



## Pr François ESTOUR



CNRS Researcher

Bioorganic team

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### PROFESSIONAL EXPERIENCES

- 2017- Full Professor (Cl. 2), Rouen Normandy University (URN), France
- 2000-2017 Lecturer, Rouen Normandy University (URN), France
- 1998-1999 Postdoctoral Associate; Advisor: Dr. P. Masson, Institut de Recherche Biomédicale des Armées, Grenoble, France.

### EDUCATION

- 2012 HDR "Habilitation" to supervise academic research in chemistry, Rouen Normandy University (URN), France
- 1998 Ph D Thesis in Organic Chemistry, Clermont-Auvergne University, France
- 1996 Pharm D, Clermont-Auvergne University, France

### ADMINISTRATIVE & INSTITUTIONAL RESPONSIBILITIES

- 2020- Teaching manager of the 1<sup>st</sup> year medical studies, Rouen Normandy University (URN), France
- 2019- Membership of the executive board of Pharmacy department, Rouen Normandy University (URN), France
- 2019- Teaching manager of the 2<sup>nd</sup> year pharmacy, Rouen Normandy University (URN), France
- 2019- Membership of the scientific reviewing committee ANR "ASTRID" since 2019
- 2018- Member of the Advisor Commission of faculty specialists (CCSE, section 85-86-87) – University of Rouen, France

### RESEARCH INTERESTS

Cyclodextrins, Enzyme mimics, Scavengers for nerve agents decontamination, Imaging contrast agents, Bio-inspired structures

## SCIENTIFIC ACHIEVEMENTS

### Academic record (h-index: 13)

35 publications, 3 Text-Books, 3 patents, 3 invited lectures,

### Selected prizes and awards

2020 « AAT – Ingénieur Général Chanson » prize

## SUPERVISION ACTIVITIES

**Supervision** and co-supervision of 9 post-doctoral researchers, 14 PhD students, 5 M2 Masters Students

## GRANTS AND FELLOWSHIPS

DGA funding (2004-2007), ANR blanc “DetoxNeuro” (2006-2010), ANR ASTRID Maturation “TEXT-épur-OP” (2015-2018), DGA funding (2015-2018), CNRS pré-maturation “Text-déc-OPneurotox” (2019-2020), ANR “MIPEnz-Decontam” (2020-2024)

## TEACHING ACTIVITIES

Organic, medicinal and pharmaceutical chemistry

## MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Membership of “Société Française des Cyclodextrines »

## EDITORIAL ACTIVITIES

Guest editor of a special issue “Calixarene and Cyclodextrin Derivatives: Design and Applications” of *Processes* (MDPI)

## PUBLICATIONS

Alex Meye Biyogo, Louise Hespel, Vincent Humblot, Laurent Lebrun, François Estour. Cellulose fibers modification through metal-free click chemistry for the elaboration of versatile functional surfaces. *European Polymer Journal*, Elsevier, 2020, 135, pp.109866. [10.1016/j.eurpolymj.2020.109866](https://doi.org/10.1016/j.eurpolymj.2020.109866).

Sophie Mohamed, Sébastien Balieu, Emilie Petit, Ludovic Galas, Damien Schapman, et al.. A versatile and recyclable molecularly imprinted polymer as an oxidative catalyst of sulfur derivatives: a new possible method for mustard gas and V nerve agent decontamination. *Chemical Communications*, Royal Society of Chemistry, 2019, 55 (88), pp.13243-13246. [10.1039/c9cc04928b](https://doi.org/10.1039/c9cc04928b). [hal-02330912](https://hal.archives-ouvertes.fr/hal-02330912)

Cécile Soullignac, Benedetta Cornelio, Frédérique Brégier, Franck Le Derf, Jean-François Brière, et al.. Heterogeneous-phase Sonogashira cross-coupling reaction on COC surface for the grafting of biomolecules – Application to isatin. *Colloids and Surfaces B: Biointerfaces*, Elsevier, 2019, 181, pp.639-647.

[10.1016/j.colsurfb.2019.06.001](https://doi.org/10.1016/j.colsurfb.2019.06.001).

Romina Zappacosta, Benedetta Cornelio, Serena Pilato, Gabriella Siani, François Estour, et al.. Effect of the Incorporation of Functionalized Cyclodextrins in the Liposomal Bilayer. *Molecules*, MDPI, 2019, 24 (7), pp.1387.

[10.3390/molecules24071387](https://doi.org/10.3390/molecules24071387).

Anais Biscotti, Cécile Barbot, Lionel Nicol, Paul Mulder, Célia Sappei, et al.. MRI probes based on C6-peracetate  $\beta$ -cyclodextrins: Synthesis, gadolinium complexation and in vivo relaxivity studies. *Polyhedron*, Elsevier, 2018, 148, pp.32-43.

[10.1016/j.poly.2018.03.013](https://doi.org/10.1016/j.poly.2018.03.013)

Ibrahim Zgani, Hussein Idriss, Cécile Barbot, F. Djedaini-Pilard, Samuel Petit, et al.. Positive variation of the MRI signal via intramolecular inclusion complexation of a C-2 functionalized  $\beta$ -cyclodextrin. *Organic and Biomolecular Chemistry*, Royal Society of Chemistry, 2017, 15 (3), pp.564-569.

[10.1039/C6OB02583H](https://doi.org/10.1039/C6OB02583H)

Benedetta Cornelio, P. Ronjat, Marie Vandesteene, I. Ferreira, Nadège Boucard, et al.. Decontaminating chemoactive textiles. *Biofutur*, Elsevier - Cachan : Lavoisier, 2017, 36 (384), pp.50-51.

Sophie Letort, Michaël Bosco, Benedetta Cornelio, Frédérique Brégier, Sébastien Daulon, et al.. Structure-efficiency relationships of cyclodextrin scavengers in the hydrolytic degradation of organophosphorus compounds. *Beilstein Journal of Organic Chemistry*, Beilstein-Institut, 2017, 13, pp.417-427.

[10.3762/bjoc.13.45](https://doi.org/10.3762/bjoc.13.45).

Sophie Letort, Sébastien Balieu, William Erb, Géraldine Gouhier, François Estour. Interactions of cyclodextrins and their derivatives with toxic organophosphorus compounds. *Beilstein Journal of Organic Chemistry*, Beilstein-Institut, 2016, 12, pp.204-228.

[10.3762/bjoc.12.23](https://doi.org/10.3762/bjoc.12.23).

Sophie Letort, David Mathiron, Thomas Grel, Christine Albaret, Sébastien Daulon, et al.. The first 2IB,3IA-heterodifunctionalized  $\beta$ -cyclodextrin derivatives as artificial enzymes. *Chemical Communications*, Royal Society of Chemistry, 2015, 51 (13), pp.2601-2604.

[10.1039/C4CC09189B](https://doi.org/10.1039/C4CC09189B).

Hussein Idriss, François Estour, Ibrahim Zgani, Cécile Barbot, Anais Biscotti, et al.. Effect of the second coordination sphere on new contrast agents based on cyclodextrin scaffolds for MRI signals. *RSC Advances*, Royal Society of Chemistry, 2013, 3 (14), pp.4531-4534.

[{10.1039/C3RA40314A}](#).

François Estour, Sophie Letort, S. Müller, Raman Kumar Kalakuntla, Romain Le Provost, et al.. Functionalized cyclodextrins bearing an alpha nucleophile--a promising way to degrade nerve agents.. *Chemico-Biological Interactions*, Elsevier, 2013, 203 (1), pp.202-207.

[{10.1016/j.cbi.2012.10.020}](#).

Raman Kumar Kalakuntla, Timo Wille, Romain Le Provost, Sophie Letort, Georg Reiter, et al.. New modified  $\beta$ -cyclodextrin derivatives as detoxifying agents of chemical warfare agents (I). Synthesis and preliminary screening: evaluation of the detoxification using a half-quantitative enzymatic assay.. *Toxicology Letters*, Elsevier, 2013, 216 (2-3), pp.200-205.

[{10.1016/j.toxlet.2012.11.020}](#).

Susanne Müller, François Estour, Raman Kumar Kalakuntla, Romain Le Provost, Olivier Lafont, et al.. New modified  $\beta$ -cyclodextrin derivatives as detoxifying agents of chemical warfare agents (II). In vitro detoxification of cyclosarin (GF): general screening and toxicokinetic aspects of OP scavengers. *Toxicology Letters*, Elsevier, 2013, 216 (2-3), pp.206-212.

[{10.1016/j.toxlet.2012.11.019}](#).

Romain Le Provost, Timo Wille, Ludivine Louise, Nicolas Masurier, Susanne Müller, et al.. Optimized strategies to synthesize  $\beta$ -cyclodextrin-oxime conjugates as a new generation of organophosphate scavengers.. *Organic and Biomolecular Chemistry*, Royal Society of Chemistry, 2011, 9 (8), pp.3026-3032.

[{10.1039/c0ob00931h}](#).

Susanne Müller, Marianne Koller, Romain Le Provost, Olivier Lafont, François Estour, et al.. In vitro detoxification of cyclosarin (GF) by modified cyclodextrins.. *Toxicology Letters*, Elsevier, 2011, 200 (1-2), pp.53-58.

[{10.1016/j.toxlet.2010.10.014}](#).

Aurélia Vergeade, Paul Mulder, Cathy Vendeville-Dehaudt, François Estour, Dominique Fortin, et al.. Mitochondrial impairment contributes to cocaine-induced cardiac dysfunction: Prevention by the targeted antioxidant MitoQ.. *Free Radical Biology and Medicine*, Elsevier, 2010, 49 (5), pp.748-756.

[{10.1016/j.freeradbiomed.2010.05.024}](#).

T. Wille, O. Tenberken, G. Reiter, S. Muller, R. Le Provost, et al.. Detoxification of nerve agents by a substituted  $\beta$ -cyclodextrin: Application of a modified biological assay. *Toxicology*, Elsevier, 2009, 265 (3), pp.96-100.

[{10.1016/j.tox.2009.09.018}](#).

Nicolas Masurier, Olivier Lafont, Romain Le Provost, David Lesur, Patrick Masson, et al.. Regioselective access to 3 I -O-substituted- $\beta$ -cyclodextrin derivatives. *Chemical Communications*, Royal Society of Chemistry, 2009, pp.589-591.

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François Estour, Vincent Ferranti, Christiane Chabenat, Emilie Toussaint, Hervé Galons, et al.. Investigation of N-hydroxythalidomide in vitro stability and comparison to other N-substituted derivatives. *Journal of Pharmaceutical and Biomedical Analysis*, Elsevier, 2007, 45 (2), pp.237-242.

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Nicolas Masurier, Olivier Lafont O, François Estour. Les cyclodextrines substituées : un exemple de catalyseurs biomimétiques. *Annales Pharmaceutiques Françaises* 2007, 65, pp.126-133.

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Alexandra Testard, Valérie Thiery, François Estour, Thierry Besson. Real impact of microwave instruments on a multi-step synthesis – Preparation of a bio-active quinazolin-4-one derivative. *Chimica Oggi • Chemistry Today* (2007), 25(2), 10-12.

Nicolas Masurier, François Estour, Bertrand Lefèvre, Bernard Brasme, Patrick Masson, et al.. Improved access to 2-O-monobenzyl ethers of  $\beta$ -cyclodextrin as precursors of catalysts for organophosphoryl esters hydrolysis. *Carbohydrate Research*, Elsevier, 2006, 341 (7), pp.935-940.

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Bernardin Akagah, François Estour, Philippe Vérité, Elisabeth Seguin, Olivier Lafont, et al.. Synthesis of models of metabolites: Oxidation of variously substituted chromenes including acronycine, by a porphyrin catalytic system. *Journal of Heterocyclic Chemistry*, Wiley, 2005, 42 (7), pp.1267-1272.

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Olivier Lafont, Gaël Mansard, François Estour, Hervé Galons. Improvement of Synthetic Pathways to Thalidomide Ester Derivatives. *Heterocycles*, The Japan Institute of Heterocyclic Chemistry, 2005, 65 (12), pp.2957.

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Bernardin Akagah, François Estour, Philippe Vérité, Pedro Lameiras, Mohammed Nour, et al.. Regio- and diastereocontrolled preparative oxidation of methyloctalones by a biomimetic porphyrin catalyst. *Chirality*, Wiley, 2004, 16 (6), pp.398-403.

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François Estour, Bernardin Akagah, Jérôme Ségresta, Philippe Vérité, Sabine Ménager, Olivier Lafont O. Les catalyseurs porphyriniques : un outil pour la préparation de modèles de métabolites. *Annales Pharmaceutiques Françaises* 2004, 62, pp.297-303.

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Line Lucry, Ferdinand Enoma, François Estour, Sabine MÉNager, Olivier Lafont, et al.. Synthesis and biological testing of 3-phenyloctahydro-pyrimido[1,2- a ]- s -triazine derivatives. *Journal of Heterocyclic Chemistry*, Wiley, 2002, 39 (4), pp.663-670.

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Emmanuel Moreau, C. Dechambre, Jean M. Chezal, François Estour, B. Combourieu, et al.. Efficient synthesis of imidazopyridodiazepines from peri annulation in imidazo[1,2-a]pyridine. *Tetrahedron Letters*, Elsevier, 2002, 43 (50), pp.9119-9123.

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Olivier Chavignon, Stéphane Rézel, François Estour, Damien Canitrot, Elena V. Bejan Voinea, et al.. Preliminary Study of the Total Synthesis of Bao Gong Teng A Analogs Using 8-Benzyl-2-oxo-8-azabicyclo[3.2.1]oct-3-ene-6-endo/exo- and 7-endo/exo-carbonitrile. *Heterocycles*, The Japan Institute of Heterocyclic Chemistry, 1999, 51 (5), pp.989-1002.

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Jean-Claude Teulade, François Estour, Stéphane Rézel, Didier Fraise, Jacques Métin, et al.. Regioselectivity of 1,3-Dipolar Cycloaddition of 3-Oxidopyridinium Betaines to Olefins and Stereoselective Synthesis of 6-Alkyloxy-5-oxa-9-azatricyclo[5.2.1.0<sup>4,8</sup>]decan-2-one Derivatives. *Heterocycles*, The Japan Institute of Heterocyclic Chemistry, 1999, 50 (2), pp.929-945. [10.3987/COM-98-5\(H\)93](https://doi.org/10.3987/COM-98-5(H)93).