

Dr Bruno FIGADÈRE

BD : 29/05/1960

Married, 3 children

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UMR8076-BioCIS

Laboratoire de Pharmacognosie,

Labex LERMIT

Faculté de Pharmacie, Université Paris Sud

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F-92290 Châtenay-Malabry (France)

Positions

2008-	Director of UMR8076-BioCIS CNRS-Université Paris Sud
2006-2007	Research Fellow at University of California at Riverside (USA)
1990-2008	Chargé, then Director of Research at CNRS (since 1997)
1988-1990	Post-Doctorate at University of California at Riverside (USA)

Laboratories

Laboratoire de Pharmacognosie-Université Paris Sud (1990- present)

RESEARCH FIELD

CHEMISTRY OF NATURAL SUBSTANCES; extraction (chromatographies), structure determination (NMR and mass spectrometry), total synthesis (multi-steps, organometallic chemistry and asymmetric synthesis), pharmacomodulation (cytotoxic, antiparasitic, neurotrops), chemical biology.

Production (H-index value: 30, ISI 2016, 3720 citations)

150	Publications in international journals (+4 submitted)
10	Chapters
5	Reviews
25	Conferences
117	Communications
66	Invited lectures
11	patents

Since 2011 :

30 publications (+4 submitted)
3 patents
4 invited conferences in international symposiums
10 invited lectures (in France and abroad)
32 communications (oral and/or posters)

SCIENTIFIC ANIMATION

Scientific Direction of Laboratoire de Pharmacognosie (Oct. 2007-present) and UMR 8076-BioCIS (January 2008-present)

Management of Research (grant evaluation ; promotions)

Commission 20 CNRS (1995-1998) then Commission 16 (2009-2012)
Commission Spécialistes 32^e Section University of Versailles-St Quentin (2004-2008)
Commission de Spécialiste of Muséum National d'Histoire Naturelle (1998-2002)
Commission CCSU University Paris Sud (2010-present)

Board member of

Member of COPIL of GIS Chimiothèque Nationale (2010-) and of Labex LERMIT (2011-present)
Member of Organisation Committee of Journées Jeunes Chercheurs-Société Chimie Thérapeutique
Member of several editorial committees of international journals (*Lett. Org. Chem, Molecules..*)
Director of Série Chimie of *Savoirs Actuels* collection (EDP Science-CNRS Edition, 2002-present)
Scientific advisor of *Alpha Chimica* (**Start-up** founded in March 2006) (complimentary)
CSO of *Neurolifesciences* (**Start-up** founded in December 2013) (complimentary)

TEACHING DUTIES

Lecturer at ESCOM (1995-1997)

Lecturer (Master degree) at University Paris Sud-Faculté de Pharmacie (2001-2010)

Invited Professor at University of Antioquia, Medellin (Colombia) (20h, 1992, 1996, 1998, 2005, 2006, 2011)

Member of Jury of « concours externe de l'Agrégation de Sciences Physiques-option Chimie » (1999-2002)

Director of : 21 PhD theses (4 co-directions at present) and 24 DEA and 7 M2

FORMATION

2006 Institut de Perfectionnement à la Gestion de la Recherche (CNRS)

1993 Habilitation à Diriger des Recherches de l'Université Paris-Sud

1987 Doctorat de Chimie Organique de l'Université Pierre et Marie Curie

1984 D.E.A Spectrochimie à l'Université Pierre et Marie Curie, Paris

DISTINCTIONS

1994 Bronze Medal CNRS

1995 SERVIER award from Société de Chimie Thérapeutique

1997 Am. Chem. Soc. Faculty Travel Award, 35th National Organic Symposium

2000 ACROS award from Division de Chimie Organique de la Société Française de Chimie

2010 PES of CNRS

ACTUAL RESEARCH ACTIVITIES (Grants, PhD directions, production)

- Mass spectrometry HTS screening for the identification of potentially antiplasmodial compounds (**US patent**, **2 publications in Anal. Chem**) ; research of antiplasmodial natural substances in insects, microorganisms and plantes (**2 PhD** 2015-2018).
- Extraction and structure determination of antiviral natural substances from neo-caledonian plantes (against dengue virus, **3 publications**) ; anti-Ebola virus (**1 publication**).
- Pharmacomodulation of antiparasitic compounds (leishmanicid quinolines) : collaboration with CEFIPRA (Pr P. LOISEAU-UMR8076) and Pr J. SAEZ (Univ. Antioquia, Medellin, Colombia) (**3 publications**).
- Conception, synthesis and biological property of hybride natural products (with neurotrophic activity) : collaboration with Dr Rita Raisman-Vozari (ICM, Hopital Pitié-Salpêtrière, Paris) (**4 patents** and **one** in preparation and **3 publications**) **ANR ANTIPARK** (**1 PhD** 2011-2013) and **1 PhD** (fellowship from Syria, 2012-2015) and **PRE-MATURATION** grants (2015).
- Total Synthesis of macrolides from marin sources : current studies (CR CNRS hired in October 2009, **3 publications**) **ANR AMPHICTOT** (**1 PhD** 2011-2014) and **1 PhD** fellowship of E.D.425 (2013-2016).
- Total Synthesis of a natural antifungi compound: current studies (**1 PhD** financially supported by **USTH**, Vietnam, 2013-2016).
- Synthesis and study of acetogenines of Annonaceae (collaboration with Pr R. Brown, UK).
- Conception and synthesis of dihybenzopyranes and hexahydroindenopyridines (collaboration with Pr D. Cortes, Espagne, **4 publications**).
- Preparation of biomimetic catalysts (**CIFRE**-Alpha-Chimica **PhD** fellowship and **3 publications**)

PUBLICATIONS (since 2011)

2011 (3): 116- "The antiplasmodium effects of a traditional South American remedy : Zanthoxylum chiloperone var. angustifolium Engl., Rutaceae against chloroquine resistant and chloroquine sensitive strains of *Plasmodium falciparum*" Cebrian-Torres G., Spelman K, Leblanc K, Munoz-Durango K, Torijano Gutierrez S., Ferreira ME, Rojas de Arias A, Figadère B, Fournet A, Maciuk A, Grellier P, Cech NB, Poupon E, *Braz. J. Pharmacognosia*, **2011**, 21, 652-661 (I.F. 3.460).

117- "Synthesis of 5,15-disubstituted porphyrins " Z. Abada, L. Ferrié, B. Akagah, A.T. Lormier, B. Figadère, *Tetrahedron Lett.*, **2011**, 52, 3175-3178 (I.F. 2.683).

118- “Formulation of 2-*n*-propylquinoline, an antileishmanial drug-candidate, for oral administration” N. Campos Vieira, J. Vacus, A. Fournet, R. Baudouin, B. Séon-Méniel, B. Figadère, P. M. Loiseau, *Parasite*, **2011**, 18, 333-336 (I.F. 1.1).

2012 (8) :119- “Mutagenic effect, antioxidant and anticancer activities of six medicinal plants from Burkina Faso” Sawadogo, W.R., Maciuk, A., Banzouzi, J. T., Champy, P., Figadère, B., Guissou, I.P., Nacoulma, O.G. *Nat. Prod. Res.*, **2012**, 26, 575-579 (I.F. 1.225).

120- “Trans-avicenol from *Z. chiloperone* (Rutaceae) shows promising antiproliferative activity against human cancer stem cells” Cebrian-Torrejon G., Spelman K, Leblanc K, Munoz-Durango K, Torijano Gutierrez S., Ferreira ME, Rojas de Arias A, Figadère B, Fournet A, Maciuk A, Poupon E, *J. Nat. Prod.*, **2012**, 75, 257-261 (I.F. 3.128).

121- “*In vitro* antileishmanial and antitrypanosomal activities of five medicinal plants from Burkina Faso” Sawadogo, W.R., Le Douaron, G., Maciuk, A., Bories, C., Loiseau, P., Figadère, B., Guissou, I.P., Nacoulma, O.G. *Parasitology Res.*, **2012**, 110, 1779-1783 (I.F. 2.149).

122- “Synthesis and leishmanicidal activity of quinoline-triclosan and quinoline-eugenol hybrids” Arango, V., Dominguez, J.J., Cardona, W., Robledo, S.M., Munoz, D.L., Figadère, B., Saez, J. *Med. Chem. Res.*, **2012**, 21, 3445-3454 (I.F. 1.271).

123- “Application of mass-spectrometry to the detection, characterization and screening of heme-binding molecules for malaria drug discovery” Muñoz-Durango, K., Maciuk, A., Torijano-Gutiérrez S., Harfouche, A., Jullian, J.-C., Quintin, J., Londoño, J., Arrango Acosta, G., Spelman, K. Mouray, E., Grellier, P., Figadère, B. *Anal. Chem.*, **2012**, 84, 3324-3329 (I.F. 5.856).

124- “Biflavonoids from *Dacrydium balansae* with potent inhibitory activity on dengue 2NS5 polymerase” Coulerie, P., Eydoux, C., Maciuk, A., Stuhl, L., Leblanc, K., Hnawia, E., Lebouvier, N., Figadère, B., Guillemot, J.C., Nour, M. *Planta Med.*, **2012**, 78, 672-677 (I.F. 2.153).

125- “Canthine-6-one from *Z. chiloperone* (Rutaceae) shows promising antiproliferative activity against GSC cancer stem cells” Cebrian-Torrejon G., Spelman K, Leblanc K, Munoz-Durango K, Torijano Gutierrez S., Ferreira ME, Rojas de Arias A, Figadère B, Fournet A, Maciuk A, Poupon E, *MedChemComm.*, **2012**, 3, 771-774 (I.F. 2.8).

126- “Synthesis and characterization of original *N*-meso chiral substituted diarylporphyrines” Z. Abada, L. Ferrié, B. Akagah, A.T. Lormier, B. Figadère, *Tetrahedron Lett.*, **2012**, 53, 6961-6964 (I.F. 2.683).

2013 (7) : 127- “Straightforward synthesis of 2-propylquinolines under multicomponent conditions in fluorinated alcohol” Ch. Venkateswarlu, P.V. Balaji, K. De, B. Crousse, B. Figadère, J. Legros, *J. Fluor. Chem.* **2013**, 152, 94-98 (I.F. 2.033).

128- “Solid state electrochemical assay of heme-binding molecules for screening of drugs with antimalarial potential” A. Domenech-Carbo, A. Maciuk, B. Figadère E. Poupon, G. Cebrian-Torrejon, *Anal. Chem.* **2013**, 85, 4014-4021 (I.F. 5.856).

129- “Synthesis and antiprotozoal activity of original porphyrin precursors and derivatives “ Z. Abada, S. Cojean, S. Pomel, L. Ferrié, B. Akagah, A.T. Lormier, P. Loiseau, B. Figadère, *Eur. J. Med. Chem.*, **2013**, 67, 158-165 (I.F. 3.346).

130- “Solution phase and nanoparticulate biosynthetically inspired interconnections in the canthin-6-one b-carboline series and study of phenotypic properties on *C. elegans*” G. Cebrian-Torrejon, R. Vazques-Manrique, N. Mackiewicz, A. Fournet, B. Figadère, J. Nicolas, E. Poupon, *Eur. J. Org. Chem.* **2013**, 5821-5828 (**Page de couverture**) (I.F. 3.329).

131- “Phytochemical Study of *Myrtopsis corymbosa*, Perspectives for Anti-dengue Natural Compound Research” P. Coulerie, A. Maciuk, N. Lebouvier, E. Hnawia, J.-C. Guillemot, B. Canard, B. Figadère and M. Nour, *Rec. Nat. Prod.*, **2013**, 7, 250-253 (I.F. 1.508).

- 132-** “Structure Activity Relationship Study of Biflavonoids on the Dengue Virus Polymerase DENV-NS5 RdRp” P. Coulerie, M. Nour, A. Maciuk, C. Eydoux, J.-C. Guillemot, N. Lebouvier, E. Hnawia, K. Leblanc, G. Lewin, B. Canard, B. Figadère, *Planta Med.*, **2013**, 79, 1313-1318 (I.F. 2.153).
- 133-** « Synthesis and leishmanicidal activity of new bis-alkylquinolines » Cardona, W., Arango, V., Dominguez, J.J., Robledo, S.M., Munoz, D.L., Figadère, B., Velez, I.D., Saez, J. *J. Chil. Chem. Soc.*, **2013**, 58, 1709-1712 (I.F. 0.469).
- 2014 (7) :134-** “dsDNA, ssDNA, G-quadruplex DNA and nucleosomal DNA electrochemical screening using canthin-6-one alkaloid-modified electrode”, A. Domenech-Carbo, G. Cebrian-Torrejon, L. de Miguel, V. Tordera, D. Rodrigues-Furtado, S. Assad-Kahn, A. Fournet, B. Figadère, R. Vazquez-Manrique, E. Poupon, *Electrochim. Acta*, **2014**, 115, 546-552 (I.F. 3.777).
- 135-** “New Inhibitors of the DENV-NS5 RdRp from *Carpolepis laurifolia* as Potential Antiviral Drugs for Dengue Treatment” P. Coulerie, A. Maciuk, C. Eydoux, E. Hnawia, N. Lebouvier, B. Figadère, J.-C. Guillemot and M. Nour, *Rec. Nat. Prod.*, **2014**, 8, 286-289 (I.F. 1.508).
- 136-** « MALDI mass spectrometry imaging of 1-methyl-4-phenylpyridinium (MPP⁺) in mouse brain » H. Kadar, G. Le Douaron, M. Amar, L. Ferrié, B. Figadère, D. Touboul, A. Brunelle, R. Raisman-Vozari, *Neurotox. Res.*, **2014**, 25, 135-145 (I.F. 2.865).
- 137-** « Synthesis of new melatoninergic hexahydroindenopyridines » L. Moreno, I. Berenguer, A. Diaz, P. Marín, J. Párraga, D.-H. Caignard, B. Figadère, N. Cabedo and D. Cortes, *Bioorg. Med. Chem. Lett.*, **2014**, 24, 3534-3536 (I.F. 2.331).
- 138-** « Etude phytochimique des écorces de tige de *Mallotus oppositifolius* (Euphorbiaceae) » F. A. Kabran, T. A. Okpekon, P. Champy, F. Roblot, K. Leblanc, B. Séon-Ménier, S. Nicolaÿ, A. Solgadi, C. Bories, L. Atoutou Djakouré, B. Figadère, A. Maciuk, *Eur. J. Sc. Res.* **2014**, 124, 180-189 (I.F. 0.736).
- 139-** « Toward the Total Synthesis of Klaivanolide: Complete Reinterpretation of its Originally Assigned Structure. » Ferrié, L.; Ferhi, S.; Bernadat, G.; Figadere, B., *Eur. J. Org. Chem.*, **2014**, 6183-6189 (I.F. 3.154).
- 140-** « Efficient Synthesis of hexahydroindenopyridines and their potential as melatoninergic ligands » J. Párraga, L. Moreno, A. Diaz, N. El Aouad, A. Galan, M.-J. Sanz, D.-H. Caignard, B. Figadère, N. Cabedo and D. Cortes, *Eur. J. Med. Chem.*, **2014**, 86, 700-709 (I.F. 3.346).
- 2015 (8) 141-** « Neuroprotective Effects of a Brain Permeant 6-Amino-Quinoxaline Derivative in Cell Culture Conditions that model the loss of dopaminergic (DA) neurons in Parkinson Disease » G. Le Douaron, F. Schmidt, M. Amar, H. Kadar, L. Debortoli, A. Latini, B. Seon-Menier, L. Ferrié, P. P. Michel, D. Touboul, A. Brunelle, R. Raisman-Vozari, B. Figadere, *Eur. J. Med. Chem.*, **2015**, 89, 467-479 (I.F. 3.346).
- 142-** « Virtual screen for repurposing approved and experimental drugs for candidate inhibitors of Ebola virus infection » V. Veljkovic, P.M. Loiseau, B. Figadere, S. Glisic, N. Veljkovic, V. Perovic, D.P. Cavanaugh, D.R. Branch, *F1000Research*, **2015**, 4:34 (doi:10.12688/f1000research.6110.2)
- 143-** « Harvesting canthinones: identification of the optimal seasonal point of harvest of *Zanthoxylum chiloperone* leaves as a source of 5-methoxycanthin-6-one » G. Cebrian-Torrejon, L. Kablan, K. Leblanc, A.B. Roffman, M.E. Ferreira, D. Rodriguez de la Cruz, N. Vera de Bilbao, A. Rojas de Arias, N.B. Cech, B. Figadère, A. Fournet, *Nat. Prod. Res.*, **2015**, 29, 2014-2058 (I.F. 1.225).
- 144-** « Bioactive phloroglucinols from *Mallotus oppositifolius* » Maciuk, A.; Kabran, F.; Okpekon, T.; Roblot, F.; Séon-Ménier, B.; Leblanc, K.; Bories, C.; Champy, P.; Yolou, S.; Loiseau, P.; Djakouré, L.; Figadere, B. *Fitoterapia*, **2015**, 107, 100-104. (I.F. 2.345).
- 145-** « Liebeskind-Srogl cross-coupling on γ -carboxyl- γ -butyrolactone derivatives: application to the synthesis of C-20-C-29 and C-20-C-34 fragments of amphidinolides F and C » J. Fenneteau, S. Vallerotto, L. Ferrié, B. Figadère, *Tetrahedron Lett.* **2015**, 56, 3758-3761(I.F. 2.391).

146- " Experimental and theoretical study of possible correlation between the electrochemistry of canthin-6-one and the antiproliferative activity against human cancer stem cells " A. Domenech-Carbo, G. Cebrian-Torres, A. Fournet, B. Figadère, E. Poupon, *J. Mol. Struc.*, **2015**, 1102, 242-246. (I.F. 1.602).

147- "In vitro and vivo antileishmanial activity of a 2-*n*-propylquinoline hydroxypropyl b-cyclodextrin formulation and pharmacokinetics via intravenous route " K. Balaraman, N. Campos-Vieira, F. Moussa, J. Vacus, S. Cojean, S. Pomel, B. Figadere, V. Kesavan, Loiseau P.M. *Int. J. Antimicrob. Ag.*, **2015**, 76, 127-133. (I.F. 4.259).

148- "Iron promoted C-C bond formation in the total synthesis of natural products and drugs" J. Legros, B. Figadère, *Nat. Prod Rep.*, **2015**, 32, 1541-1555. (I.F. 10.107).

2016 (2+3 submitted) 149- « Electric Syringe drug preparation : A key for homogenous administration » B. Garrigue, F.-X. Laborne, D. Sapir, K. Leblanc, B. Figadère, *Crit. Care Nurse*, **2016**, in press.

150- « New 6-aminoquinoxaline derivatives with neuroprotective effect on dopaminergic neurons in cellular and animal Parkinson disease models » G. Le Douaron, L. Ferrié, J. E. Sepulveda, M. Amar, B. Seon-Meniel, R. Raisman-Vozari, P. P. Michel, B. Figadere, *J. Med. Chem.*, **2016**, revised.

PATENTS

9- "Dérivés amino-quinoxalines pour le traitement des maladies neurodégénératives." Schmidt, F., Figadère, B., Raisman-Vozari, R., Ferrié, L., Le Douaron, G. ; *Fr. Pat. Appl* (30 mars) **2011**, FR 11/52645 ; PCT/EP**2012**/055903

10- " Utilisation de phacétopérane pour traiter un trouble déficit de l'attention hyperactivité." Konofal, E., Figadère, B.; *Fr. Pat. Appl* (29 novembre) **2011**, FR 11/60902; PCT/FR**2012**/05274

11- " triazaphenanthrenes pour le traitement des maladies neurodegeneratives." Figadère, B., Ferrié, L., Le Douaron, G., Raisman-Vozari, R.; Michel, P. *Fr. Pat. Appl* (09 Octobre) **2015**, FR 15/59639;

PUBLICATION OF GENERAL INTEREST

5- "L'hème, cible des antimalariques:qui s'y colle ?" Maciuk, A., Figadère, B., *Plein Sud-Spécial Recherche*, **2011**, 52-57.

CONFERENCES

22- " Hybrids of natural products with new biological properties"- XI Congresso FitoQuimica, 5th October **2011**, Medellin, **Colombia**.

23- " New screening for antimalarial compounds"- COST Action CM1307, 28th October **2014**, Calvi, **France**

24- " Annonaceae and Parkinsonism " The 4th PAK-France Binational Workshop on Natural Product Chemistry, 14 Oktober **2015**, Karashi, **Pakistan**.

25- " Annonaceae and Parkinsonism " Yangling International Agri-science Forum, 6 November **2015**, Yangling, **China**.

INVITED LECTURES

- 57-** " Design, synthesis and development of new drugs against leishmaniasis." Université Louis Pasteur Strasbourg, **France**, 19 Mai **2011**.
- 58-** " Hybrids of Natural Products with new Biological Activities." Universidad de Antioquia, Medellin, **Colombia**, 12 October **2011**.
- 59-** " Hybrides de Substances Naturelles Possédant de Nouvelles Activités Biologiques." IRCOF, Rouen, **France**, 23 Mars **2012**.
- 60-** " Annonaceae et Parkinson." ECOFOG, Cayenne, **France**, 25 Juin **2012**.
- 61-** " Nouvelle méthode de criblage pour la découverte de composés antimalariques." 1ere Conf. STRONGER, Cayenne, **France**, 26 Juin **2012**.
- 62-** " Synthesis of tetrahydrofurans ; contribution to synthesis of amphidinolide C, C2 and F" University of California, Riverside, **USA**, 14 Mars **2013**.
- 63-** « Dérivés de produits naturels traversant la barrière hémato-encéphalique et protégeant les neurones dopaminergiques dans un modèle de la maladie de Parkinson », Université de Caen, **France**, 21 octobre **2013**.
- 64-** « Hybrides de produits naturels vers de nouveaux composés utiles dans un modèle de la maladie de Parkinson », ICSN, **France**, 30 octobre **2014**.
- 65-** « Hybrides de produits naturels vers de nouveaux composés utiles dans un modèle de la maladie de Parkinson », ICSN, **France**, 30 octobre **2014**.
- 66-** « Natural products in Chatenay ; what's new ? », Université de Valencia, Burjassot, **Espagne**, 27 Mars **2015**.