Short Curriculum vitæ- english

Éric BENOIST

Professor and team leader of SOMAB (**S**ondes **O**rgano-**M**étalliques pour des **A**pplications **B**iomédicales)
Laboratoire de Synthèse et Physico-Chimie des Molécules d'Intérêt Biologique (SPCMIB)
UMR-CNRS 5068, Université Paul Sabatier,
118, route de Narbonne,
31062, Toulouse,
France
Mail : benoist@chimie.ups-tlse.fr
Phone : +33 561 556 480

Director of the Doctoral School in Physical, Chemical and Material Sciences
Maison de la Recherche et de la Valorisation,
Université Paul Sabatier,
118, route de Narbonne,
31062, Toulouse,
France

Mail : benoist@chimie.ups-tlse.fr
Phone : +33 561 556 480

PROFESSIONAL GOAL

Design, conception and biological evaluation of organometallic probes as efficient monomodal or bimodal imaging agents for Magnetic Resonance Imaging (MRI), Optical (fluorescence) or Nuclear Imaging.

More precisely, in my group, we prepare original chelating systems for different metals (^{99m}Tc, ^{111}In for Nuclear Imaging, Gd for MRI and Eu, Tb for fluorescence) and couple them to peptides in order to target specifically cancer cells. At the same time, similar tumour targeting radiopeptides are developed as therapeutic agents (using β^- emitters such as ^{188}Re, ^{90}Y).

We work in close collaboration with biologists for the evaluation of theses probes.

EDUCATION

Habilitation Defense in bioinorganic chemistry in 2005
Conception of radiopharmaceuticals: From synthesis to biological evaluation

PhD thesis in chemistry-radiochemistry, June 1997, Nantes University and INSERM U463, Nantes, France, conducted by Dr. J.-F. Gestin (DR CNRS).
Synthesis of new N_2S_2 tetradentate ligands for copper-67 ; application to the specific targeting of cancer cells.

Diploma thesis (Master) in Organic Synthesis, June 1993, Nantes University, directed by Prof. J.-P. Quintard.

Bachelor of honor in Organic Synthesis, June 1992, Nantes University, directed by Prof. J.-P. Quintard.

RESEARCH

Professor *from 2011* **and leader of SOMAB group** *from 2016*, SPCMIB-CNRS UMR 5068, Paul Sabatier University, Toulouse, since 2016

Assistant-professor *from 2007 to 2011* (4 years) with Dr. C. Picard (DR CNRS), SOMAB Team, at SPCMIB-CNRS UMR 5068, Paul Sabatier University, Toulouse with **CNRS delegation** in 2008 (for 6 months)

Assistant-professor *from 1998 to 2007* (9 years) with Dr. M. Dartiguenave (DR CNRS) at Inorganic chemistry Laboratory, Paul Sabatier University, Toulouse

Post-doctoral position with Prof. D. Parker at Durham University (GB) (1998, 9 months)
Synthesis of bifunctional chelating agents for Indium-111.

PhD in chemistry-biology supervised by Dr. J.-F. Gestin at INSERM, France (1993 - 1997, 4 years)
Synthesis of new N_2S_2 tetradentate ligands for copper-67 ; application to the specific targeting of cancer cells
Results published in N. J. Chem., Perkin Trans., Synthesis, Bioconjugate Chem.

PUBLICATIONS, SUPERVISION AND SCIENTIFIC CONTRIBUTIONS

- 51 publications (h-index = 13), 10 proceedings, 8 invited conferences (2 international), 25 talks (10 international), 55 poster presentations (20 international),

- 1 Post-doctoral Fellow, 7 PhD students, 10 Master Students and 23 research students

- Referee for the RSC (Chem. Soc. Rev., Dalton Trans., Chem. Commun., Org. Biol. Chem., Metallomics …), Molecules, Eur. J. Inorg. Chem, Eur. J. Med. Chem…. (~ 10 per year) since 2007

- Expert for ANR (National Agency of Research) since 2011

- President of jury, jury member or referee for 40 PhD defenses and 8 Habilitation defenses since 2003

- Main organiser of the GPOL 2012, Toulouse (European congress, 60 invited persons) and member of the organizing committee for the ISABC2016, Toulouse (International congress, 300 invited persons)

- Main organiser of Young Researcher Seminars at SPCMIB-UMR 5068, since 2012

5 MOST RECENT SIGNIFICATIVE PAPERS ON THE LAST 5 YEARS

Design, synthesis and reactivity of semi-rigid multidentate ligands with rhenium(I) and rhenium(V) cores
J.-H. Wang, R. Eychenne, S. Mallet-Ladeira, M. Wolff, N. Lepareur, E. Benoist
European Journal of Inorganic chemistry, **2017**, 3908-3918

Optical and relaxometric properties of monometallic (Eu^{III}, Tb^{III}, Gd^{III}) and heterobimetallic (Re^{I}/Gd^{III}) systems based on a functionalized bipyridine-containing acyclic ligand†
N. Leygue, A. Boulay, C. Galaup, E. Benoist, S. Laurent, R.N. Muller, L. Vander Elst, B. Mestre-Voegtlé, C. Picard
Dalton Transactions, **2016**, *45*, 8379-393.

Preparation and biodistribution of 1-((2-methoxyphenyl)piperazine)ferrocenecarboxamide labeled with technetium-99m as a potential brain receptor imaging agent
N. Malek-Saied, N. Mejri, R. El Aissi, E. Benoist, M. Saidi,
European Journal of Medicinal Chemistry, **2015**, *97*, 280-288.

A functionalized heterobimetallic ^{99m}Tc/Re complex as a potential dual-modality imaging probe: synthesis, photophysical properties, cytotoxicity and cellular imaging investigations
A. François, C. Auzanneau, V. Le Morvan, C. Galaup, H.S. Godfrey, L. Marty, A. Boulay, M. Artigau, B. Mestre-Voegtlé, N. Leygue, C. Picard, Y. Coulais, J. Robert, E. Benoist*
Dalton Transactions, **2014,** *43*, 439-450.

Oxorhenium(V) complexes of quinoline or isoquinoline carboxylic acids – Synthesis, structural characterization and catalytic application in epoxidation reactions
Barbara Machura, Mariusz Wolff, Eric Benoist, Jörg A. Schachner, Nadia C. Mösch-Zanetti
Dalton Transactions, **2013**, 42, 8827-8837.

TEACHING AND COMMUNITY RELATED ACTIVITY

- Assistant-Professor (1998-2011) then Professor (2011-) at Paul Sabatier University, Toulouse (up to 200h of teaching and demonstrating per year)

- Member of Chemistry Department (2001-2004)

- Main organiser of the Doctoral School Days since 2007,
- Member of the Doctoral School in Physical, Chemical and Material Sciences (2007-2009)
- Deputy-director of the Doctoral School in Physical, Chemical and Material Sciences since 2009
- Director of the Doctoral School in Physical, Chemical and Material Sciences since 2015

- Member of the committee of the “habilitation” defense since 2011

- Member of the French Society of Medicinal Chemistry since 2011