA Le Ripault, Monts.
2000-2001 Lecturer, Versailles-St-Quentin-en-Yvelines University, Versailles, France.

EDUCATION – DIPLOMAS AND DEGREES

- 2017 Accreditation to supervise researches (HDR)
1997-2000 Ph.D. Spectrochemistry, University of Versailles, France.
1997 M.S. Spectrochemistry, Pierre et Marie Curie University, Paris 6, France.

ADMINISTRATIVE & INSTITUTIONAL RESPONSIBILITIES

- 2016-2019 Member of the National Council of Universities – Section 31 (CNU31).
2010- Member of the Unit Council (COBRA UMR 6014-CNRS).

RESEARCH INTERESTS

Liquid and solid state NMR applied to the characterization of:

- Organic and bioorganic compounds (structure, reaction monitoring, complex mixtures ...)
- Polymers (structure, ageing)
- Host-Guest interactions

SCIENTIFIC ACHIEVEMENTS

Academic record: h-index 13

32 publications, 3 book chapters, 1 review, 1 congress act, 4 invited lectures (academia & industry)

SUPERVISION ACTIVITIES

- 2016-2018 Supervision of Asma Bourafai's Ph.D.: "Study of the interaction of Mcl-1, implied in apoptosis, and potential inhibitors. Application to ovarian cancers' treatments."
- 2013-2016 Co-supervision of Laura Bailac's Ph.D.: "Fluorinated compounds: multinuclear (^1H , ^{13}C , ^{19}F) NMR and DFT study."
- 2011-2014 Co-supervision of Ghanem Hamdoun's Ph.D.: "New NMR methodologies for the dynamic and structural characterization of organolithiated aggregates."
- 2011-2013 Co-supervision of Emilie Cossoul's Ph.D.: "Characterization of Poly(Ether Ketone)(PEKK) by NMR and Mass spectrometry."
- 2005-2018 Supervision of 8 master internships (M2)

TEACHING ACTIVITIES

Teaching responsibilities

- Co-responsible for L3 internships organization
- Co-responsible for L2 teaching unit "Analytical methods"
- Co-responsible for L3Pro teaching unit "Spectroscopy"
- Responsible for L3/M1 NMR practical work

Teaching activities

- L1: Structure of matter, thermodynamic
- L2: Analytical methods (Chromatography, spectroscopy: UV, IR, atomic absorption)
- L3Pro: Spectroscopy (NMR, UV, IR, atomic absorption)

Professional Training

- Theoretical and practical training in liquid and solid state NMR for beginners and advanced.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- Member of « GERM » (Research group in NMR)
- Member of « MuFoPAM » (Research group in Antimicrobial Peptides)
- Member of « Chemobiologie »

PUBLICATIONS

Book Chapter: 3

Spectroscopic advances in structural lithium chemistry: diffusion-ordered spectroscopy and solid-state NMR. Chapter 4: Spectroscopic Advances in Structural Lithium Chemistry: Diffusion-Ordered Spectroscopy and Solid-State NMR.

Sebban, M.; Guilhaudis, L.; Oulyadi, H.

Renzo Luisi (Editor), Vito Capriati (Editor) (Avril 2014)

ISBN: 978-3-527-33343-1.

DOI: 10.1002/9783527667512.ch4

NMR Spectroscopy: A Useful Tool in the Determination of the Electrophilic Character of Benzofuroxans - Case Examples of the Reactions of Nitrobenzofuroxans with Dienes and Nucleophiles.

Sebban, M.; Sepulcri, P.; Jovené, C.; Vichard, D.; Terrier, F.; Goumont, R. *Magn. Reson. Spectrosc.* (2012). ISBN 978-953-307-771-0. DOI: 10.5772/31566

The Diels-Alder reactivity of the furoxan ring of substituted benzofuroxans. Synthesis of substituted imines and evidence of the intermediacy of ortho-dinitrosoarenes in the 1-oxide/3-oxide interconversion.

Jovene, C.; **Sebban, M.**; Marrot, J.; Goumont, R.

Targets Heterocycl. Syst. (2012), 16, 90-112.

ISBN 978-88-86208-72-7. ISSN 1724-9449

Review: 1

Ageing study by NMR of polymers under irradiation.

Palmas, P.; Longieras, N.; **Sebban, M.**; Gardette, J.-L.; Rivaton, A.

CHOCS (2006), 32, 72-80.

Editor : Commissariat à l'énergie atomique ; Direction des applications militaires.

ISSN: 1157-741X

Publications (IF>1): 31

Binding mode of Pyridoclast to Myeloid cell leukemia-1 (Mcl-1) revealed by Nuclear Magnetic Resonance Spectroscopy, Docking and Molecular Dynamics Approaches.

Bourafai-Aziez, A.; **Sebban, M.***; Benabderrahmane, M.; Marekha, B.; Denis, C.; Paysant, H.; Weiswald, L. B.; Carlier, L.; Bureau, R.; Coadou, G.; Ravault, D.; Voisin-Chiret, A. S.; Sopkova-de Oliveira Santos, J.*; Oulyadi, H.

J. biomol. Struct. Dyn. (2019), Ahead of print. DOI: 10.1080/07391102.2019.1680434

The facile dearomatization of nitroaromatic compounds using lithium enolates of unsaturated ketones in conjugate additions and (4+2) formal cycloadditions.

Pasturaud, K.; Rkein, B.; Sanselme, M.; Sebban, M.; Lakhdar, S.; Durandetti, M.; Legros, J.; Chataigner, I.

Chem. Commun. (2019), 55(52), 7494-7497. DOI: 10.1039/C9CC02924A

Dihydroquinoline carbamate DQS1-02 as a prodrug of a potent acetylcholinesterase inhibitor for Alzheimer's disease therapy: multi-gram scale synthesis, mechanism investigations, in vitro safety pharmacology, and preliminary in vivo toxicology profile.

Alix, F.; Gembus, V.; Coquet, L.; Hubert-Roux, M.; Chan, P.; Truong, L.; **Sebban, M.**; Coadou, G.; Oulyadi, H.; Papamicaël, C.; Levacher, V.

ACS Omega (2018), 3 (12), 18387–18397. DOI: 10.1021/acsomega.8b02121

Characterization of Milkisin, a novel lipopeptide with antimicrobial properties produced by Pseudomonas sp. UCMA 17988 isolated from bovine raw milk.

Schlusselhuber, M.; Godard, J.; **Sebban, M.**; Bernay, B.; Garon, D.; Seguin, V.; Oulyadi, H.; Desmasures, N.

Frontiers in microbiology (2018), 9, article 1030. DOI: 10.3389/fmicb.2018.01030

Rational design of carbamate-based dual binding site and central AChE inhibitors by a "biooxidisable" prodrug approach: synthesis, in vitro evaluation and docking studies.

Tintas, M.-L.; Gembus, V.; Alix, F.; Barre, A.; Coadou, G.; Truong, L.; **Sebban, M.**; Papamicael, C.; Oulyadi, H.; Levacher, V.

Eur. J. Med. Chem. (2018), 155, 171-182. DOI: 10.1016/j.ejmech.2018.05.057

2D ⁷Li Ultrafast CT-COSY: a new tool for the rapid measurement of tiny homonuclear lithium scalar couplings.

Hamdoun, G.; Gouilleux, B.; **Sebban, M.**; Barozzino-Consiglio, G.; Harrison-Marchand, A.; Giraudeau, P.; Maddaluno, J.; Oulyadi, H.

Chem. Commun. (2017), 53(1), 220-223. DOI: 10.1039/c6cc08744b

Enantioselective Synthesis of Dideoxy-tetrafluorinated Hexoses.

Golten, S.; Fontenelle, C. Q.; Timofte, R. S.; Bailac, L.; Light, M.; **Sebban, M.**; Oulyadi, H.; Linclau, B.

J. Org. Chem. (2016), 81(11), 4434-4453. DOI: 10.1021/acs.joc.6b00302

Radical Cyclisation of α -Halo Aluminium Acetals: A Mechanistic Study.

Bénéteau, R.; Boussonnière, A.; Rouaud, J.-C.; Lebreton, J.; Graton, J.; Jacquemin, D.; **Sebban, M.**; Oulyadi, H.; Hamdoun, G.; Hancock, A. N.; Schiesser, C. H.; Dénès, F.

Chem. Eur. J. (2016), 22(14), 4809-4824. DOI: 10.1002/chem.201504780

Alkyl lithium Mixed Aggregates: Dynamic Behavior and Comprehensive Analysis of NMR ²J_{7Li-7Li} Spin-Spin Coupling.

Hamdoun, G.; **Sebban, M.**; Tognetti, V.; Harrison-Marchand, A.; Joubert, L.; Maddaluno, J.; Oulyadi, H.

Organometallics (2015), 34(10), 1932-1941. DOI: 10.1021/acs.organomet.5b00162

Evaluation of atmospheric solid analysis probe ionization coupled to ion mobility mass spectrometry for characterization of poly(ether ether ketone) polymers.

Cossoul, E.; Hubert-Roux, M.; **Sebban, M.**; Churlaud, F.; Oulyadi, H.; Afonso, C.

Anal. Chim. Acta (2015), 856, 46-53. DOI: 10.1016/j.aca.2014.12.013

Organocatalyzed Multicomponent Synthesis of Isoxazolidin-5-ones.

Berini, C.; **Sebban, M.**; Oulyadi, H.; Sanselme, M.; Levacher, V.; Brière, J.-F.

Org. Lett. (2015), 17(21), 5408-5411. DOI: 10.1021/acs.orglett.5b02755

Thermal pretreatments of superficially porous silica particles for high-performance liquid chromatography: Surface control, structural characterization and chromatographic evaluation.

Mignot, M.; **Sebban, M.**; Tchaplal, A.; Mercier, O.; Cardinael, P.; Peulon-Agasse, V.

J. Chromatogr. A (2015), 1419, 45-57. DOI: 10.1016/j.chroma.2015.09.072

Toward the Synthesis of Fluorinated Analogues of HCV NS3/4A Serine Protease Inhibitors Using Methyl α -Amino- β -fluoro- β -vinylcyclopropanecarboxylate as Key Intermediate.

Milanole, G.; Andriessen, F.; Lemonnier, G.; **Sebban, M.**; Coadou, G.; Couve-Bonnaire, S.; Bonfanti, J.-F.; Jubault, P.; Pannecoucke, X.

Org. Lett. (2015), 17(12), 2968-2971. DOI: 10.1021/acs.orglett.5b01216

¹H Pure Shift DOSY: a handy tool to evaluate the aggregation and solvation of organolithium derivatives.

Hamdoun, G.; **Sebban, M.**; Cossoul, E.; Harrison-Marchand, A.; Maddaluno, J.; Oulyadi, H. *Chem. Commun.* (2014), 50(31), 4073-4075. DOI: 10.1039/c4cc00111g

Efficient access to fluorinated homoallylic alcohols through an indium promoted fluoroallylation reaction.

Lemonnier, G.; Van Hijfte, N.; **Sebban, M.**; Poisson, T.; Couve-Bonnaire, S.; Pannecoucke, X. *Tetrahedron* (2014), 70(19), 3123-3133. DOI: 10.1016/j.tet.2014.03.067

Aromatic C=C bonds as dipolarophiles: Facile reactions of uncomplexed electron-deficient benzene derivatives and other aromatic rings with a non-stabilized azomethine ylide.

Lee, S.; Diab, S.; Queval, P.; **Sebban, M.**; Chataigner, I.; Piettre, S.R. *Chem. Eur. J.* (2013), 19, 7181-7192. DOI: 10.1002/chem.201201238

Conformation Control of Abiotic α -Helical Foldamers.

Perato, S.; Fogha, J.; **Sebban, M.**; Voisin-Chiret, A.-S.; Sopkova-de Oliveira Santos, J.; Oulyadi, H.; Rault, S. *J. Chem. Inf. Model.* (2013), 53, 2671-2680. DOI: 10.1021/ci400365y

Structural Characterizations of Oligopyridyl Foldamers, α -Helix Mimetics.

Sopkova-de Oliveira Santos, J.; Voisin-Chiret, A.-S.; Burzicki, G.; Sebaoun, L.; **Sebban, M.**; Lohier, J.F.; Legay, R.M.; Oulyadi, H.; Bureau, R.; Rault, S. *J. Chem. Inf. Model.* (2012), 52, 429-439. DOI: 10.1021/ci200424a

The conformation of tetrafluorinated methyl galactoside anomers: crystallographic and NMR studies.

Linclau, B.; Golten, S.; Light, M.; **Sebban, M.**; Oulyadi, H. *Carbohydr. Res.* (2011), 346(9), 1129-1139. DOI: 10.1016/j.carres.2011.04.007

Flexible Porous Metal-Organic Frameworks for a Controlled Drug Delivery.

Horcajada, P.; Serre, C.; Maurin, G.; Ramsahye, N. A.; Balas, F.; Vallet-Regi, M.; **Sebban, M.**; Taulelle, F.; Férey, G. *J. Am. Chem. Soc.* (2008), 130(21), 6774-6780. DOI: 10.1021/ja710973k

Degradation of epoxy resins under high energy electron beam irradiation: Radio-oxidation.

Longieras, N.; **Sebban, M.**; Palmas, P.; Rivaton, A.; Gardette, J.-L. *Polym. Degrad. Stab.* (2007), 92(12), 2190-2197. DOI: 10.1016/j.polymdegradstab.2007.01.035

Metal-organic frameworks as efficient materials for drug delivery.

Horcajada, P.; Serre, C.; Vallet-Regi, M.; **Sebban, M.**; Taulelle, F.; Férey, G. *Angew. Chem., Int. Ed.* (2006), 45(36), 5974-5978. DOI: 10.1002/anie.200601878

Multiscale approach to investigate the radiochemical degradation of epoxy resins under high-energy electron-beam irradiation.

Longieras, N.; **Sebban, M.**; Palmas, P.; Rivaton, A.; Gardette, J.-L. *J. Polym. Sci., Part A: Polym. Chem.* (2006), 44(2), 865-887. DOI: 10.1002/pola.21176

- Radiochemical ageing of an amine cured epoxy network. Part II: kinetic modelling.*
Devanne, T.; Bry, A.; Raguin, N.; **Sebban, M.**; Palmas, P.; Audouin, L.; Verdu, J.
Polymer (2005), 46(1), 237-241. DOI: 10.1016/j.polymer.2004.07.041
- Tautomerism and ¹H, ¹³C and ¹⁵N NMR spectral assignments of some nitro derivatives of malonic acid diamide.*
Sebban, M.; Guillard, J.; Palmas, P.; Poullain, D.
Magn. Reson. Chem. (2005), 43(7), 563-566. DOI: 10.1002/mrc.1592
- The multifaceted Diels-Alder reactivity of 4,6-dinitrobenzofuroxan and 4,6-dinitrobenzo-furazan towards isoprene and 2,3-dimethylbutadiene.*
Goumont, R.; **Sebban, M.**; Marrot, J.; Terrier, F.
ARKIVOC (2004), 3, 85-100. DOI: 10.3998/ark.5550190.0005.309
- Ageing of EPDM elastomers exposed to γ -radiation studied by ¹H broadband and ¹³C high-resolution solid-state NMR.*
Palmas, P.; Colsenet, R.; Lemarie, L.; **Sebban, M.**
Polymer (2003), 44(17), 4889-4897. DOI: 10.1016/S0032-3861(03)00476-2
- A novel reactivity pattern of nitro-benzofuroxans and -benzofurazans: the heterodienic behavior of the five-membered ring.*
Goumont, R.; **Sebban, M.**; Terrier, F.
Chem. Commun. (2002), 18, 2110-2111. DOI: 10.1039/b205164h
- The Diels-Alder reactivity of nitrobenzofuroxans: mono- and di-adducts of isoprene and 2,3-dimethylbutadiene. New convenient precursors to naphtho- and phenanthreno-furoxanic and -furazanic structures.*
Goumont, R.; **Sebban, M.**; Sepulcri, P.; Marrot, J.; Terrier, F.
Tetrahedron (2002), 58(16), 3249-3262. DOI: 10.1016/S0040-4020(02)00236-3
- Dual Behavior of 4-Aza-6-nitrobenzofuroxan. A Powerful Electrophile in Hydration and σ -Complex Formation and a Potential Dienophile or Heterodiene in Diels-Alder Type Reactions.*
Terrier, F.; **Sebban, M.**; Goumont, R.; Halle, J.-C.; Moutiers, G.; Cangelosi, I.; Buncel, E.
J. Org. Chem. (2000), 65(22), 7391-7398. DOI: 10.1021/jo0005114
- Diels-Alder trapping of an o-dinitroso intermediate in the 1-oxide/3-oxide interconversion of a 2,1,3-benzoxadiazole derivative.*
Sebban, M.; Goumont, R.; Halle, J.-C.; Terrier, F.; Marrot, J.
Chem. Commun. (1999), 11, 1009-1010. DOI: 10.1039/a902170a

Congress Act: 1

- MOFS as new materials for drug delivery.*
Horcajada, P.; Serre, C.; **Sebban, M.**; Taulelle, F.; Vallet-Regi, M.; Férey, G.
Abstracts of Papers, 235th ACS National Meeting, New Orleans, LA, United States, april 6-10th (2008), INOR-828.