

Liste des publications

- 1) Stabilization of carbenium ions species by two different adjacent organometallic moieties: synthesis, NMR study and synthetic application.
L.L. Troïtskaya, V.I. Sokolov, V.I. Bakhmutov, O.A. Reutov, M. Gruselle, **C. Cordier**, G. Jaouen *J. Organomet. Chem.* (1989), 364, 195-206
- 2) Vibrational spectra of the organometallic estrogen-receptor marker [3-*O*-(3-hydroxypropyl)-17 β -estradiol]- α -tricarbonylchromium(0) and related compounds.
I.S. Butler, F. Dicaire, **C. Cordier**, S. Top, A. Vessières, G. Jaouen, H. Guy *J. Raman. Spect.* (1990), 21, 355-358
- 3) Structures of zearalenone and zearalanone in solution: a high-field NMR and molecular modeling study.
C. Cordier, M. Gruselle, G. Jaouen, D. W. Hughes, M. J. McGlinchey *Magn. Res. in Chem.* (1990), 28, 835-845.
- 4) Electronic and steric factors for elimination reactions in carbenium ions derived from (17 β -ethynylestradiol) M_2L_6 complexes ($M_2L_6 = Co_2(CO)_6, Mo_2Cp_2(CO)_4$). X-ray structure of $[Mo_2Cp_2(CO)_4(\mu-CH\equiv CC_{19}H_{25}O)]^+ BF_4^-$
M. Gruselle, **C. Cordier**, M. Salmain, H. El Amouri, C. Guérin, J. Vaissermann, G. Jaouen *Organometallics* (1990), 9, 2993-2997
- 5) NMR structural and dynamic study of a carbenium ion with a steroidal substituent $[Mo_2Cp_2(CO)_4(\mu-HC\equiv CC_{19}H_{24}O)]^+ BF_4^-$.
C. Cordier, M. Gruselle, G. Jaouen, V.I. Bakhmutov, M.V. Galakhov, L.L. Troïtskaya, V.I. Sokolov *Organometallics* (1991), 10, 2303-2309
- 6) Nature of the stabilization of a carbenium ion adjacent to two organometallic groups. $[Mo_2Cp_2(CO)_4(\mu-FcCHC\equiv C(CH_2)_2CH_3)]^+, BF_4^-$: x-ray structure and NMR dynamic investigation.
C. Cordier, M. Gruselle, J. Vaissermann, L.L. Troïtskaya, V.I. Bakhmutov, V.I. Sokolov, G. Jaouen *Organometallics* (1992), 11, 3825-3832
- 7) Deprotonation of chromium tricarbonyl allylbenzenes in basic medium. 1H and ^{13}C NMR study and reactivity of allylic anions: electronic and steric effects of the chromium tricarbonyl group.
M.C. Sénéchal-Tocquer, D. Sénéchal, J.Y. Le Bihan, D. Gentric, B. Caro, M. Gruselle, **C. Cordier**, G. Jaouen *J. Organomet. Chem.* (1993), 458, 105-117
- 8) NMR Study of the Dynamic Behavior of $[(2\text{-propynylbornyl})Mo_2(CO)_4Cp_2]^+ BF_4^-$: Nonfluxional Molybdenum-Cobalt Clusters as the Key to Understanding the Mechanism of the Formation of Metal-Stabilized Cations.
H. El Hafa, **C. Cordier**, M. Gruselle, Y. Besace, G. Jaouen, M.J. McGlinchey *Organometallics* (1994), 13, 5149-5156
- 9) Coupling of 2'-Deoxyribonucleotides with 2-Pyridinealdehyde Methiodides.

- G. Dodin, B. Bourliataud, **C. Cordier** *J. Org. Chem.* (1996), 61, 2561-2563
- 10) Thermal fragmentation of 1-substituted spiro[adamantane-2,2'-adamantane] derivatives.
J.S. Lomas, **C. Cordier**, S. Briand *J. Chem. Soc., Perkin Trans. 2* (1996), 865-870
- 11) Thermal rearrangement of 1-substituted spiro[adamantane-2,2'-adamantane] derivatives.
J.S. Lomas, **C. Cordier**, S. Briand, J. Vaissermann *J. Chem. Soc., Perkin Trans. 2* (1996), 871-876
- 12) Triplet correlation in DNA sequences and stability of heteroduplexes.
G. Dodin, P. Levoir, **C. Cordier** *J. Theor. Biol.* (1996), 183, 341-343
- 13) Book critic for Dynamics of solutions and fluid mixtures by NMR written by J.J. Delpuech in *Analisis* (1996), 24 (3), 25-26
- 14) Covalent binding of a bridged pyridinium aldehyde with the self-complementary decamer [d(ATGACGTCAT)]₂. Gel analysis, MALDI mass spectrometry and NMR studies.
C. Cordier, O. Convert, J.C. Blais, T. Couesnon, K. Zakrzewska, O. Mauffret, S. Femandjian, G. Dodin *J. Chem. Soc., Perkin Trans. 2* (1998), 115-121
- 15) A novel route to new carbonyl derivatives of cinchonine and cinchonidine.
G. Dodin, **C. Cordier**, L. Menager, A. Bourzegue, J.C. Blais *J. Chem. Soc., Perkin Trans. 1* (1998), 3619-3621
- 16) Hydrogen bonding and solvent effects in heteroaryldi(1-adamantyl)methanols: an NMR and IR spectroscopic study.
J.S. Lomas, A. Adenier, **C. Cordier**, J.C. Lacroix *J. Chem. Soc., Perkin Trans. 2* (1998), 2647-2652
- 17) Conformational variation of the central CG site in d(ATGACGTCAT)₂ and d(GAAAACGTTTTC)₂: an NMR, molecular modelling and 3D-homology investigation.
C. Cordier, L. Marcourt, M. Petitjean, G. Dodin *Eur. J. Biochem.* (1999), 261, 722-733
- 18) Impact of C5-cytosine methylation on the solution structure of d(GAAAACGTTTTC)₂: an NMR and molecular modelling investigation.
L. Marcourt, **C. Cordier**, T. Couesnon G. Dodin *Eur. J. Biochem.* (1999), 265, 1032-1042
- 19) Fourier and wavelet transform analysis, a tool for visualizing regular patterns in DNA sequences.
G. Dodin, P. Vandergheynst, P. Levoir, **C. Cordier**, L. Marcourt *J. theor. Biol.* (2000), 206, 323-326
- 20) XPS, NMR and FTIR structural characterization of polysiloxane-immobilized amine ligand systems.
I.M. El Nahhal, M.M. Chehimi, **C. Cordier**, G. Dodin *J. Non-Cryst. Solids* (2000), 275, 142-146
- 21) Covalent bonding of bridged pyridinium aldehyde derivatives with guanine N7 is controlled by CpG site conformation.
L. Marcourt, **C. Cordier**, G. Bertho, J.P. Girault, O. Convert, G. Dodin *J. Chem. Soc., Perkin Trans. 2* (2001), 1771-1780

- 22) An ABMX spin system study: From experimental to calculated spectra.
C. Cordier, R. Thouvenot, H. Amouri, M. Gruselle *J. Chem. Ed.* (2002), 79, 234-238
- 23) Efficient asymmetric synthesis of Δ - and Λ -enantiomers of (bipyridyl)ruthenium complexes and crystallographic analysis of Δ -bis(2,2'-bipyridine) (2,2'-bipyridine-4,4'-dicarboxylato)ruthenium: Diastereoselective homo- and heterochiral ion pairing revisited.
R. Caspar, H. Amouri, M. Gruselle, **C. Cordier**, B. Malézieux, R. Duval, H. Lévêque *Eur. J. Inorg. Chem.* (2003), 499-505
- 24) Rotational isomerism in 3,4-alkylenedioxy-2,5-bis[di(tert-butyl)hydroxymethyl]thiophenes.
J.S. Lomas, **C. Cordier** *J. Phys. Org. Chem.* (2003), 16, 361-368
- 25) Salicylaldehyde Benzoyl Hydrazone: Isomerization Due to Water. A Structural Analysis Using a Combination of NMR, IR, and Theoretical Investigations.
C. Cordier, E. Vauthier, A. Adenier, Y. Lu, A. Massat, A. Cossé-Barbi *Struc. Chem.* (2004), 15 295-307.
- 26) Efficient DNA Binding by Optically Pure Ruthenium Tris(bipyridyl) Complexes Incorporating Carboxylic Functionalities. Solution and Structural Analysis.
R. Caspar, L. Musatkina, A. Tatosyan, H. Amouri, M. Gruselle, C. Guyard-Duhayon, R. Duval, **C. Cordier** *Inorg. Chem.* (2004), 43, 7986-7993.
- 27) Is the unexpected behaviour of the resolved $K_3[Cr^{III}(C_2O_4)_3]$ in aqueous solution responsible for the formation of pure chiral solid phase of a two-dimensional (2D) $[Mn^{II}Cr^{III}(C_2O_4)_3 NEt(n-Pr)(n-Bu)(n-C_5H_{11})]$ network?
M. Gruselle, C. Train, F. Villain, N. Ovanesyan, **C. Cordier** *Mendeleev Comm.* (2004), 284-285.
- 28) Deposit of 1H and ^{31}P chemical shifts (δ) for GTTC-ACA-GAAC in the BioMagResBank (<http://www.bmrb.wisc.edu>) with accession number 6273 (2004).
L. Patard, M. Lamoureux, **C. Cordier**
- 29) Deposit of 1H chemical shifts (δ) for GTAC-ACA-GTAC in the BioMagResBank (<http://www.bmrb.wisc.edu>) with accession number 6274 (2004).
M. Lamoureux, L. Patard, **C. Cordier**
- 30) Study of an AB system within the 1H NMR spectrum of a maleamic acid : application of chemical exchange between acid-base conjugates
P. Fellmann, A. Gevertz, **C. Cordier** *J. Chem. Ed.* (2006), 83, 432-435.
- 31) Spectroscopic and structural impact of a stem base-pair change in DNA hairpins: GTTC-ACA-GAAC vs. GTAC-ACA-GTAC
M. Lamoureux, L. Patard, B. Hernandez, T. Couesnon, G.P.H. Santini, J.A.H. Cognet, C. Gouyette, **C. Cordier** *Spect. Chim. Acta Part A.* (2006), 65, 84-94.
- 32) SERRS study of the DNA-binding by Ru(II) tris-(bipyridyl) complexes bearing one carboxylic group
E. Gaudry, J. Aubard, H. Amouri, G. Lévy, **C. Cordier** *Biopolymers – Biospec.* (2006), 82, 399-404.
- 33) Proton NMR and IR study of self-association in pyridylalkanols: open or cyclic dimers ? Higher polymers ?

J.S. Lomas, A. Adenier, **C. Cordier** *J. Phys. Org. Chem.* (2006), 19, 295-307.

- 34) A New Family of Mono- and Dicarboxylic Ruthenium Complexes $[\text{Ru}(\text{DIP})_2(\text{L}_2)]^{2+}$ (DIP) 4,7-diphenyl-1,10-phenanthroline): Synthesis, Solution Behavior, and X-ray Molecular Structure of *trans*- $[\text{Ru}(\text{DIP})_2(\text{MeOH})_2][\text{OTf}]_2$
R. Caspar, **C. Cordier**, J. B. Waern, C. Guyard-Duhayon, M. Gruselle, P. Le Floch, H. Amouri *Inorg. Chem.* (2006), 45, 4071-4078.
- 35) Homo-chiral ion-pairing assisted by π - π stacking between Δ - $[\text{Ru}(\text{bpy})_2(\text{Hcmbpy})]^{2+}$ and Δ -Trisphat : A quantitative investigation
I. Correia, H. Amouri, **C. Cordier** *Organometallics* (2007), 26, 1150-1156.
- 36) Homo-Chiral Supramolecular Triangular Hosts: Anion Metathesis, Solution Behaviour and High Stability of the Metal Configuration.
L. Mimassi, **C. Cordier**, C. Guyard-Duhayon, B. E. Mann, H. Amouri *Organometallics* (2007), 26, 860-864.
- 37) Self-association in{2-[3,4-alkylenedioxy-5-(3-pyridyl)]-thienyl}alkanols: an NMR, IR and single crystal X-ray study.
J.S. Lomas, **C. Cordier**, A. Adenier, F. Maurel, J. Vaissermann *J. Phys. Org. Chem.* (2007), 20, 1-12.
- 38) Mono- and dicarboxylic polypyridyl-Ru complexes as potential cell DNA dyes and transfection agents.
E. Musatkina, H. Amouri, M. Lamoureux, T. Chepurnykh, **C. Cordier** *J. Inorg. Biochem.* (2007), 101, 1086-1089.
- 39) Insertion of a Bulky Rhodium Complex into a DNA Cytosine-Cytosine Mismatch: An NMR solution study
C. Cordier, V. Pierre, J.K. Barton *J. Am. Chem. Soc.* (2007), 129, 12287-12295.
- 40) Diols as hydrogen bond acids: ^1H NMR study of the hetero-association of pyridine with sterically hindered EDOT diols
C. Cordier, J.S Lomas *J. Phys. Org. Chem.* (2009), 22, 289-297.
- 41) Le CO_2 humain exhalé : analyse par IR-FT d'un rotateur non rigide
A. Adenier, P. Fellmann, **C. Cordier** *Actualité chimique*, (2010), 344, 10-14.

Conférences internationales

- 1) Study of local conformations of DNA by NMR. A tool for the biology. **Septembre 2002**
Laboratory of Cellular and Viral Oncogenes Regulation – Centre de Recherches sur le Cancer de Moscou – Académie des Sciences Médicales de Russie.
- 2) Study of model oligonucleotidic sequences by physico-chemical methods. **Septembre 2002**
Institute of Problems of Chemical Physics, Russian Académie des Sciences de Russie, 142432 Chernogolovka, Région de Moscou, Fédération de Russie.
- 3) Chiral molecular assembly of DNA with octahedral Ru/Rh complexes. **May 2006**
San Diego State University – California.

4) DNA-Metal complex interactions. What can we learn from NMR? **August 2006**
California Institute of Technology (Caltech) – California.

Présentation Orale (O) ou par Poster (P) à des conférences

- 1-O) Structural study of mycotoxins by high field NMR and molecular modelling. - **Mai 1990**. Semaine d'Etude de Chimie Organique (SECO) XXVII. Cap d'Agde (France).
- 2-P) Structural similarity and optimal superposition. An application to nucleotides.- **Août 1997**. 36th Congress IUPAC. Switzerland.
- 3-P) Study of the conformational similarity of the ACGT step within d(ATGACGTCAT)₂ and d(GAAAACGTTTTTC)₂.- **Mars 1998**. 6^{ème} réunion du groupe thématique magnétisme nucléaire et biologie. La Grande Motte (France).
- 4-P) Conformational variation of the central CG site in the (purine-ACGT-pyrimidine) step. **Mai 1998**. 14th European Experimental NMR Conference (EENC). Slovenia.
- 5-P) Effects of CpG cytosine methylation in (A)₄CG(T)₄ sequences.- **Mai 1998**. 14th European Experimental NMR Conference (EENC). Slovenia.
- 6-O) Study of conjugate cyanines by UV / Visible spectrometry. Extension of the quantum model of the 'free' particle in a one-dimensional box.- **Juin 2001**. 18^{ème} JIREC et 10^{ème} MIEC. Nice (France).
- 7-P) NMR studies of a DNA hairpin.- **Juillet 2002**. SfC Eurochem. Toulouse (France).
- 8-P) NMR studies of a DNA hairpin and Biopolymer Chain Elasticity (BCE) a new approach used to model DNA hairpin loop structure from NMR data.- **Octobre 2002**. 3^{ème} SFC-SAJEC 2002. Obernai (France).
- 9-P) Solvent and Structure Effects on Rotamerization and Self-Association in Mono- and Disubstituted Thiophenes.- **Juillet 2004**. 7th International Conference on Reaction Mechanisms. Ireland.
- 10-O) Optically pure ruthenium complexes: From homo-chiral recognition to DNA binding.- **Mars 2005**. Abstract of Paper, 229th ACS National Meeting, San Diego, CA, United States.
- 11-P) Spectroscopic study of the DNA-binding by optically pure Ru(bpy)₂(L-L)²⁺ bearing carboxylic functions. **Septembre 2005**. 11th European Conference on the Spectroscopy of Biological Molecules. Germany.
- 12-P) Carboxylic bipyridyl Ru^{II} complexes : promising agents for cell DNA imaging, plasmid internalization and supramolecule building – **Septembre 2007**. 12th European Conference on the Spectroscopy of Biological Molecules (ECSBM). France.
- 13-O) Carboxylic bipyridyl Ru^{II} complexes : promising agents for cell DNA imaging, plasmid internalization and supramolecule building – **Février 2008**. 2nd International Congress Of Progress in Vibrational Spectroscopy (ICOPVS). Inde.

Autres contributions scientifiques

- Rapporteur d'ouvrage et d'articles scientifiques:
J.J. Delpuech Dynamics of solutions and fluid mixtures by NMR Ed. John Wiley & Sons Ltd 1995.
Publications pour Journal of Physical Organic Chemistry
- Membre du comité d'organisation du congrès CONCOORD XXII.- **Paris 1992.**
Membre du comité d'organisation du congrès ECSBM (12). **Bobigny 2007.**
- Membre du comité de sélection pour le recrutement d'ingénieurs.
- Membre de jury de thèses:

L. Ménager-Marcourt - Thèse de l'Université P. et M. Curie – **27 janvier 2000**

Titre: Etude conformationnelle du dinucléotide CpG dans d(GAAAACGTTTTC)₂. Effet de la méthylation et d'un mésappariement C-A sur les adduits dodecamère-bispyridinium.

A. Bourzègue-Boubahri - Thèse de l'Université P. et M. Curie – **29 mars 2001**

Titre: Etude de la structure de deux oligonucléotides simples brins non auto-complémentaires d(GTTGGCCCAGGA) et d(TCCTGGGCCAAC).

O. Delalande - Thèse de l'Université D. Diderot; dirigée par J. Kozelka (Ecole Doctorale de Biochimie et Biologie Moléculaire) – **05 novembre 2004**

Titre : Etude structurale par RMN et modélisation moléculaire d'adduits formés entre l'ADN et le cisplatine ou des dérivés énantiomériques du cisplatine; Interaction de ces adduits avec des protéines à domaine HMG.

R. Caspar - Thèse de l'Université P. et M. Curie; dirigée par H. Amouri (Ecole Doctorale de Physique et Chimie des Matériaux) – **13 décembre 2004**

Titre: Etude des interactions de complexes de ruthénium optiquement purs avec l'ADN: reconnaissance chirale à l'échelle moléculaire et supramoléculaire.

D. Nemecek - Thèse en co-tutelle de l'Université P. et M. Curie et de l'Université Charles de Prague (Tcheque Republic); dirigée par P.Y. Turpin (Ecole Doctorale de Biophysique) – **28 janvier 2005**

Titre: Une nouvelle génération d'oligonucléotides synthétiques utilisables en stratégie antisens: propriétés d'hybridation et stabilité des complexes formés avec leurs compléments d'ADN naturel.

Collaborations scientifiques – Programmes d'échange

- Professeur J. Cognet** – Laboratoire BIOMOCETI - BIOphysique MOléculaire, CELLulaire et TIssulaire - (CNRS UMR 7033), Université P. et M. Curie (Paris 6).

Professeur M. Ghomi - Laboratoire BIOMOCETI - BIOphysique MOléculaire, CELLulaire et TIssulaire - (CNRS UMR 7033), Université P. et M. Curie (Paris 6).

Docteur H. Amouri (DR) - Laboratoire de Chimie Inorganique et Matériaux Moléculaires (CNRS UMR 7071), Université P. et M. Curie (Paris 6).

R. Duval - Société Chirosep, Parc de la Boissière, 76170 LaFrenaye, France.

Professeur A. Tatosyan / I. Zborovskaya – Laboratoire de Régulation des Oncogènes. Centre de Recherches sur le Cancer de Moscou – Académie Russe des Sciences Médicales.

□ *Programme d'échange OTAN en 2002 (PST.CLG.977659).*

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