

Karine Andrieux, BPharm, Ph.D



CURRENT POSITION

- Professor of Pharmaceutics, Faculty of Pharmacy, Université Paris Cité, 75006 Paris, France
- Researcher, Chemical and Biological Technologies for Health (UTCBS), CNRS UMR 8258 Inserm U1267, Université Paris Cité

WEBSITES

<http://utcbs.u-paris.fr>

orcid.org/0000-0002-2002-7556

SCOPUS Author ID <https://www.scopus.com/authid/detail.uri?authorId=55894010800>

Google Scholar: https://scholar.google.com/citations?user=gc_5Om8AAAAJ

PubMed: <https://pubmed.ncbi.nlm.nih.gov/?term=Andrieux+K>.

PERSONAL

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EDUCATION / AFFILIATIONS / POSTS

2010	Diploma of « Habilitation à diriger les recherches », University of Paris Sud, France
2000	PhD in Pharmaceutical Sciences, University of Paris Sud, France
1996	Msc in Pharmaceutical technology and Biopharmacy, University of Paris Sud, France
1995	Pharmacy , Faculty of Pharmacy, University of Paris Sud, France

RESEARCH ACTIVITIES

Since 2013 – **Professor** - Faculty of Pharmacy - University of Paris 5 Descartes

Research areas: - *Translocation of nanoparticles through Blood Brain Barrier* – Co-supervision of 3 students on Master 2 (2013-2017) and 1 Ph.D. (2016-2019).

- *Interactions between Nanomedicines and placenta* - Co-supervision of 2 students on Master 2 level (1 Erasmus student from Camerino University, Italy) and 1 Ph.D. student (2015-2018) in collaboration with S. Gil, T. Fournier (Placenta Unit, University Paris Descartes).

- *Skin formulations* - Co-supervision of 1 Ph.D. (2016-2019) in collaboration with M. Paul (CHIC, Créteil).

2001-2013 – **Assistant Professor** - Faculty of Pharmacy - Châtenay-Malabry - University Paris Sud 11

Research areas: - *Translocation of nanoparticles through Blood Brain Barrier* – Co-supervision of 5 students on Master 2 (2002-2010), 5 on Ph.D. (2001-2014) and 2 on post-doctoral (2002, 2009-2011). Supervision of Erasmus students from Univ. Camerino, Italy (since 2008), from Univ. Liège, Belgium (since 2010) and from Univ. Ferrara, Italy (since 2011).

- *Oral administration of a ddi prodrug* - Co-supervision of 2 students on Master 2 level (2003, 2005), one on Ph.D. (2005-2008) and 2 on post-doctoral (2006-2008, 2009-2010).

PARTICIPATION IN RESEARCH PROJECTS-FUNDING

- 2016 – 2025 **EMJMD (Master degree), NANOMED:** Nanomedicine in drug delivery, Founder (1.906 K€ for 2016-2021 and 3.068 K€ for 2020-2025).
- 2015 **LEEM** (French pharmaceutical companies, 30 K€)
- 2008 – 2013 **European Project 7th PCRD, NAD:** Nanoparticles for Alzheimer disease/ Partner scientist responsible (1.173 K€), steering committee member and responsible of 2 workpackages.
- 2006 – 2008 **ANR SYLIANNU:** Design of lipid systems as nanocarrier of nucleoside analogue with antitumor and antiviral activities/Co-coordinator.

TEACHING ACTIVITIES

- 2018 **Organizer** of the 1st «Nanomedicine in drug delivery» Summer school / Program of 2 weeks / 14 attendees / France
- 2016 – 2025 **Founder/Coordinator** of an Erasmus Mundus Joint Master Degree (EMJMD) on “Nanomedicine in drug delivery” (NANOMED), consortium of 4 European universities offering an international programme.
- 2013 – **Full professor** – Pharmaceutical Technology, Faculty of Pharmacy, Université Paris Cité, France
- 2009 – 2012 **Invited expert** of Summer Schools: CYCLON (FP7) / 2 weeks / 20 attendees / France; ULLA / 2 weeks / 100 attendees / Italy; NAD (FP7) / 2 weeks / 20 attendees / Greece.
- 2001 – 2013 **Assistant Professor** – Pharmaceutical Technology, Faculty of Pharmacy, University of Paris Sud, France

PRIZES-HONORS

- 2010 **Award of the best poster presentation** on the 11th European Symposium on Controlled Drug Delivery, 7-9 avril 2010, Egmond Aan Zee, The Netherlands
- 2000 – 2001 **Fellowship for postdoctoral internship** (1 year), CNRS and Fournier company, France
- 2000 Both **PhD awards** received from APCI (*Paul Neumann-APCI Price*) and from Pharmacy Academia, France
- 1996 **Master degree award** received from APCI/ France

CONFERENCE ORGANIZATION

- 2018 **Chair** of 1st «Nanomedicine in drug delivery» Workshop Scientific congress of 2 days / 60 attendees / France
- 2013 **Organising/scientific committee member** of the NAD scientific meeting «Nanoparticles for Alzheimer’s disease»/ 80 attendees / Italy.
- 2007 **Organising/scientific committee member** of «Innovation in drug delivery» conference Scientific congress of 2 days / 300 attendees / Italy
- 2004 - **Organising committee member** of *One day APCI conferences* (1 by 4-years) Professional meetings / 30-80 attendees / France

PROFESSIONAL AFFILIATIONS

- 2004 – Advisory board member, “APGI (*French society of pharmaceutical technology*)”
2004 – 2021 Member, Research Network “SCMC (*Society of circulation and metabolism in the brain*)”
2002 – 2013 Member, Research Network “GTRV (*Nanocarriers network*)”

PROFESSIONAL ACTIVITIES

Institutional responsibilities

- 2018 – Member of the Faculty Pedagogic Committee, Université Paris Cité, France
2016 – Laboratory council member of UTCBS, France
2006 – 2013 Laboratory council member of Institut Galien Paris Sud, France
2004 – Selection committee member/ *Paris Sud University (5), Bourgogne University (1), Lille University (1), Lorraine University (1) and Paris Descartes University (4) / France*
2002 – 2005 Organizer of Institut Galien Paris Sud seminars, France

Editorial activities:

- 2019 Reviewer for an “Habilitation à diriger des recherches”/ Tours University / France
2018 Review Board for professor extraordinary bonus, EPHE/ France
2007 – 2010 Editorial Board member of International journal of pharmaceutical science and technology and Journal of Nanoneuroscience
2003 – Regular referee for: ACS Nano, Eur. J. Pharm. Biopharm., Int. J. Pharm., J. Control. Rel., Nanoscale, Pharm. Res., Placenta, etc...

Research Evaluation Activities:

- 2012 – Regular scientific expert for grant proposals: ANR (French Research Agency)/ France ; FNRS/ Belgium ; FCT/ Portugal ; CAFES COFECUB/ Brazil; GRIS/ Czech Republic ; Research Programmes/Canada ; Liege university/Belgium CINECA/ Italy ; University of Angers and Bordeaux/ France ; France Alzheimer society/ France
2012 – Reviewer for PhD defence (21 students), French/ Belgium/ Canadian/ South African Universities

PUBLICATIONS (GENERAL)

- 66 international publications, 5 national papers
-91 (of which 30 in national congresses) posters, 60 (of which 17 in national congresses) conferences

METRICS

Google Scholar Citations: 4115 (total) and 374 (max), **h-index:** 30, i-10 index: 42, **m-index:** 12.04
Scopus 75 cited documents: **Citations:** 3716; **h-index:** 28

10 REPRESENTATIVE PUBLICATIONS

1- Microfluidic Manufacturing of Liposomes: Development and Optimization by Design of Experiment and Machine Learning. Rebollo R., Oyoum F., Corvis Y., El-Hammadi M.M., Saubamea B., Andrieux K., Mignet N., Alhareth K.*. ACS Appl. Mater. Interfaces 2022, 14(35):39736-39745. doi.org/10.1021/acsami.2c06627.

- 2- Influence of Liposomes' and Lipoplexes' Physicochemical Characteristics on Their Uptake Rate and Mechanisms by the Placenta. Fliedel L, Alhareth K, Seguin J, El-Khashab M, Chissey A, Mignet N, Fournier T, Andrieux K*. *Int J Mol Sci.* 2022 Jun 4;23(11):6299. doi: 10.3390/ijms23116299.
- 3- Co-Encapsulation of Fisetin and Cisplatin into Liposomes for Glioma Therapy: From Formulation to Cell Evaluation. Renault-Mahieux M., Vieillard V., Seguin J., Espeau P., Le,R. Lai-Kuen D. T., Mignet N., Paul M. and Andrieux K. *Pharmaceutics* 2021, 13, 970, doi.org/10.3390/pharmaceutics13070970
- 4- Qualitative and quantitative analysis of the uptake of lipoplexes by villous placenta Explants. Alhareth K.*, Valero L., Elhady Mohamed K., Fliedel L., Roques C., Gil S., Mignet N., Fournier T., ANDRIEUX K. *Int. J. Pharm.* 2019, 567, 118479, doi.org/10.1016/j.ijpharm.2019.118479
- 5- Liposomes as Gene Delivery Vectors for Human Placental Cells. Valero L., Alhareth K., Espinoza Romero J., Viricel W., Leblond J., Chissey A., Dhotel H., Roques C., Campiol Arruda D., Escriou V., Mignet N., Fournier T., Andrieux K.* *Molecules.* 2018 May 4;23(5), E1085. doi: 10.3390/molecules23051085.
- 6-Antibody-functionalized polymer nanoparticle leading to memory recovery in Alzheimer's disease-like transgenic mouse model. Carradori D., Balducci C. Re F., Brambilla D., Le Droumaguet B., Flores O., Gaudin A., Mura S., Forloni G., Ordoñez-Gutierrez L., Wandosell F., Masserini M., Couvreur P., Nicolas J.*, Andrieux K. *Nanomedicine.* 2018 Feb;14(2):609-618. doi: 10.1016/j.nano.2017.12.006.
- 7- Assessment of dually labelled PEGylated liposomes transplacental passage and placental penetration using a combination of two ex-vivo human models: the dually perfused placenta and the suspended villous explants. Valero L., Alhareth K., Gil S., Simasotchi C., Roques C., Scherman D., Mignet N., Fournier T., Andrieux K.* *International Journal of Pharmaceutics* 532 (2017) 729–737. doi: 10.1016/j.ijpharm.2017.07.076.
- 8-Pharmacokinetics, biodistribution and metabolism of squalenoyl adenosine nanoparticles in mice using dual radio-labeling and radio-HPLC analysis. Gaudin A., Lepetre-Mouelhi S., Mougin J., Parrod M., Pieters G., Garcia-Argote S., Loreau O., Goncalves J., Chacun H., Courbebaisse Y., Clayette P., Desmaële D., Rousseau B., Andrieux K.*, Couvreur P. *J Control Rel.* 212, 50-8 (2015). doi: 10.1016/j.jconrel.2015.06.016
- 9- Transport Mechanisms of Squalenoyl Adenosine Nanoparticles Across the Blood-Brain Barrier. Gaudin A., Tagit O., Sobot D., Lepetre-Mouelhi S., Mougin J., Martens T. F., Braeckmans K., Nicolas V., Desmaële D., de Smedt S. C., Hildebrandt N., Couvreur P. *, Andrieux K. *Chemistry of Materials*, 27 (2015)3636-3647. Cover of the journal. doi.org/10.1021/acs.chemmater.5b00267
- 10- Squalenoyl adenosine nanoparticles provide neuroprotection after stroke and spinal cord injury. Gaudin A., Yemisci M., Eroglu H., Lepêtre-Mouelhi S., Turkoglu O. F., Dönmez-Demir B., Caban S., Sargon M. F., Garcia-Argote S., Pieters G., Loreau O., Rousseau B., Tagit O., Hildebrandt N., Le Dantec Y., Mougin J., Valetti S., Chacun H., Nicolas V., Desmaële D., Andrieux K.*, Capan Y., Dalkara T., Couvreur P.* *Nat. Nanotechnol.* 9(12), 1054-1062 (2014). DOI 10.1038/nnano.2014.274.

CHAPTERS IN BOOKS-BOOK SERIES

-5 chapters of books

INVITED PRESENTATIONS

-23 (6 in France) invited lectures and 20 (12 in France) seminars in universities or institutes.

MENTORING -MAJOR CONTRIBUTIONS TO THE EARLY CAREERS OF RESEARCHERS

I have mentored/supervised:

- 2013 – **5 PhD/ 23 Master Students**, UTCBS CNRS UMR 8258 Inserm U1267, Université Paris Cité/ France
- 2001 – 2013 **5 Postdocs/ 6 PhD/ 16 Master Students**, Institut Galien Paris Sud, UMR CNRS 8612, University of Paris Sud, France